



SWEDISH
ANTIQUITIES

Arranged and described

by

OSCAR MONTELIUS



STOCKHOLM

P. A. Norstedt & Söners
Förlag

O S C A R M O N T E L L I U S



S W E D I S H A N T I Q U I T I E S

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OSCAR MONTELIUS

WITH WOODCUTS DRAWN BY

OLOF SÖRLING

I

THE STONE AGE AND THE BRONZE AGE



STOCKHOLM -- P. A. NORSTEDT & SÖNERS FÖRLAG

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S I R J O H N E V A N S

WHO GAVE US HIS EXCELLENT WORKS ON
THE ANCIENT STONE AND BRONZE IMPLEMENTS OF
GREAT BRITAIN AND IRELAND



I have experienced the great good fortune after nearly half a century of publishing a new edition of »Svenska fornsaker» — or »Antiquités suédoises», as the French edition was entitled, — the first section of which, dealing with the Stone Age, was printed in 1871, and presented to the Congress at Bologna in that year.

Materials have grown considerably during the long period that has elapsed since the first edition was published. In the first edition, information was given concerning the circumstances under which each object was discovered and in what collection it is preserved. Similar information is given in the new edition, together with literary references. I have moreover indicated the distribution of every type in Scandinavia and beyond it as well as certain other circumstances which seem to be of some interest; and furthermore my literary references endeavour, without of course claiming completeness, to offer further guidance in the study of the groups. It is my hope that this series of short monographs will prove of some value, even to others than the beginners.

In the case of the antiquities of the Stone Age, only those that belong to the older part are distinguished from those of the later. Any attempt to ascribe *every* object of the later Stone Age to one of the four periods established by me would have been impossible. It is sufficiently proved that these periods are actually consecutive in the manner indicated, but such an attempt would have obscured the lucidity which seems to be of such importance that it should not be imperilled.

The antiquities of the Bronze Age, on the other hand, are classified in the six periods that I established in 1885. By this means, an easier survey is obtained than was previously possible over the Scandinavian civilization in that remarkable epoch and over its abundant relics which have been preserved to the present day, and many of which excite wonder by their fine execution, tasteful shape, and beautiful ornamentation.

The age assigned to the antiquities illustrated is indicated on each plate as follows: I signifies the Stone Age (I: 1 = the older; I: 2 = the later) and II the Bronze Age (II: 1 = the first period, and so on).

The Royal Academy of History and Antiquity has facilitated the publication of this work by placing at my disposal gratis all the numerous and costly woodcuts and other reproductions which have been executed during the past decades at the Academy's expense.

To Mr. Olof Sörling, the Academy's artist, who has drawn almost all the reproductions in this volume, I offer my thanks for his excellent work. Among those to whom I am otherwise indebted, I would especially mention Dr. Sune Lindquist, amanuensis to the Academy.

Stockholm, September 1920.

OSCAR MONTELIUS.

I. The Stone Age.

During many thousand years the peninsula of Scandinavia, like other portions of northern Europe, lay under enormous masses of ice and snow, just as Greenland lies in our own days. Stockholm and Christiania are indeed about as far north as the south point of Greenland.

Ever since northern Europe was first covered by ice which endured through summer and winter, year after year, millennium after millennium, cold and heat have interchanged, so that a couple of »glacial periods» could be distinguished, and between them a warmer interval in which the southern edge of the ice shrank to the north, leaving large spaces of northern Europe ice-free.

Long before the last ice-period — during which North Germany was covered by ice and snow — England, Belgium and France were inhabited. Uncounted relics have come to light of man living there, not only during the milder interval between glacial periods, but also while the Scandinavian countries and many other districts in our hemisphere lay under ice.

Ingenious investigations¹ have shown that more than 5,000 years elapsed from the moment when the ice, at the end of the last glacial age, began to melt at the present south coast of Skåne, to the time — about 10,000 years before our days — when the northernmost portions of Sweden became ice-free.

And it is known that, after the end of the latest ice-age, the territories of South Sweden and Denmark, set free from the immense pressure of ice, gradually rose, so that Skåne, the present Danish islands and Jutland formed a large continuous country only penetrated by narrow streams. The Baltic, which thus became shut off from open connection with the ocean, but which, then as now, received a huge quantity of fresh water from the rivers running into it, became then an immense fresh-water lake. This period is named the *Ancylus Age*, so called after the shells of that snail, found in deposits formed then.

This endured a long time, and then South Sweden and Denmark sank again, and Öresund and the Belts came into existence. Thus the salt water of the ocean was able to pour from the Kattegat into the Baltic, which became a bay of the sea, as it now is. This period is named the *Littorina Age*, a title derived from the shells of *Littorina littorea*, which occur in the strata formed at that date.

After the commencement of this period, South Sweden continued to sink, until it once more began to rise, a movement which is still maintained.

In Central and North Sweden, where the land likewise rises continually, no such considerable sinking seems to have taken place as that which proceeded in South Sweden during the early *Littorina* age.

No relics are known of human beings living in our country *before the beginning of the ice-age*; nor yet have any traces been found of man inhabiting the coasts of Sweden *during this period*, as is the case in Greenland in our days.

But as the ice-edge began to shrink from the south coast of Skåne northwards, and plants and beasts were first able to live in our country, man soon followed. He came, of course, from central Europe. Several objects made by man, and discovered in various parts of the Scandinavian peninsula, belong to the *Ancylus Age*;

¹ GERARD DE GEER, *A Geo-chronology of the last 12,000 years*, in *Congrès géologique international, Compte rendu de la XI:e session, Stockholm 1910*, p. 241.

and relics of human life in great abundance on certain stretches of South Sweden, as in Denmark, date from the early Littorina Age, before the southern portion of the peninsula began to rise for the second time.

No metals were known here either then or for millenniums after the first immigration of man. It was of stone, bone, horn and wood that man made his weapons and tools. He lived in a *Stone Age*, which corresponds to the grade of civilization in which many nations in other parts of the world still remained during the last few centuries.

The time between the first appearance of man in Sweden and the rising of the southern part of the land in the Littorina Age is called *the older Stone Age*.

The remaining portion of the Stone Age is called *the later Stone Age*.

Reindeer, which inhabited France and central Europe in the ice-age, penetrated hither when the ice melted in southern Scandinavia. In Skåne and north of it, as far as Västergötland, horns and bones of this animal have been discovered. But it disappeared from South Sweden long before the end of the older Stone Age.

As human beings for many millenniums lived in the portions of central Europe which were not ice bound, before the Scandinavian peninsula became habitable by the melting of the ice, the older Stone Age in Sweden commences long after the beginning of the older Stone Age in France and other regions of central Europe, which epoch is known by the name of the *Palaeolithic period*. The later part of the Stone Age in central Europe — known as the *Neolithic period* — corresponds not only to our later Stone Age, but also to a part of the older Stone Age in Scandinavia.

Several centuries before the end of the Stone Age in Sweden, copper was known here, though not generally used. The second half of the later Stone Age can therefore also be called the *Copper Age*. Most of the tools and weapons were still made of stone and bone, but some were of copper.

The Stone Age did not end at the time when man entirely ceased to utilize stone for his tools and weapons, but when the *Bronze Age* began, that is to say when the use of copper hardened with tin, »bronze», was general. Long after the beginning of the Bronze Age, weapons and tools of stone were still used, although in steadily diminishing quantities.

Thanks to a fruitful cooperation between geologists and antiquarians, we now know that the foot of man trod Swedish soil for the first time at least 15,000 years before our days.

Our Swedish ancestors were the first inhabitants of our country. We have not taken it from anybody else,

Literature:

O. MONTELIUS, *Sveriges forntid*. 1. *Stenåldern* (Stockholm, 1874). — ID., *Sur les tombeaux et la topographie de la Suède pendant l'âge de la pierre* (*Congr. St.*, 1, p. 152). — ID., *Öfversikt öfver den nordiska forntidens perioder* (*Sv. Fornm.-för. tidskr.*, vol. 8, Sthlm, 1892, p. 135, *Stenåldern*). — ID., *De förhistoriska perioderna i Skandinavien* (*Mbl.*, 1893, supplement). — K. STJERNA, *Före hällkisttiden* (*A. T.*, 19: 2; 1911). — N. ÅBERG, *Studier öfver den yngre stenåldern i Norden och Västeuropa* (Norrköping, 1912). — O. ALMGREN, *Några svensk-finska stenåldersproblem* (*A. T.*, 20: 1; 1914). — T. J. ARNE, *Ensamgrafvar från stenåldern i Sverige* (*Fornv.*, 1909, p. 99).

Certain districts of Sweden: MONTELIUS, *Bronsåldern i norra och mellersta Sverige*, with a list of stone implements found there (*A. T.* 3; 1872—3). — S. ERIXON, *Stenåldern i Blekinge* (*Fornv.*, 1913). — MONTELIUS and E. EKHOF, *Bohuslänska fornsaker från hednatiden* (*Boh. bidr.*). — E. EKHOF, G. GUSTAFSON, O. ALMGREN, O. FRÖDIN and G. HALLSTRÖM, *Bohusläns fasta fornlämningar från hednatiden* (*Boh. bidr.*). — K. E. SAHLSTRÖM, *Om Väster-*

götlands stenåldersbebyggelse (1915). — ID., *Förteckning öfver Skaraborgs läns stenåldersgrafvar* (*Västerg. Fornm.-för. tidskr.*, III: 7; 1915). — MONTELIUS, *Östergötland under hednatiden* (*Sv. Fornm.-för. tidskr.*, 12; 1905). — B. NERMAN, *Östergötlands stenålder* (*Meddelanden från Östergötl. Fornm.-för.*, 1911). — N. ÅBERG, *Kalmar läns stenålder* (*Meddelanden från Kalmar läns Fornm.-för.*, VII; 1913). — N. LITBERG, *Götlands stenålder* (Stockholm, 1914). — T. J. ARNE, *Om det forntida Södermanland* (*Bidr. t. Södermanl. äldre kult.-hist.*, XIV; 1909). — G. EKHOLM, *Upplands stenålder* (*Uppl. Fornm.-för. tidskr.*, XXVI; 1909). — ID., *Studier i Upplands bebyggelsehistoria*, I, *Stenåldern* (*Upps. Univ. årsskrift*, 1915). — E. ÖLSSON, *Västmanland under sten- och bronsåldern* (Västerås, 1915). — S. LINDQVIST, *Från Nerikes sten- och bronsålder* (*Meddel. fr. Fören. Örebro läns Museum*, 1912). — E. NYGREN, *Värmlands stenålder* (*Meddel. fr. Värmlands Naturh. och Fornm.-för.*, XII; 1914). — MONTELIUS, *Huru gammal är bygden i Helsingland?* (*Helsingl. Fornm.-sällsk. årskr.*, 1901, p. 27). — P. ÖHLSSON and others, *Om stenåldern i Jämtland, Herjedalen och Ångermanland* (*Sv. Fornm.-för. tidskr.*, 5, 8 and 10).

I: 1. Older Stone Age.

Together with flint and other kinds of stone¹, much bone and horn were used during this period as materials for weapons and tools.

Things made of flint are commonly rudely chipped and are practically never polished. Axes made of stone are, at the end of the period, sometimes polished, especially at the edges.

During this time in many places men dwelt in crowds (probably belonging to the same tribe or family) on the shore of the sea or of a lake; others lived on rafts built of tree-trunks, which drifted about on a water surface, or were fixed in a certain spot by means of poles, driven into the bottom of the lake. Remains of such dwelling-places have been found here in Sweden as in Denmark. Some of the Danish ones have been famous under the name »*kjökkenmøddinger*» (kitchenmiddens) or shell-mounds on the shores. Life was supported exclusively by hunting and fishing.

Within the older Stone Age in Sweden we are able to distinguish a first and a second period.

The former coincides, at least partially, with the Ancyclus Age. From a very early part of this first period date such roughly chipped »almond-shaped» flint tools as those reproduced in fig. 1—8.

Remains from the second period are those tools of stone, bone and horn, which have been found together with pieces of pottery, bones of beasts and charcoals in the Danish »*kjökkenmøddinger*» and in Swedish dwelling-places from the same time. Shells of oysters and other molluscs form a great part of the Danish *kjökkenmøddinger*. — A station from an earlier time than these has been discovered in Maglemose at Mullerup on Sjælland; the time next before the »*kjökkenmøddinger*» is therefore often called the Maglemose period.

As it is not yet possible in every case to decide whether an object is to be ascribed to one period of the older Stone Age or to another, the relics from the various portions of this epoch have been given on pl. 1—8 without any chronological distinction.

MONTELIUS, *Sveriges forntid*, p. 31. — ID., *Öfversigt öfver den nordiska forntidens perioder* (*Sv. Fornm.-förs. tidskr.*, 8, p. 131; literature). — ID., *De förhistoriska perioderna i Skandinavien* (*Mbl.*, 1893, pl. 1 and 2). — STJERNA, *A. T.*, 19: 2. — K. KJELLMARK, *En stenåldersboplats i Järavallen vid Linhamn* (*A. T.*, 17: 3). — H. SCHETELIG, *Vorgeschichte Norwegens* (*Mannus*, III, p. 29). — S. MÜLLER, *Ordnung af Danmarks Öldsager, Stenalderen* (Kjöbenhavn, 1888). — A. P. MADSEN, S. MÜLLER etc., *Affaldsdynger fra Stenalderen i Danmark* (Kjöbenhavn, 1900). — O. ALMGREN, *Nyare undersökningar af Danmarks »kjökkenmøddingar»* (*Ymer*, 1902, p. 56). — G. SARAUW, *En Stenalders Boplats i Maglemose ved Mullerup* (*Aarbøger*, 1903, p. 148). — ID., *Maglemose* (*Prähist. Zeitschr.*, 1911, p. 52). — TH. THOMSEN and A. JESSEN, *Brabrand-Fundet fra den ældste Stenalder* (*Aarbøger* 1906, p. 1; *Mémoires*, 1904, p. 162). — KUPKA, *Das Campignien im nord-europäischen Glazialgebiet* (*Zeitschr. f. Ethnologie*, 1907, p. 192; literature).

1—8. Roughly chipped, elliptical, »almond-shaped» flint tools without any trace of grinding. Parts of the natural chalk-covering (crust) are often left, sometimes on both sides. A number of small chips (»retouches») are commonly seen along the edges, a fact which shows that they are finished works. The majority were found in Skåne and Bohuslän; some in Västergötland and Dal.

MONTELIUS, *De »mandelformiga» flintverktygens ålder* (*A. T.*, 20: 6; literature).

2. Massleberg, Boh. peat-bog, with 4 similar implements.

3. Sk.; found in the peat beneath the »Järavallen», a formation from the Littorina period.

9—18. Roughly chipped flints of different shapes without any trace of grinding; many found under conditions which show them to belong to the former part of our older Stone Age.

19—30. Flint axes (»tranchets»). The broad straight edge is formed by the two surfaces meeting each other at a sharp angle. The flat face was produced by striking off the piece from the flint block; the other face was also formed by a single stroke. The narrow sides are shaped by chipping. The edges are at times so narrow that the tool might well be considered as a chisel (MÜLLER, *Ordnung, St.*, f. 15, 16). — The type survived to the beginning of the later Stone Age (traces of grinding; RYDBECK, in *Fornv.*, 1916, p. 119).

Common in Skåne and Bohuslän, rare in the rest of Götaland; scarcely ever found in Gotland and Svealand. Discovered in Norway, even as far north as the district of Trondhjem. Abundant in Denmark,

¹ »Stone» is commonly used for brevity's sake to indicate other kinds than flint, as greenstone &c.

where they are called »skivespalter». They occur in northern Germany too, in England (very seldom), Belgium, France (there called »tranchets») and Italy.

For distribution in Sweden, see the literature p. 2. — S. NILSSON, *Skandinaviska Nordens Ur-Invånare* (1st edition, Lund, 1838—43; 2nd ed., Stockholm, 1866), f. 79. — *Ant. suéd.*, f. 10. — O. RYGH, *Norske Olds.*, f. 1. — W. C. BRÖGGER, *Strandliniens beliggenhed under stenalderen i det sydøstlige Norge* (Kristiania, 1905), pl. I—III. — *Oldtiden*, I, p. 38; II, pp. 1, 40, 45, 61 (Trondhjems museum). — S. MÜLLER, *Ægredskaber fra den ældre Stenalder* (*Aarb.*, 1888, p. 238; 1890, p. 308; 1896, p. 346; *Mémoires*, 1884—89, p. 371 [f. 9, shafted]; 1890—95, p. 99; 1897, p. 113). — *Id.*, *Ordning, St.*, f. 14—16. — *Affaldsdynger fra Stenalderen i Danmark*, p. 29, pl. IV et IX. — J. MESTORF, *Vorgeschichtl. Alterthümer aus Schleswig-Holstein* (Hamburg, 1895), f. 4. — R. BELTZ, *Die vorgesch. Altert. d. Grossherzogtums Mecklenburg-Schwerin* (Schwerin, 1910), f. 6, 7. — *Photographisches Album der prähistorischen und anthropologischen Ausstellung zu Berlin 1880*, II, pl. 2 (Pomerania). — *Zeit-schr. f. Ethnol.*, 1907, p. 204. — J. EVANS, *The ancient Stone implements of Great Britain*, 2nd ed. (London, 1897), p. 69. — ÅBERG, *Studier*, p. 58. — DÉCHELETTE, *Manuel*, 1, p. 329. — STJERNA, *A. T.*, 19: 2, p. 42. — G. and A. DE MORTILLET, *Musée préhistorique*, pl. XXXIX. — G. A. COLINI, *Bullettino di Palehnologia italiana*, XXXII (1906), p. 249, pl. XX, XXI.

21 and 22. Limhamn, close by Malmö, Sk.; dwelling-place (2nd period of the older Stone Age; see f. 39, 41, 80—90)

27. Åby, near Lake Vättern, Ö.G.; found with similar implements.

31—34. Flint axes chipped all round. The rounded edge is formed, as in the specimens 19—30, by two surfaces meeting each other at a sharp angle. Both broad sides, or at least one of them, strongly curved; rough-hewn. No narrow sides; the section therefore often pointed oval. Traces of grinding extremely rare. Some of these tools are so narrow that they should rather be considered as chisels than as axes (MÜLLER, *Ordning, St.*, f. 20, 21).

Common in Skåne, rare in the rest of Götaland; unknown in Svealand. Common in Denmark; met with also in northern Germany, France (where this tool is called »pic») and England.

Ant. suéd., f. 11. — ÅBERG, *Studier* (p. 3, Scandinavia, pp. 37 and 58, western Europe). — MÜLLER, *Ordning, St.*, f. 18—21. — *Affaldsdynger fra Stenalderen i Danmark*, p. 35, pl. V and IX. — *Aarb.*, 1896, p. 317; *Mémoires*, 1897, p. 97 (hafts). — BELTZ, *Altert. Mecklenb.*, p. 14. — *Photogr. Album, Berlin 1880*, II, pl. 1—3 (Pomerania). — *Zeitschr. f. Ethnol.*, 1907, p. 202. — DÉCHELETTE, *Manuel*, 1, p. 329. — EVANS, *Stone Impl.*, p. 67.

35—38. Stone axes of the »Lihult type»: copies in stone from the flint axes f. 31—34. Like those, they are chipped, not hammered, which would have been more natural for the material. One broad side is as a rule almost flat, the other distinctly convex, so that the section is often triangular (f. 37, 38). Many are entirely unground, but some show traces of grinding.

General in Bohuslän (see f. 35, Lihult), in Dal (Hästefjorden) and in Västergötland (in the proximity of Vänern); occurring also in the eastern part of Götaland. Lihult axes have also been found in Södermanland, Nerike, Uppland and Dalarna, mostly of late shapes. — General in Norway, where they are called axes of »Nöstvet-type».

For distribution in Sweden, see the literature p. 2. — FRÖDIN, *Ymer*, 1906, p. 26. — A. W. BRÖGGER, *Över av Nöstvettypen* (*Norges Geologiske Undersøgelse*, n:o 42; Kristiania, 1905). — ÅBERG, *Studier*, p. 6.

35. Lihult, Boh.; a great number of similar tools have been found there. — *Boh. bidr.*, 1, p. 328.

39—41. Stone axes of »Limhamn-type»: roughly chipped, broad, comparatively short, with curved broad sides but no narrow sides (consequently with a sharp oval section); the edges generally distinctly rounded. Badly ground; not only at the edge.

ÅBERG, *Studier*, p. 11.

39 and 41. Limhamn, Sk.; see f. 21.

42—58. Points of bone or horn with teeth or barbs, as a rule only on one side, seldom on both. Have belonged to harpoons or other missiles; some of them probably to a kind of spear. Harpoon points sometimes have holes at the lower end for the cord by which they were made fast to the shaft. On account of the conditions under which they were found being insufficiently examined, it is not certain that all here reproduced belong to the older Stone Age (many have been found singly in peat-bogs unconnected with other antiquities). But they are given here for the sake of survey, whereas harpoon tips ascribed with certainty to the later Stone Age are found under numbers 529—536.

Many bone-tips of the sort now under consideration are found in Skåne and other parts of Götaland; some in Svealand and Norrland. Similar points from the older Stone Age are found in Denmark, and harpoon tips of bone occur in central Europe during the palaeolithic age. In America such bone-tips have been used down to the most recent times.

NILSSON, *Ur-Inv.*, f. 160, 163. — MONTELIUS, *Sveriges forntid*, p. 100. — HOLST, *Sveriges geolog. Undersökn. Arsbok*, 1908, n:o 8, p. 11. — STJERNA, *A. T.*, 19: 2, pp. 7—29 (p. 10 Kunda, Estland) and 160, 161. — MÜLLER, *Ordning, St.*, f. 185, 186. — *Aarbøger*, 1903, p. 241 (Maglemose). — MESTORF, *Alterth. Schleswig-Holstein*, pl. XVI. — BELTZ, *Altert. Mecklenb.*, pl. 2. — *Verhandl. d. Berl. Anthr. Ges.*, 1886, p. 127; 1888, p. 343; 1890, p. 367, etc. — *Mannus*, 1, pl. IV (f. 5, of reindeer-bone). — DÉCHELETTE, *Manuel*, 1, pp. 153, 317. — *Dictionnaire archéologique de la Gaule*, 1 (Paris, 1875; grottes in Périgord). — G. and A. de MORTILLET, *Musée archéologique* (Paris, 1881), pl. XXV (France). — J. HEIERLI, *Urgeschichte der Schweiz* (Zürich, 1901), p. 46. — M. MUCH, *Kunsthistorischer Atlas* (Wien 1889), pl. II (Moravia). — *Wiadomości Archeologiczne*, IV (Warschau, 1882). — CH. RAU, *Prehistoric Fishing in Europe and North America* (*Smithsonian Contributions to Knowledge*, Washington, 1884), pp. 17—80 (Europe) and 142—152 (America, modern times).

42—56. Barbs only on one side.

44, 55 and 56. On the bottom of the Råbblöf-lake, Sk.; with several other things from the same time (see also f. 758).

57 and 58. Barbs on both sides.

59—65. Bone points belonging to arrows or possibly javelins (formerly called »bird arrows») with small sharp chips of flint set in grooves along the edges and fastened with resin. Many bits of flint have already fallen out. At the lower end of the bone-points are to be seen remains of resin, with which the bone had been fastened to the shaft. Most of these are ascribed to a late portion of the older Stone Age. The idea of providing a weapon of bone or wood in this manner with edges of flint, however, survived for at least the whole of the Stone Age: during the last part of that era a kind of short sword was made out of wood with flint edges, by inserting flakes of flint in furrows along

the edges (*Aarb.*, 1907, p. 79); and one bone tip with flint splinters is asserted to have been found in a grave of the Bronze Age (MONTELIUS, *Sveriges forntid*, p. 99). — In Mexico and Central America, where man was still living in the Bronze Age when the Europeans arrived, such wooden swords were used with edges of obsidian splinters (G. FRIEDRICI, in *Baessler Archiv*, Supplement VII [Leipzig and Berlin, 1915], p. 9).

In northern Greenland Eskimos made knives of bone, the edges of which were formed of small bits of native iron (of meteoric or rather of telluric origin), inserted along the edges in grooves.

Many found in Skåne, several in Bohuslän, a few in Västergötland and one in the cave of Stora Förvar on Stora Karlsö (later Stone Age; see f. 183). They occur also in Norway, Denmark, Germany and Esthonia. At Kunda in Esthonia, alongside of points with flint splinters, there have been found points entirely of bone, with edges imitating those of flint splinters.

NILSSON, *Ur-Inv.*, pl. VII (2nd ed., pl. IV). — MONTELIUS, *Ant. suéd.*, p. 98. — HOLST, *Sv. Geolog. Unders. årsbok*, 1908, n:o 8, p. 11. — STJERNA, *A. T.*, 19: 2, pp. 9—27, 158 et 161 (list of all specimens known from Sweden). — MADSEN, *Afbildninger, St.*, pl. 40. — MÜLLER, *Ordning, St.*, f. 187. — *Verhandl. d. Berl. Anthr. Ges.*, 1891, p. 755 (several found in East Prussia). — FRIEDEL, *Archiv f. Anthropol.*, V (1872), p. 433. — RAU, *Prehistoric Fishing*, p. 82.

66. Similar bone point, without grooves. — Eggvena, V.G.; with a bone point = f. 59—65. — *Mbl.*, 1895, p. 54.

67—74. Axes or picks of horn (mostly elk); f. 67 with a deep groove at the top, the others with a hole, for the shaft. The hole — generally round, at times rectangular (f. 74) — is either bored at the thick end, not through the fork (the earliest), or else, somewhat later, through one of the branches of the horn. The circumstances of the discovery are not often very enlightening as to the age, and so it is quite difficult to say whether all those represented here are attributable to the older Stone Age. During the later Stone Age, too, (see f. 677) and the Bronze Age (MÜLLER, *Ordning, Br.*, f. 140; compare LINDENSCHMIT, *Alterth. unserer heidnischen Vorzeit*, vol. IV, pl. 7) similar picks of horn occur; many of them have been used in flint mines. — For a long wooden shaft on such a tool see *Aarb.*, 1906, p. 21, f. 4. — Instead of picks, use could be made of pieces of staghorn, held in the hand with no handle.

Sweden (in many districts), Norway, Denmark, Germany and western Europe (flint mines).

NILSSON, *Ur-Inv.*, pl. X (2nd edit., pl. A). — STJERNA, *A. T.*, 19: 2, pp. 5, 16 and 30. — *Meddel. fr. Kristianstads Mus.*, n:o 3, f. 2 (long, with netlike ornaments). — MÜLLER, *Ordning, St.*, f. 24, 25. — *Affaldsdynger*, p. 57, pl. VII. — TH. THOMSEN and A. JESSEN, *Brabrand-Fundet fra den ældre Stenalder* (*Aarb.*, 1906, p. 20). — MESTORF, *Alterth. Schlesw.-Holst.*, f. 6 et 128—130. — BELTZ, *Alterth. Mecklenb.*, pl. 15. — LINDENSCHMIT, *Alterth. unserer heidn. Vorzeit*, 1: 5, pl. 1. — *Matériaux pour l'histoire de l'homme*, 1887, p. 15 (France; flint mine). — *Aarb.*, 1871, pp. 339, 346 (no shaft-hole; England, flint mines). — SCHNITZER, *A. T.*, 19: 1, p. 13 (no shaft-hole; Skåne, flint mines).

75—79. Bone implements. Some of them resemble that which is fastened at one end of the rope along the top edge of a net, and is intended for gathering it when pulled up out of the water; some have possibly been »flaying knives» or daggers. At least one such Swedish implement (f. 76) has been found in fresh-water clay deposited from the Baltic, and therefore dates from the Ancyclus Age.

LINDQVIST, *Meddel. fr. Kristianstads M.*, n:o 3 (1915), p. 11. 80—84 and 87, 88. Flakes and scrapers of flint. — Limhamn, Sk. (see f. 21).

85 and 86. »Transversal» arrowheads of flint, in shape like the »tranchets» (f. 19—30), but much smaller. Such arrowheads have also been found in many other parts of Europe dating from the older Stone Age. The type occurs likewise in the later Stone Age (see f. 457).

Sv. forntid, p. 98. — MADSEN, *Afbildn., St.*, pl. 22 f. 19 (shaft of wood). — MÜLLER, *Ordning, St.*, f. 17. — *Affaldsdynger*, p. 50, f. 1—19.

85 and 86. Limhamn, Sk. (see f. 21).

87 and 88. See f. 80. — Limhamn, Sk. (see f. 21).

89. Flint borers. Similar tools were used also in the later Stone Age.

90. During the former part of our older Stone Age the art of making clay vessels does not seem to have been known here. Not a single bit of such a vessel has been discovered in the habitation of Maglemose. But on the »kjökkenmøddinger» and contemporary habitations pieces of pottery are general; these have been large, rough and slightly burnt; they have no ears or other such excrescences and are not ornamented, or very seldom. Their base is commonly pointed, so they could not stand on the ground, unless a hole was dug in which the lowest part of the vessel was supported. Most of the vessels have been made by laying strips of clay upon each other and pressing them with the fingers from the top.

KJELLMARK, *A. T.*, 17: 3, p. 81, pl. VI and VII. — MÜLLER, *Ordning, St.*, f. 41, 42. — *Affaldsdynger*, p. 71. — *Brabrandfundet* (*Aarb.*, 1906, p. 38).

90. Limhamn, Sk. (see f. 21).

I: 2. Later Stone Age.

The people of the later Stone Age lived under conditions better than those of the earlier one. As time went on, people learned to make tools and weapons far more suited to their purpose than those which were used here during the previous era; and in Skåne, as in Denmark, the abundant flint provided the Scandinavians with an excellent material, of which many other races in Europe had no supply. Skill in working flint and other stones became so great here in the North, that many Scandinavian masterpieces from this time are superior to everything that the rest of Europe then had to show. This cannot, as many have supposed, be due to the longer duration of the Stone Age in the North than in the South. The end of the Stone Age, in fact, was not *much* later here than in central and southern Europe, besides which many of the fine Scandinavian works belong to a time when the Bronze Age had not yet begun in other lands.

During the later Stone Age hunting and fishing were no longer the only means of support. Cattle-rearing and farming, too, existed at least in large tracts of our country. Besides the dog, which was already established as man's comrade in the early Stone Age, other domestic animals were now kept: cattle, horses, sheep, goats and pigs. Wheat, corn and millet were then cultivated in Scandinavia.

The relations between the Swedes of the Stone Age and other peoples were of greater importance than is usually supposed. Thus, a considerable influence was exerted directly by nearest neighbours and indirectly by peoples living farther off, and several Swedish works of this period reveal in shape and ornaments the connection between the inhabitants of our country and other regions. Foreign influence is also visible in the construction of the tombs and in the presence of copper. Communication with other peoples depended largely on trade; and for trade between Scandinavia and other countries it was specially important that the west coast of Jutland abounded in amber, which long before the end of the Stone Age was a staple export of importance.

During the later Stone Age in Sweden four periods may be distinguished:

To the first (the »period of round axes») belong flint axes with oval section like f. 91—105, and such stone axes (»round axes») as f. 106—116. The dead were laid in graves dug in the earth (»earth tombs»).

To the second (the »dolmen period») belong, among other tools, such »thin-necked» flint axes as f. 119—128. For the dead in certain districts tombs were raised, built of and covered with large stones (»dolmens»); in other parts the dead were laid in earth-tombs (as also during the two following periods).

To the third (the »gallery-grave period») belong, among others, thick-necked flint axes like f. 153—176, double-edged and boat-shaped axes with a shaft-hole (as f. 264—322). Daggers and spearheads of flint and axes of copper (f. 147—152) began to be used at this time. In some regions the bodies were buried in »gallery-graves», constructed and covered with large stones. An earlier and a later part can be distinguished in this period.

To the fourth (the »cist period») belong, among other things, thick-necked axes and such daggers of flint as f. 415, 430—433 &c. In some regions the bodies were buried in »cist-formed» tombs, constructed of stone slabs. An earlier and a later part can be distinguished in this period, as in the preceding.

In many instances we can determine without difficulty to which period of the later Stone Age a tool or weapon or other thing belongs; but in many cases this is impossible unless the circumstances of the discovery afford some enlightenment as to the age. It has therefore proved most suitable in this work to arrange the figures according to the groups to which the originals belong, and within each group as far as possible according to the various shapes (the »types»). By this means we attain the object which is the aim of this work: a survey of the relics from our Stone Age and a conception of how one type is developed from another.

During the 4th millennium, perhaps even earlier, the later Stone Age in our country began. Its first period evidently lasted very long. The »dolmen period» corresponds to the larger portion of the first half of the 3rd millennium and the »gallery grave period» to the centuries about or subsequent to the middle of the same millennium. The »cist period» comprises the end of the 3rd and the beginning of the 2nd millennium.

Many skulls discovered in the graves of this period show a complete similarity to ours. This goes to prove, as already has been said, that the inhabitants of Sweden during the Stone Age were our forefathers.

Abundant discoveries testify not only that all the territories of southern and central Sweden were inhabited by our ancestors long before the end of the Stone Age, but also that they spread along the coast of Norrland, and along many great rivers there. Long before the end of the Stone Age, the Swedish immigration into Finland had begun.

Other finds (such tools as f. 185 &c.) suggest that people of another race, probably Lapp or Finn, lived side by side with the Swedes during the Stone Age in the northern sections of the country: they seem to have possessed districts even more southerly than the present Laplanders.

During the whole of our Stone Age the dead were buried, without cremation, sometimes lying down extended, or with bended knees, sometimes sitting. At their side were found weapons, tools, ornaments, pottery and bones of animals; the vessels probably contained food or drink for the dead, and the bones are remains of these articles of food or of the funeral feasts. During the major part of the gallery-grave period many ornaments of amber were laid in the tombs; but such ornaments are extremely uncommon in the cists, obviously because man had learnt to appreciate the high value of this material, when once export trade had begun.

MONTELIUS, *Öfversikt öfver den nordiska forntidens perioder*, (Se. *Fornm.-förr. tidskr.*, 8, 1892), p. 133. — ID., *Corresp. Bl. d. deutschen Gesellsch. f. Anthrop.*, 1891, p. 99. — ID., *Mbl.*, 1893, pl. 3—6.

91—105. From such axes as f. 31—34 were developed flint axes like f. 91—105 with convex section. The difference is twofold: the edge is no longer formed by one smart blow from each side but by several lighter blows; and many of these axes are well ground. Not a few, however, are not ground at all, either because they were used without any grinding, or because they are unfinished, not being yet polished. The oldest axes of this class are usually »point-necked», narrowing very distinctly at the top. The broad sides are curved, the edges rounded off. Those with a biconvex section gradually vary their shape: at the top they become tapering to a less degree, even if the edge is considerably wider than the face; the angles of the edge are sharper; the biconvex section passes into an oval. Finally narrow sides occur (f. 100—103), which nevertheless are less sharply defined to begin with than they became later: they are, like those with the oval section, generally tapering at the top end. — Flint axes with a biconvex section belong to the first period of the later Stone Age. Flint axes with a similar section are nevertheless found, though seldom, during the following parts of the Stone Age. But they are unlike those now under consideration (f. 96); several have gouge edges (f. 211, 221).

Common in Skåne, less frequent in the rest of Götaland; rare in Svealand. They occur also in Norway, Denmark, northern Germany, France, England and other countries.

For distribution in Sweden, see the literature p. 2. — NILSSON, *Ur.-inv.*, f. 6, 28. — *Congr. St.*, I, p. 248 (the evolution). — *Ant. suéd.*, f. 12, 13. — ÅBERG, *Studier*, p. 24 (Scandinavia), 39 (France) and 58 (England). — RYDBECK, *Fornv.*, 1916, p. 119. — RYGH, *Norske Olds.*, f. 6. — J. J. A. WORSAAE, *Nordiske Oldsager* (Kbhvn, 1859), f. 8. — MADSEN, *Afbildn. St.*, pl. 27. — MÜLLER, *Ordning St.*, f. 46 (47, shaft). — BELTZ, *Alterth. Mecklenb.*, p. 25.

106—116. Stone axes with round or rounded oval section (»round axes»). — Just as in the large

stretches of Sweden where flint could not be got, except by purchase from far away, the flint axes chipped all round had been copied in other stone; so other stone axes resembled flint axes with biconvex section. These stone axes became more or less rounded, and hence their name »round axes». The oldest are closely akin to Lihult axes and, like them, are chipped. The later were made by hammering, a process that suited the material better. In certain districts they already occur before the end of the older Stone Age, but the bulk of them belong to an early part of the later Stone Age. The type survived a long time, as may often be the case with simple forms. Many axes are pointed at the top, but most are rounded off there. The section is circular or broad oval. They are generally ground not only at the edge but over pretty nearly the whole surface; the upper portion may at times be entirely unground, although the axe is otherwise well polished. The length is occasionally rather great (f. 106 and 111).

Round axes are very common in Sweden and occur in many other European countries, too; rare in central Europe, but general in the south and west.

For distribution in Sweden, see the literature p. 2. — NILSSON, *Ur.-inv.*, f. 13, 14. — *Ant. suéd.*, f. 14, 15. — ÅBERG, *Studier*, pp. 16 (Sweden), 23 (Denmark), 51 (France). — W. C. BRÖGGER, *Strandliniens betygenhed*, p. 168. — A. W. BRÖGGER, *Öxer av Nöstrettypen*, p. 44. — MÜLLER, *Ordning. St.*, f. 22, 23. — *Aarb.*, 1906, p. 11 (Brabrand). — *Mannus*, I, p. 36 (north-eastern Germany; common in Brandenburg). — EVANS, *Stone Implem.*, 2nd ed., p. 123 (oval section). — DE MORTILLET, *Musée préhist.*, f. 446 (France). — *Matériaux*, 1887, p. 17 (France); 1881, p. 464 (Portugal). — PEET, *The Stone and Bronze Ages in Italy and Sicily* (Oxford, 1909), p. 151 (common in southern Italy and Greece). — *L'Anthropologie*, 1900, p. 18 (Algeria).

117 and 118. Stone axes; the lower part expanded.

119—128. »Thin-necked» flint axes. Broad sides, convex, slightly tapering at the top end; flat, sharply defined narrow sides, so that the section is almost rectangular. Many are quite unground (f. 120), but there is no indication that they have been used; they must doubtless be considered as unfinished and not yet

ground. Most of the thin-necked flint axes are polished, as a rule with remarkable care, and almost over the whole surface, both on the broad and the narrow sides (f. 121—128); the only unground part is the extreme upper end, which is thinner than the rest. Some that had been broken have obtained a fresh edge (f. 124, 126). Axes of this kind are often very large; a length of 40 cm. is not uncommon; some are longer. The manner of their shafting may be seen from f. 121, 128, and other specimens.

This excellent type, characteristic of the second period of the later Stone Age, that of the dolmens, is developed from those flint axes of the first period, which have pointed necks and a biconvex section (f. 91—105). The development proceeded here in Scandinavia, which is proved by the fact that *unground* flint axes of this fine type only occur here; they do not exist either in France, or in the British Isles, or in any other part of Europe outside the Germanic region. In the non-Germanic districts, it is true that some axes have been found with narrow sides, but in those instances the narrow sides were formed not by chipping, but by a much easier process, — that of grinding down the edges on axes that had an oval section. On the other hand, the method of chipping to produce such well-defined narrow sides as those on our thin-necked flint axes bears witness to great skill and ability in getting the better of the material, and that is only won by continuous practice. The superiority shown by Scandinavians over other nations in this respect is all the more noteworthy because these axes date from a very early portion of the later Stone Age — the first half of the third millennium before Christ — a period when that influence of nations with a higher culture which resulted from the amber trade had not been able to make itself felt.

The admirable flint axes of this type, remarkable for a great size, a beauty that one might almost call classic, and a careful grinding, bear remarkable witness to the advanced skill in treating the flint and the taste which the Scandinavians possessed during this early period.

In Skåne thin-necked flint axes are very common, but a notably large number of them also occur in the other parts of Götaland. Several similar axes are known, too, from Svealand; north of the river Dalälven also some specimens of flint axes of this type are found. Practically all those found in Sweden have been without doubt made in Skåne, which is rich in flint of the kind in question. Numerous specimens dug up in other districts, like many other products in flint, thus testify to the considerable traffic which at that time existed between Skåne and other parts of our country.

Several times two or more thin-necked flint axes have been met with on the same spot; often it could be observed that they had purposely been laid down in a definite arrangement. As they were not discovered in

dwelling places or in tombs, they must have been entrusted to mother earth in accordance with some religious custom, as a sacrifice of some sort; and this is all the more probable because the axe has proved — even as early as the Stone Age — to have been a symbol of the god of the Sun or the Thunder, since it was supposed that lightning was an axe thrown by that deity.

In Norway, several thin-necked axes of flint have been found, and in Denmark they are abundant. In that portion of northern Germany where Germanic races dwelt at this time many similar axes have also been found.

For distribution in Sweden, see the literature p. 2. — NILSSON, *Ur-inv.*, pl. I. — *Ant. suéd.*, f. 19—22. — *Congr. St.*, I, p. 240. — ÅBERG, *Studier*, p. 30. — ID., *Die Steinzeit in den Niederlanden* (Uppsala, 1916), p. 11 (with a map). — RYGH, *Norske Olds.*, f. 3 and 7. — MADSEN, *Afbildninger, St.*, pl. 26. — MÜLLER, *Ordning, St.*, f. 54—56. — SEHESTED, *Fortidsminder*, pl. I, II. — MESTORF, *Alterth. Schlesw.-Holst.*, pl. IV. — BELTZ, *Alterth. Mecklenb.*, pl. 4, p. 26. — MERTINS, *Schles. Vorz.*, III, p. 13.

- 122. Kulstade, G.; with six similar axes.
- 123. Kongelf, Boh.; with two similar axes.
- 127. Slöta, V. G; with a similar axe.
- 128. Dagstorp, Sk.; shaft of an elk-bone.

129—146. Axes and chisels of greenstone and other kinds of stone (excluding flint).

- 129. Hult, Ö. G.; with a great number of non-perforated stone axes, 3 stone axes with shaft-holes and several polishing stones. The majority of the axes not being finished, it is evident that they have been fabricated there.
- 133. Åloppe, Upl.; dwelling-place (see f. 541, 542, 601, 627, 643, 674, 679, 682, 691—701, 703). — ALMGREN, *Uppländska stenåldersboplatser* (*Fornv.*, 1906, p. 1); EKHM, *Studier*, p. 19; LINDQVIST, *Fornv.*, 1916, p. 164.
- 141. Alvastra, Ö. G.; lake-dwelling in a peat-bog (see f. 169, 180—184, 457, 537, 583—88, 599 etc.). — O. FRÖDIN, *En svensk påbyggnað från stenåld.* (*Fornv.* 1910, p. 29); ID., *Ein schwedischer Pfahlbau aus der Steinzeit*, (*Mannus*, II, p. 109); *Meddel. fr. Östergötl. Fornm.-förs.*, 1908, p. 33; 1909, p. 27; 1910, p. 1.

147—152. *Copper* axes. The majority have the same shape as many stone axes: they are plain (without any trace of raised edges) and almost of uniform width, being at the top only a very little narrower than at the edge. Some are thinned off at the top end, thus resembling thin-necked flint axes. Like contemporary copper implements from central and southern Europe, the copper axes discovered in Scandinavia are of remarkable pure metal (more than 99 % of copper), without any trace of tin. They have obviously been imported from the South: some resemble Hungarian and South European copper axes; the edge arched, but otherwise the axe is almost rectangular and quadrilateral, with a straight-lined top. Most of the pure copper axes found in Sweden probably belong to the time before the end of the period of the gallery-graves, the third period of our later Stone Age. Axes of somewhat later types (see f. 779), with the lower part much wider than the upper, are of copper with a trifling admixture of tin. Several of these, too, are perhaps to be ascribed to the period immediately before the end of our Stone Age.

In Skåne about 15 such copper axes have been found; a few are known from Blekinge and the government

of Kalmar (f. 148). Similar specimens occur in Denmark and in central, south and eastern Europe, as also in the Orient.

MONTELIUS, *Finnas i Sverige minnen från en kopparålder?* (Sv. Fornm.-f. tidskr., 8, 1893). — ID., *Findet man in Schweden Ueberreste von einem Kupferalter?* (Arch. f. Anthrop., 23, 1895). — ID., *Chronol. ältest. Bronzezeit*, p. 8. — MÜLLER, *Ordnung, St.*, f. 125, 126. — W. SPLITZ, *Inventar der Bronzealterfunde aus Schlesw.-Holst.* (Kiel, 1900), f. 1. — BELTZ, *Altert. Mecklenb.*, pl. 19, p. 151. — M. MUCH, *Die Kupferzeit in Europa* (Wien, 1886; 2nd edit., Jena, 1893). — F. VON PULSZKY, *Die Kupferzeit in Ungarn* (Budapest, 1884). — MONTELIUS, *Die vorklassische Chronologie Italiens* (Stockholm, 1912), p. 4 (»Kupferzeit«).

147. Analysed; more than 99 % copper. — Frösjöf, Sk.

149. Analysed: 99.5 % copper. — Tommarp, Sk.

150 and 151. North-western Skåne, probably found together (151 analysed: more than 99 % copper).

152. Hungarian type; analysed: more than 99 % copper, traces of nickel. — Svenstorp, Sk. — *Meddel. fr. Kristianstads Mus.*, nr 3 (1915), p. 16, f. 36 (copper axe of the same type; Skåne). — MONTELIUS, *Chronol. ält. Br.-z.*, pp. 10, 93 and 119 (Hungary); cf. pp. 11 and 165 (Greece), and 143 (Egypt). — ID., *Die vorklassische Chronologie Italiens*, p. 5, f. 10, and p. 6, note. — A. MOSSO, *The Dawn of Mediterranean Civilisation* (London, 1910), p. 59 (Italy and Egypt).

153—176. »Thick-necked« flint axes; formerly called »broad chisels«. The top is rectilinear, not so curved as that of the thin-necked axes. Section almost rectangular. Broad-sides flatter, less arched than in older specimens. Edge in some cases very broad, possibly owing to the influence of the copper axes with similar edges (see f. 152, 778—809). — This type, developed from thin-necked axes, is common during the third part of our later Stone Age, the period of gallery-graves; but it survives also during the fourth period, and to the beginning of the Bronze Age.

For distribution in Sweden, see the literature p. 2. — NILSSON, *Ur-inv.*, f. 9, 10—12. — *Ant. suéd.*, f. 23—25. — RYGH, *Norske Olds.*, f. 17, 19, 20. — SEHESTED, *Fortidsminder*, pl. XIV, XVIII—XX (tombs). — MADSEN, *Afbildninger, St.*, pl. 16, 27, 28. — ID., *Gravhøje og Gravfund fra Stenalderen i Danmark* (Kbhvn., 1896), pl. IX, XI, XIII etc. — MÜLLER, *Ordnung, St.*, f. 59. — MESTORF, *Alterth. Schlesw.-Holst.*, pl. V—VII. — BELTZ, *Altert. Mecklenb.*, pl. 5, pp. 28—34. — MERTINS, *Schlesiens Vorzeit*, III, p. 12. — Several flint axes of this type have been found in Posen, East Prussia, Poland, Galicia and Volhynia (museums in Craeow, Lemberg etc.). — *Photograph. Album, Berlin 1880*, I, pl. 5 (East Prussia).

153—164. Thick-necked flint axes, not ground.

165—176. Thick-necked flint axes, more or less ground.

169. Alvastra, Ö. G.; lake-dwelling (see f. 141).

175. Östra Torp, Sk.; with 2 other axes of the same type and a gouge, all of flint and polished.

177—179. Chisels of flint; some are absolutely unground (f. 177), others ground (f. 178 and 179). Thick-necked: section nearly square.

For distribution in Sweden, see the literature p. 2. — NILSSON, *Ur-inv.*, f. 19. — *Ant. suéd.*, f. 29, 30. — RYGH, *Norske Olds.*, f. 18. — MADSEN, *Afbildninger, St.*, pl. 39. — MÜLLER, *Ordnung, St.*, f. 126, 132. — SEHESTED, *Fortidsminder*, pl. XIV, XVIII—XX (tombs). — MADSEN, *Gravhøje og Gravfund*, pl. IX, XI, XIII etc. — MESTORF, *Alterth. Schlesw.-Holst.*, pl. VIII. — BELTZ, *Alterth. Mecklenb.*, pl. 6. — DE MORTILLET, *Musée préhist.*, pl. LII, 7. — KELLER, *Pfahlb.*, 7, pl. II, 13 (shafted stone chisel).

180—184. Chisels of bone or horn. Several have been discovered in surprisingly good preservation.

NILSSON, *Ur-inv.*, f. 20. — MÜLLER, *Ordnung, St.*, f. 127, 136. — ID., *Aarb.*, 1888, p. 267. — SEHESTED, *Fortidsminder*, pl. XX. — MADSEN, *Afbildninger, St.*, pl. 25. — ID., *Gravhøje og Gravfund*,

pl. IX, XX, etc. — MESTORF, *Altert. Schlesw.-Holst.*, f. 40. — BELTZ, *Altert. Mecklenb.*, f. 129, p. 76. — DE MORTILLET, *Musée préhist.* pl. LII.

183. Stora Karlsö, island near Gotland; found in a cave called Stora Förvar, with a great quantity of bones of different animals and implements from the later Stone Age (see f. 59, 233, 529—531, 533—535, 597, 603, 607, 610—12, 620, 710—16, 742). — *Grottan Stora Förvar på Stora Karlsö, undersökt af L. KOLMODIN och H. STOLPE, beskrifven af B. SCHNITZER* (Sthlm., 1913).

185—205. Axes and hammers of stone.

185. Black slate; lower part polished. Lappish type. — Joekmock, Lapl.; a sanctuary.

188. Gullrum, G.; dwelling-place (see f. 669, 688, 709). — II. HANSSON, *En stenåldersboplats på Gotland* (Sv. Fornm.-f. tidskr., 10, p. 1); LITBERG, *Gotl. stenåld.*, p. 61.

192. German type (»Schuhleistenkeil«). — Near Stockholm. — *Uppland*, 1, p. 171, f. 36; EKHOLOM, *Studier*, p. 57, f. 88, and p. 59; MEILLIS, *Die sogenannten Schuhleistenkeile der neolithischen Zeit* (Centralbl. f. Anthrop., 6 [1901], pp. 129 and 193).

194. Russian (Karelian) type. — Tierp, Upl. — R. ARPI, *Studier tillägnade Oscar Montelius af lärjungar*, p. 49, f. 2; A. T., 19: 2, p. 90, f. 96; EKHOLOM, *Studier*, f. 94.

198. Stone club; see f. 208—210. — Vendel, Upl. — EKHOLOM, *Studier*, p. 60, f. 100, and p. LXX. Cf. *Finska Fornm.-f. tidskr.*, XXV, p. 131, f. 78, 79.

202. In a piece of horn (a hole for the handle). — Balkåkra, Sk.

203—205. Stone hammers; Danish types.

MÜLLER, *Aarb.*, 1907, p. 88. — MADSEN, *Afbildn., St.*, pl. 41.

206 and 207. Stone axes with a small round hole through the broad-sides.

NILSSON, *Ur-inv.*, f. 17. — *Mbl.* 1895, p. 86, f. 51. — MONTELIUS, *Chronol. d. ält. Bronzezeit*, p. 11 (literature). — MESTORF, *Alterth. Schlesw.-Holst.*, f. 82. — BELTZ, *Altert. Mecklenb.*, pl. 10 f. 67, p. 55.

208—210. Round stone clubs, with a shaft-hole in the centre; see f. 198. Similar stone-clubs, generally globular, occur in many European countries, as in Asia and Egypt.

MÜLLER, *Ordnung, St.*, f. 121 (globular), 122 (discoid). — MADSEN, *Afbildninger, St.*, pl. 41. — *Congr., Copenhagen, 1869*, p. 124. — MADSEN, *Gravhøje*, II, pl. XVII (gallery-grave). — MESTORF, *Alterth. Schlesw.-Holst.*, f. 105, 111 (gallery-grave). — BELTZ, *Altert. Mecklenb.*, pl. 10 f. 69, 70, p. 56. — DE MORTILLET, *Musée préhist.*, f. 499 (flint; France). — MONTELIUS, *Vorkl. Chron. Ital.*, col. 5. — ID., *Chronol. d. ält. Bronzezeit*, p. 178 (Hungary, Egypt and Asia).

211—235 (and 237, 239—243). Adzes of flint and other stones, with concavo-convex edge — formerly called »broad gonges«. Flint-axes with such an edge and an oval section (f. 211) belong to a much later part of the Stone Age than the straight-edged axes with a similar section (*Fornv.*, 1916, p. 137).

By digging in the earth, it is not rare to find, about a metre deep, a hollow-edged axe and a boat-shaped hammer of stone (= f. 303—322); in most cases, they have been buried with a corpse, although no remains of this, as a rule, are now to be seen. — Similar adzes occur in America.

NILSSON, *Ur-inv.*, f. 18 and 30. — *Ant. suéd.*, f. 27 and 28. — ARNE, *Fornv.* 1909, p. 99. — LINDQVIST, *Ner. stenåld.*, pp. 22, 23. — MÜLLER, *Ordnung, St.*, f. 58, 61—63, 66—68. — MADSEN, *Afbildninger, St.*, pl. 29. — ID., *Gravhøje og Gravfund*, pl. XIV, XLVI, etc. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 38, 39. — BELTZ, *Altert. Meckl.*, p. 25. — JONES, *Antiquities of the Southern Indians*, pl. XIV f. 7.

212. Flint. — Bjurselet, near Skellefte, Vb. (not Vg.); with 69 similar flint tools; all of them are quite unpolished. — A. T., 3, pp. 182 and 409; *Ant. suéd.*, f. 27.

226. Stone — Gustafsvik, Ner.; with a boat-shaped hammer, probably in a tomb. — LINDQVIST, *Ner. stenåld.*, p. 22.
 232. Stone. — Högby, Ner.; with a boat-shaped hammer (f. 317), probably in a tomb. — LINDQVIST, *Ner. stenåld.*, p. 23.
 233. Stone. — Stora Karlsö; in the »Stora Förvar» (see f. 183).
 237. Stone. — Russian (Karelian type). — Hoby, Bl. — *Formv.*, 1913, p. 163, f. 31.

236 and 238. Gouges of flint. Comparatively rare.

NILSSON, *Ur-Inv.*, f. 21. — *Ant. suéd.*, f. 31. — MADSEN, *Afbildninger, St.*, pl. 29. — MÜLLER, *Ordning, St.*, f. 128, 133, 134. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 37.

239—243. See f. 211.

244—256. Axes and hammers of stone with a groove for the shaft. Occur in many European countries, as in the East. — Such hammers have also been used since the end of the Stone Age in mines and elsewhere. Tools like them were common in America and Australia.

NILSSON, *Ur-Inv.*, f. 24—26. — *Ant. suéd.*, f. 36, 37. — MADSEN, *Afbildninger, St.*, pl. 30. — MÜLLER, *Ordning, St.*, f. 82, 83. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 85. — BELTZ, *Alterth. Mecklenb.*, pl. 7. — *Schlesiens Vorzeit in Bild u. Schrift*, II, 3, p. 16. — *Steinhämmer mit Rillen* (*Verhandl. Berl. Anthr. Ges.*, 1894, pp. 329, 587 [Germany]; 1895, pp. 135, 689—696 etc.). — MÜCH, *Kupferzeit*, 2nd edit., p. 258 (Austria, in a copper-mine). — W. PLEYTE, *Nederlandsche Oudheden, Friesland* (Leiden, 1877), pl. XXIII. — EVANS, *Stone Implem.*, 2nd edit., pp. 168, 236 (England, Australia, etc.). — *Matériaux*, 1876, p. 543 (France, tomb.) — DÉCHELETTE, *Manuel*, I, p. 530 (France, Spain, America). — CARTAILHAC, *Âges préhistoriques de l'Espagne et du Portugal*, pp. 202, 203 (Spain, copper-mines), 205 (North America, shafted). — MONTELIUS, *Vorklass. Chronol. Italiens*, pl. III. — CHANTRE, *Recherches anthropologiques dans le Caucase*, I (Paris, 1885), pl. II (salt-mines). — CH. JONES, *Antiquities of the Southern Indians* (New York, 1873), pl. X.

257—263. Stone axes with a sort of stop-ridge, which prevented the tool when used from penetrating the shaft. The circumstances of the discovery giving no information of date, it is possible that some of them belong to a period after the end of the Stone Age. Similar axes of stone and metal have also been used outside Europe.

MADSEN, *Afbildninger, St.*, pl. 30. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 85, 87. — BELTZ, *Alterth. Mecklenb.*, pl. 25 f. 37, 38. — For a somewhat similar flint axe, see MÜLLER, *Ordning, St.*, f. 70.

264—399. Axes of stone with holes bored for handles. All are of other stone than flint (f. 288 is of copper). Many of them have been used as battle-axes.

It has long enough been supposed that holes could not be bored in stone axes, unless metal tools could be used for it. By experiments it has been proved, however, that such a hole can be produced with a wooden peg, sand and water. The peg is twirled swiftly round for a long time, by which means it presses hard on the grains of sand setting them in motion so that they fret away the portion of stone they press against. This causes an excavation which narrows somewhat downwards, because the wooden peg also wears away during the operation. When the boring is continued in this way, a hole is produced, but the task is facilitated usually by boring from both sides until the piercings meet. If a tube of bone or the like is used instead of a solid peg, much work is saved, because it is not needful in that case to fret away the whole mass of stone

inside the hole that is to be made. Before the hole is complete, there is a projecting core in the middle which can easily be knocked off and taken out. A number of stone axes are found in Sweden, as in other lands, with incomplete holes, and many cores have been knocked off: these prove that both methods of procedure were pursued during the Stone Age (see f. 310, 329, 345, 369, 384, 385, 390). Other stone axes have holes which are either somewhat conical (f. 379) or bi-conical (f. 264, 330): this depends on whether they were bored only from one side, or from both (see also f. 351, 363, 398 etc.). Many stone axes are also found on which no hole at all has been started, although the shape shows that the intention was to provide them with holes (f. 277, 281, 283 etc.) — In our times, without any knowledge of the way stone axes were bored thousands of years ago, the invention has been made a second time (in mining tunnels or sinking wells through granite) of boring holes through stone by using cylindrical bores, whose lower edges are set with black diamonds. Inasmuch as the diameter of the hole is much larger, and the thickness of the cylinder much smaller, in comparison to what was the case with stone axes, the proportionate saving made by the modern tools is even greater than by the antiques. — The holes here described are circular. It is remarkable that some stone axes have been found with oval holes for the handle, like the holes in several copper axes. — The hole is almost always parallel to the edge, but in some cases it is perpendicular to it (»adzes» or »mattocks», f. 398, 399).

Many axes with shaft-holes, especially those of the more simple shapes, show traces of long-sustained usage (the edge is often re-ground): these have doubtless been used as tools. Axes of finer shapes, such as the double-edged, polygonal, boat-shaped, etc., have obviously been weapons (battle-axes): they display no such traces of sustained usage as the former. Many axes of stone, whether used as tools or as weapons, have been found broken over the shaft-hole; they were of course weakest at the point where the hole was bored. A fresh hole is often seen in them (f. 395).

Even during the older Stone Age, axes or mattocks have been found in Scandinavia with holes for the shaft, but these tools were of horn. Some few specimens of stone (f. 399) seem to be copied from such horn mattocks: it is not yet exactly known to what period they are referable. Nevertheless the oldest stone axes with shaft-holes which can be dated — e. g. the numerous double-edged and polygonal axes, f. 264, 289, — have not been copied from perforated implements of horn, but from copper axes imported hither from the South. Such a copper axe, found in Sweden, may be seen f. 288. Some axes with two edges and some polygonal axes are made of *red sandstone*, to imitate the colour of the copper. — The axes, or rather hammers now spoken of belong to the time of the gallery-graves,

that is the 3rd period of the later Stone Age; and the oldest are probably from the first half of that period. During its second half these hammers are often of a very fine form, such as the »boat shaped» hammers (f. 303). These survive into the 4th period, during which axes with shaft-holes largely assume forms of increasing simplicity. Even during the Bronze Age, at least its earlier portion, axes with shaft-holes were in use, though probably not as a general rule.

About 20,000 stone axes with shaft-holes are known in Sweden. They are also very numerous in Norway, in Denmark, and in those districts of Finland where Swedes lived as early as the Stone Age.

Albeit in far less numbers than in Scandinavia, axes with shaft-holes occur also in Central Europe, as in countries east of the Baltic, and in the British Isles, in France, central or south Germany, Switzerland, Austria and Hungary. In southern Europe they are rare. In Italy and in the northern Balkans (Bosnia and Thessaly), some have been found; but in the Spanish peninsula, Greece, and on the islands of the Ægean, as well as in Egypt and other tracts of northern Africa they are either entirely lacking or very rare. The case is the same with Asia Minor, excepting Troas, where their occurrence is evidently due to the influence of the Balkan lands. In the Caucasus and lands bordering the Euphrates as well as Turkestan and other districts in Asia, some few stone axes with shaft-holes have been dug up.

As in Scandinavia, so in all these other countries, they occur only in a very late period of the Stone Age, when copper was used.

In America too stone axes with shaft-holes were used. There, as in the ancient world, the method was known of boring the hole with a cylindrical tool, as is proved by the core that remains in not finished holes.

The boring of the hole: C. RAU, *Die durchbohrten Geräte der Steinperiode* (Archiv f. Anthropologie, 3 [1868], p. 187); cf. *Annual report of the Smithsonian Institute*, 1868, p. 392. — H. HILDEBRAND, *Mbl.* 1872, p. 134. — *Sv. forntid.*, p. 59. — SEHESTED, *Archæolog. Undersøg.*, p. 26. — MÜLLER, *Ordning, St.*, p. 11 (see f. 90: flint axe with a natural hole, used as a shaft-hole).

The hole perpendicular to the edge (»adzes»): WORSAAE, *Nord. Olds.*, f. 50. — MADSEN, *Afbildn., St.*, pl. 32. — LINDENSCHMIT, *Alterth.*, I: 2, pl. 1. — *Jahreschr.* (Halle), I, pl. XVIII. — M. DE PUYDE, *Mélanges d'arch. préhist.*, pl. V (Belgium). — EVANS, *Stone implements*, p. 190.

Oval hole: MÜLLER, *Ordning, St.*, f. 97. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 88. — BELTZ, *Alterth., Mecklenb.*, pl. 9 f. 53, p. 50. — LINDENSCHMIT, *Alterth.*, I: 8, pl. 1 f. 7 (Lüneburg). — Museum in Danzig (1 from West Prussia). — All these are of the same type. — EVANS, *Stone Implem.*, f. 133. — *Proceedings Soc. Antiqu. Scotl.*, 1887—88, p. 384. — In Switzerland several double-edged stone axes have an oval hole (see below).

For the Scandinavian countries, see below, the different groups. — Central and South Germany: LINDENSCHMIT, *Alterth.*, I: 1, pl. 1; I: 2, pl. 1; I: 4, pl. 1; I: 8, pl. 1, etc. — GÖTZE, HÖFER and ZSCHIESCHE, *Die Vor- und frühgeschichtl. Altertümer Thüringens* (Würzburg, 1909), pl. VI. — Finland and the Baltic provinces: ASPELIN, *Antiquités*, f. 8—16, 64—81. — *Atlas öfver Finland 1910*, map 49: 1, p. 12. — *Katalog d. Ausstellung zum X. archæol. Kongress in Riga 1896*, pl. 2. — Austria and Hungary: J. L. PÍČ, *Čechy předhistorické*, I (Prag, 1899), pl. III, IV etc. (Bohemia). — *Mittheil. d. anthropol. Gesellsch. in Wien*, I (1871), pl. II, etc. — MUCH, *Kunsthistor. Atlas*, pl. VIII, IX, XIV. — J. HAMPFEL, *Antiquités*

préhistoriques de la Hongrie (Esztergom, 1876), pl. IV. — M. WOSINSKY, *Das prähistorische Schanzwerk von Lengyel* (Budapest, 1888), pl. XII etc. — Bosnia: RADIMSKY and FIALA, *Die neolithische Station von Butmir bei Sarajevo in Bosnien* (Wien, 1895 and 1898), I, pl. XIX; II, pl. XV. — The British islands: EVANS, *Stone Implements*, p. 183. — MONTELIUS, *The Chronology of the British Bronze Age* (*Archæologia*, LXI, 1908). — France: DÉCHELETTE, *Manuel*, I, p. 516. — Switzerland: KELLER, *Pfahlbauten*, I, pl. III; 2, pl. 1; 3, pl. III, V etc. — *Antiquités lacustres* (Mus. in Lausanne; 1896), pl. VIII. — Italy: G. A. COLINI, *Bull. Paletnol. ital.*, XVIII, p. 149, pl. X; XXII, p. I, pl. I, II. — Russia (Finland and the Baltic provinces, see above): ASPELIN, *Antiquités*, f. 96—113. — *Congr. archæol. de Moscou*, 1892, II, p. 245, f. 12 (govern. Vladimir). — V. STERN, *«Materiali»*, published by Russian Archaeological Commission, no 34 (1914): magnificent pieces, one of nephrite and three of serpentine, found in Bessarabia. — TALLGREN, *Finska Fornm.-förs. tidskr.*, XXV, p. 125. — Thessaly: CH. TSOUNTAS, *Αι προϊστορικαι ἀρχαιοτητες Διημεριου και Θεσσαλον* (Athens, 1908), pl. 41, col. 319—324. — A. J. B. WACE and M. S. THOMPSON, *Prehistoric Thessaly* (Cambridge, 1912), pp. 43, 164 — Troas: W. DÖRPFELD, *Troja und Ilios* (Athens, 1902), pp. 322, 373; f. 323—326: magnificent pieces, one of lapis lazuli and three of a beautiful greenish stone. — Caucasus: CHANTRE, *Le Caucase*, I, pl. I. — Babylonia: MONTELIUS, *Die älteren Kulturperioden im Orient und in Europa*, p. 171, f. 569 and 570 (miniature axes with shaft-holes). — Turkestan: *Antiqua*, 1887, p. 33, pl. V (Samarkand). — Egypt: *Catalogue of the National Museum of Antiquities of Scotland* (Edinburgh, 1892), p. 111 (the hole in the middle; pointed at both ends and probably used as a weapon; Upper Egypt). — J. DE MORGAN, *Recherches sur les origines de l'Égypte*, p. 143, f. 321, 322 (clubs). — America: JONES, *Antiquities of the Southern Indians*, p. 281, pl. XIII.

264—277. Double-edged axes of stone with holes for handles (battle-axes). Originally copied from axes of copper with double edges and a shaft-hole in the middle; some are therefore of reddish stone, imitating the colour of the copper. Looked at in profile, the oldest stone axes in this group are quite like copper axes, but the former must, naturally, be made much thicker than the latter, otherwise they could not be strong enough. The shaft-hole — generally round but sometimes oval — was at first placed in the middle of the stone axe, which was narrowed down equally towards both edges, as was the case with copper axes. But the position of the hole gradually moved farther towards one of the edges. The latter soon lost its shape of an edge and gradually became quite thick. Both ends were sometimes of the same breadth as the axe itself, but they were often a little broader, and gradually became very broad, as in f. 268—277. — For the types derived from such axes, see f. 369 and following. — Contemporary with double-edged battle-axes of stone, similar axes were made in miniature of bone or amber, used for amulets, symbols of the sun-god (the god of thunder: f. 646, 658, 684).

Double-edged stone axes are common both in the peninsula of Scandinavia and in Denmark; they are often found in gallery-graves, and therefore belong to the third period of our later Stone Age. Outside Scandinavia, double-edged stone axes occur in several other countries, as Germany, England, France, and Switzerland.

For distribution in Sweden, see the literature p. 2. — NILSSON, *Ur-inv.*, f. 131. — *Ant. suéd.*, f. 39, 42. — MONTELIUS, *Chronol. d. ält. Br.-Zeit.*, p. 16. (f. 33, France). — *Id.*, *Meisterstücke im Museum vaterländischer Altertümer in Stockholm* (1912), pl. 1 f. 1. — ASPELIN, *Antiquités du Nord Finno-Ougrien*, p. 22 (Finland). — RYGH, *Norske Oldsager*, f. 33, 34. — MÜLLER, *Ordning, St.*, f. 78, 79, 93—96. — SEHESTED, *Fortidsminder*, pl. XI, XVIII (gallery-grave). — MADSEN, *Afbildninger, St.*, pl. 15, 31, 32. — *Id.*, *Gravhøie*, pl. XVIII,

XX, XXI etc. (gallery-graves). — MESTORF, *Alterth. Schlesw.-Holst.*, f. 101, 102. — FR. LISCH, *Friderico-Franciscum*, pl. XXVIII f. 2, pl. XXIX f. 1. — BELTZ, *Alterth. Mecklenb.*, p. 46, 54, pl. 9 f. 56, 57, 64. — H. SCHUMANN, *Die Steinzeitgräber der Uckermark* (Prenzlau, 1904), pl. XXII, XXXVI, XLIII. — Mus. f. Völkerkunde in Berlin (one of red sandstone found in Brandenburg). — LINDENSCHMIT, *Alterth.*, I: 4, pl. 1 f. 10. — MUNRO, *Lake-Dwellings in Europe*, f. 98 (Posen). — E. HÜSING (J. R. NÜNNING), *Westfälisch-Münsterländische Heidengräber* (Coesfeld, 1855), pl. V. — EVANS, *Stone Implements*, 2nd edit., f. 113 (England; tumulus, with a dagger of copper). — DE MORTILLET, *Musée préhist.*, f. 515—517 (France). — DÉCHELETTE, *Manuel*, I, f. 185: 4 and 5 (France). — *Matériaux*, 1881, pl. VI f. 2, 8 (36 cm. long!). — BELTZ, *Alterth. Mecklenb.*, p. 269, 275 (France); 1879, pl. II f. 14, p. 58 (Switzerland; oval hole). — GROSS, *Protohelvètes*, pl. IX f. 13, 15 (both with oval holes; the latter seems to be an imitation of copper axes with the one edge perpendicular to the other; cf. f. 14). — *Pfahlbauten*, 8, pl. III f. 22, 23, pl. VII f. 27; 9, pl. XVIII f. 12, 13, pl. XIX f. 4 (Switzerland; all of them with oval holes). — *Prähist. Zeitschr.*, 1907, pp. 96, 99 (Bulgary).

278—287. Stone axes with shaft-holes, of various shapes.

288. Copper axes with shaft-hole; imported from the continent, probably from Hungary.

MONTELIUS, *Sv. Fornm.-f. ö. tidskr.*, 8, p. 221. — *Id.*, *Chronol. ält. Br.-z.*, f. 22. — PULSZKY, *Die Kupferzeit in Ungarn*, p. 89. — HAMPEL, *Antiq. préhist.*, pl. VIII f. 17.

288. Analysed; only 0.3 % tin. — Southern or western Skåne.

289—296. »Polygonal» stone axes with shaft-holes: used as battle-axes. Stone axes of about the same shape as the copper axe f. 288, which was doubtless imported from the South (cf. HAMPEL, *Antiq. préhist.*, pl. VIII f. 17) — with a round projecting top and the edge more or less arched — are found in Central Europe, Sweden and Norway. Such axes not being found in Denmark, the occurrence of this type in Sweden proves a direct connection between the north coast of Germany and Skåne. The type, which is widespread in Sweden, belongs to the 3rd period of our later Stone Age (not the beginning of the Bronze Age, as was once supposed). Some are of reddish stone — an echo of the fact that they are copied from copper axes.

Ant. suéd., f. 98. — *Chronol. ält. Br.-z.*, pp. 12—14 (Sweden and Central Europe), 93 (Silesia), 118 (Sweden; gallery-graves), 191 (Italy). — *Fornv.*, 1913, p. 199 (Blekinge). — ÅBERG, *Kalm. läns stenåld.*, pp. 33, 56. — LITBERG, *Götl. stenåld.*, p. 30. — *Meddel. Österg. Fornm.-f. ö.*, 1911, p. 26. — SAHLSTRÖM, *Västerg. stenåld.*, p. 51. — NYGREN, *Värml. stenåld.*, p. 75. — LINDQVIST, *Ner. stenåld.*, p. 18. — EKHOLM, *Upl. stenåld.*, p. 71. — *Id.*, *Studier*, p. 45, tab. I, II, map II. — RYGH, *Norske Olds.*, f. 36. — MÜLLER, *Ordning, St.*, f. 101 (found in Sweden, Lake Vänern; see *Mémoires*, 1845—49, p. 170). — BELTZ, *Alterth. Mecklenb.*, pp. 46, 52. — *Schlesiens Vorzeit*, II, 3, p. 23, f. 70—72. — LINDENSCHMIT, *Alterth.*, I: 4, pl. 1 f. 11 (Mecklenburg), 12 (Bavaria). — Museums in Danzig and Thorn. — PIČ, *Čechy předhistorické*, I, col. 135, 156 (Bohemia). — CHANTRE, *Le Caucase*, I, p. 49 (Bohemia). — *Mannus*, I, p. 196 (Bohemia). — *Photogr. Album, Berlin 1880*, II, pl. 7 (Pomerania). — KELLER, *Pfahlbauten*, 5, pl. IX f. 2, 3; 6, pl. VI f. 23; 8, pl. III f. 25, 26 (Switzerland). — MUCH, *Kunsthist. Atlas*, pl. XIV (Austria). — R. MUNRO, *The Lake-Dwellings of Europe* (London, 1890), f. 38, 39 (Austria). — *Mittheil. aus Bosnien-Herzeg.*, IV, p. 7. — *Bullettino di Paletol. ital.*, XXII, pl. I f. 1, 2. — MONTELIUS, *Civil. primit. en Italie*, II, col. 615.

297—302. Stone axes with shaft-holes, nearly akin to the »polygonal». Some occur in Denmark.

MADSEN, *Afbildninger*, pl. 32, 33. — MÜLLER, *Ordning, St.*, f. 100, 102, 103.

303—322. »Boat-shaped» stone axes, or stone hammers, with shaft-holes (»boat axes»); like the double-edged and »polygonal» axes used as weapons. As is shown by the round projecting top and the shape of

the axe, they are developed from the »polygonal» axes. Round the hole, on the back side, is often seen a raised ring, and the edge is not infrequently extended backwards. It is possible that a direct prototype in copper has existed in Hungary. A copper axe is known of the same shape as the boat-formed stone axes — with round enlarged top, high projecting ring on the back side, round the hole, and with an edge prolonged backwards, features which are to be seen in different Hungarian axes of copper. The fact that this boat-shaped copper axe is narrower than stone axes is explained by the material. The place of discovery is unfortunately unknown, but it is assumed to have lain in Eastern Russia (J. AILIO, *Die steinzeitlichen Wohnplatzfunde in Finland*, I [Helsingfors, 1909], p. 37, f. 30; A. M. TALLGREN, *Die Kupfer- und Bronzezeit in Nord- und Ostrussland* [Helsingfors, 1911], p. 127, f. 74). If this is the case, it may have travelled eastwards from Hungary in the same way as the original of f. 288 travelled northwards.

Many boat-shaped axes show exceptionally good grinding, in which there was often left a narrow raised line running along the middle of one side. The difficulties that were met with in the producing of this straight line, however, were small compared with those that had to be overcome when three such raised lines converging at the edge were left on the other side (f. 305): it is a mark of great skill to be able to make these three raised lines run along so evenly and meet in such sharp angles as in this case. We are bound to admire not only the exceeding technical ability to which these axes bear witness, but also their beautiful and perfectly symmetrical shape in all their simplicity.

The type is best developed in Sweden, where the majority (many hundreds are known in this country) and the most beautiful examples have been unearthed. It belongs here to the period of gallery-graves; together with hollow-edged adzes, boat axes are often met with in earth-tombs (see f. 211—235). Such axes are also found in Norway, but in Denmark they are very rare, excepting on Bornholm, which belongs geographically to Skåne. South of the Baltic such axes are not found, but they exist in the districts east of the Baltic, and neighbouring provinces of Russia; they are especially common in south-western Finland, proving a considerable immigration from Sweden in the 3rd millennium. Most of the boat-shaped axes found in Finland are somewhat different from the Swedish, and forming a variation in type peculiar to Finland.

NILSSON, *Ur-inv.*, f. 127, 128. — *Ant. suéd.*, f. 96, 97 (were then supposed to date from the beginning of the Bronze Age). — MONTELIUS, *Meisterstücke*, pl. 1. — STJERNA, *A. T.*, 19: 2, p. 111. — ALMGREN, *A. T.*, 20: 1, p. 8. — ARNE, *Fornv.*, 1909, p. 99 (earth-tombs). — ERIXON, *Fornv.*, 1913, p. 197 (Blekinge). — ÅBERG, *Kalm. läns stenåld.*, pp. 39, 56, pl. VIII. — LITBERG, *Götl. stenåld.*, p. 30. — NERMAN, *Österg. stenåld.*, p. 26 and map VI. — SAHLSTRÖM, *Västergötl. stenåldersbebygg.*, p. 54, tab. II. — NYGREN, *Värml. stenåld.*, p. 46 and map II. — LINDQVIST, *Ner. stenåld.*, p. 17. — EKHOLM, *Upl. stenåld.*, pp. 72 and 90 (tab.). — MONTELIUS, *Helsingl. Fornm.-Sällsk. årsskr.*, 1901, p. 26. — RYGH, *Norske Olds.*, f. 35. — BRÖG-

GER, *Norges Vestlands stenald.*, p. 63. — MADSEN, *Afbild., St.*, pl. 33 f. 35. — MÜLLER, *Ordning, St.*, f. 114. — *Aarb.*, 1881, p. 356. — VEDEL, *Bornh.*, p. 11. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 93. — LISSAUER, *Prähistor. Denkmäler, W.-Preussen*, p. 26. — *Katalog Ausst. Riga 1896*, pl. 2. — ASPELIN, *Antiqu.*, f. 64, 65 (Finland), 96 (Jaroslav). — *Atlas öfver Finland 1910*, map 49:2 (text pp. 9, 12). — One was found near Kiev (TALLGREN, *l. c.*, p. 129, note) and another not far from Kovno (in the National Museum of Stockholm).

317. Högby, Ner.; see f. 232.

323—334. »Rhomb-axes», so called because from the front view the axe has a more or less rhombic shape; they are also called »axes with many facets». They were probably battle-axes. The type occurs in Sweden, Norway, Denmark and Finland. In other countries no similar axes, at least not those of the perfectly developed type, have been found.

For distribution in Sweden, see the literature p. 2. — STJERNA, *A. T.*, 19:2, p. 111. — RYGH, *Norske Olds*, f. 37, 38. — MADSEN, *Afbildn., St.*, pl. 32 f. 21, pl. 33 f. 34. — MÜLLER, *Ordning, St.*, f. 71, 84—86. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 79, 80. — *Atlas öfver Finland 1910*, map 49.

335—338. »Bent-necked» axes with shaft-holes.

EKHOLM, *Studier*, p. 47.

339—341. Stone hammers with projections like the arms of a cross on both sides of the shaft-hole: some with incised zigzag lines or other similar ornaments that occur on works in horn. Probably copied from horn mattocks. Very seldom occurring outside the Scandinavian peninsula (f. 349—351 are a little different).

RYGH, *Norske Olds*, f. 42 (potstone) and 43. — A. W. BRØGGER, *Norges Vestlands stenald.*, p. 60. — *Oldtiden*, 1, Bergens M. p. 35, f. 12 (potstone). — *Aarsberetn. af Foren. t. norske fortidsmind. bevar.*, 1895, p. 117, f. 7 (potstone, only 4.8 cm. long; short projections); cf. 1889, pl. I f. 5, p. 98. — *Nord. Tidsskr. f. Oldkynd.*, 1 (Kbhvn, 1832), pl. III f. 36 (locality unknown). — J. M. KEMBLE, *Horn ferales* (London, 1863), pl. II f. 33 (Holland). — ASPELIN, *Antiquités*, f. 111 (Kaluga in Russia, S.-W. of Moscow).

344—348. Long narrow mattocks of stone (often schist) with shaft-holes: the section more or less round. The hole is often biconical; in the uncompleted holes no core is seen, and so they must have been bored with solid wooden pegs, not cylinders. These mattocks, which seem to be copied from those of horn, are attributed to an early part of the later Stone Age. Most of them have been found in western Sweden.

NYGREN, *Värml. stenald.*, p. 48. — LINDQVIST, *Ner. stenald.*, f. 18. — SAHLSTRÖM, *Västerg. stenald.*, p. 55. — FRÖDIN, *Meddel. fr. Österg. forn.-förs.*, 1912, p. 24 (rare in Ö.G.; two found in early dwelling-places in Boh.). — NILSSON, *Ur-öv.*, f. 143 (Denmark; the hole near the large, round top). — *Oldtiden*, IX, p. 11 (»plonghs»).

349—351. Stone hammers with short projections on both sides of the shaft-hole (cf. f. 339—341). Similar forms occur east of the Bothnian Gulf.

ASPELIN, *Antiquités*, f. 66—70. — *Atlas öfver Finland, 1910*. Map 49—51, p. 9, f. 14.

352. Danish (Jutland) type, as some of the following. — Trälleborg, Sk. — *Opuscula*, p. 48, f. 11; N. ÅBERG, *Prähist. Zeitschrift*, 1917, p. 21.

358. Finnish type. — Vänge, Upl. — ALMGREN, *A. T.*, 20:1, p. 5, f. 7.

369. See f. 264. — Lilla Mellösa, Söd.

379. Actual length: 35.9 cm. — Moheda, Sm.

390 a. Core from a hole. — Näs, V. G.

390 b. Two cores from holes bored from the opposit sides of an axe. — Småland.

397. Finnish type. — Kårsta, Upl. — SALIN, *Uppland*, 1 p. 171, f. 37; EKHOLOM, *Studier*, p. 57, f. 89.

398, 399. Adzes: the shaft-hole is perpendicular to the edge. The holes being as great as those intended for shafting, these axes are of a kind different from those with a small hole through their broad sides (f. 207). Such adzes are rare both in Scandinavia and in other parts of Europe.

WORSAAE, *Nord. Olds.*, f. 50. — MADSEN, *Afbildn., St.*, pl. 32 f. 24. — BELTZ, *Allert. Mecklenb.*, f. 67. — *Prähist. Zeitschr.*, 1912, p. 215 (Prignitz). — *Jahresschr.* (Halle), I, pl. XVIII. — EVANS, *Stone Impl.*, p. 190, f. 122. — *Die neolitische Station von Butmir bei Sarajevo in Bosnien*, I, pl. XIX f. 11 (see II, pl. XV).

400, 401. Sandstone rubbers for arrow-shafts. On the flat side there is a bevelled groove for polishing arrow-shafts and the like: two such stones are often found together. In our days similar rubbers for arrow-shafts have been used by Indians of North America.

Boh. bidr., 8, p. 446 (pumice-stone). — MÜLLER, *Ordning St.*, f. 196. — *Aarb.*, 1898, p. 263 (two rubbers, found in a tomb with an arrow-head). — SCHUMACHER, *Arch. f. Anthr.*, IX, p. 249. — EVANS, *Stone Impl.*, 2nd edit., p. 267, f. 185. — DE MORTILLET, *Musée préhist.*, f. 593.

400. Hagestaborg, Sk.; in a gallery-grave.

402—491. Daggers, spear-heads and arrow-points of flint (only f. 464, 471—474 and 491 are of other materials).

The majority of flint daggers both in and out of Europe have had handles of wood, bone or horn. In Scandinavia and North Germany, inhabited by the same Scandinavian race, but not in other parts of Europe, many daggers had *handles of flint*. Since the whole weapon must then naturally be of one single piece, its production met with great difficulties, especially when it was a question of making such daggers as f. 430—33, which are veritable masterpieces, and must have been most costly, evidently intended for chieftains. The beauty of the shape and the perfect symmetry shown in these, as in the other weapons now under consideration, as well as the elegant manner in which the contour lines of handle and blade pass into each other, all witness to an advancement in artistic skill and a taste which could not have been expected in works executed in the remote North, thousands of years ago.

In Egypt, certainly, weapons of flint have been found so well executed that their equals have only been met in the Scandinavian North. Some Egyptian productions in flint — which however were not daggers or spear heads — are so wonderfully fine that opinions are divided whether they or the Scandinavian specimens ought to hold first rank. But this is only when technical execution is exclusively considered. When one also takes the shape into account, there is no question that such tasteful and elegant works in flint as the daggers f. 430—33 did not exist in Egypt.

It can easily be seen that the originals of f. 430—433 were daggers, and that other weapons here illustrated were spear-heads; but it can only be decided in a few instances which of the other flint weapons now in question were used as daggers, and which as spear-heads. Most of these blades may quite as well have been fastened to a short hilt suited to the hand, and thus used as daggers, as been fixed on the tip of a long lance or spear.

The edges both of daggers, lances and arrows are not ground, nor have ever been intended to be ground. But on the broad sides large or small parts are sometimes ground (f. 409), since unevennesses which could not be chipped away were removed by grinding.

On many spear-heads found in Sweden and other Germanic countries (f. 466—470), as on arrow-points (f. 446), the edges are provided with large or small saw-teeth, by which wounds became far more dangerous than was otherwise the case. Outside the Germanic North flint spears with saw-teeth are very rare.

If the dagger or spear struck against some hard substance, a splinter could easily be broken off the edge. When the damage was to be remedied, the other edge had also to be worked up to prevent the blade being oblique. If this was several times repeated, the blade continued to diminish in width and finally became almost entirely worn out (f. 426). If it was a dagger with a flint handle that had been damaged in this way, the handle might remain unchanged, while the blade was ultimately converted into a short narrow point (f. 427).

Daggers and spear-heads of flint have been found in Sweden in very large numbers; many thousands of specimens are now known here. They occur not only in Skåne, where there is a good supply of excellent flint, but also far north from that district. Some are very long; one weapon found in Skåne (like f. 404) is 44.2 cm. in length. These weapons are very common also in other Scandinavian lands, especially Denmark and the northernmost part of Germany — that is to say within the whole Germanic district.

In other parts of Europe daggers and spear-heads of flint have been met with far less often than in the Scandinavian region.

MONTELIUS, *Dolkar, spjut- och pilspetsar af ben och sten*, A. T., 22: 2 (with literature).

402. Ranten, close by Falköping, V.G.; in a gallery-grave (»Lustushögen»; see f. 591, 593, 737). — *Ant. suéd.*, f. 51; K. E. SAHLSTRÖM, *Västerg. stenåld.-bebygg.*, f. 40; *Id.*, *Förteckning över Skaraborgs läns stenåldersgravar* (Västerg. Fornm.-för. tidskr., III, 1915, p. 49, f. 16—18).

416. Bårslöf, Sk.; in a dolmen. — N. G. BRUZELIUS, *Svenska fornlemningar*, I, p. 20.

426—429. By repeated chipping, blades have been converted into short narrow points.

429. Ökull, V. G.; cist-grave (see f. 479). — SAHLSTRÖM, *Stenåld.-gravar*, p. 73.

431. Karleby Utbogården, V.G.; large cist-grave (see f. 600). — *Congr. St.*, I, p. 172, f. 23, 24; MONTELIUS, *Hällkista vid Karleby Utbogården* (*Mbl.*, 1877, p. 425); SAHLSTRÖM, *Stenåld.-gravar*, p. 37.

435—451. Arrow-points of flint, »blade-shaped», usually barbed, chipped on both sides (the larger, as f. 439, have possibly been javelin-heads). Some have their base rounded (f. 444): on others it is straight, without any trace of barbs (f. 448, 450). The majority have their base more or less curved inwards, or they have barbs, which often are of considerable length, and testify to great skill in the maker (f. 437, 441). The type f. 442, 443, with a short tang and barbs, which is the common one in some other countries, is rare in Sweden, as it is in other parts of the Germanic North. — Blade-shaped arrow-points of flint first begin to come into use during the later part of the period of gallery-graves. — Such arrow-points are found in Skåne in large numbers, but comparatively seldom in the other districts of Götaland. In Svealand they are met with very seldom and scarcely any are known from Norrland, where there was no supply of flint, arrow-heads of bone and schist being used instead. In Norway many arrow-heads of flint have been found. In Denmark they are very common; and in northern Germany they occur, though less often. They occur also in other parts of Europe, in Asia, Africa and in the New World.

Literature, see A. T., 22: 2.

447. Hjellby, V. G.; cist-grave (see f. 632, 641). — *Mbl.*, 1896, p. 65; MONTELIUS, *Der Orient und Europa*, p. 138.

452—456. Commonly called »three-sided arrow-heads»; but on account of their size and weight they seem rather to have been javelin-heads. Common in the three Scandinavian countries, but very rare in Germany. In other European lands practically unknown. Occur in western Asia and Egypt.

Literature, see A. T., 22: 2.

457, 458. »Transversal» arrow-heads of flint; already occurring in our older Stone Age (f. 85, 86), but still quite common in the North during the period of gallery-graves.

Literature, see A. T., 22: 2.

457. Alvastra, Ö.G.; lake-dwelling (see f. 141).

460—463. Lance-heads with a notch at the edge for fixing (see f. 451).

Literature, see A. T., 22: 2.

464. Quartsite. — Nederkalix, Vbtt.

466—470. Lance-heads with larger or smaller saw-teeth along both edges.

466. Örenäs, Sk.; gallery-grave. — *Fornv.*, 1908, p. 226, f. 70 (and p. 231).

471. Arrow-head of bone. — Visby, G.; dwelling-place close by the ruin of the church of Drotten (with a skeleton; see f. 536, 622, 712). — WENNERSTEN, *Boplats från stenåldern i Visby* (*Fornv.*, 1909, p. 201, f. 14); LITBERG, *Gotl. stenåld.*, f. 68; see pp. 69, 88. — See f. 527.

472. Arrow-head of bone. — Hemmor, G.; dwelling-place (see f. 532, 615). — LITBERG, *Gotl. stenåld.*, p. 65, f. 69.

473. Arrow-head of schist; edges with fine teeth. — Gammelstorp, V.G.

474. Arrow-head of bone. — Romeleåsen, Sk.

478. Knife of flint (for food). — Småland (not Sk.). — *Mbl.*, 1892, p. 71, f. 45. See A. T., 22: 2.

479. Ökull, V. G.; eist-grave (see f. 429).

489. Luttra, V. G.; gallery-grave (see f. 590, 594, 596, 639, 650). — *Ant. tidskr.* 1, p. 255; *Ant. suéd.*, f. 47; *Congr. St.*, I, p. 159, f. 9; SAHLSTRÖM, *Stenåld.-gravar*, p. 42.

491. Lance-head of quartzite. — Vängel, Ång. — MONTELIUS, *A. T.*, 20: 6, p. 33.

492. Copper daggers, with a tang more or less distinct, the breadth of which is much greater than the thickness, and which has no rivet holes. They are copies in metal of flint daggers (cf. f. 484); a closer investigation shows that flint daggers are not copied from copper daggers, as once was supposed (*West-deutsche Zeitschr.*, XIX, p. 229). Similar specimens, though still in small numbers, are known from several parts of Europe.

MONTELIUS, *Chronol. d. ält. Bronzezeit*, p. 42 (Saxony), 109 (Bohemia), 143 (Egypt: a rivet-hole in the short tang), 194 (England: cf. *Id.*, *Chronol. Brit. Bronze Age*, p. 9. The dagger, said to be of bronze, is probably of copper; so far as I know, it has not been analysed). — *Id.* *Die vorklass. Chronol. Ital.*, pl. II f. 9 (north Italy), p. 8, f. 26 (Sardinia). — *Jahresschr. f. d. Vorgesch. d. sächs.-thür. Länder*, 8, pp. 14, 58, pl. I f. 6, pl. IV f. 33. — *Prähist. Zeitschr.*, 1914, p. 87 (Bulgary). — V. GROSS, *Les protohelvètes*, pl. 10 t. 27 and 29 (Switzerland). — *Antiqua*, 1884, pl. XIV f. 74 (Switzerland). — *L'Homme préhistor.*, 1903, p. 98, t. 20 (France). — L. SIRET, *Questions de chronologie et d'ethnographie ibériques*, I, p. 376, pl. VII f. 20.

492. Nättraby, Bl.

493—526. Spear-heads, daggers and arrow-heads of slate (schist). Many have barbs. Some shapes seem to be copied from flint heads (cf. for example f. 452 and 501); others have come into existence by development from them. — Like many other productions from slate (f. 537—555), these weapons are especially common in Lapland and Norrland. Many are also found in Svealand, but they are seldom met with in Götaland, especially in the southernmost part, in the districts that are rich in flint. In Norway also, pre-eminently in its northern parts, and in Finland they have been in general use. They are not found in Denmark and Germany. Especial use has been made of them by the non-Germanic peoples inhabiting the extreme north of Europe; but many were exported and imitated in districts somewhat more southerly and were used by our Scandinavian forefathers.

MONTELIUS, *Sur les souvenirs de l'âge de la pierre des Lapons en Suède (Congrès de Stockholm 1874)*, p. 188. — *Id.*, *Minnen från lapparnes stenålder i Sverige (Mbl.)*, 1874, p. 97. — ALMGREN, *A. T.*, 20: 1, p. 41. — For distribution in Sweden, see the literature. p. 2. — RYGH, *Sur le groupe arctique de l'âge de la pierre polie en Norvège (Congrès de Stockholm 1874)*, p. 177. — *Id.*, *Norske Olds.*, f. 83—88. — A. W. BRØGGER, *Den arktiske Stenålder i Norge (Vidensk. Selsk. skr., Kristiania, II, 1909, no 1)*. — ASPELIN, *Antiquités du Nord Finno-Ougrien*, f. 56. — *Oldtiden*, I: II, p. 7 (arrow-head of schist with its wooden shaft); cf. III, p. 59.

501. Torhamn, Bl., dwelling-place (»Pysslingebacken»); see f. 766. — *Fornv.*, 1913, p. 164, f. 34 (cf. pp. 186, 189, 198); *A. T.*, 20: 1, p. 38, f. 43.

514 and 517. Västerbjers, G.; with a skeleton (see f. 528, 673). — *Mbl.*, 1887, p. 110, f. 56.

527, 528. Spear-heads and arrow-heads of bone and horn (see f. 471, 472, 474).

528. Lance-head of bone (the same type as the lance-heads of schist). — Västerbjers, G.; tomb (with f. 514).

529—536. Harpoon-points of bone, similar to those of the older Stone Age (see f. 42—58). Those which date from the later Stone Age in Sweden, according to the known circumstances of their discovery, are not two-sided; they have teeth only on one side. The teeth are usually few and large (»barbs»), seldom many and small (as in f. 42, 45 etc.). Besides these points (f. 529—536), many are certainly from the same period, although not discovered under conditions such as to tell for certain whether they belong to the older or the later Stone Age. In other lands, too, similar bone heads have been in use both in the later Stone Age and since: in certain districts they then had barbs on both sides. Similar points of bronze are also known.

Verhandl. Berl. Anthr. Ges., 1882, p. 129 (Spandau, lake-dwelling, with many weapons from the Bronze Age). — *Pfahlbauten*, 2, pl. III f. 41; 3, pl. II f. 9, pl. IV f. 1, 2; 7, pl. I f. 1, 18 (small, only with one barb); 8, pl. IV f. 5 (several two-sided and badly made). — GROSS, *Les protohelvètes*, pl. VI f. 9, 14, 16 (two-sided), 10 (small, only with one barb). — MESSIKOMMER, *Die Pfahlbauten von Robenhansen*, pl. XI f. 1 (two-sided). — MONTELIUS, *La civilisation primit. en Italie*, pl. 4 f. 6 (two-sided).

Of bronze: *La civilisation primit. en Italie*, pl. 9 f. 3—6 (with or without socket; one barb); pl. 70 f. 12 (one-sided, more than one barb, incomplete). Cf. *Fornv.*, 1907, p. 273, f. 110.

529—531 and 533—535. Stora Karlsö (»Stora Färvar»); see f. 183.

532. Hemmör, G.; dwelling-place (see f. 472).

536. Visby (Drotten); dwelling-place (see f. 471).

537—551. Knives or daggers of slate. Some handles terminate with an animal's head (f. 677). Distribution about the same as that of the spear-heads (f. 493).

Literature, see f. 493. — ALMGREN, *Nordiska stenåldersskulpturer (Fornv.)*, 1907, p. 116.

541, 542. Åloppe, Upl.; dwelling-place (see f. 133).

552—555. Instruments of slate, similar to those in iron with handle of wood, which are still used by Laplanders as scrapers for tanning.

P. G. VISTRAND, *Sv. Fornm.-f. tidskr.*, 8, p. 94.

556, 557. Rounded pieces of granite and the like with cup-shaped depressions (»cups»). At least some of them have been probably used as hammer stones, in working up flint and other kinds of stone. Others have possibly borne some symbolic significance in religion (cf. f. 689, 690). Stones which resemble f. 557, but have no cups (*Fornv.*, 1910, p. 48, f. 28), have manifestly been used as hammer-stones: they show clear traces of blows.

NILSSON, *Ur-inv.*, f. 95—99. — *Ant. suéd.*, f. 1. — FRÖDIN, *Fornv.*, 1910, p. 48. — MADSEN, *Afbildn., St.*, pl. 21 f. 4—10. — MÜLLER, *Ordning, St.*, f. 199, 200. — EVANS, *Stone Impl.*, 2nd edit., p. 239.

557. Alvastra, Ö. G.; lake-dwelling (see f. 141).

558—560. Grindstones of sandstone, on which were ground tools and weapons of flint and other kinds of stone. In order to facilitate the work, sand or gravel with water was often used; on the surface of many flint axes scratches made by sandgrains may still be seen. — Such grindstones as f. 558 are known only in Scandinavia.

NILSSON, *Ur-inv.*, f. 101—103. — *Ant. suéd.*, f. 5, 6. — RYGH, *Norske Olds.*, f. 89—91. — MADSEN, *Afbildn., St.*, pl. 21 f. 1—3. —

MÜLLER, *Ordning, St.*, f. 201, 202. — SEHESTED, *Archæol. Undersög.*, p. 14.

558 and 559. Skåne (different places). The two flint tools have not been found together with the grinding-stones.

560. Limestone. — Sanda, G.

561. Chipping hammers formed of the point of an antler, the end of which is cut off and polished by use (cf. f. 676); used in working up flint. Such tools of bone with a wooden shaft have been used in our days by Esquimaux and other peoples.

MÜLLER, *Ordning, St.*, f. 40. — ID., *Aarb.*, 1888, p. 274. — *Sv. forntid*, p. 50. — EVANS, *Stone Impl.*, 2nd edit., p. 33.

561. Tullstorp, Sk.; in a flint mine.

562, 563. Flint-cores. Chips were struck off a flint block, either after suitable preparation to use the remaining interior of the block as an axe, a dagger, or the like; or else to utilize the flakes struck off as knives, scrapers, arrow-heads and so forth. In the latter case the residue of the flint block is generally called a core (»nucleus»).

NILSSON, *Ur-inv.*, f. 108. — *Ant. suéd.*, f. 3. — *Sv. forntid*, p. 49. — MADSEN, *Afbildn. St.*, pl. 24 f. 1—3. — MÜLLER, *Ordning, St.*, f. 7—9. — EVANS, *Stone Impl.*, 2nd edit., f. 2, 189. — DE MORTILLET, *Musée préhist.*, pl. XXXIII.

564—568. Scrapers of flint and quartzite, generally rounded in front. Sometimes they are almost circular (f. 565), sometimes oblong (f. 566), sometimes »spoon-shaped» (f. 567, 568). The last-named have a sort of flint handle; of the others — like similar scrapers of stone used by primitive peoples in our days — many may have had handles of wood or bone (*Sv. forntid*, f. 65). Flint scrapers occurred as early as during the older Stone Age (see f. 81). They have been used partly in fabrication of works in wood, horn and bone, partly in preparation of skins. Sometimes several scrapers have been found laid together in the ground or in water. In Sweden, as in other lands, scrapers of flint are very common; the »spoon-shaped» variety, however, is seldom met with outside Scandinavia (*Sv. forntid*, f. 63).

NILSSON, *Ur-inv.*, 2nd edit., pp. 65, 175, pl. VI f. 137, pl. IX f. 8. — *Ant. suéd.*, f. 69, 70 (8 found together in a bog). — *Sv. forntid*, p. 86. — ERHOLM, *Studier*, p. 67, f. 122. — GUSTAFSON, *Norges oldtid*, p. 25, f. 66. — MADSEN, *Afbildn. St.*, pl. 24 f. 9—11. — MÜLLER, *Ordning, St.*, f. 146—148; cf. f. 10—13. — *Aarböger*, 1896, p. 360, f. 37, 38 (for the food). — BELTZ, *Altert. Mecklenb.*, pl. 11 f. 86, 88—90. — EVANS, *Stone Impl.*, 2nd edit., p. 298. — DE MORTILLET, *Musée préhist.*, pl. XXXVII.

564. Quartzite. — Resele, Ång.

565—568. Flint. — 566. Änneröd, Boh.; dwelling-place (see f. 761). — FRÖDIN, *Ymer*, 1906, p. 17; *Mbl.*, 1903—5, p. 238.

569. Clay daubing: clay which was daubed on the frame-work of a hut. On the burnt pieces of clay left from the destruction of a hut by fire, impressions are seen of the twigs and reeds (wattles), which composed the frame-work of the hut.

MONTELIUS, *Boning, grav och tempel* (A. T., 21: 1, p. 39).

569. Tanum, Boh.; in a tumulus that covered a dolmen (see f. 760). — FRÖDIN, *Boh. bidr.*, 8, p. 445.

570—572. Flint flakes used as knives: they are not ground, but the edge is formed by the sharp angle

between two sides. Sometimes the ridge has been carefully worked with a rounded end (f. 570). Common in districts where flint is found.

NILSSON, *Ur-inv.*, f. 68, 69. — *Ant. suéd.*, f. 2, 67. — *Sv. forntid*, p. 65 (f. 33, stone-knife with wooden handle, from Australia). — MÜLLER, *Ordning, St.*, f. 143, 144.

573—575. Flint borers. Such borers occurred as early as the older Stone Age (f. 89); many being found separately, it is often difficult to decide to what period they should be ascribed.

Sv. forntid, p. 68. — MÜLLER, *Ordning, St.*, f. 28—32. — *Aarböger*, 1866, p. 311. — EVANS, *Stone Impl.*, 2nd edit., p. 321. — DE MORTILLET, *Musée préhist.*, pl. XXXVIII.

574. Bolmsö, Sm.; eist-grave. — *Sv. Fornm.-för. tidskr.*, 3, p. 246, f. 1.

576—582. Flint saws, often with saw-teeth more or less distinct along the edge, almost straight or somewhat curved in. The other border is usually bow-shaped and therefore these tools are called »halfmoon-shaped»; near this border is frequently seen a shiny stripe indicating that the saw was fixed in a wooden handle. Many transitional forms show how these tools developed from flint flakes, while they increased in size and were carefully worked up. Flint saws like f. 581 were copied in bronze during the Bronze Age. — The view expressed in *Fornv.*, 1906, f. 241, that such flints as f. 582 had been sickles, cannot be correct. — Such flint saws are seldom found in tombs, but many have been laid together in the earth or in water (hoards, »dépôts»).

Flint saws like f. 577—582 are common in Sweden, especially in the south part of the country, and in Denmark; several have been found in Norway. Also in the portion of Germany that belongs to the Scandinavian district, they are numerous; but in other lands they were not used, if not imported from the North.

For distribution in Sweden, see the literature p. 2. — NILSSON, *Ur-inv.*, f. 70—72; f. 73, of the same form as the others, but with saw-teeth along both edges. — *Ant. suéd.*, f. 71—44. — *Sv. forntid*, p. 67. — MADSEN, *Afbildn. St.*, pl. 24 f. 12—16. — MÜLLER, *Ordning, St.*, f. 137—140; cf. f. 9. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 25—27. — BELTZ, *Altert. Mecklenb.*, pl. 12 f. 95—100. — EVANS, *Stone Impl.*, 2nd edit., p. 294. — DE MORTILLET, *Musée préhist.*, pl. XXXVI.

Hoards: *Sv. forntid*, p. 149. — *Oldtiden*, VI, p. 155 (in a bog, 32 saws lay together). — *Nationalmuseumet* (in Copenhagen). *Den danske samling: Oldtiden*, nos 75 and 85.

577. Sotorp, Boh.; with 8 similar saws. — *Boh. bidr.*, 1, p. 410, f. 127.

583—585. Implements for producing fire. Fire was struck with flint (or quartzite) and iron pyrites; the sparks lighted tinder (made out of touchwood). In districts where flint was costly, quartzite was used instead.

583. Iron pyrite. — Alvastra; lake-dwelling (see f. 141).

584 and 585. Pieces of quartzite, used instead of flint for making fire; flint does not exist in this region. — Alvastra; lake-dwelling (see f. 141), together with touchwood.

586. Stone querns (granite). Seed was laid in the large concavity and ground with another stone. Revolving mills did not come into use until much later.

586. Lndby, V.G.; found at the bottom of a tumulus covering a gallery-grave (see f. 680, 689). — *Sv. Fornm.-för. tidskr.*, 6, p. 41, f. 2: SAHLSTRÖM, *Stenåld-gravar*, p. 72.

587. Grains of barley (*Hordeum hexastivum*). During the later Stone Age millet, barley and wheat were cultivated in Sweden.

587. Barley. — Alvastra, Ö. G.; lake-dwelling (see f. 141).

588. Apples.

588. Alvastra, Ö. G.; lake-dwelling (see f. 141).

589—597. Bone pins for fastening clothes together. With the aid of a hole they could be firmly fixed so that they should not be lost. In several pins, the hole passed through the head and out of the side (f. 589—594).

MONTELIUS, *Chronol. d. ält. Bronzezeit*, p. 116. — MÜLLER, *Ordning, St.*, f. 240—243.

589, 592. Lanna, Ner.; cist-grave (see f. 628). — LINDQVIST, *Ner. stenåld.*, p. 35, f. 62—64.

590, 594, 596. Luttra, V. G.; gallery-grave (see f. 489).

591, 593. Ranten, V. G.; gallery-grave (see f. 402).

595. Västkunde, G.; cist-grave. — LITNBERG, *Gottl. stenåld.*, f. 184.

597. Stora Karlsö (»Stora Förvar»); see f. 183).

598. Bracers (arm-guards): elongated quadrilateral plates of bone, burnt clay or stone (schist), generally a little curved; with a couple of holes near the middle or the ends. They served to protect the bowman's arm from the string when shooting.

MÜLLER, *Ordning, St.*, f. 244, 245. — BELTZ, *Altcr. Mecklenb.*, pl. 14 f. 122. — *Corresp.-Bl. d. deutschen Gesellsch. f. Anthropol.*, 1896, p. 59; 1897, p. 17. — *Westdeutsche Zeitschr.*, XIX, p. 231. — EVANS, *Stone Impl.*, 2nd edit., p. 425 (»bracers» or »arm-guards») — DÉCHELETTE, *Manuel*, II, p. 226 (»brassards d'archers»). — MONTELIUS, *Vorklass. Chronol. Italiens*, p. 6, f. 16—18. — *The Annual of the British School at Athens*, III, p. 67 (Amorgos).

598. Bone. — Mysinge, Öl.; gallery-grave (see f. 648, 670). — ARNE, *Fornv.*, 1909, p. 92, f. 9, and pp. 93, 108.

599—610. Bone points, used partly as awls for boring holes in leather, through which thread was to be passed, partly for arrow or spear heads. Mostly bones of sheep, goat, roedeer; some of birds. — Often found in Scandinavia, as in other lands.

MÜLLER, *Ordning, St.*, f. 192, 194. — *Aarböger*, 1888, p. 262. — DE MORTILLET, *Musée préhist.*, pl. XXXVIII.

599, 602, 604—606, 608, 609. Alvastra, Ö. G.; lake-dwelling (see f. 141).

600. Karleby, V. G.; cist-grave (see f. 431).

601. Åloppe, Upl.; dwelling-place (see f. 133).

603, 607, 610. Stora Karlsö (»Stora Förvar»); see f. 183).

611, 612. Bone daggers. Occurring in various parts of Europe.

DE MORTILLET, *Musée préhist.*, pl. XL f. 541. — MONTELIUS, *Civilis. Ital.*, col. 564 (of a human bone). — *Id.*, *Dolkar af flinta* (*A. T.*, 22: 2).

611, 612. Stora Karlsö (»Stora Förvar»); see f. 183).

613. Implement of bone. — Ugerup, Sk.; found with a skeleton, a flint axe (see f. 651).

614—626. Fish-hooks of bone. Some (f. 616, 621) had no barbs, but the majority had. As early as the Stone Age, therefore, fish-hooks were of the same shape as those of today. Many of those here illustrated were discovered under conditions which exclude any doubt about ascribing them to the Stone Age. Of the others,

most are probably of the same date. Fish-hooks of flint (without barbs) also exist; many of them are doubtless false, but in some few cases their genuineness is incontestable. Others, used during the Stone Age in many countries, were of mussel-shell or wood with a point of bone or flint.

Sv. fornt., p. 100. — RAU, *Prehist. Fishing in Europe and North America*, p. 120. — Fish-hooks of flint: NILSSON, *Ur-inv.*, f. 86, 87, pl. B f. XV, XVI. — *Aarböger*, 1907, p. 85.

615. Hemmor, G.; dwelling-place (see f. 472).

616. No barb. — Öglunda, V. G.; cist-grave. — MONTELIUS, *Der Orient u. Europa*, p. 141.

619. Ranten, close by Falköping, V. G.; cist-grave. — SAHLSTRÖM, *Stenåldersgravar*, p. 47.

620. Stora Karlsö (»Stora Förvar»); see f. 183).

622. Tooth of swine. — Visby (Drotten); dwelling-place (see f. 471).

623. Alnäs, Ö. G.; cist-grave. — E. SÖRLING, *Fornv.*, 1912, p. 208, f. 71—90.

627—636. Pendant ornament (amulets?), commonly ending below in an edge; their shape more or less recalls long and narrow stone axes without shaft-holes (cf. f. 680). Generally of stone (f. 629—636 of schist; f. 627 of bone). Many have a hole which passes in at the top and out at two sides; they were carried on a cord or the like, which was threaded through this hole. Most are quadrilateral, some round; those at least, on which incised ornaments are to be seen, cannot have been »polishing-stones», as has been assumed. Common during the cist-period and transition-era to the Bronze Age. Occurring also in Norway, Denmark and northern Germany.

NILSSON, *Ur-inv.*, f. 104, 105, 182. — *Aarböger*, 1881, p. 339. — MÜLLER, *Ordning, St.*, f. 204, 205. — BELTZ, *Altcr. Meckl.*, f. 126.

627. Bone. — Åloppe, Upl.; dwelling-place (see f. 133).

628. Greenstone. — Lanna, Ner.; cist-grave (see f. 589).

629. With ornaments. — Vininge, Sk.; gallery-grave.

630. With a groove (no hole). — Marbäck, V. G.; cist-grave.

632. With ornaments. — Hjellby, V. G.; cist-grave (see f. 447).

635. With ornaments. — Stora Köpinge, Sk.; stone-grave in a tumulus.

636. Round. — Saritslöf, Sk.; peat-bog.

637—675. Pendant ornaments, heads and other ornaments of bone, amber and gold (f. 641).

637. Amber; many holes along the borders. — Kälfvane, V. G.; peat-bog, with beads of amber. — *Opuscula*, p. 62; MÜLLER, *Ordning, St.*, f. 259

638. Amber. — Falköping (Vetterlinsgården), V. G.; gallery-grave (see f. 662, 663, 666, 667). — SAHLSTRÖM, *Stenåld.-gravar*, p. 53.

639, 640. Pendant ornaments of bone, resembling eye-glasses (cf. f. 655). Similar specimens in amber are found in East Prussia.

MÜLLER, *Ordning, St.*, f. 250. — R. KLEBS, *Der Bernstein-schmuck der Steinzeit* (Königsberg, 1882), pl. VIII f. 8—12, p. 25. — A. W. BRÖGGER, *Den arkt. stenåld. i Norge*, pp. 199, 206, 221. — SCHLIEMANN, *Ilios* (London, 1880), p. 430, f. 557 (diomite; Hissarlik).

639. Luttra, V. G.; gallery-grave (see f. 489). — *Ant. suéd.*, f. 82.

640. Skogsbo, V. G.; cist-grave.

641. Bead of gold. The oldest object of gold known of in Sweden. — Hjellby, V. G.; cist-grave (see f. 447).

642, 643. Animal's teeth, worn as ornaments; without holes (see f. 650—652), but with a groove around the top.

LITHEBERG, *Gotl. stenåld.*, f. 168 (tooth of seal).

642. Alvastra, Ö. G.; lake-dwelling (see f. 141).

643. Åloppe, Upl.; dwelling-place (see f. 133).

644—647. Beads of amber. Many resemble more or less a double-edged axe (cf. f. 684); see f. 644—647, 658, 659, 666. Many are of other shapes (see f. 661—675, 685). Common in gallery-graves; almost entirely lacking during the cist-period. Most are found in Skåne and Västergötland. Beads of the same form are also very numerous in Denmark. In North Germany, especially in the districts round the lower Vistula, ornaments of amber are very common, but the beads have not the shapes common in Scandinavia (f. 645—647).

NILSSON, *Ur-iv.*, f. 112, 113. — *Sv. fornt.*, p. 91. — *A. T.*, 19: 2, p. 96. — SAHLSTRÖM, *Om Västergötl. stenåldersbebyggelse*, p. 58. — MÜLLER, *Ordnung, St.*, f. 263, 264. — NERGAARD, *Ravsmykkekerne: Stenaldere (Aarbøger, 1888, p. 281)*. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 31, 116—118. — BELTZ, *Alterth. Mecklenb.*, pl. 15 f. 143, p. 80.

644. Dverstorp, V. G.; peat-bog, with other ornaments of amber (f. 659, 665) and a flint-dagger. — *Ant. suéd.*, f. 84; *Opuscula*, p. 62, f. 36.

645. Gantofta, Sk.; gallery-grave (see f. 647, 675, 744, 748, 755, 756, 777). — *Fornv.*, 1908, p. 266; *A. T.*, 20: 1, pp. 11, 32.

646. Karleby Klöfvagården, V. G.; gallery-grave, with a great number of amber beads. — *Mbl.* 1873, p. 10; *Sv. fornt.*, p. 92, f. 75; MONTELIUS, *Sveriges (illustr.) historia*, 1st edit., 1, p. 58, f. 97; *Congr. St.*, 1, p. 158, f. 7.; *A. T.*, 19: 2, p. 96, f. 108; SAHLSTRÖM, *Västerg. stenåld.-bebygg.*, f. 39; *Id.*, *Stenåld.-gravar*, p. 33, f. 5—7.

647. Gantofta, Sk.; gallery-grave (see f. 645).

648, 649. Cylindrical beads of bone, some ornamented. Cylindrical beads, often rather long, of amber, jet, other stones, gold etc., occur both in Denmark and northern Germany and in other lands during the latter part of the Stone Age and the beginning of the Bronze Age (see f. 668).

MÜLLER, *Ordnung, St.*, f. 254, 255 (amber). — *Aarbøger*, 1888, p. 285. — KLEBS, *Bernsteinschmuck*, pl. I (amber). — EVANS, *Stone Impl.*, 2nd edit., pp. 458—462 (jet). — DE MORTILLET, *Musée préhistorique*, f. 637 (jet). — P. CAZALIS DE FONDOUCE, *Allées couvertes de la Provence*, II (Montpellier, 1878), pl. IV (stone and gold). — DÖRPFELD, *Troja u. Ilion*, p. 385, f. 359 (cornaline).

648. Mysinge, Öl.; gallery-grave (see f. 598).

649. Luttra, V. G.; gallery-grave (see f. 489).

650—652. Animals' teeth (bear, wolf, dog, etc.) with a hole bored near the root; worn as ornaments and hunting trophies or amulets (see f. 642, 673), as was the custom also in many other lands both during the Stone Age, as early as the palaeolithic time, and long after its termination, right down to our days. — During the Stone Age, ornaments were also worn of bone, sometimes of stone or copper, which resemble, more or less, pierced animals' teeth like these (f. 651, 652).

Ant. suéd., f. 89, 90 (bear and wolf). — *Sv. fornt.*, p. 90. — *Fornv.*, 1909 p. 203 (seal-teeth: 91 were placed at the waist of a corpse and 100 at the waist of another; consequently, they had been fixed to the belt). — BELTZ, *Alterth. Mecklenb.*, pp. 79, 102 (about 90 teeth to the waist, i. e. at the belt, of a corpse). — LINDENSCHMIT, *Alterth.*, II: 8, pl. 1 f. 9 (Germany; female skeleton: necklace of 38 teeth). — *Verhandl. Berl. Anthr. Ges.*, 1895, p. 353 (Bohemia; teeth and clay-imitations of teeth); 1898, p. 266 (France: imitations of teeth in stone and mussel-shell). — WOSINSKY, *Das prähist. Schantzwerk von Lengyel*, pl. XIX, XXXIII, p. 49 (Hungary; deer). — DE MORTILLET, *Musée préhist.*, f. 630 (dog). — MONTELIUS, *Civil. ital.*, pl. 4 f. 19 (bear); pl. 3 f. 28 (imitation in stone). — Older Stone

Age; WOSINSKY, *Lengyel*, p. 49 (Mentone: 22 perforated teeth of reindeer, at the head). — Later times: CRUSE, *Neerolivonica* (Dorpat, 1822), pl. 3, 16. — BÄHR, *Gräber der Livon* (Dresden, 1850), pl. 111, IX, X. — Of stone: *Civilis. Ital.*, pl. 3 and 33 (North Italy). — Of copper: FORRER, *Antiqua*, 1884, p. 59, pl. XIV f. 70; 1885, p. 110, pl. XXIV f. 17 (Switzerland).

650. Bear-tooth. — Luttra, V. G.; gallery-grave (see f. 489).

651. Imitation in bone. — Ugerup, Sk.; tomb (see f. 613).

652. Imitation in bone. — Fjälkinge, Sk.; with a skeleton and more than 100 similar ornaments. — *Mbl.*, 1891, p. 176, f. 55.

653—657. Amber and stone buttons, with V-shaped boring: two holes, bored obliquely to each other from the under side, meet, so that the button can be firmly fixed with a cord threaded through them. During the Bronze Age, ornaments like f. 939—952 were developed from these buttons. — Buttons with V-shaped boring occur also, during the end of the Stone Age and the transition period to the Bronze Age, in other parts of the Scandinavian region, as in west and south Europe.

Opuscula, p. 61. — BRÖGGER, *Den arktiske stenald.*, pp. 186 (amber; not button; Norway), 207—210 (amber; Sweden and western Russia). — SPLIETH, *Inventar*, f. 20. — KLEBS, *Bernsteinschmuck*, pl. 11 (amber; Prussia). — OLSHAUSEN, *Verhandl. Berl. Anthr. Ges.*, 1890, p. 287. — EVANS, *Stone Impl.*, 2nd edit., pp. 452—456 (jet, amber; England). — DE MORTILLET, *Musée préhist.*, f. 648 (alabaster; France). — CARTAILHAC, *Les âges préhist. de l'Espagne*, f. 112 (four-sided, of bone; Portugal). — SIRET, *Les premiers âges du métal dans le Sud-est de l'Espagne*, pl. XVI, XXI, XLVIII (ivory). — MONTELIUS, *Civilis. Ital.*, pl. 10 f. 3 and 4 (stone and amber; North Italy). — HEIERL, *Urgeschichte der Schweiz*, p. 155, f. 93. — WOSINSKY, *Das prähist. Schantzwerk von Lengyel* (Hungary), 1, pl. XV, XIX, 1, pp. 35, 48; 2, p. 85 (of bone and mussel-shell). — MUCH, *Die Kupferzeit in Europa*, 2nd edit., pp. 95 (stone; Mondsee, Austria), 99 (both in Austria-Hungary and on the Spanish peninsula, painted red, evidently in imitation of the colour of the amber).

653. Potstone. — Upland.

654. Amber. — Skredsvik, Boh., peat-bog. — *Sv. Fornm.-för.tidskr.*, 7, p. 141, f. 9; *Opuscula*, p. 62, f. 33.

655. Stone, with a ring. — Knislinge, Sk.; cist-grave. — *Mbl.*, 1886, p. 48, f. 2.

656, 657. Amber; very small. — Hammarlöf, Sk.; cist-grave at the bottom of a tumulus (»Bonhög»). Above this tomb, there were others dating from the Bronze Age (see f. 903, 1036, 1264, and 943 a). — *Mbl.*, 1893, p. 11.

658. Amber-bead, broken and repaired; holes for binding together the two pieces. — Alvastra, Ö. G.; lake-dwelling (see f. 141). — Cf. *Sv. forntid.*, p., 91, f. 77 (amber-bead, broken and repaired in the same way).

659. Amber-bead. — Dverstorp, V. G. (see f. 644).

660. Bead of burnt clay. — Siretorp, Bl.; dwelling-place (see f. 731, 740). — *Fornv.*, 1913, p. 174, f. 39.

661. Broken spindle-whorl of burnt clay. — Kvarnby, Sk.; dwelling-place (see f. 741, 840). — *A. T.*, 19: 1, p. 28, f. 23.

662, 663, 666, 667. Amber-beads. — Falköping (Vetterlingsgården), V. G.; gallery-grave (see f. 638).

664. Four-sided amber-bead. — Falköping (Åttagården), V. G.; gallery-grave. — SAHLSTRÖM, *Stenåld.-gravar*, p. 53, f. 19.

665. Perforated piece of amber. — Dverstorp, V. G. (see f. 644).

668. Amber beads, cylindrical and short. Similar beads, of amber or other material, occur alike in Scandinavia and elsewhere; they are often somewhat thicker at the middle than at the ends (barrel-shaped). Long cylindrical beads, see f. 648, 649.

668. Full size (not 1/2). — Falköping (»Smedjekullen»), V. G.; cist-grave. — SAHLSTRÖM, *Stenåld.-gravar*, p. 51.

669. Bead of burnt clay. — Gullrum, G.; dwelling-place (see f. 188).

670. Pendant ornament of deer-horn. — Mysinge, Öl.; gallery-grave (see f. 598).

671. Small ring of bone. — Örenäs, Sk.; gallery-grave, with a flint axe etc. — *Fornv.*, 1908, p. 231.

672. Amber-head. — Sundsholm, Sm. — *Opuscula*, p. 61, f. 31.
 673. Boar-tusk, with two holes; see f. 650. — Västerbjers, G.; tomb containing 7 similar tusks etc. (see f. 514). — Cf. *Mémoires*, 1896—1901, p. 127; DE MORTILLET, *Musée préhist.*, f. 617.
 674. Bone of swine, perforated. — Åloppe, Upl.; dwelling-place (see f. 133).
 675. Amber-head. — Gantofta, Sk.; gallery-grave (see f. 645).
 676. Deer-horn (cf. f. 561). — Alvastra, Ö.G.; lake dwelling (see f. 141).

677—679 (see also 687, 688). Representations of animals: some of the oldest art-productions known in Sweden (cf. f. 537—540, schist knives).

ALMGREN, *Nordiska stenåldersskulpturer* (*Fornv.*, 1907, p. 113).

677. Hoe of (elk)-horn; two deers and rhomboid ornaments incised. — Near Ystad, Sk. — *Ant. suéd.*, f. 43.
 678. Elk of stone; head very well made. — Deep, round cavity (no perforating hole) at the middle of the base. Has this figure of an elk been placed at the top of a piece of wood to be worshipped? — Alunda, Upl. — O. ALMGREN, E. REUTERSKIÖLD, R. SERNANDER and J. V. EIKSSON, *Ett karelskt stenrapen med älghufvud, funnet i Uppland* (*Fornv.*, 1911, p. 152).
 679. Elk of burnt clay; head very well made. — Åloppe, Upl.; dwelling-place (see f. 133).

680—685. Axes of stone, amber (see f. 644), burnt clay and bone, which were not used as weapons or tools, but had a religious signification: they are symbols of the Thunder (or Sun) God; often in the shape of double-edged axes. — Symbolic axes are numerous in Scandinavia as in other districts both during the Stone Age and later, when they are usually of metal. In the Viking Age they were replaced by the Tors-hammer, in silver or iron (see f. 817).

MONTELIUS, *Solgodens yxa och Tors hammare* (*Sv. Fornm.-förr. tidskr.*, 10, p. 277). — *Id.*, *The Sun-God's Axe and Thor's Hammer* (*Folk Lore*, 1910, p. 60). — ALMGREN, *Symboliska miniatyraxor från den yngre järnåldern* (*Fornv.* 1909, s. 39). — SCHETELIC, *En miniatyraxa av brons från vikingetiden* (*Bergens Museums Aarbok*, 1911, no 13). — *Oldtiden*, VI, p. 35 (iron, 5.7 cm long). — *Mittheil. Anthr. Ges. Wien*, 35 (1905), *Sitz.-Ber.*, p. 40 (burnt clay). — *Monum. antiehi, Accad. d. Lincei*, XXIII, col. 248 (flint, 2 cm. long; Asia Minor). — MONTELIUS, *Die älteren Kulturperioden im Orient und in Europa*, p. 171, f. 569 and 570 (burnt clay; Babylonia), p. 174 (blue glass, imitating lapis-lazuli; same country).

680. Bone; imitating the axes without shaft-hole, but with a small hole at the top, as f. 206. — Lundby, V.G.; gallery-grave (see f. 586). — MONTELIUS, *Chronol. ält. Br.*, f. 17.
 681. Stone, only 5.4 cm. long. — Villberga, Upl. — SALIN, *Uppland*, I, p. 237, f. 110.
 Miniature-axes of stone are common in Sweden (see f. 304). The smallest, known, in cretaceous stone, is not more than 1.1 cm. long; it had been placed, with 4 glass-beads, in a tomb from the 10th century A. D. (*Fornv.* 1909, p. 41, f. 7).
 682. Broken miniature-axe of burnt clay. — Åloppe, Upl.; dwelling-place (see f. 133).
 683. Amber; 12.4 cm. long (the edge is not quite complete) — Instön, Boh. — *Boh. bidr.*, 5, p. 379, f. 233; *Sv. Fornm.-förr. tidskr.*, 10, p. 285, f. 14.
 Two other amber-axes of about the same size are known from Scandinavia. One, 12 cm. long, had been deposited in a Danish gallery-grave (Uby, Sjælland; *Mémoires*, 1896—1901, p. 143, f. 51). The other, 10.5 cm. long, was found in the southern part of the Jutland peninsula.
 684. Bone. — Falköping (Frugården), V.G.; gallery-grave. — MONTELIUS, *Chronol. ält. Br.*, f. 39.
 685. Amber. — Falköping (Vetterlinggården); gallery-grave, see f. 638.
 686. Round disc of burnt clay, probably representing a wheel with four spokes, the symbol of the sun; the other side is plain. A vertical hole for a piece of wood supporting the disc. — See f. 757. — Fjälkinge, Sk.; gallery-grave (see f. 752).
 MONTELIUS, *Hjulet som en religiös symbol i förkristen och kristen tid* (*Nordisk tidskr.*, 1901, p. 1). — *Id.*, *Das Rad als religiöses Symbol in vorchristlicher und christlicher Zeit* (*Prometheus*, 16, 1904—5, p. 241).

687. Human head of amber.

687. Åsarp, V.G.; peat-hog. — *Fornv.*, 1907, p. 117, f. 9.

688. Comb of bone.

688. Comb of bone, with a human head and a head of an animal (dog?); cf. f. 677—9. — Gullrum, G.; dwelling-place (see f. 188). — *Sv. Fornm.-förr. tidskr.*, 10, p. 12, f. 11; *Fornv.*, 1907, p. 115 f. 3; LITHEBERR, *Gott. stenåld.*, f. 164.

689, 690. Stones with cup-shaped depressions («cups») for sacrifice. Similar cups are seen both in moveable stones (f. 556, 557) and in fixed rocks. On dolmens, and other tombs of the Stone Age, they are common, as they are in the «rock-sculptures» of the Bronze Age. Down to our days, the custom has survived of sacrificing in these «fairy-mills», as they are termed by the Swedish people. — Stones with such cups occur also in other lands. They are called by German archaeologists «Schalensteine», by the French «pierres à écuelles», or «à cupules», by the English «cup-marked stones».

MONTELIUS, *A. T.* 13, p. 35 (cups on dolmens in Europe, Palestine etc.). — O. HERMELIN, *Sv. Fornm.-förr. tidskr.*, 2, p. 186 (the «fairy-mills» in Södermanland are by the people considered to be the property of the parish, and they are still used as offering-stones). — F. KELLER, *Die Zeichen- oder Schalensteine der Schweiz* (*Mitteil. d. antiquar. Gesellsch., Zürich*, XVII, 3, 1870). — R. FORBER, *Reallexikon d. prähistor. . . Altertümer*, p. 686 («Schalensteine»). — DÉCHELETTE, *Manuel*, I, p. 615 («les pierres à écuelles»). — J. ANDERSON, *Scotland in Pagan Times, the Iron Age* (Edinburgh, 1883), p. 299. — P. KARGE, *Rephaim, Die vorgeschichtliche Kultur Palästinas und Phöniziens* (Paderborn, 1918), pp. 755, 756 (Schalenvertiefungen).

691—777. Clay vessels. All hand-made, and baked in an open fire. The revolving potter's wheel was not yet known here. Many vessels, as manifest signs show, were produced by placing narrow rings of clay, while somewhat moist, one over the other, and pressing them firmly together. They are but incompletely baked. The Swedish pottery from the Stone Age is neither painted, nor glazed.

As might be expected, most of the vessels are found in dwelling-places or in graves. Naturally the former are broken, as a rule, so that only fragments are now preserved. Of the latter, certain specimens have been preserved till our times more or less complete. The remarkable difference shown between the pottery from the dwelling-places and that from the tombs (or the «megalith-pottery», as vessels of the latter group are usually called, because most of them have been deposited in the large tomb-chambers of stone, «megalith tombs») is due partly to the fact that most examples now known of both groups are from different districts, and in some cases from somewhat different dates.

The pottery from the dwelling-places (f. 691—731 etc.), chiefly found in eastern Sweden and the interior of Skåne, show much affinity with that of the older Stone Age (*Fornv.*, 1913, p. 179). They are usually rather thick, of coarse clay, mixed with gravel or stone splinters, and badly baked. Many have been rather large, with a diameter at the mouth of as much as 30 cm. (*Fornv.*, 1906, p. 101, n.); others are small (f. 694). At

the bottom most of them are like vessels of the older Stone Age (f. 90), round or pointed so as not to be able to stand on a table or the bare ground without support. Flat-bottomed vessels are unusual (*Fornv.*, 1913, p. 173). Differently from the majority of vessels from the older Stone Age, they are often ornamented, especially at the upper part (not seldom, too, on the mouth-edge); but the designs are very simple, commonly small round dots set in rows, produced by pressure from a wooden peg; also linear ornaments engraved with a point or flint flake: horizontal or perpendicular zigzag lines set obliquely, lines crossing each other, which sometimes form figures like network and the like (f. 696). Sometimes the ornamentation is made not by ordinary lines, but by rows of points produced with some instrument like a comb (»Kammtechnik»; LINDQUIST, *Ner. stenåld.*, p. 24). Almost all designs are rectilinear; circles, half-circles and so on are very rare (f. 692, 698 etc.). — A large number of the dwelling-places, where the pottery in question is dug up, belong to an early part of the period of gallery-graves (*A. T.*, 20: 1, p. 23; *Fornv.*, 1913, p. 180). — Similar pottery has been found not only in other Germanic regions, but also in other lands. The pottery from the dwelling-places of eastern Sweden is very similar to that from the other side of the Baltic. — Bits of tomb pottery are found only by exception in dwelling-places (*A. T.*, 20: 1, p. 17; *Fornv.*, 1913, p. 177 [»rope ornament»]).

Tomb pottery, principally from the coast districts of Skåne, Blekinge, Halland, Bohuslän, and Västergötland, is thinner, of finer clay, unmixed with gravel, and rather better baked than that from the dwelling-places, although tomb pottery also is baked at an open fire. The majority has flat bottoms, so that they can stand without support. Many, however, are intended to be hung or carried, as is shown by the holes at the upper edge or in the middle (f. 743—748). Ears are extremely rare; but sometimes a kind of handle without a hole is to be seen (f. 751). Most of the vessels are not large. Certain of them have been preserved more or less complete to our days. The ornaments, sometimes horizontal (f. 745), sometimes perpendicular (f. 747), sometimes angular (fig. 768, »Winkelbandkeramik»), are generally very tasteful, though, like those from dwelling-places, simple and only linear (seldom curved). They were incised or impressed in the clay, before baking. Among the latter should be especially noted those that are impressed with a rope (»rope ornament», f. 750; German: »Schnurkeramik»). In some cases the designs are not produced by pressure from an actual rope, but by pressing a peg surrounded with twined thread, or the like, against the surface of the vessel (FRÖDIN, in *Boh. bidr.*, 8, p. 442). Sometimes this »rope pottery» is not genuine; the ornaments are produced not by pressure of a rope, but by imitation (»false ropes»). — Only by exception has a sort of primitive stamp been used (f. 763). — The incised ornaments are filled up with a white

material (chalk or the like). Several schemes of design, such as the chessboard type (f. 743, 752), rhombs (f. 751), rope ornament (f. 750) and those peculiar for the »band pottery» (f. 768—777), reveal a southern influence. — In the regions east of Sweden nothing is found resembling our megalith pottery. — Most of the tomb pottery belong to the period of gallery-graves: »rope pottery» (*Ymer*, 1906, p. 31) proves to be as early as the earlier part of the period, and »band pottery» (*A. T.*, 20: 1, p. 23) is first found during the latter part of that period. In graves of the cist-period, a sort of simple pottery (f. 732—739) is met with, which is very different from that now being discussed. — Rope and band pottery are equally common in central Europe, but outside Sweden has pottery of the same types as f. 743—748 only been found in Denmark.

Pottery from the dwelling-places. O. FRÖDIN, *En svensk kök-kennmödding* (Ånneröd, Boh.: period of the gallery-graves; *Ymer*, 1906, p. 19). — ALMGREN, *Uppländska stenåldersboplatser* (*Fornv.*, 1906, p. 101). — ID., *Några svensk-finska stenåldersproblem* (*A. T.*, 20: 1, pp. 17, 27 [the origin of the dwelling-place-pottery; a similar pottery is known from the countries on the other side of the Baltic]). — LINDQUIST, *Ner. stenåld.*, pp. 24, 27. — S. ERIXON, *Stenåld. i Blek.* (*Fornv.*, 1913, p. 173). — J. ALLIO, *Die steinzeitlichen Wohnplatz-funde in Finland* (Helsingfors, 1909). — MADSEN, MÜLLER, and others, *Affaldsdynger fra Stenalderen i Danmark*, pp. 142, 156, 169 (dwelling-places from the later Stone Age).

Megalithkeramik. *Ant. suéd.*, f. 93—95. — MADSEN, *Afbildninger*, St. pl. 43—45. — ID., *Gravhøje og Gravfund.* — MÜLLER, *Ordning*, St. f. 217—37. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 131—49.

- 691—701, 703. Åloppe, Upl.; dwelling-place (see f. 133). — *Fornv.*, 1906, pp. 103, 104; 1910, p. 76, f. 79; cf. 1916, p. 176, f. 7, 8; EKHMOLM, *Uppl. stenåld.*, p. 58, f. 12—28.
702. The round bottom of a vessel. — Mjölkbö, Upl.; dwelling-place. — *Fornv.*, 1906, p. 104, f. 26; cf. pp. 11, 2, and the map f. 2.
704. Torslunda, Upl.; dwelling-place from the last period of the Stone Age. — *Fornv.*, 1906, p. 17; cf. p. 2 and the map f. 3.
- 707, 708. Torhamn, Bl.; dwelling-place. — C. WIBLING, *Ymer*, 1899, p. 272, f. 5; EKHMOLM, *Fornv.*, 1913, pp. 186, 188, f. 64.
709. Gullrum, G.; dwelling-place (see f. 188).
- 710, 711, 713—716. Stora Karlsö (»Stora förvar»; see f. 183).
712. Visby (Drotten); dwelling-place; see f. 471.
717. »Comb ornaments». — Säter, Ö. G.; dwelling-place. — *Fornv.*, 1906, p. 256, f. 79 (same vessel as f. 717); NERMAN, *Östergötl. Fornm.-för. Meddel.*, 1911, p. 6; ÅBERG, *Kalm. läns stenåld.*, p. 12; ALMGREN, *A. T.*, 20: 1, p. 38. — Another dwelling-place at Säter, at a distance of 100 m. from this, is from the same time as that of Åloppe.
719. Alvastra, Ö. G.; lake-dwelling (see f. 141).
- 720—730. Lake Ringsjön, Sk.; dwelling-places on the borders of the lake (see f. 759). — (C. D. REVENTLOW), *Mbl.*, 1883, p. 60; 1885, p. 82; 1886, pp. 140, 184; 1889, pp. 77, 107, 145; and *Ymer*, 1905, p. 156; STJERNA, *A. T.*, 19: 2, p. 77, f. 75—78; ALMGREN, *A. T.*, 20: 1, pp. 14, 37, f. 14, 15, 40—42.
731. Miniature. — Siretorp, Bl.; dwelling-place (see f. 660).
732. Finnckumle, V. G.; cist-grave, with daggers and arrowheads of flint etc.
733. Herrljunga, V. G.; cist-grave, with a great number of flint-daggers etc. — MONTELIUS, *Der Orient und Europa*, p. 139, f. 186, 187.
734. Spoon of burnt clay. — Köpinge, Sk. (see f. 971).
735. Riseberga, Sk.; cist-grave, with flint daggers etc. — WIBLING, *Fornv.*, 1908, p. 36, f. 18.
736. Cup; ornaments on the upper part. — Usteryd, Sm.; cist-grave.
737. Cup; ornaments over the whole surface. — Falköping (Ranten), V. G.; gallery-grave (see f. 402).
738. Timmelhed, V. G.; cist-grave, with flint daggers etc. — ARNE, *Fornv.*, 1909, p. 99, f. 20.
740. Siretorp, Bl.; dwelling-place (see f. 660).
741. Rope ornaments. — Kvarnby, Sk.; dwelling-place (see f. 661). — *Boh. bidr.*, 8, p. 407.

742. Stora Karlsö (»Stora Förvar»; see f. 183).
743. Two pairs of small holes near the border. — Kvistofta, Sk.; gallery-grave, in a tumulus called »Åsahögen», with other vessels (f. 745, 746, 751), flint axes (= f. 153—176), amber beads etc. — *Idu. a.*, 9, p. 285; *Ant. suéd.*, f. 95; *Chronol. ält. Br.*, p. 90; *A. T.*, 19: 2, p. 99.
744. Two pairs of small holes near the border. — Gantofta, Sk.; gallery-grave (see f. 645). Found in the lower layer, with other vessels (f. 748, 755), flint axes (= f. 153—176) etc. In the upper layer, pottery with »band-ornaments» had been deposited (f. 756, 777). — *Fornv.*, 1908, p. 266; *A. T.*, 20: 1, p. 11.
- 745, 746. Two pairs of small holes near the border. — The gallery-grave in the »Åsahögen», Sk. (see f. 743). — *Ant. suéd.*, f. 94.
747. Vininge, Sk.; gallery-grave (see f. 767). — *Fornv.*, 1906, p. 105, f. 27.
748. Gantofta, Sk.; gallery-grave (see f. 744).
749. Fjärrestad, Sk.; gallery-grave, with other vessels (f. 754, 757, 762, 763), amber beads etc. — *Fornv.*, 1907, p. 292.
750. Rope ornaments. — Skåne. — *Mbl.*, 1895, p. 94, f. 69.
751. Handle with a very small hole; imitation of a human face. — The gallery-grave of the »Åsahögen», Sk. (see f. 743).
752. Fjälkinge, Sk.; gallery-grave (see f. 686). — *Chronol. ält. Br.*, p. 90, f. 247—249.
753. Cup, with horizontal ornaments. — Östra Värlinge, Sk.; dolmen. — N. G. BRUZELIUS, *Svenska fornlemningar*, 1, p. 25.
754. Fjärrestad, Sk.; gallery-grave (see f. 749).
- 755, 756. Gantofta, Sk.; gallery-grave (see f. 744): 755 in the lower, 756 in the upper layer.
757. Probably a round disc as f. 686. — Fjärrestad, Sk.; gallery-grave (see f. 749).
758. Found on the bottom of the lake of Råbelöf, Sk. (see f. 44). — *Mbl.*, 1903—5, p. 195, f. 258; *Boh. bidr.*, 8, p. 443.
759. Band-ornaments. — Lake Ringsjön, Sk.; lake-dwelling (see f. 720).
760. Tanum, Boh.; dwelling-place (see f. 569).
761. Ånneröd, Boh.; dwelling-place (see f. 566).
- 762, 763. Fjärrestad, Sk.; gallery-grave (see f. 749).
- 764, 765. Slädene, V. G.; tomb, with other vessels, a flint chisel etc. — ARNE, *Fornv.*, 1909, p. 105; *A. T.*, 19: 2, f. 111.
766. Torhamn, Bl.; dwelling-place (»Pyslingebacken»; see f. 501).
767. Vininge, Sk.; gallery-grave (see f. 747).
768. Band-ornaments. — Angerum, Bl.; tombs for one body, with other vessels (f. 775), a boat-shaped hammer (= f. 303—322), flint axes with concave edge etc. — WIBLING, *Mbl.*, 1895, p. 124; *Fornv.*, 1909, p. 102; 1913, p. 199; *A. T.*, 19: 2, p. 112; 20: 1, p. 28.
770. Cup with rounded bottom. — Olofsholm, near Borås, V. G.; with the vessel f. 774, a boat-shaped hammer (= f. 303—322) and flint axe with concave edge (in a tomb). — *A. T.*, 20: 1, p. 28, f. 26; *Fornv.*, 1916, p. 193, f. 8 (the cup restored).
- 771, 772. Östra Herrestad, Sk. — *A. T.*, 20: 1, p. 28, f. 25, 24; *Fornv.*, 1916, p. 194, f. 9.
773. Hvellinge, Sk.; with a skeleton, a boat-shaped hammer (= f. 303—322) etc. Other skeletons have been discovered in the same place. — FRÖDIN, *Fornv.*, 1916, p. 187, f. 5—7 (literature).
774. Olofsholm, V. G.; tomb (see f. 770).
775. Angerum, Bl.; tomb (see f. 768).
776. Probably Skåne (not Boh.).
777. Gantofta, Sk.; gallery-grave (see f. 744).

II. The Bronze Age.

Long before the end of the 4th millennium *copper*, was already used in some Oriental countries. In Scandinavia, it was known in the 3rd millennium. Before the beginning of the 2nd millennium, it was discovered in the Orient that by an admixture of tin with copper an alloy could be obtained which is harder and more elastic than copper. This alloy has been called *bronze*.¹ A tool or weapon of bronze got a sharper edge than one of unalloyed copper. Experience showed that about 90 % copper with 10 % tin gave the best bronze.

From the Orient the use of bronze spread to South Europe and early in the 2nd millennium reached the lands of the Baltic. During the whole era, which is now called the Bronze Age, man here generally made his weapons and tools of bronze; not until the end of this age did they begin to be made of iron. All bronze used in Sweden during this age, considered as material, was imported from other countries, chiefly central Europe, since the Swedish copper mines only became known at a far later date, and because tin ore does not exist in Scandinavia. Besides bronze, the inhabitants of the North at this time had only *one* metal, *gold*.

With few exceptions, all tools, weapons, vessels, personal ornaments, and other objects of bronze and gold which were used in Sweden during the Bronze Age were made in our country. The bronzes are cast, the ornamentation commonly punched. Soldering had not yet been learned.

The objects of foreign origin which have been found here together with the indigenous ones have made it possible to determine the age of the latter, with which they proved to be contemporary.

Within the Bronze Age in the Scandinavian countries and in the northern part of Germany — where the same Germanic people lived — we can now distinguish six periods, of which the last forms a transition to the Iron Age. The objects belonging to the various periods are so arranged on plates 48—100 that it can be seen which types are peculiar to each period.

Period 1	corresponds to the time between the beginning of the 18th and the middle of the 16th century B. C.																	
» 2	»	»	»	»	»	»	middle	»	»	16th	»	»	end	»	»	14th	»	»
» 3	»	»	»	»	»	»	beginning	»	»	13th	»	»	»	»	»	12th	»	»
» 4	»	»	»	»	»	»	»	»	»	11th	»	»	middle	»	»	10th	»	»
» 5	»	»	»	»	»	»	middle	»	»	10th	»	»	»	»	»	8th	»	»
» 6	»	»	»	»	»	»	»	»	»	8th	»	»	end	»	»	7th	»	»

As in the Stone Age, our ancestors were in connection with other peoples during the Bronze Age, by means of commerce, especially the trade in amber. Along the rivers and other natural waterways, amber was transported chiefly to districts round the north of the Adriatic Sea. By this means, a line of communication was opened, not direct but by the agency of the intervening peoples, between the Baltic countries, on the one hand, and Greece and Italy, on the other.

¹ Just as the word »copper» has been formed from the name Kypros (Cyprus), which island was renowned for its richness in copper ore, so the word »bronze» comes from Brundisium (Brindisi), a town on the south-east coast of Italy, noted for its commerce in this metal.

The Bronze Age here in the North attained its climax as early as the second period; this was without doubt due chiefly to the strong influence from the high culture which at the same time flourished in Greece, »the Mycenaean culture». There can also be traced during the whole of the Bronze Age a considerable intercourse between Italy and the North, which especially became of considerable importance after the Etruscan immigration into central Italy towards the end of the 2nd millennium.

During the Bronze Age, as before in the Stone Age, Scandinavian handicraft stood high. Its productions in the 2nd period excel, in simple beauty of form, tastefulness of design, and completeness of technique, all that was made at the same time in the rest of Europe, — excepting Greece, which was then an Oriental rather than an European country. Even during our 5th period the Scandinavian bronzes are admirable, but by that time, after the Etruscan immigration, Italy had gone ahead.

During the first centuries of the Bronze Age, the Swedish tombs were of the same kind as in the Stone Age: the dead were buried without cremation. But before the end of the 2nd period a new custom, originally foreign, began to gain admission — the dead were burned; and long before the end of the 3rd period the burning of corpses had become general here. During the 4th and 5th periods practically all dead bodies were cremated. The inhumation of the dead occurs again, although seldom, during the 6th period, the transition to the Iron Age.

In Sweden, graves and other relics of the Bronze Age are most numerous in Götaland, especially in Skåne. Several remarkable discoveries, however, have also been made in the Mälare-districts. North of the river Dalälven, few bronzes of this age are known; but other finds prove that large tracts of Norrland were also inhabited at that date.¹

S. NILSSON, *Skandinaviska Nordens Ur-invännare, Bronsåldern* (Stockholm, 1862—1864; quoted here: *Bronsåld.*; new edit. 1872). — *Id.*, *Ureinwohner des scandinavischen Nordens. Das Bronzealter* (Hamburg, 1863). — MONTELIUS, *L'Age du bronze en Suède (Congrès de Copenhague, 1869, p. 249; Congrès de Bologna, 1871, p. 288, and Congrès de Stockholm, 1874, p. 488).* — *Id.*, *Minnen från bronsålderns slut i Norden (Mbl., 1880, p. 97).* — *Id.*, *Ett fynd från vår bronsålders äldsta tid (Mbl., 1880, p. 129).* — *Id.*, *Om den nordiska bronsålderns ornamentik (Mbl., 1881, p. 17).* — *Id.*, *Om tidsbestämning inom bronsåldern med särskildt afseende på Skandinavien (Vitterh.-Akad. Handlingar, 30, Stockholm, 1885).* — *Id.*, *Die Chronologie der ältesten Bronzezeit in Nord-Deutschland und Skandinavien (Archiv f. Anthropol., 25, 26, 1898—1900).* — *Id.*, *L'Age du Bronze en Suède (Congrès de Monaco, 1906, p. 235).*

Certain districts in Sweden. MONTELIUS, *Halländska fornsaker från hednatiden (Hallands Fornm.-förs. årsskr., 1869, 1872).*

— *Id.* and EKHOF, *Bohuslänska fornsaker från hednatiden (Boh. bidr.).* — EKHOF etc., *Bohusläns fasta fornlämningar från hednatiden (Boh. bidr.).* — J. A. WITLOCK, *Jordfynd från Värends förhistoriska tid (Stockholm, 1874).* — MONTELIUS, *Fynd från bronsåldern i Kalmar län (Sv. forn.-förs. tidskr., 4, 1880).* — N. ÅBERG, *Kalmar läns bronsålder (Meddel. fr. Kalm. läns Fornm.-förs., IX, Kalmar, 1915).* — G. A. GUSTAFSON, *Gotländska bronsåldersfynd (Sv. Fornm.-förs. tidskr., 6, p. 209).* — MONTELIUS, *Östergötland under hednatiden (ibid., 12, p. 288).* — *Id.*, *Bronsåldern i norra och mellersta Sverige (A. T., 1872—1873).* — S. LINDQVIST, *Från Nerikes sten- och bronsålder (Meddel. fr. fören. Örebro läns museum, 1912).* — ARNE, *Om det forntida Södermanland (Bidr. t. Södermanl. äldre kult.-hist., XIV, 1909).* — E. OLSSON, *Västmanl. under sten- o. bronsåldern (Västerås, 1915).* — EKHOLM, *Upplands bronsålder (Uppl. Fornm.-förs. tidskr., XXVII, 1911).*

The first period.

From the beginning of the 18th to the middle of the 16th century B. C.

In this period may be distinguished:

and earlier part, characterized by such axes as f. 778—789;

and a later part, characterized by such axes, as f. 790—809.

MONTELIUS, *Tidsbestämning*, pl. 1.

778—809. Bronze axes, without shaft-holes, — the oldest very poor in tin. Almost all have flanges, or projecting ledges along the greater part of each side of the faces. At times, however, the flanges are so low that they can scarcely be observed. Such axes are termed »flanged axes» or »flanged celts», because axes

without shaft-holes were formerly termed »celts». Like many stone axes without shaft-holes, these metal axes have been shafted in such a way as to be inserted in the cloven end of a bent wooden handle.

The first copper axes of this kind had, as shown in f. 147—152, exactly the same shape as stone axes. But it was soon found that the new material made possible

¹ Fig. 778—1486 (and everything spoken of pp. 24—51) are all of bronze unless another material is indicated. — »Northern region» = Sweden, Norway, Denmark, and that part of Germany where people of the Germanic race lived.

changes of form which were not to be thought of so long as the use of metal was unknown. On a metal axe, the edge could be made rather broad without the necessity of broadening the whole axe to the same extent; it was thus possible to save material. This had been of no importance when stone was used, but for the costly metal it was of great moment: f. 778—782 show how much could thus be saved. It was also soon discovered that a copper or bronze axe could be flanged, which had not been possible so long as stone was used. These flanges, at first scarcely noticeable but soon gradually higher, prevented the axe when used from turning in its handle. By making the axe-blade somewhat thicker in the middle than elsewhere (f. 780), a sort of stop-ridge was obtained, which also prevented the axe from pressing deeper into the shaft when the blow was struck. — The oldest of these metal axes are of unmixed copper, but the longer this evolution advanced, the more was copper mingled with tin; so bronze supplanted copper. Such axes as f. 779, 781, 783 and 787 are very poor in tin, of which they contain only up to one per cent. The original of f. 780 contains some few per cent, but the axes with flanges and a beginning stop-ridge about 10 % (*Chron. ält. Br.*, p. 22). Towards the end of the 1st period, the «flanged axes», which then had rather high flanges, become narrower than before, and had almost the same breadth at the top as at the edge (f. 805).

Bronze axes with flanges were common in Italy. The influence of that country probably made them general also in Europe north of the Alps. But in the Pyrenean peninsula they are either lacking or extremely rare, and they are not found at all either in the mainland of Greece or on the Ægean islands; this is also the case in Egypt, Asia Minor and Babylonia.

Such axes are general in Sweden, as in other parts of Scandinavia and in North Germany. Most axes of this kind found in our country were made here, but several have arrived hither from abroad: some (as f. 786, 793, 794, 802, 803) from England, some (as f. 796, 797, 799, 800) from central Europe, and some (as f. 798, 801 and 804) from Italy.

Some bronze axes of this kind (as f. 817) have been religious symbols; cf. f. 680, 864, 883, 884.

Evolution: MONTELIUS, *Die typologische Methode*, p. 21. — NILSSON, *Bronsåld.*, f. 30, 31. — *Ant. suéd.*, f. 137, 140—143. — For distribution in Sweden, see the literature p. 23. — RYGH, *Norske Olds.*, f. 95. — *Aarsberctn.*, 1879, p. 229, pl. IV. — WORSAAE, *Nord. Olds.*, f. 177—180. — MADSEN, *Afbildn., Br.*, I (*Suiter*), pl. 21. — MÜLLER, *Ordning, Br.*, f. 127—131. — *Id.*, *Aarb.*, 1891, p. 220. — MESTORF, *Alterth. Schlesw.-Holst.*, pl. XXII. — W. SFLIETH, *Inventar d. Bronzealterfunde Schlesw.-Holst.*, f. 2—4, p. 15. — BELTZ, *Althert. Mecklenb.*, pl. 19. — LINDENSCHMIT, *Alterth.*, I:1, pl. 3. — MONTELIUS, *Die Chronologie d. ältesten Bronzezeit in Nord-Deutschland und Skandinavien*, p. 39.

778. Hyndevad, Söd.; on the bottom of the river »Eskilstunaån». At the same place, several objects from the Stone and the Bronze Age (see f. 1311, 1368), and from later periods have been found. — *Fornv.*, 1909, p. 234.

779. No flanges; the two faces are convex rather than concave. Poor in tin: 97.09 % copper, 1.16 tin, 0.07 nickel (and iron), 1.68 bismuth etc. — Fjälke, Sk. — *Chron. ält. Br.*, p. 21, f. 52.

780. Flanges almost invisible; the faces taper a little from the middle (the beginning of a transverse ridge); 94.92 % copper, 4 tin, 0.33 nickel, 0.85 bismuth etc. — Tanum, Boh.; found with a similar axe (cf. f. 883). — *Chron. ält. Br.*, p. 57, f. 168.

781. Flanges almost invisible. Very poor in tin: 98.94 % copper, 0.65 tin. — Skåne. — *Chron. ält. Br.*, p. 21, f. 53.

782. Flanges almost invisible; edges rounded and everted. — Skåne. — *Chron. ält. Br.*, p. 81, f. 213 (cf. f. 201, Saxony, and 207, Denmark).

783. Flanges almost invisible. Very poor in tin: 97.62 % copper, 0.70 tin, 0.47 nickel, 1.21 silver etc. — Munktorp, Vstml. — *Chron. ält. Br.*, pp. 83, 86, f. 231.

784. The flanges are very slight; 91.37 % copper, 8.09 tin (no nickel). — Torhamn, Bl. — *Chron. ält. Br.*, p. 83, f. 223.

785. The flanges are very slight; edge everted. — Möjebro, Upl. — EKIHOLM, *Uppl. bronsåld.*, p. 221, f. 3.

786. Made in England. Large (length: 26.5 cm.), flat, with a broad edge; 89.76 % copper, 6.75 tin, 2.36 antimony, 0.15 nickel, 0.98 silver etc. — Skifvarp, Sk.; found with 2 large axes = f. 789. — *Chronol. ält. Br.*, pp. 56, 122, f. 294, 295.

787. The flanges are very slight; broad edge. Very poor in tin: 98.60 % copper, 0.52 tin. — Skåne. — *Chron. ält. Br.*, p. 21, f. 54.

789. The flanges are very slight; stop-ridge almost invisible; 96.79 % copper, 0.04 (!) tin, 1.41 nickel. — Pile, Sk.; with 10 axes of the same type, 2 flat axes, 5 daggers (f. 823, 832), 1 hraeet (f. 845), 1 spiral-ring (f. 842), other riugs (f. 846), all of bronze. Several objects are incomplete. Total weight: 5.86 kilogr. — *Chron. ält. Br.*, p. 54. Cf. MÜLLER, *Ordning, Br.*, f. 128. — One of the flat axes (= f. 786; see *Chron. ält. Br.*, f. 154) was made in England and rich in tin: 89.08 % copper, 10.87 (!) tin; no trace of nickel. In England, with its richness in tin, the bronze with about 10 % tin is contemporaneous with the Scandinavian bronzes that are poor in tin. The English copper-ores do not contain nickel, as do the ores in Central-Europe.

790. Flanges. — Torstunda, Upl. (hoard); with another axe (f. 814) and a spear-head (f. 822). — *Chron. ält. Br.*, p. 58.

792 (not 79). Stop-ridge; on both faces, below the stop, an axe of the same form is traced in points. — Skåne. — *Ant. suéd.*, f. 143.

793 and 794. Both made in England. Arched and broad edge; the sides are fluted or worked into a sort of longitudinal facets. — Lilla Bedinge, Sk.; found together, near the sea-shore (cf. f. 883). — *Chron. ält. Br.*, p. 56.

795. Flanges; the upper part of the axe narrow, the edge semicircular (breadth: 15.5 cm.). Big (length: 36.5 cm.), well made, of an elegant shape and quite symmetrical; beautiful patina. — Knifvinge, Ö.G. — *Chron. ält. Br.*, p. 84; MONTELIUS, *Meisterstücke*, pl. 3 f. 1.

796. From the Continent. Cf. f. 800. — Frommesta, Ner. — LINDQVIST, *Ner.*, f. 70.

797. From the Continent («Bohemian type»). — Orebäcken, Sk.; beneath a block of stone, with a similar axe (f. 799) and a chisel (f. 810) of bronze. — *Chron. ält. Br.*, p. 56.

798. Made in Italy. — Skegrie, Sk.; beneath a block of stone, with other axes (1 = f. 799), 2 spear-heads etc. — *Chron. ält. Br.*, p. 56.

Many Italian axes of this type — with a rounded incision at the hilt end — have been found north of the Alps. We know of at least 4 from Sweden (f. 798, 801, 804) and an axe found at Englie, Sk.). Most of them were evidently brought here along the Elbe, through Bohemia, where several have been found. — RICHLY, *Die Bronzezeit in Böhmen*, pl. XV, XXVIII, XXXVI, XLI.

799. From the Continent. — Depot at Orebäcken, Sk. (see f. 797).

800. From the Continent (cf. f. 796). — Olefsborg, Sm. — *Chron. ält. Br.*, p. 125.

801. Made in Italy (cf. f. 798). — Skåne. — *Chron. ält. Br.*, f. 211; cf. MONTELIUS, *Die vorklass. Chronologie Italiens* (1912), pl. 2 and VI.

802. Made in England. — Fjälkinge, Sk.; hoard: with a similar English axe, an Italian axe (f. 804), a Swedish axe (f. 805), all of bronze, and 2 gold-spirals (f. 841). — MONTELIUS, *L'Age du Bronze en Suède (Congrès de Monaco, 1906, II, p. 267)*; *Id.*, *The Chronology of the British Bronze Age (Archæologia, LXI, 1908, p. 60)*; *Id.*, *Die vorklassische Chronologie Italiens*, p. 181.

803. Made in England. — Skåne. — *Chron. ält. Br.*, f. 212.

804. Made in Italy (cf. f. 798). — Fjälkinge, Sk. (hoard: see f. 802).

805, 806. Axes of this type (narrow and almost everywhere of the same breadth) belong to the end of the 1st period of our Bronze Age.

805. Fjälkinge, Sk. (hoard; see f. 802).

810. Chisels of bronze with low flanges along the upper part; no stop-ridge. This type of chisel occurs in Bohemia.

RICHLY, *Die Bronzezeit in Böhmen*, pl. XXXIII.

810. Orehächen, Sk. (hoard; see f. 797).

811—816. Massive heavy bronze axes with a large shaft-hole that is not placed up at the top. Almost the same shape as the stone axes with shaft-holes common at the close of the Stone Age. Often ornamented with punched rectilinear designs. Sometimes an elevated ridge round the shaft-hole is seen, projecting on one side or on both sides (f. 811). — About 20 such bronze axes are now known in Sweden from the 1st period. In other parts of the Scandinavian region, bronze axes like f. 811—815 also occur. Some seem to have been deposited in tombs. — Outside this region, similar axes are met with in the countries near the Danube (Hungary). There too are found, as round the Mediterranean and in the Orient, copper and bronze axes with shaft-holes near the butt end.

NILSSON, *Bronsåld.*, f. 46 (2 axes found together at Skurup, Sk.). — *Ant. suéd.*, f. 130. — MONTELIUS, *Tidsbest.*, pl. 1 f. 3. — *Id.*, *Chron. ält. Br.*, p. 25. — *Aarsberetn. of Foren. t. norske for-tidsm. bevar.*, 1879, p. 230, pl. V f. 22. — MÜLLER, *Ordning, Br.*, f. 139. — *Aarbøger*, 1891, p. 224, no 341 (9 axes found in a peat-bog). — MESTORF, *Alterth. Schlesw.-Holst.*, f. 242. — SPLIETH, *Inventar*, f. 5, p. 11. — BELTZ, *Alterth. Mecklenb.*, pl. 20 f. 15. — LINDENSCHMIDT, *Alterth.*, I: 4, pl. 2 f. 1 (Hannover).

The shaft-hole distant from the top; same shape as the stone axes: PULSZKY, *Die Kupferzeit in Ungern*, p. 58 (copper); cf. p. 61. — *Chron. ält. Br.*, p. 93, f. 253. — Museum of Trieste: some axes of this type.

The shaft-hole close by the top: PULSZKY, l. c., p. 71:

Tombs: *Chron. ält. Br.*, p. 67, nos 97 and 101.

814. Torslunda, Upl. (hoard; see f. 790).

817. Large thin bronze axes, which could be used neither as weapons nor tools, but in all probability were intended for sacred purposes (cf. f. 680, 864, 883, 884). Similar bronze axes are also found in Italy.

MONTELIUS, *La civilisation primitive en Italie*, pl. 77, 82.

817. Ornamented; broad edge. Remains of a socket, with a rivet. — Borreby, Sk. — *Ant. suéd.*, I: 137; *Chron. ält. Br.*, p. 81, f. 214.

818, 819. Flint daggers with broad blade, and hilt of no specially good work which does not widen at the end; a degenerated form of the flint daggers common during the last period of the Stone Age, with fine hilts broader towards the end (f. 432). This type (f. 818, 819) often occurs in tombs of the 1st period of the Bronze Age.

LINDQVIST, *Ner.*, p. 38, f. 72. — SPLIETH, *Inventar*, p. 14, f. 22.

819. Allatorp, Bl.; cist-grave.

820—822. Spear-heads of bronze with a socket for the shaft. The oldest spear-heads of metal had, like those of stone, a narrow tang for fastening them

into the handle. But as early as the beginning of the 2nd millennium they began to be provided with a socket. Such specimens appear at the close of the 1st period of the Scandinavian Bronze Age.

Tang: *Chron. ält. Br.*, f. 392 (Greece).

Socket: *Chron. ält. Br.*, f. 139 (Holstein), 151 (Jutland). — BELTZ, *Alterth. Mecklenb.*, pl. 19 f. 9, p. 156 (23 spear-heads and a flanged axe).

822. Torslunda, Upl. (hoard; see f. 790).

823—826. Bronze blades to short daggers or »halberds» (the blade was fixed in a long perpendicular shaft; see f. 835, 836). They very often have a rounded base; they are two-edged, generally broad, triangular, often large, though not specially long compared with their breadth. The type turns up during the 1st period, but survives, slightly changed, into the 2nd; during the latter, many daggers had such blades, with an oval pommel of bronze (f. 897). These blades have no tang, but were fixed with two or more rivets to the hilt, which was of wood, bone or horn. In the »halberds», the rivets are sometimes very thick. Such blades — of copper or bronze — occur also in other parts of the Northern region; even outside it, similar weapons have been used.

Blades, of copper or bronze, probably belonging to short daggers, with rivets, no tangs (1st or 2nd period): *Ant. suéd.*, f. 168 (rivets, with separate heads; see f. 829), 169. — ÅBERG, *Kalm. l. bronsåld.*, p. 13, f. 5, 6. — *Chron. ält. Br.*, f. 150, 183, 185 (Scandinavian region), 318 (Carniola), 352 (Egypt; copper, with one rivet), 393 (Greece), 402 and 404 (Mycenae), 457 and 458 (Sicily), 448 (England). — MADSEN, *Afbildn., Br.*, I, pl. 11 f. 18. — BOYE, *Eggekister*, pl. II, X, XVII, XXI, XXIII, XXVII. — MÜLLER, *Ordning, Br.*, f. 21—23, 26. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 159, 161, 167. — SPLIETH, *Inventar*, f. 6—8. — BELTZ, *Alterth. Mecklenb.*, pl. 20 f. 10, 11; pl. 25 f. 20, 21. — MONTELIUS, *Vorklass. Chronol. Ital.*, pl. 1 f. 3, 4, 6, 7; pl. 4 f. 11 (very short tang); pl. II, VI, VII—IX.

823. Pile, Sk. (hoard; see f. 789).

824—826. »Halberds»: the blade has been fixed perpendicularly in a long shaft; stout rivets. — *Chron. ält. Br.*, f. 217, 218.

827—834. Long daggers and short swords of bronze; double-edged, some of them have bronze hilts. The lines of ornamentation on the blade, resembling a large triangle, prove that these weapons are descendants from the broad bronze daggers common in Italy during the 1st period of the Bronze Age: some such daggers have been found in northern Germany. When the hilt is of bronze, it has been cast separately and riveted to the blade. The rivets on the daggers from the end of the 1st period have their heads not infrequently made from separate pieces (»ring rivets»). — Daggers and short swords of this kind have been found not only in Götaland but also in the provinces round Lake Mälaren; similar weapons occur in other parts of Scandinavia and North Germany, as in central Europe and Italy.

Chron. ält. Br., p. 126. — MONTELIUS, *Die typologische Methode*, p. 32. — *Ant. suéd.*, f. 168 (rivets with separate heads; Södermanl.). — MÜLLER, *Ordning Br.*, f. 156—158. — *Aarbøger*, 1909, p. 6, f. 4—10.

827. Elinelund, Sk.; with a skeleton.

828. Hollow hilt. — Karlevi, Öl. — *Chron. ält. Br.*, p. 84.

829. Undulating, incised lines, filled with resin; ring-rivets. — Vretha Kloster, Ö. G. — *Chron. ält. Br.*, f. 198.

830. Bragby, Upl.; peat-bog. — EKHOLM, *Fornv.*, 1916, p. 158. Cf. *Chron. ält. Br.*, p. 130.
831. Hilt covered with four narrow lamels of bronze, bound together with a ring of bronze; ring-rivets. — Lekaryd, Sm. — *Mbl.*, 1883, p. 178, f. 5.
832. Pile. Sk.; hoard (see f. 789).

834. Daggers with bronze hilts, cast in one piece with the blade and terminating in a rounded pommel, with no projection in the middle. The parallel lines of the hilt are copied from the narrow binding which was wrapped round the wooden hilt of the flint daggers.

Chron. ält. Br., f. 60 (flint dagger), 61 (copper, of the same type as f. 60), 104, 134. — MÜLLER, *Aarbøger*, 1909, p. 1, f. 2.

834. Very poor in tin: 96.58 % copper, 1.02 tin, 0.56 antimony. — Säter, Dal. — *Chron. ält. Br.*, f. 229.

835, 836. »Halberds» of bronze with shaft partly of the same metal (see f. 823—826). In this period — when it was not yet possible to cast long sword-blades which enabled the user to reach the enemy at a longer distance than with the daggers — a dagger blade was sometimes fixed at a right angle to a long shaft. The blade of such a weapon, called by the archaeologists a »halberd», was usually fastened with three stout rivets, ending on both sides in large conical heads. Such weapons have been used not only within the Scandinavian region, but also in several other countries. The shaft was commonly wooden, but in North Germany it was often of bronze, at least partially. — In the Bronze Age, the blades were of bronze, but such weapons with blades of copper or stone had already occurred before the beginning of that age. Both in Sweden and elsewhere »halberds» fell out of use towards the end of the 1st period of the Bronze Age. They became superfluous, when weapons with long blades (swords) were made.

NILSSON, *Bronsåld.*, f. 12. — MONTELIUS, *Chron. ält. Br.*, (1900) p. 27 (list of halberds with bronze-handles), 206 (Italy), 219 (Spain). — WORSAAE, *Nord. Olds.*, f. 143. — MADSEN, *Afbildn., Br.*, I, pl. 11. — MÜLLER, *Ordning, Br.*, f. 155 and 156. — *Id.*, *Aarb.*, 1909, p. 4, f. 1. — *Archiv. f. Anthrop.*, XXV, p. 467. — *Jahresschrift (Halle)*, 4, pl. II—IV (the big hoard of Dieskan); 5, pl. II, IV. — MONTELIUS, *Civil. primit. en Italie*, pl. 127 (halberds with long handles, on rock-carvings in North-Italy). — G. COFFEY, *Irish Copper halberds (Proceedings of the R. Irish Acad., XXVII, p. 94)*. — SIRET, *Les premiers âges du métal dans le Sud-Est de l'Espagne*, pl. 32 (remains of the wooden handle). — H. SCHMIDT, *Der Dolchstab in Spanien (Opuscula, p. 69; flint)*.

835. Made in Germany. Hilt partially of bronze; 3 large rivets imitated. — Klagstorp, Sk. — *Chron. ält. Br.*, pp. 29, 83.
836. Made in Germany. Hilt of bronze; 3 large rivets imitated. Both sides of the blade have been plated with gold. — Årup, Sk. — *Chron. ält. Br.*, pp. 29, 83.

837. Single-edged weapon, resembling a sabre of bronze (poor in tin), with its point bent back; blade and hilt cast in one piece. No other metal weapon of the same shape is known in Scandinavia, nor in the rest of Europe. But in Denmark has been found a similar, though shorter, specimen of flint, which must be an imitation of such a weapon; it is made with great skill. In old Egypt there occur single-edged blades like sabres, with points bent back. In western Asia similar swords are also found, but the point is not bent back; they date from the 2nd millennium B. C.

Denmark (flint): WORSAAE, *Nord. Olds.*, f. 51. — MADSEN, *Afbildn., St.*, pl. 34 f. 1. — MÜLLER, *Ordning, St.*, f. 195.

Egypt (bronze): MONTELIUS, *L'âge du Bronze en Egypte (L'Anthropologie)* 1890, pl. I and II f. 6, 13 (wall-paintings), f. 7, 14 (bronze). — Western Asia: II. VINCENT, *Canaan* (Paris, 1907), p. 231, f. 163, 164 (bronze: Palestine and Assyria). — II. HILDEBRAND, *Mbl.*, 1876, p. 272, f. 47.

837. Norre, Ö. G. — *Chron. ält. Br.*, f. 227.

838, 839. Bronze pins. — At the beginning of the Bronze Age there occur in Scandinavia, North Germany and Bohemia, bronze pins with large almost globular heads, pierced as f. 838; some are twisted. Cf. the bone pins f. 589—594, with a head pierced in a similar way. — Pins flattened at the top like f. 839 (in Germany called »Scheibennadeln») have been found in various European lands together with objects from the beginning of the Bronze Age; the upper part is not unfrequently rolled up, sometimes rectilinear (»Rudernadeln»). Some, as f. 839, bear designs characteristic of that epoch (cf. *Chron. ält. Br.*, p. 73).

After the end of the 1st period, the upper part of such pins became large and circular; sometimes it is ornamented with spirals (LINDENSCHMIT, *Alterth.*, II: 3, pl. 4); similar pins have also been used in the Caucasus.

Pins with round perforated head: *Chron. ält. Br.*, p. 98, f. 131, 144, 187 (Scandinavia and northern Germany), 259 (Bohemia; twisted). — PIC, *Čechy předhistorické*, I, pl. XIX f. 18 (Bohemia). — *Westdeutsche Zeitschr.*, XX, f. 195.

Pins with flat head: PIC, *l. c.*, I, pl. XIV f. 1. — LINDENSCHMIT, *Alterth.*, V, p. 6, f. 39 (very wide and richly ornamented; Rhine-Hesse). — *Westdeutsche Zeitschr.*, XX, pl. 8 f. 7, 8; pl. 13 f. 3, 5—10; pp. 195, 198 (note; literature), 352. — MÜLLER and REIMERS, *Alterth. Hannover*, pl. X f. 82 (later, with spirals). — *Mittel. d. anthrop. Ges.*, Wien, XXXII, p. 112. — *Mittel. d. ant. Ges.*, Zürich, XXIV: 3, pl. II, III. — HEIERLI, *Urgesch. d. Schweiz*, f. 229, 234. — DE MORTILLET, *Musée préhist.*, f. 728, 729 (north Italy and Switzerland). — MONTELIUS, *Civil. primit. en Italie*, pl. 3 f. 23. — VIRCHOW, *Das Gräberfeld von Koban*, pl. V and VI (Caucasus), p. 34, f. 14, 15 (Germany).

840. Bridle bars of horn or bone from a very early part of the Bronze Age have been met with in several parts of Europe.

SCHNITZER, *A. T.*, 19:1, p. 36 (literature). — MONTELIUS, *Mbl.*, 1887, pp. 160, 164, f. 88 (modern bridle only of wood and horn, Sweden). — *Aarb.*, 1900, p. 240 (antler). — DE MORTILLET, *Musée préhist.*, pl. LXXXV. — KELLER, *Pfalz.*, 7, pl. I f. 20, 32, pl. II f. 29, 35 (found in pairs).

840. Antler. — Kvarnby, Sk. (see f. 661); dwelling-place from the beginning of the Bronze Age. — *A. T.*, 19:1, p. 26, f. 33.

841. A spiral ring of thin double gold thread, with the pointed ends twisted together. See f. 1303.

841. Fjälkinge, Sk.; hoard (2 rings; see f. 802).

842. Open armlet of round bronze, which is bent forward and backward several times.

842. Pile, Sk.; hoard (see f. 789).

843, 844 (see 846). Open rings of a massive, round bar of bronze (or copper with very little tin). Such rings are sometimes of a size to fit the neck, sometimes (as f. 843, 844) they have been worn on the arms, or possibly round the legs. They are often very thick and heavy; thickest in the middle, they become somewhat thinner towards the ends, which are cut off abruptly or slightly rounded, sometimes widened a little. Generally smooth and without decoration. They are not

only personal ornaments of the simplest, most primitive kind, but it seems that many have been considered only as ingots. Judging from their colour, they are often of pure copper or bronze with very little tin.

Chron. ält. Br., pp. 55, 84 (Sweden), 52 (Denmark), 47, 49 (Mecklenburg), 40, 41 (Saxony), 39 (Silesia). — *Nordiske Fortidsminder*, I, pl. XVI (Denmark). — BELTZ, *Altert. Mecklenb.*, pl. 21 f. 16 (collar), 19 and 20 (bracelets). — Pič, *Čechy předhistorické*, I, pl. V—IX, XIII etc. (collars and bracelets; Bohemia).

844. With linear ornamentation. — Hyllie, Sk.; stone-cist, 2.40 m. long (not covered with a barrow). The ring surrounded the right fore-arm of an extended skeleton. — *Chron. ält. Br.*, p. 68.

845. Bracelets of bronze, cast, open, broad, with parallel borders and straight ends; several parallel ridges or raised rims going the whole length. These bronze bracelets are evidently copies of spiral arm-rings; as they were cast so that the spiral coils were firmly united to each other, they were usually made open in order to facilitate encircling the arm (*Chron. ält. Br.*, f. 76, 77; cf. f. 254, not open). — At the beginning of the Bronze Age, bracelets of this type were sometimes worn on each arm here in Scandinavia, north Germany, Bohemia and Bosnia. In Denmark has been found such a bracelet of thick gold (*Chron. ält. Br.*, f. 204). Similar, though smaller, bracelets were also used during the second period (f. 966); cf. the necklaces f. 958—965, which are likewise copies of several thin rings cast together.

Chron. ält. Br., f. 136 (Mecklenburg), 87 (Silesia), 256 (Bosnia); f. 204 (Denmark; gold). — BELTZ, *Altert. Mecklenb.*, pl. 21 f. 23 (»Manchettering»), p. 158.

845. Pile, Sk.; hoard (see f. 789).

846. Bronze collar (see f. 843). — Pile, Sk.; hoard (see f. 789).

847. Great ornament of bronze, probably for an altar of wood. The large round plate (42 cm. in diameter) is cast separately; on its upper surface 5 concentric circles of rays are punched, intended to suggest the radiant sun. This plate rests on a crown-shaped ring, composed of ten separately cast parts, riveted together; each part terminates in a four-spoked wheel, the symbol of the sun. The rivets are »ring-rivets», with large conical heads, separately cast. No such specimen is known from Scandinavia, but at Haschendorf near Ödenburg in Hungary a perfectly similar work in bronze has been found (in 1914), likewise with 10 four-spoked wheels and a large plate, on the upper side of which 7 circles of rays are seen; it was obvious that the ornamented side had been turned up and that the wheels turned downwards. There can be no doubt that the original of f. 847 was imported hither from the south.

Ant. suéd., f. 254. — *Chron. ält. Br.*, f. 199. — *Der Haschendorfer Bronzefund* (*Mitteil. d. Anthropol. Ges. in Wien*, XLIV, 1914, p. 316).

847. Balkåkra, Sk.; near Ystad; peat-bog (found in 1847).

The second period.

From the middle of the 16th to the end of the 14th century B. C.

In this period there can be distinguished:

an earlier part characterized, among other things, by such axes as f. 861—863; during this time we meet in Scandinavia such fibulæ as f. 969—971;

and a later part characterized, among other things, by such fibulæ as f. 973—976.

Fibulæ as f. 972 and 1024 belong to the transitional time between the 2nd and 3rd periods.

MONTELIUS, *Tidsbestämning*, pl. 2.

848—860. Bronze-axes with stop-ridge on each side — previously termed »palstaves». To prevent the axe blade penetrating the handle at a heavy stroke, the flanged axes of the 1st period were often somewhat thickened in the middle; sometimes a kind of low stop-ridge was formed there (f. 794). The stop-ridges grew more common during the transitional time between the 1st and the second period (f. 848); and ere long they became high and rectilinear, forming a right angle with the axe-blade (f. 849—860); such axes were firm in their

shafts, because the flanges prevented all side-slipping, and the high stop-ridges obviated the penetration of the handle by the axe.

Many such axes (f. 849 etc.), which are simple and without ornament, have clearly been intended for tools. Proofs of long usage have often been seen on them: the edges have been reground, and evidently in many cases several times; sometimes the blade itself is almost entirely worn away (f. 853). Several hoards have contained axes of this sort, but such axes are scarcely ever found in tombs. — Other axes with stop-

ridges (f. 860), which are especially fine in shape and tastefully decorated, were weapons. They are found alike in tombs and hoards.

Bronze-axes with stop-ridges are common in Scandinavia and northern Germany. In other European lands as well, especially Italy, France and England, they are general, though more or less different from the northern types.

Typolog. Methode, pp. 29 (evolution in Scandinavia), 23 (in Italy).

V. BOYE, *Fund af Egekister fra Bronzealderen i Danmark* (Kbhvd, 1896), pl. XV f. 11, p. 74 (crooked handle of ash-wood).

EVANS, *Bronze Implem.*, p. 73. — MONTELIUS, *L'Anthropologie*, 1901, p. 615 (France). — DÉCHELETTE, *Manuel*, 2, p. 249. — HAMPEL, *Bronzezeit in Ungarn*, pl. VIII. — MONTELIUS, *Vorklass. Chronol. Italiens*, pl. 5—9, XIV, XVII, XXIII, XXX, XL.

848. A type characteristic for the transition between the 1st and the 2nd period. — Västra Alstad, Sk.

849. Stockhult, Sk.; hoard found beneath a great block of stone (in 1900): with 2 other axes with stop-ridges (f. 853, 859), 3 axes with shaft-holes (f. 866, 872, 882), a spear-head, 2 large round belt-plates (f. 953), other belt-ornaments (1 = f. 941; 35 = f. 949), 3 necklaces (f. 961), 2 small human figures (f. 981), some bracelets and spiral finger-rings, all of bronze.

851 and 856. Intermediate forms between this type and the fig. 860.

854. No flanges at the upper part of the axe; 2 rivets. — Ryssberget, Sk. — MONTELIUS, *Methode*, p. 29, f. 57.

857—859. The axes of this class which were utilized as tools, are almost of uniform breadth, slightly wider at the edge than in the middle; on the lower half of both broad sides two depressions running the whole length are seen. The type is general not only in the Scandinavian peninsula (the National Museum at Stockholm possesses more than 100 from Sweden) and in Denmark, but also in northern Germany; but outside this region exactly similar axes are not met with, otherwise than possibly by exception. Resembling types are however found (see f. 848—860).

For distribution in Sweden, see the literature, p. 23. Cf. f. 849, 850, 853, 855. — *Ant. suéd.*, f. 117 (Nerike) — *Mbl.*, 1893, pl. 8 f. 4. — *Sv. Fornm.-f. tidskr.*, 12, p. 296, f. 153 (Östergötland). — *Upl. Fornm.-f. tidskr.*, 6, p. 227, f. 14 (Upland). — MONTELIUS, *Methode*, p. 29, f. 55 (Sweden). — *Id.*, *Kulturgesch. Schwedens*, p. 105, f. 179 (Gotland). — *Opuscula*, p. 80, f. 2 (Gotland). — ÅBERG, *Kalm. l. bronsåld.*, p. 24, f. 21 (Öland).

Aarsber., 1877, pl. VII f. 38. — MADSEN, *Afbildn., Br.*, I, pl. 22 f. 13; II, supplement-pl. I f. 3, 4 (moulds). — *Annaler f. nord. Oldkynd.*, 1853, pl. I (rich hoard). — MÜLLER, *Ordning, Br.*, f. 132, 133. — *Aarb.*, 1891, pp. 220—224 (hoards). — MESTORF, *Alterth. Schlesw.-Holst.*, f. 213, 221. — SPLIETH, *Inventar* (Schlesw.-Holst.), f. 27. — BELTZ, *Alterth. Mecklenb.*, pl. 22 f. 3, 4, p. 169. — LINDENSCHMITZ, *Alterth.*, I: 1, pl. 4 f. 26—30 (Hannover). — *Verhandl. Berl. Anthr. Ges.*, 1882, pl. XIII f. 1—4, p. 125 (Spandau, near Berlin). — H. SCHUMANN, *Die Kultur Pommerns in vorgeschichtlicher Zeit* (Berlin, 1897), pl. 2 f. 17. — A. LISSAUER *Die prähist. Denkmäler d. Prov. Westpreussen* (Leipzig, 1887), pl. III f. 22.

858, 859. Stockhult, Sk.; hoard (see f. 849).

860. This fine type of axes was intended for weapons. They are tastefully ornamented in spirals and fine zigzags. Many are found in southern Sweden (especially Skåne, Blekinge, Öland), — the National Museum possesses 25 specimens, — Denmark and Slesvig-Holstein; in other parts of the Germanic sphere the type is rare, and outside it, unknown.

For the evolution of this type, see MONTELIUS, *Die typol. Methode*, p. 28.

NILSSON, *Bronsåld.*, pl. 2 f. 18, 19. — *Ant. suéd.*, f. 116 (Öland). — ÅBERG, *Kalmar läns br.*, f. 11, nos 48, 50, 70, 71, 89,

93. — *Mbl.*, 1890, p. 156, f. 58 (Skåne, our f. 860); 1892, p. 8, f. 1 (Blekinge); 1900, p. 143, f. 23 (Skåne). — MONTELIUS, *Die typol. Methode*, f. 57 (Blekinge; our f. 854). — WORSAAE, *Nord. Olds.*, f. 181, 183. — MÜLLER, *Ordning, Br.*, f. 38. — *Id.*, *Aarb.*, 1891, pp. 194—199; 1909, pp. 53, 59, 70. — *Annaler f. nord. Oldkynd.*, 1853, pl. II (rich hoard). — MADSEN, *Afbildn., Br.*, I, pl. 22 f. 8—10; II, pl. I, II. — BOYE, *Fund af Egekister*, pl. XXII f. B 6. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 216, 217. — SPLIETH, *Inventar*, f. 26, p. 30. — BELTZ, *Alterth. Mecklenb.*, pl. 22 f. 2, p. 128.

861. Flanged axes of bronze; see f. 805—809.

862, 863. Bronze axes resembling f. 861, but with a socket for the handle. The wooden handle was originally wrapped with bronze wire, which formed a cylinder, but this was later replaced by a socket, on which the bronze wire wrapped spirally is imitated (f. 863; see f. 877). Below the wrapping there can be seen the end of the wooden handle, also copied in bronze.

MONTELIUS, *Methode*, p. 30, f. 61, 62 (Denmark).

864. Bronze axe with stop-ridges, probably designed for religious purposes (see f. 817). Lower part of the blade very broad; no edge.

864. Genarp, Sk.

865. Stone axes, showing in shape or ornamentation the influence of bronze axes. Here in Scandinavia, as in other regions, stone axes have been found which are imitations of copper or bronze axes. The patterns (as in the case of f. 865) being characteristic of the 2nd period of the Bronze Age, we here have an evidence that stone axes were still used at this date. In many countries they were in use even later.

SALIN, *Uppland*, 1 (Upsala, 1905), p. 173, f. 39. — WORSAAE, *Nord. Olds.*, f. 109; see our f. 868.

866—874 (see 880—884). Bronze axes with shaft-holes, which in many cases project on both sides. In one axe (f. 867), the hole is placed in the middle, and there are edges at both ends. Almost always, however, the hole is placed near the butt end, which is commonly round and convex (in the shape of a hat). The edge is broad, sometimes very wide (f. 833, 834). Many axes are ornamented with punched designs, commonly of spirals or concentric circles. — Most of these axes (f. 866—874, 880—882) are massive; many very heavy. But some (f. 883, 884) are made of very thin bronze, cast over a core of clay, still preserved. — Many bronze axes with shaft-holes of this period are known in Sweden. In other parts of Scandinavia, especially in Denmark, and in North Germany, many are found. Outside this region no similar specimens are met with.

RYGH, *Norske Olds.*, f. 92. — WORSAAE, *Nord. Olds.*, f. 112, 113. — MADSEN, *Afbildn., Br.*, I, pl. 2, 3. — MÜLLER, *Ordning, Br.*, f. (96), 152—154. — *Annaler f. nord. Oldk.*, 1853, p. 337. — *Mémoires d. antiqu. du Nord.*, 1850—1860, p. 171. — *Aarb.*, 1876, p. 244; 1911, p. 315, f. 14 (unusual size). — MESTORF, *Alterth. Schlesw.-Holst.*, f. 243 (butt end thin). — SPLIETH, *Inventar*, f. 32, p. 38 (peat-bog). — See f. 868.

866. Stockhult, Sk.; hoard (see f. 849).

867. Double-edged bronze axes with the shaft-hole at the middle. Our f. 867 is the only one now known

in northern or central Europe. In the Greek world many such axes have been found, though very different from f. 867; they generally lack ornamentation, and even when designs are found, they are quite different from those on f. 867 (MONTELIUS, *Chronol. ält. Br.*, p. 17, f. 40—43). Double-edged axes of copper (also different from f. 867, and lacking ornaments, at least any like those of f. 867) are found in Central Europe (*l. c.*, p. 14, f. 26—30).

867. For the ornamentation see f. 873, 913. — Ronneby, Bl.; probably found with a bronze axe with stop-ridges = f. 859.

868. Bronze axes with shaft-holes; both broad sides fluted from the head downwards to the broad edge. Many axes of this type are found in Denmark (Jutland) and northern Germany, where they prove to be contemporary with the end of our 2nd and possibly the beginning of our 3rd period.

MADSEN, *Afbildn., Br.*, I, pl. 2 f. 5, 6 (tomb). — MÜLLER, *Ordning, Br.*, f. 95 (5 axes from different localities in Jutland). — MESSTORF, *Alterth. Schlesw.-Holst.*, f. 241. — SPLIETH, *Inventar*, f. 83 (5 axes from different localities). — BELTZ, *Alterth. Mecklenb.*, p. 22, f. 10, p. 170 (3 from Mecklenburg: one in a hoard, with axes = f. 859 etc., and 2 in tombs; 2 from Brandenburg). — LISSAUER, *Bronzezeit in d. Prov. Westpreussen* (Danzig, 1891), p. 10, pl. II f. 21. — O. TISCHLER, *Schriften d. physik-ökonom. Gesellsch. zu Königsberg*, 28, p. 12; 29, p. 8; 31, p. 3 (many axes of this type; 20 in the same hoard). — Cf. HAMPEL, *Bronzezeit in Ungarn*, pl. XXX. — A stone axe found in Denmark (WORSAAE, *Nord. Olds.*, f. 109) seems to be an imitation of these bronze axes.

868. Made in Germany or Jutland. — Hasslarp, Sk.

869. Gräsgårde, Sm.; with 'a' similar axe. See f. 883. — ÅBERG, *Kalm. l. bronsäld.*, f. 26.

872. Stockhult, Sk.; hoard (see f. 849).

873. Lånby, Hal. — *Ant. suéd.*, f. 99; MONTELIUS, *Meisterstücke*, pl. 4 f. 1.

874. Villie, Sk.; peat-bog (in 1812). — *Ant. suéd.*, f. 100.

875. Bronze chisels, with stop-ridges, as on the axes f. 848—860.

876—879. Socketed axes (formerly termed »celts») of bronze. Many are developed from flanged axes in the manner shown by f. 861—863. Others have arisen in other ways. The axe blade often has great similarity with that which occurs on axes like f. 857. The socket is generally round, but sometimes quadrilateral (f. 876).

MONTELIUS, *Die typologische Methode*, p. 30.

878. Cf. f. 857. — Täckhammar, Söd.; on the bottom of a river, with other bronzes. — *Ant. suéd.*, f. 149. — A similar axe belongs to a great Danish hoard. *Annaler f. nord. Oldkynd.*, 1853, pl. III.

880—884. Bronze axes with shaft-holes (see f. 866—874); f. 880—882 massive, f. 883, 884 of thin bronze cast over a clay core. That bronze so thin could have been cast shows wonderful skill in the founder.

880, 881. Balsby, Sk.; upon a stone, with a third bronze axe of the same form and a gold band (f. 957). — *Ant. suéd.*, f. 133.

882. Stockhult, Sk.; hoard (see f. 849).

883 a. Thin bronze, cast over a core of clay; round gold plates, inlaid with amber. — Skogstorp, Söd.; with a similar axe (f. 883 b).

883 b. The upper part of a similar axe; handle of oak, covered with cast bronze. — G. STEPHENS, *To i Sverrig fundne Processions-øxer* (*Annaler f. nord. Oldkynd.*, 1866, p. 120). — C. F. HERBST, *Om de over en kjerne af brændt Leer støbte Bronze-Øxer* (*ibidem*, p. 124). — *A. T.*, 3, p. 291. — *Ant. suéd.*, f. 134—136.

See f. 884. At Brøndsted in Jutland, a pair of similar axes of thin bronze have been found (MÜLLER, *Ordning, Br.*, f. 154). — All these axes of thin bronze are so heavy and so fragile that they could not be used as weapons or tools. They have evidently been symbols of the Sun-god, which with the axe (the thunder) killed his enemies (see f. 680, 778—809). — In Sweden, as in other countries, several times two similar axes have been found together, of stone (f. 127), of copper (f. 150) or of bronze (f. 780, 797, 811—816, literature, 869). Two similar axes have also been figured together, as in the tomb of Kivik (MONTELIUS, in the *Folk-Love*, XXI [London, 1910], p. 70, pl. V f. 22). In other ways also the deity and his symbols have been represented in pairs.

Se. Fornm.-f. tidskr., 10, p. 295, f. 24 (Laplandish representation of the god Thor, with a hammer in each hand). — DÉCHELETTE, *Manuel*, II, p. 483, n. 1 (in Tenedos two axes were worshipped). — *Mitteilungen des deutschen Instituts, Athen. Abteil.*, XXI, p. 277 (2 representations of the same god). — *Épaveois*, 1900, pl. 4 (Greece; a female deity with an axe in each hand).

884. Thin bronze, cast over a core of clay. — Båstad, Sk.; peat-bog. It is not known whether this axe was found alone or together with a similar axe.

885—887. Bronze daggers.

885, 886. Hofby, Sk.; stone-cist, with »human skulls and bones», a fibula (f. 1024) and a knife (f. 922). — MONTELIUS, *Die vor-klassische Chronologie Italiens*, p. 240.

The dagger f. 886 is of an Italian type (*l. c.*, pl. IX f. 4), that — as several Italian finds prove — is contemporaneous with the later part of the 2nd period of our Bronze Age. The fibula f. 1024 dates from the transition between the 2nd and 3rd period.

888—891 (see f. 897—909). Bronze swords. Some daggers, as we saw (f. 827), had already before the end of the 1st period become so long, that they might be called short swords. During the 2nd period, the length of the blade was often considerably increased, so that some swords, including the hilt, are about 93 cm. long.

888, 889. Swords with broad, flanged tang; rivet-holes in the lower part of the hilt but not in the tang. The type occurs in Scandinavia as in middle and southern Europe.

MÜLLER, *Mémoires*, 1908—1909, p. 56, f. 48—50 (Denmark); f. 51—53 (Austria-Hungary); f. 85, 86 (Denmark and Italy). — BOYE, *Egekister*, pl. (V), XXII, XXVII. — *Schlesiens Vorzeit*, IV, p. 8, f. 23.

890, 891. Swords with bronze hilt. The section of the hilt is oval (f. 890), oftener octagonal (f. 891); the pommel is oval and high in the middle. Several hilts are beautifully ornamented with spirals. — Many swords of this type are found in Sweden and Denmark. They were imported from central Europe (the Danube region) or imitated from swords imported thence.

MONTELIUS, *A. T.*, 3, p. 344. — *Id.*, *Congr. St.*, pp. 886, 900. — MÜLLER, *Ordning, Br.*, f. 24, 25 (about 30 swords of this type are known from Denmark). — *Id.*, *Mémoires*, 1908—1909, p. 91, f. 83, 84.

892. Sheaths (scabbards) of wood for bronze swords and daggers. Owing to especially favourable conditions, such sheaths, in spite of the length of time, have been preserved to our day in more or less good condition; sometimes almost undamaged.

BOYE, *Egekister*, pl. I, V, VIII, X, XV, XVII, XX, XXVI.

892. Wood. — Hammarlöf, Sk.; great barrow (»Björnbög»). The dagger (f. 907) to which this sheath belonged was found in the remains of an oaken coffin, with a skeleton, a fibula (f. 969) and 2 belt-ornaments (one of them f. 940; the other = f. 948). The barrow

contained also other graves from the Bronze Age (see f. 924). — *Mbl.*, 1893, p. 10.

893—895. Belt hooks of bronze; the round plate ornamented with spirals, concentric circles or zigzag lines. Many are found in Sweden and Denmark; similar hooks are also met with in northern Germany.

MADSEN, *Afbildn., Br.*, I, pl. 39 f. 10, 11. — MÜLLER, *Ordning, Br.*, f. 37 (f. 36, no round plate). — *Id.*, *Mémoires*, 1908—1909, p. 31, f. 25. — BOYE, *Egekister*, pl. VIII f. 11; pl. XVII f. 3; pl. XXIV f. B 6. — SPLIETH, *Inventar*, f. 41. — BELTZ, *Altert. Mecklenb.*, p. 171.

894. Perforated plate. — Sjögestad, Ö. G.; in a stone-cist from the Stone Age, with 4 skeletons, spear-heads or daggers of flint, a bronze awl (f. 982) etc. — *Sv. Fornm.-för. tidskr.*, 12, p. 294, f. 144; cf. *Fornv.*, 1906, p. 169.

895. Plate decorated with spirals and amber. — Sjögestad, Ö. G.; in another stone-cist from the Stone Age (MONTELIUS, *Der Orient und Europa*, p. 195), with a pincette (f. 979) and a small ring of bronze. — *Sv. forn.-för. tidskr.*, 12, p. 293.

896. Chapes of bronze for sword scabbards; a common type in the 2nd period.

WORSAAE, *Nord. Olds.*, f. 120 b. — MÜLLER, *Ordning, Br.*, f. 35. — *Id.*, *Mémoires*, 1908—1909, p. 110, f. 98. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 180 b. — SPLIETH, *Inventar*, f. 38, p. 25—35 (12 specimens). — *Verhandl. Berl. Anthr. Ges.*, 1882, pl. XII, p. 124 (Spandan, near Berlin). — *Jahresschr.* (Halle), 8, pl. XIV f. 22. — See *Aarb.*, 1876, p. 264, note (Central Europe).

897—909 (see f. 885—891). Bronze daggers and swords. The hilt is not seldom entirely or partially (f. 899) of bronze, but it has usually been of horn, bone or the like, and fixed to the blade (which has no tang) with rivets (f. 897, 901—903, 907); the pommel is often of bronze. The blade is generally ornamented with fine lines on both sides of its middle, which is slightly raised; it has frequently the elegant form seen in f. 897, 898, 901, 904 and 906: the greatest width of the blade is not at the hilt, but near the middle.

Many swords of the type f. 897—907 are found in southern Scandinavia; similar ones are also found in other parts of Scandinavia and northern Germany, principally Sleswig-Holstein and Mecklenburg; but they have never, or scarcely ever, been found in other countries. They are therefore northern in execution, and testify, like so many other works, to the high standing of the craft among the Scandinavians during the 2nd period of the Bronze Age.

NILSSON, *Bronsäld.*, f. 1—3. — *Ant. suéd.*, f. 103—107. — *Atlas f. nord. Oldk.*, pl. III and IV. — *Annaler f. nord. Oldkynd.*, 1853, pl. II f. 12 (hoard). — MADSEN, *Afbildn.*, I, pl. 4, 7—11; II, pl. I—3, 7. — BOYE, *Egekister*, pl. I, II, XII, XV, XVII, XX, XXI, XXIV; pp. 35, 36. — MÜLLER, *Ordning, Br.*, f. 26—30. — *Id.*, *Mémoires*, 1908—1909, pp. 22, 50, 81. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 172—182. — SPLIETH, *Inventar*, f. 36. — BELTZ, *Altert. Mecklenb.*, pl. 23 f. 11, 12, p. 170. — *Jahresschr.* (Halle), 8, pl. XIV f. 22, p. 139 (province of Saxony).

899. Hilt of bronze and some organic substance that has now disappeared. Such hilts are also seen in Italy and central Europe on several bronze daggers with broad »triangular» blades, contemporary with our first period.

Vorklass. Chronol. Italiens, pl. 2 f. 5. — *Jahresschr.* (Halle), 1, pl. III f. 4.

901. Hallsjö, V. G.; with 2 belt-ornaments (f. 939).

902. Hammarlöf, Sk.; great barrow (»Tingshögg»): oak coffin, wherein a body had been buried, with a knife (f. 923), a fibula (f. 973), a pincette (= f. 977), a belt-ornament (f. 943 b), 2 buttons (one of them, f. 989; the other = f. 985) etc., all of bronze, and a little spear-head of flint (for fire-making).

903. Remains of the sheath of leather. — Hammarlöf, Sk.; »Bonhögg» (see f. 656); oak coffin, wherein a body had been buried, with the sword, a piece of amber (f. 910), 2 knives (one of them, f. 920), a fibula (= f. 974—976) and a pincette (f. 977), all of bronze, and a little spear-head of flint (f. 933, for fire-making).

904. Segerstad, V. G.; peat-bog. — MONTELIUS, *Meisterstücke*, pl. 4 f. 2.

905. Vallby, Sm.; with 2 other swords. — ÅBERG, *Kalm. l. bronsäld.*, p. 31, f. 13 (and 12).

906. Solberga, Öl. (in 1846); barrow (cairn) of stones with a fine axe with stop-ridges (= f. 860), a spear-head (= f. 913), both of bronze, a little spear-head of flint, and probably remains of a skeleton. — *Ant. suéd.*, f. 103.

907. The hilt had been of horn; for the wooden sheath see f. 892. — Hammarlöf, Sk.; barrow (»Björnhögg»; see f. 892).

908, 909. Symbolic swords (miniatures) of bronze. Instead of real swords, miniature copies are sometimes found in graves or hoards (see f. 1081—1083, 1204—1206).

MONTELIUS, *La civilisation primitive en Italie*, col. 667.

908. Visingsö, island in Lake Vättern; barrow.

909. Torslunda, Upl.; barrow, with burnt bones, a necklace (f. 958), a belt-plate (= f. 946, spiral ornaments), 6 pendant ornaments (f. 938). See f. 946. — EKHOLOM, *Uppl. bronsäld.*, p. 226, f. 11.

910. Oval piece of amber, which evidently has been inlaid in the pommel of a sword.

910. Flat oval piece of amber, with concentric circles. — Hammarlöf, Sk.; barrow (»Bonhögg»; see f. 903). Found with a bronze sword to the pommel of which it certainly belonged.

911—919. Spear-heads of bronze; many of them decorated with spirals or other punched ornaments. They are either rather narrow, with the edges running almost to the opening of the socket (f. 911—913, 915), or broader, with edges terminating in some distance from the lower end (f. 914, 916—919). The former type is general in Sweden and other parts of the northern region, but not found outside it. Spear-heads of the latter type are also characteristic of the northern region.

The narrow type: NILSSON, *Bronsäld.*, f. 15. — *Ant. suéd.* f. 101. — EKHOLOM, *Uppl. bronsäld.*, f. 13, 17. — ÅBERG, *Kalm. l. bronsäld.*, f. 11. — WORSAAE, *Nord. Olds.*, f. 185, 186. — *Atlas f. nord. Oldk.*, pl. 1 f. 16. — MADSEN, *Afbildn., Br.*, I, pl. 13 f. 10. — *Annaler f. nord. Oldk.*, 1853, pl. V (hoard). — MÜLLER, *Ordning, Br.*, f. 97. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 232. — SPLIETH, *Inventar*, f. 43. — BELTZ, *Altert. Mecklenb.*, pl. 25 f. 24, 25. — *Verhandl. Berl. Anthr. Ges.*, 1882, pl. XIII f. 6, p. 126 (Spandan, near Berlin).

The broad type: *Ant. suéd.*, f. 102. — MADSEN, *Afbildn., Br.*, I, pl. 13 f. 6—8; II, pl. 1 (tomb). — *Annaler f. nord. Oldk.*, 1853, pl. IV, V. — MÜLLER, *Ordning, Br.*, f. 41. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 229. — SPLIETH, *Inventar*, f. 42. — BELTZ, *Altert. Mecklenb.*, pl. 25 f. 26—28. — *Verhandl. Berl. Anthr. Ges.*, 1882, pl. XIII f. 10, p. 127 (Spandan, near Berlin).

912. Dalby, Bl.; barrow, with a sword, an axe with stop-ridges (= f. 860), a bead of glass (f. 934) and some »bits of charcoal» (probably remains of an oak-coffin).

913. Solvallen, Upl. (in 1862); with burnt bones. — *Ant. suéd.*, f. 101.

914. Rhombic section of the socket. — Skåne.

915. Length 39,1 cm. — Testeberga, Sk.

918. Böda, Öl. (not Sk.).

919. Simtuna, Upl.; barrow of stones (cairn). — EKHOLOM, *Uppl. bronsäld.*, p. 222, f. 8.

920—931. Knives; shaft and blade both of bronze.

920—926 (see f. 931). The point of the blade more or less bent downwards.

920—923. The shaft comparatively thick; its section rounded.

MÜLLER, *Ordning, Br.*, f. 16. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 248. — SPLIETH, *Inventar*, f. 92.

920. Hammarlöf, Sk.; barrow («Bonhöög»; see f. 903).

921. Bolum, V. G.; barrow of stones (cairn).

922. Hölby, Sk.; grave (see f. 885).

923. Hammarlöf, Sk.; barrow («Tingshöög»; see f. 902).

924, 925. The shaft narrow, quadrangular. The type belongs to the transition between the 2nd and 3rd period, and occurs only in the northern region.

Ant. suéd., f. 113. — ÅBERG, *Kalm. l. bronsåld.*, f. 37. — RYGH, *Norske Olds.*, f. 118. — WORSAAE, *Nord. Olds.*, f. 165. — MADSEN, *Afbildn., Br.*, 1, pl. 23 f. 10. — BOYE, *Egekister*, pl. XXV f. 3. — MÜLLER, *Ordning, Br.*, f. 83. — *Id.*, *Aarb.*, 1891, p. 208. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 248. — SPLIETH, *Inventar.*, f. 92, p. 48.

924. Hammarlöf, Sk.; barrow («Björnhög»; see f. 892): oak coffin with a skeleton, 2 spiral rings of gold (f. 1042), a necklace (f. 964), a sword (f. 1009) and an awl of bronze. The two last-named objects had been placed, with woollen thread, in a box of birch-bark. This tomb dates from the transition between the 2nd and 3rd period.

926. Knives with shaft of bronze, in which is a large oblong opening (without cross-pieces). This type too belongs to the transition between periods 2 and 3, and occurs only in the northern region. See f. 1017.

WITLOCK, *Jordfynd fr. Varend.*, pl. 5 f. 4. — ÅBERG, *Kalm. l. bronsåld.*, f. 34. — RYGH, *Norske Olds.*, f. 117. — MADSEN, *Afbildn.*, I, pl. 23 f. 2. — MÜLLER, *Ordning, Br.*, f. 81 (cf. f. 82). — *Id.*, *Aarb.*, 1891, pp. 208, 221. — SEHESTED, *Fortidsminder og Oldsager.*, pl. XXII f. 12 b. — *Id.*, *Arch. Undersög.*, pl. X f. 1 d. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 259. — SPLIETH, *Inventar*, f. 93, p. 48. — BELTZ, *Alterth. Mecklenb.*, pl. 26 f. 38 (cf. f. 39), p. 177. — LINDENSCHMIT, *Alterth.*, II: VIII, pl. 2 f. 13 (Lüneburg; the point bent upward, not downward); cf. I: VIII, pl. 4 f. 2, 4, 12.

927—930. Knives with shaft of bronze in the form of a horse's head (both the eye and the ear are visible). The blade uniform in breadth, cut off short in front: the edge somewhat convex (knives with such blades, but with a short handle rolled into a spiral, see MÜLLER, *Ordning, Br.*, f. 17). Knives of this typ, with obvious horses' heads, dating from the transition from period 2 to 3, occur both in the Scandinavian peninsula, in Denmark, and in Sleswig-Holstein. In other parts of northern Germany, such knives — with eye and ear visible on a horsehead of comparatively fine shape — scarcely seem to exist, only some later ones with an inferior head (as f. 1013—1015, 1102). From the type f. 927—930 are developed here in the North during the following periods those forms of knives which display heads more and more degenerating until every trace of it has disappeared, and the shaft, narrow and bent back, has been rolled into a spiral.

MONTELIUS, *A. T.*, 3, p. 331. — *Id.*, *Congr. St.*, 1874, p. 492. — *Id.*, *Tidsbestämning*, f. 32. — RYGH, *Norske Olds.*, f. 116. — MADSEN, *Afbildn.*, I, pl. 25 f. 24. — MÜLLER, *Ordning, Br.*, f. 85. — *Id.*, *Aarb.*, 1891, pp. 196, 199, 208. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 247. — SPLIETH, *Inventar*, f. 91.

928. Tygelsjö. Sk.; stone-cist, with a skeleton, a sword (= f. 897—909), an axe with stop-ridges (= f. 860), a knife (= f. 926), 2 belt-ornaments (= f. 940), a pincette (= f. 977) and a small spiral.

929. Bäckaryd, Sm.; with a sword (f. 1012), and a skeleton, in a great stone-cist from the Stone Age. — *A. T.*, 1, p. 234; cf. *Forrv.*, 1906, p. 171.

930. Bejby, Öl.; with a skeleton, a knife (= f. 925), and a sword with a narrow, four-sided tang. — *Ant. suéd.*, f. 115.

931. Bronze knife (probably from a later period than the 2ad). — Hoby, Bl.; little barrow, with burnt bones in a hiconical vessel of clay. — *Mbl.*, 1903—5, p. 98.

932. Saws of bronze, copied from the »half-moon» flint saws (f. 581). During the latter periods of our Bronze Age the shape becomes narrower (f. 1020, 1068). In other countries such bronze saws do not occur.

Congr. St., 1874, p. 494. — MÜLLER, *Ordning, Br.*, f. 149.

932. Bosgården, Sk. (in 1816); great barrow, with a similar saw, 2 awls (f. 953), a spear-head, a neck-ornament (= f. 964), a spiral bracelet, 2 other bracelets (f. 967), a belt (f. 937), 4 belt-ornaments (f. 942, 948 [two] and = f. 946), a comb (f. 935), a ferrule for a spear (f. 1230) etc. — *Ant. suéd.*, f. 124.

933. Spear-heads (and the like) of flint. Such flints have been gathered out of many graves of the earlier Bronze Age. In several cases the pointed end bears clear signs of having been used for some purpose other than that originally intended: fire has been struck with it from iron pyrites. A bit of iron pyrite occasionally lies in a grave (*Aarb.*, 1891, p. 195). Other flints seem to have been amulets (WORSAAE, *Nord. Olds.*, f. 621; sewn in a case of leather).

MÜLLER, *Ordning*, f. 46. — *Id.*, *Aarb.*, 1891, p. 195—207.

934. Glass beads, usually blue, which have come in commerce from the south during the earlier Bronze Age, are sometimes found in North Germany and Denmark. Such beads occur in Egypt at the same time.

Aarb., 1882, p. 319; 1886, p. 287. — SEHESTED, *Arch. Unders.*, p. 54, pl. VII f. 5. — BOYE, *Egekister*, p. 138, pl. XXVI f. 3. — SPLIETH, *Inventar*, pp. 37, 56. — BELTZ, *Alterth. Mecklenb.*, p. 194, pl. 34 f. 116.

934. Dalby, Bl.; barrow (see f. 912).

935, 936. Combs of bronze or horn, rounded with bow-shaped openings. They are found in graves both of men and of women. Bronze combs of the same rounded shape, though otherwise dissimilar, occur also in the later Bronze Age (f. 1366); similar combs of bone and horn are common down to a late period in the Iron Age.

Early Bronze Age: MÜLLER, *Ordning, Br.*, f. 20. — MADSEN, *Afbildn.*, I, pl. 30 (6 of bronze); II, pl. 5, 10 (2 of horn). — BOYE, *Egekister*, pl. II, X, XII, XIX, XXII (all of horn). — *Aarb.*, 1886, p. 261, f. 1 (of horn).

Later Bronze Age: Our f. 1366. — WORSAAE, *Nord. Olds.*, f. 233, 234. — MÜLLER, *Ordning, Br.*, f. 201. — MADSEN, *Afbildn.*, *Br.*, I, pl. 30. — SPLIETH, *Inventar*, f. 189.

935. Bosgården, Sk.; barrow (see f. 932).

937. Cylinders, formed of thin quadrilateral plates of bronze, rolled. They are found many together, and have enclosed woollen strings which formed a belt (cf. f. 1355, 1356) or a sort of fringe to a dress. — Such bronze cylinders, which are found here in Scandinavia from both the early and the later Bronze Age, occur also outside the northern region.

MÜLLER, *Ordning, Br.*, f. 63 (woollen fringe with bronze cylinders). — BOYE, *Egekister*, pl. XXVI (two rows of cylinders, one above the other, at the belt), XXVII (see f. 150). — MADSEN, *Afbildn., Br.*, II, pl. 22 (later Bronze Age).

937. Bosgården, Sk.; barrow (see f. 932).

938. Round pendant ornament of very thin bronze. At the border, a projecting flap, bent into a clasp or small cylinder.

BELTZ, *Altert. Mecklenb.*, pl. 33 f. 105, p. 190. — V. ESTORFF, *Alterth.*, pl. IX (Hanover). — LINDENSCHMIT, *Alterth.*, III: 6, pl. 3. — NAUE, *Prähistor. Blätter*, 1904, pl. I. — RICHLÝ, *Die Bronzezeit in Böhmen*, pl. LI f. 9. — HAMPEL, *Bronzezeit in Ungarn*, pl. LIV, LXXXVII.

938. Torslunda, Upl.; barrow (see f. 909).

939—952. Round bronze ornaments, high, hollow, hat-shaped or conical in the middle, used as decorations for a belt, or the like, sometimes in conjunction with larger round plates as f. 953—955. A small ornament like this has often been called »tutulus» by archæologists. The type has clearly arisen from imitation in bronze of amber or stone buttons with V-boring such as f. 653—657 (cf. MESTORF, *Alterth. Schlesw.-Holst.*, f. 314, of tin).

NILSSON, *Bronsåld.*, f. 65. — *Ant. suéd.*, f. 112 (cf. f. 180). — KJELLMARK, *Kronob. läns fornl.* (Malmö, 1911), p. 107. — *Aarsber.*, 1873, pl. II; 1880, pl. II. — *Oldtiden*, I (Stavanger), p. 12. — MÜLLER, *Ordning, Br.*, f. 15, 59—61. — *Id.*, *Aarb.* 1891, p. 200. — SEHESTAD, *Archæol. Undersøgelser*, pl. V (pl. IV: shows how it was placed in the tomb). — MADSEN, *Afbildn., Br.*, I, pl. 39 f. 5 (6); II, pl. 1, 10, 17. — BOYE, *Egekister*, pl. I, V, XII, XXI, XXVI (f. 1 shows how it was placed in the tomb, with a big round plate), XXVII (at the belt; see p. 150). — MESTORF, *Alterth. Schlesw.-Holst.*, f. 294, 312. — SPLIETH, *Inventar*, f. 51, 109, p. 30. — BELTZ, *Altert. Mecklenb.*, pl. 33, p. 189.

939. Hultsjö, V. G.; see f. 901.

940. Hammarlöf, Sk.; barrow (»Björnhög»; see f. 892).

941. Stockhult, Sk.; hoard (see f. 849).

942. Bosgården, Sk.; barrow (see f. 932).

943 a. Hammarlöf, Sk.; barrow (»Bonhög»; see f. 656). Found alone in the barrow, not in a tomb.

943 b. Hammarlöf, Sk.; barrow (»Tingshög»; see f. 902).

947. Benestad, Sm.; with 2 similar ornaments, in a stone-cist from the Stone Age. — KJELLMARK, *Kronob. läns förhist. forn-lämningar o. fynd* (Malmö, 1911), pp. 82, 107; cf. *Fornv.* 1906, p. 161.

948. Bosgården, Sk.; barrow (see f. 932).

949. Stockhult, Sk.; hoard (see f. 849).

950 and 951. Ekudden, Söd.; hoard: with 5 similar ornaments (f. 1033, 1034), a button, 30 cylinders for a belt (see f. 937), 2 spiral bracelets, 2 axes with stop-ridges (= f. 859), a socketed axe, 3 socketed chisels (see f. 1192), 7 saws (f. 1020) and a spear-head (f. 999). — MONTELIUS, *Die typol. Methode*, p. 11.

Some of the bronzes, that had been deposited here in the 3rd period, date from this period, but the others were made during the 2nd period. These have evidently been used for a long time and are very much worn, but the bronzes from the 3rd period are not at all worn.

953—955. Round belt ornaments of bronze, with circles of spiral decoration round a projecting point. In the middle of the underside is a loop. The careful examination of some graves has shown that these round plates of bronze, which may be considerable in size, have been worn by women as a sort of belt-ornaments; similar ones are worn in our day by women in Egypt in the same manner. — Several such round bronze plates are found in Sweden and the other Scandinavian countries; they are up to 28.2 cm. in diameter. In

the districts of North Germany forming part of our region, similar ornaments about 15 cm. in diameter have been dug up.

NILSSON, *Bronsåld.*, f. 43 (big, broken: part in the museum of Lund, part in that of Göteborg). — *Ant. suéd.*, f. 111. — *Mbl.*, 1878, p. 689 (Torpa in Sm). — EKHOLM, *Uppl. bronsåld.*, p. 226 (Torslunda in Upl.; see f. 909). — RYGH, *Norske Olds.*, f. 135, 137. — *Aarsber.*, 1879, pl. III f. 13. — *Bergens Mus. Aarbok*, 1912: 4, p. 24, f. 17 (Jæderen). — *Opuseula*, p. 100, f. 6. — WORSAAE, *Nord. Olds.*, f. 205. — MADSEN, *Afbildn., Br.*, I, pl. 39 f. 1; II, pl. 10 f. 17, pl. 17 f. 2, 3. — BOYE, *Egekister*, pl. XII f. 10, pl. XXVI f. 7 (f. 1 shows how it was placed in the tomb), pl. XXVII f. 4 (p. 150: the place in the tomb). — SEHESTED, *Archæol. Unders.*, pl. V f. 8 (pl. IV: the place in the tomb); pl. VII f. 6 (pl. VI n:o 37: the place in the tomb; cf. p. 54). — BAHNSOO, *Aarb.*, 1886, p. 284, and *Mém. Soc. Antiq. du Nord.*, 1884—1889, p. 271 (female tombs). — *Nordiske Fortidsminder*, pl. XV, p. 73. — MÜLLER, *Ordning, Br.*, f. 58 (cf. f. 49). — *Id.*, *Aarb.*, 1891, p. 200; 1909, p. 86, f. 89. — *Aarb.*, 1915, p. 124, f. 1. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 336. — SPLIETH, *Inventar*, f. 69, pp. 29, 36. — BELTZ, *Altert. Mecklenb.*, pl. 33 f. 101, 102, p. 189.

953. Part of a big plate (diam.: 27,8 cm.). — Stockhult, Sk.; hoard (see f. 849).

955. The middle of the concentric circles is »au reponssé». A strip of leather goes through one of the two holes. — Near Båstad, Sk.; barrow, with burnt bones, a knife (f. 1019) and 2 bracelets (= f. 966).

956, 957. Gold bands, with split, spiral-shaped ends (»diadems»). Occurring both in Sweden and Denmark; similar ones of bronze in Germany.

MONTELIUS, *Guldarbeten från bronsåldern funna i Sverige* (*Fornv.*, 1916, pp. 8, 21). — WORSAAE, *Nord. Olds.*, f. 225. — MÜLLER, *Ordning, Br.*, f. 9. — *Kataloge des Röm. Germ. Central-Museums* (Mainz), No 6. *Bronzezeit Süddeutschlands*, p. 204, f. 139 (bronze).

956. Örebro, Ner. (in 1780!). — *Fornv.*, 1916, p. 22.

957. Balsby, Sk.; hoard (see f. 880).

958—965. Neck-ornaments of bronze, broadest in the middle, with ends narrowed and rolled up. The type is a copy of a sort of neck-ornament formed of several narrow collars laid together. Both in Italy and north of the Alps — in the Northern region, too, — such prototypes have been found, belonging to the first period; see *Chronol. ält. Br.*, p. 109, f. 276; p. 33, f. 78—80 (several rings), f. 81 (neck-ornament, cast in one piece, in imitation of such rings). Cf. f. 845. The separate rings may still be distinguished in f. 958, 960, 963, 964; only the ends are completely united, forming a surface decorated with spirals or other ornamentation. These bronzes having a certain likeness to a diadem, it was long supposed that they had been worn as such ornaments, with the wider opening upwards; but in several tombs they have been found round the neck with the wider opening below. — The oldest neck-ornaments, modelled on those that consisted of several narrow rings, date from an early part of the second period (*Photogr. Alb. Berlin*, 1880, II, pl. 21). A number of others belong also to the 2nd period, but the type survives, somewhat altered, into the 3rd; narrow, parallel, raised rims, which are relics of rings, disappear before the end of the 2nd period and are replaced by spiral decorations; the front side, which at first is very distinctly sloped, becomes almost horizontal during the 3rd period (f. 1022, 1023).

Many such ornaments are known from middle and southern Sweden, Denmark, Sleswig-Holstein, and Mecklenburg. In other districts belonging to the northern region, the type is less common, and it is unknown in other countries.

Among neck-ornaments found in northern Germany are some resembling the older Scandinavian specimens of this kind (f. 963), but many show variations, especially those from later times than the 2nd period. On two broad portions, separated by raised rims, spiral ornaments can be seen, as in f. 962 (probably imported from Germany to Skåne); the lines which bind the spirals are sometimes dotted or accompanied with lines of dots. The decoration gradually disappears, and a degeneration sets in, so that the latest neck-ornaments, contemporary with our 4th or 5th period, only display their relationship to the older specimens by means of a certain similarity of shape (LISSAUER, *Bronzezeit, W.-Preussen*, pl. V f. 8; pl. VI f. 8). — Cf. f. 1273—1275.

NILSSON, *Bronsåld.*, f. 23, 24. — *Ant. suéd.*, f. 122, 123. — From Sweden at least 21 are known (per. 2 and 3). — Norway: *Aarsber.*, 1881, pp. 124, 125 (2 = f. 963; Stavanger); see *Bergens Mus. Aarbok*, 1912: 4, p. 26, f. 18. — *Opuscula*, p. 101, f. 8. — Denmark: WORSAAE, *Nord. Olds.*, f. 216—218 (and 226). — MADSEN, *Afbildn.*, I, pl. 31; II, pl. 17. — BOYE, *Egekister*, pl. XXVI f. 2 (f. 1: the place in the tomb), pl. XXVII f. A I (p. 150: the place in the tomb). — SEHESTED, *Archæol. Unders.*, pl. V f. 5 (pl. IV: the place in the tomb); pl. X f. 4. — MÜLLER, *Ordning, Br.*, f. 50. — *Id.*, *Aarb.*, 1891, p. 200; 1909, p. 87, f. 91. — BAHNSON, *Aarb.*, 1886, p. 285, and *Mémoires* 1884—1889, p. 271 (female tombs). — *Aarb.* 1876, pp. 231, 292. — Germany: MESTORF, *Alterth. Schlesw.-Holst.*, f. 279, 280. — SPLIETH, *Invent.*, f. 65, p. 36; f. 104, p. 54 (per. 3). — BELTZ, *Alterth. Mecklenb.*, f. 74, 75, p. 183 (Mecklenb. Schwerin). — Museum in Nen Strelitz (at least 7 with raised rims; Mecklenb. Strelitz). — LINDENSCHMIT, *Alterth.*, 1: x, pl. 2 f. 1, 4 (Mecklenburg), 2, 3 (Hannover). — v. ESTORFF, *Heidn. Alterth.*, pl. XI f. 6, 7 (Hannover). — *Verhandl. Berl. Anthr. Ges.*, 1884, p. 97 (Lüneburg). — MÜLLER, *Alterth. Hannover.*, pl. IX f. 73. — *Jahresschr.* (Halle), 8, p. 137, f. 3, p. 146 (prov. Saxony). — *Photogr. Album Berlin 1880*, III, pl. 2 (Brandenburg); II, pl. 21 (Pomerania). — *Verhandl. Berl. Anthr. Ges.*, 1890, p. 609 (Pomerania). — Museum in Stralsund (several from Pomerania). — BEKMAN, *Hist. Beschreib. d. Mark- u. Chur-Brandenburg*, 2, 1, pl. 6 14. — BRÜCKNER, *Beiträge z. Gesch. d. deutsch. Alterth.* (Meiningen, 1858), pl. II f. 3 (near Meiningen). — *Jahresber. d. altmärk. Vereins*, 4, p. 27.

958. Torslunda, Upl.; barrow (see f. 909).

959. Torpa, near Jönköping, Sm.; hoard: with a similar neck-ornament (f. 963), 2 round belt-ornaments (13 and 9.8 cm. in diam.; spirals), 9 other belt-ornaments (= f. 939—952), a great button (f. 988), spiral bracelets, 2 other bracelets, garniture of a chair (f. 990), a ring (f. 968), 2 saws (= f. 932), an awl (= f. 982). — II. HILDEBRAND, *Mbl.*, 1878, p. 687.

961. Stockhult, Sk.; hoard (see f. 849).

963. Torpa, Sm.; hoard (see f. 959).

964. Hammarlöf, Sk.; barrow (»Björnhög»; see f. 924).

965. Hedvigsdal, Sk.; barrow. — *Mbl.*, 1895, p. 102.

966. Bracelets of bronze, uniform in breadth, with longitudinal grooves and ends cut square. Such bracelets of bronze, sometimes of gold, were worn here in the North during the 2nd and at the beginning of the 3rd period. The type is a descendant of the very broad bracelets which occur during the 1st period, with ridges all along and squared ends (f. 845). Bracelets worn in other lands during the earlier Bronze Age are more or less like those of the North; they are often narrower than the latter, and their ends are usually not so squared, but more rounded. — During the later

Bronze Age, bracelets of uniform width were worn here in Scandinavia, but they differ from the earlier specimens (WORSAAE, *Nord. Olds.*, f. 258, 264, 265; MÜLLER, *Ordning, Br.*, f. 375—377).

The Scandinavian type: *Ant. suéd.*, f. 127. — *Aarsber.*, 1879, f. 74; 1881, pp. 123, 224. — BRØGGER, *Opuscula*, pp. 98, 102 (Norway). — MADSEN, *Afbildn.*, I, pl. 34 f. 7. — MÜLLER, *Ordning, Br.*, f. 113 (gold), 114 (bronze). — *Id.*, *Aarb.*, 1891, pp. 202, 213—216, 222, 224; 1909, pp. 86, 98, 114. — SPLIETH, *Inventar*, f. 105, p. 46. — *Jahresschr.* (Halle), 1, pl. VIII f. 4, p. 66. — *Schles. Vorzeit*, IV, p. 8. — PIČ, *Čechy předhistorické*, 2, pl. IV, XI, XIV etc. — RICHLY, *Die Bronzezeit in Böhmen*, pl. XLVII: cf. pl. XLIX.

Continental types: MONTELIUS, *L'Anthropologie*, 1901, p. 616, f. 4 (France). — KELLER, *Pfahlbauten*, 7, pl. XXII f. 10. (Babylonia). — CHANTRE, *Caucase*, II, pl. XV f. 11. — MONTELIUS, *Die ält. Kulturperioden*, p. 169, f. 550 (Babylonia; silver, rectilinear ends).

966. Dämmestorp, Hal. (see f. 1006, 1016, 1243, 1421, 1423, 1432, 1438, 1445); barrow (»Bussahögen»): stone-cist, with a skeleton and a bracelet of the same type. The bracelets surrounded the arms. — *Ant. suéd.*, f. 127.

967, 968. Bracelets of bronze.

967. Bracelet of bronze. — Bosgården, Sk.; »barrow» (see f. 932).

968. Massive bracelet of bronze. — Torpa, Sm.; hoard (see f. 959).

969—976. Bronze »fibulae» (brooches). The Scandinavian fibulae consist of two parts, the pin being made in one piece by itself; but in other respects they resemble the contemporaneous Italian fibulae, which have the same form as the modern »safety pin», with the pin made in one piece with the brooch itself. Like the Scandinavian flanged axes, the fibulae of the North is the result of a connexion between the countries of the Mediterranean and Scandinavia in the earlier Bronze Age. On the oldest Northern fibulae, as on the oldest Italian, the point of the pin rests against a hook (f. 969—971). On most of the northern specimens, however, the point of the pin rests on a small spiral-shaped plate (f. 972—976), as is the case with many Italian ones too; but the former, in contradistinction to the latter — which have the pin cast in one piece with the rest — have a similar spiral-plate also at the other end. The Scandinavian and Italian fibulae have also a similar »bow». This is on many of them narrow and round, on others broader, leaf-shaped, and flat (f. 970, 971, 976). For the evolution after this time, see the following periods. Fibulae like f. 969—976, as many discoveries in tombs testify, were worn by both men and women.

They are rather common in southern Sweden, especially in Skåne and Västergötland; in other parts of South Sweden they also occur, as in Norway (particularly on Jæderen, the south-western part of the country). In Denmark they are very numerous. In Sleswig-Holstein and Mecklenburg many are found, and some in other parts of northern Germany. In Denmark and Sleswig-Holstein some brooches, belonging to the end of the 2nd period and the transition to the 3rd, are of *gold* or of gold-plated bronze.

MONTELIUS, *A. T.*, 3, p. 219. — *Id.*, *Congr. St.*, 1874, p. 495. — *Id.*, *Die typolog. Methode*, p. 54. — *Id.*, *Vorklass. Chronol. Italiens*, pp. 229—236.

Fibulae from the 2nd per. and the transition to the 3rd: *Ant. suéd.*, f. 120. — ÅBERG, *Kalm. l. bronsåld.*, p. 34. — *Aarsber.*, 1879,

pl. III. — LORANGE, *Norske Olds. i Bergens M.*, pp. 36—42. — *Opuscula*, pp. 101 (Norway), 113 (Sleswig: with burnt bones). — WORSAAE, *Nord. Olds.*, f. 228. — MÜLLER, *Ordning, Br.*, f. 11, 69, 70 (3 of gold, found in Denmark). — *Id.*, *Aarb.*, 1891, pp. 194—199 (male tombs), 200 (female tombs). — *Id.*, *Aarb.*, 1909, pp. 36, 60. — BOYE, *Egekister*, pl. V, XII, XV, XXI, XXII, XXV. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 337—342. — SPLIETH, *Inventar*, f. 50 (one plated with gold). — BELTZ, *Alterth. Mecklenb.*, pl. 29 f. 64, 65, 71, p. 182. — *Mannus*, II, pl. XV, XVI, p. 192 (Brandenburg). — In other parts of North-Germany than Sleswig-Holstein and Mecklenburg fibulae of these types are rare. — See MONTELIUS, *Tidsbestämning*, pp. 177, 178 (N. Italy and Tyrol), 234 (Russia; silver). — BELTZ, *Zeitschr. f. Ethn.*, 1913, p. 665.

969. Hammarlöf, Sk.; barrow (»Björnhög»); see f. 892).
 970. Falköping, V. G.; gallery-grave; secondary grave with a spiral ring of bronze.
 971. Köpings, Sk.; barrow (no IV): stone-cist, with a skeleton, a small gold spiral, a perforated dog-tooth, etc. — See f. 1039, 1087, 1102, 1112, 1222, 1263, 1310, 1313, 1354, 1367, 1370, 1373, 1429, 1474, 1485. — RYDBECK, *Fornv.*, 1912, p. 115, f. 53—55.
 972. Stora Köpings, Sk.; barrow: oak coffin, with burnt bones, a dagger, a button and remains of woollen cloth.
 973. Hammarlöf, Sk.; barrow (»Tingshög»); see f. 902).
 975. Klefva, V. G.; barrow of stones (cairn); with 2 daggers (= f. 897) and a knife.
 976. Varnhem, V. G.; (tomb) with a neck-ornament (= f. 959), a bracelet, a dagger and an awl (= f. 982).

977—979. Small tongs (»pincettes») of bronze. During the 2nd period they are generally broad and thick at the opening, forming a wide bow above. During the subsequent periods they have other forms (f. 1040, 1116, 1366). This type is general in the Scandinavian district, but similar tongs were also used in other countries at about the same time. Because they have several times been met with in tombs of men, but not in those of women, they have probably been used to draw out of the face single hairs. In Denmark have also been found such a tong, an awl, an earpick, and a nail-cleaner, all of bronze and hanging together on a bronze ring (MÜLLER, *Vor Oldtid*, p. 239, f. 130).

ÅBERG, *Kalm. l. bronsåld.*, f. 10. — *Aarsber.*, 1880, pl. II f. 8. — MÜLLER, *Ordning, Br.*, f. 18. — BOYE, *Egekister*, pl. VIII, XXI, XXIV. — *Mémoires*, 1908—1909, p. 89 (filled up with a bit of wood). — MESTORF, *Alterth. Schlesw.-Holst.*, f. 266. — SPLIETH, *Inventar*, f. 55. — BELTZ, *Alterth. Mecklenb.*, pl. 27 f. 48. — NAUE, *Prähist. Blätter*, 1893, pl. VI (Franconia). — *Id.*, *Die Bronzezeit in Oberbayern*, pl. XVIII f. 7, p. 118. — MONTELIUS, *Vorkl. Chron. Ital.*, pl. XI f. 12, 13. — TSUNTAS, *Αμυρος κ. Σαοζλος*, pl. 4 f. 2.

977. Hammarlöf, Sk.; barrow (»Bonhög»); see f. 903).
 978. Kastlösa, Öl.; with another pincette of bronze and a dagger of flint (probably in a barrow of stones). — ÅBERG, *Kalm. l. bronsåld.*, f. 29.
 979. Sjögestad, Ö. G.; stone-cist (see f. 895).

980, 981. Bronze images of men and animals.

980. Horse, cast in thin bronze over a core of clay; the eyes are inlaid with amber. — Hålsingborg, Sk.; hoard, with a similar horse, 3 spear-heads (= f. 913), 3 axes with stop-ridges (2 = f. 859; 1 = f. 860) and now lost parts of a small car and of a round plate of bronze. Cf. the sun-wheel drawn by a horse of bronze, upon a sort of car, found at Trundholm in Denmark (*Nordiske Fortidsminder*, I, p. 303).
 981. Man; in the horizontal part of the helmet there are two small holes, probably for ornaments in the shape of horns. The arms, cast separately, are lost; beneath each foot, a point for fixing of the figure in a pedestal. — Stockhult, Sk.; hoard (see f. 849), with a quite similar figure (two holes for horns, no arms).

982, 983. Awls of bronze, round with quadrangular tang (the latter has by error been turned downwards

in f. 982, 983). They occur in the earlier Bronze Age, and are common in the later (see f. 1089, 1370). Some have their shafts of amber or bronze (f. 1089, 1090); most of them had shafts of wood or bone. A golden awl has been discovered in Denmark. — Many awls have naturally been used to bore holes in wood, leather and so forth; but many have manifestly had another purpose. Awls are not found in women's tombs (or very seldom); but in men's graves they have been discovered, especially the finer specimens. And there often lie together in the same tomb, chiefly in the later Bronze Age, an awl with a small tong (see f. 977) and a razor. Probably they were used for tattooing.

MÜLLER, *Ordning, Br.*, f. 19 a (bronze handle), 145. — MADSEN, *Afbildn. Br.*, I, pl. 27 f. 18—21 (handle of bronze and bone); II, pl. 3, 14, 16 (bronze handle), 18, 32 (bronze handle). — BOYE, *Fortegnelse*, p. 27 (of gold). — MÜLLER, *Vor Oldtid*, p. 237 (tattooing).

982. Sjögestad, Ö. G.; stone-cist (see f. 894).
 983. The figure is placed upside down. — Bosgården, Sk.; barrow (see f. 932).

984. Bronze pins with round heads; below this, a hole in the more or less thickening part of the pin. Such pins, not general in the Northern region, occur plentifully in Italy. — Bronze pins from the Bronze Age are not so common in the Scandinavian region as in central Europe, evidently because fibulae were generally used here, but not there.

Aarsber., 1887, pl. I f. 3, p. 61 (south-western Norway; 25 (!) cm. long, with two perforations in different directions). — SPLIETH, *Inventar*, f. 71; cf. KOSSINA, *Die deutsche Vorgeschichte*, 2nd edit, p. 111. — PIČ, *Čechy predhist.*, I, pl. XI f. 14 (per. 1); II, pl. II f. 3. — NAUE, *Die Bronzezeit in Oberbayern*, pl. XII, XXIX, XXXII, p. 153. — KELLER, *Pfahlbauten*, 7, pl. XXII f. 11. — MONTELIUS, *La civil. primit. en Italie*, pl. 1, 7, 16, 37 (early), 38, 40. — STROBEL, *Avanzi preromani*, 2, pl. IV f. 22 (in the eye stuck probably a string of leather with a bronze button [not a bit of bronze]; cf. *Verhandl. Berl. Anthr. Ges.*, 1890, p. 328). — Cf. MONTELIUS, *Chronol. ält. Bronzezeit*, p. 153 (Cyprus; copper), 145 (Egypt; copper).

984. Herrljunga, V. G. (not Sk.); great stone-cist from the Stone Age, — *Fornv.*, 1906, p. 170.

985—989. Buttons of bronze. In the Scandinavian peninsula and in Denmark several rather large specimens from this period have been found: the upper plate is flat, decorated with real or false spirals; the lower plate is sometimes like a wheel (see f. 1143). Others, generally smaller, have the upper part high and conical.

The upper part flat (not conical): MÜLLER, *Ordning, Br.*, f. 13. — BOYE, *Egekister*, pl. I, V (of horn or bone), X (of wood), XXI f. 5 (bronze, inlaid with amber) and f. 11 (of tin), XXVII (small plates). — MADSEN, *Afbildn. Br.*, pl. 29 f. 15, 16.

985. Östra Karup, Hal. (near the borders of Skåne).
 988. Torpa, Sm.; hoard (see f. 959).
 989. Hammarlöf, Sk.; barrow (»Tingshög»); see f. 902).

990. Bronze mountings for a chair; ornaments open worked.

SPLIETH, *Inventar*, p. 42; cf. BOYE, *Egekister*, pl. XIV f. 1 (chair, found in a coffin of oak).

990. Torpa, Sm.; hoard (see f. 959).
 991. Head of a bronze pin (?). — Stenåsa, Öl.; perhaps found with a neck-ornament (= f. 958—965). — ÅBERG, *Kalm. l. bronsåld.*, f. 28.

The third period.

From the beginning of the 13th to the end of the 12th century B. C.

Within this period, there may be distinguished:

an earlier part, characterized, among other things, by such fibulae as f. 1024—1026;

and a later part, characterized, among other things, by such fibulae as f. 1027—1030.

MONTELIUS, *Tidsbestämning*, pl. 3.

992—997. Socketed axes of bronze, uniform in breadth; some of them showing traces of origin from socketed axes of the 2nd period. The Swedish axes of this type from the 3rd period are often decorated with raised linear ornaments as f. 992—995 and 997; similar ones occur also, though seldom, in Norway, but they are not known from Denmark, nor from northern Germany, unless possibly by exception. They were therefore made in Sweden. Casting-moulds for them have also been discovered here (f. 998). Descendants of Swedish socketed axes from the 3rd period survived a long time.

LINDQVIST, *De svenska holkaxarna från bronsåldern* (*Opuscula*, p. 79). — RYGH, *Norske Olds.*, f. 96.

992. Tullinge, Söd.; hoard, beneath a block of stone: with a similar axe (f. 997), a sickle (f. 1021), 2 belt ornaments (= f. 1033) and 2 spiral bracelets. — *A. T.*, 3, p. 239; *Opuscula*, p. 82, f. 8.

994. Stora Mellösa, Ner. (not Söd.). — *Opuscula*, p. 82, f. 10.

997. Tullinge, Söd.; hoard (see f. 992).

998. Stone moulds for socketed axes like f. 992—997. Many moulds from the Bronze Age have been preserved till our day. Most of them are of stone (f. 1067, 1069, 1070, 1181—1184, 1194), some of bronze (f. 1185). Of moulds in clay, — especially used for casting, with wax models, the finer bronzes, — fragments are found only seldom, because these moulds had to be broken, when the casting was finished. — See f. 1071 (jet).

MONTELIUS, *Mbl.*, 1872, p. 97. — MÜLLER, *Ordning, Br.*, f. 150 (literature). — *Jahrb. Mecklenb.*, 34, p. 220. — BELTZ, *Altert. Mecklenb.*, p. 266. — RICHLÝ, *Bronzezeit in Böhmen*, pl. XLIV, XLV. — KELLER, *Pfahlb.*, 3, pl. VII, etc. — GROSS, *Protohelvètes*, pl. XXVII—XXX. — MONTELIUS, *Civil. primit. Italic*, pl. 2, 3 etc.

Method of casting: NEERGAARD, *Haag-fundet, En Affaldsdyngje fra en Metalstobers Hytte, fra den yngre Bronzealder* (*Aarb.*, 1908, p. 273). — OLSHAUSEM, *Die Technik alter Bronzen* (*Verhandl. Berl. Anthr. Ges.*, 1885, f. 410). — MUCH, *Kupferzeit*, 2nd edit., p. 238. — K. v. MISKE, *Die prähist. Ansiedlung Velem St. Vid*, I (Wien, 1908; see *Aarb.*, 1908, p. 273, note). — DÖRFELD, *Troja*, p. 368.

998. Lugnås, V. G.; found with the other half of the same mould.

999. Bronze spear-heads (see f. 911).

999. Ekudden, Söd.; hoard (see f. 950).

1000—1012. Bronze swords. The hilts, often formed entirely or partially of bronze, are developed from those of the 2nd period (f. 897—907). The pommel is no longer oval, but rhombic.

MONTELIUS, *Congr., St.*, 1874, p. 887. — *Id.*, *Die typolog. Methode*, p. 41. — RYGH, *Norske Olds.*, f. 101. — MÜLLER, *Ordning, Br.*, f. 88—91. — *Id.*, *Aarb.*, 1891, p. 204. — MADSEN, *Afbildn.*

Br., I, pl. 9, 11. — SPLETH, *Inventar*, f. 79—80. — BELTZ, *Altert. Mecklenb.*, pl. 24 f. 14.

1000. Length: 76.2 cm. — Kyleberg, Ö. G. (in 1848); at the bottom of the lake Tåkern. — *Ant. suéd.*, f. 109.

1003. Length: 115 cm.(!). — Ellösefjorden, Boh.; the sword stood vertically in the bottom of the sea. — *Mbl.*, 1883, p. 75.

1004. Dref, Sm. (in 1860); great stone-cist from the Stone Age. — WITTLÖCK, *Jordfynd från Varend*, pl. 6 f. 4, p. 72.

1006, 1007. Sheath of wood and leather; chape of bronze. — Dömmestorp, Hal. (in 1869; see f. 966); barrow: little stone-cist, with burnt bones and remains of woollen cloth (f. 1048). — *Ant. suéd.*, f. 165, 166.

1008. Bronze swords; rivet holes in the flanged hilt as well as at the base of the blade.

1008. Krokek, Ö. G. — MÜLLER, *Mémoires*, 1908—1909, p. 128.

1009. Hammarlöf, Sk.; barrow (Björnhög); see f. 924.

1010. Utterstad, Ö. G. (in 1869); barrow: with a knife (f. 1013). The barrow contained also a stone-cist from the Stone Age, with 5 skeletons, a flint spear, etc. — *Ant. suéd.*, f. 107.

1012. Transition to the 3rd period. — Bäckaryd, Sm.; barrow (see f. 929). — *Ant. suéd.*, f. 108.

1013—1019. Bronze knives.

1013—1015. Short shaft, terminating in a horse's head, often very much degenerated (cf. f. 927).

1013. Utterstad, Ö. G.; barrow (see f. 1010).

1016. Dömmestorp, Hal. (see f. 966); barrow: little stone-cist, with burnt bones, a fibula (f. 1026) and a button.

1017—1019. One or two oblong openings in the shaft, often divided by cross pieces (cf. f. 926).

Cross-pieces in the opening: WITTLÖCK, *Jordfynd från Varend*, pl. 5 f. 3, 5. — WORSAAE, *Nord. Olds.*, f. 163. — VEDEL, *Bornholms Oltidsminder og Olds.*, p. 35, f. 21.

1017. Spärlinge, Sk.; barrow. In a little stone-cist, with burnt bones.

At the bottom of the barrow, there was an oak coffin, wherein the body of a woman, in the 2nd period, had been buried, with a dagger, 2 belt-ornaments (= f. 1033—1035) and a handful of beech-nuts — proving that that tree lived in Skåne already in the middle of the 2nd millennium B. C. — The barrow contained 8 other tombs (see f. 1120) from different periods of the Bronze Age; the latest dates from the transition to the Iron Age.

1019. Båstad, Hal.; tomb (see f. 955).

1020. Saws of bronze (cf. f. 932).

1020. Ekudden, Söd.; hoard (see f. 950).

1021. Bronze sickles, with projecting plug for fastening to the handle. Such implements have, though seldom, been found in Sweden, as in other parts of the Scandinavian region; most of them date from the earlier Bronze Age. In other parts of Europe sickles from the Bronze Age have a more or less similar shape; sometimes they are provided with sockets for the handles. — See f. 587.

WORSAAE, *Nord. Olds.*, f. 159. — MÜLLER, *Ordning, Br.*, f. 146, 147. — MADSEN, *Afbildn., Br.*, I, pl. 26 f. 1, 2. — SPLIETH, *Inventar*, f. 59, 60. — BELTZ, *Altert. Mecklenb.*, pl. 26 f. 31—33, pl. 38 f. 33. — MANNUS, II, p. 179. — EVANS, *Bronze Implem.*, p. 194 — *Proceedings of the R. Irish Academy*, 3 ser., II, p. 381. — DÉCHELETTE, *Manuel*, p. 266. — DE MORTILLET, *Musée préhist.*, pl. LXXVIII. — KELLER, *Pfahlb.*, 7, pl. VII (handle of wood, well preserved). — GROSS, *Protohelvètes*, pl. XX. — MONTELIUS, *Vorklass. Chronologie Italiens*, pl. XI, XV (sickles and mould for them).

1021. Tullinge, Söd.; hoard (see f. 992).

1022, 1023. Bronze neck-ornaments, richly decorated with spiral designs (cf. f. 958—965).

1022. Broken and mended, in this period, by rivetting. — Simrishamn, Sk.; barrow: with a fibula (= f. 1032) and a belt-ornament (= f. 1033—1035). — *Ant. suéd.*, f. 123.

1023. Gotland. — *Fornv.*, 1907, p. 96.

1024—1032. Bronze fibulae, developed from the types of the 2nd period.

1024—1030. The narrow bronze thread, of which the spiral plates are formed, is first rolled so tight that it loses its round shape, and is squeezed into a narrow fillet standing on its edge (f. 1025, 1026); then it gets flattened out into a horizontal ribbon, which gradually widens. Only the last coil, which is thicker than those inside it, retains its round shape; it is generally ornamented in such a way that it looks twisted. The plates, at first narrow, soon get larger and larger. At the same time the central part of the fibula is altered; it becomes more and more bow-shaped and shorter than before.

MONTELIUS, *Die typolog. Methode*, p. 56. — RYGH, *Norske Olds.*, f. 124. — *Aarsber.*, 1879, pl. III f. 14. — MÜLLER, *Ordning, Br.*, f. 70—73. — *Id.*, *Aarb.*, 1891, p. 199. — SPLIETH, *Inventar*, f. 98—101. — BELTZ, *Altert. Mecklenb.*, pl. 29. — *Id.*, *Zeitschr. f. Ethnol.*, 1913, pp. 669, 676.

1024 (not 1424). Hofby, Sk.; tomb (see f. 885).

1025. Västkind, G.; with a skeleton and 2 buttons.

1026. Dömmestorp, Hal.; barrow (see f. 1016).

1031, 1032 (see f. 1151). Bronze fibulae, with a large, flat, rhombic plate, parallel to the pin and often adorned with spiral decoration. The pinhead is generally »tutulus»-shaped. The type, developed from such forms as f. 970, occurs only in the south-eastern part of Skåne and on Bornholm; from northern Germany only isolated specimens like f. 1031—1032 are known; but several fibulae from later times with a flat, almost rhombic plate (though different from f. 1031—1032) are found in Germany, Bohemia, and Hungary.

Tidsbestämning, pl. 3 f. 67, pp. 71 (type d) and 207, 226, 228. — Fibulae of about the same form: LISSAUER, *Bronzezeit in Westpreussen*, pl. V f. 2, pl. IV f. 1. — BELTZ, *Zeitschr. f. Ethnol.*, 1913, pp. 671—675. — PÍČ, *Čechy předhistorické*, 2, pl. XXVI. — HAMPPEL, *Bronzezeit in Ungarn*, pl. XXXIX. — UNDSSET, *Étude sur l'âge de bronze de la Hongrie*, pl. I—V (Hungary, Bohemia and Germany).

1031. Sandby, Sk.; with a belt-ornament (= f. 1034), a collar and 2 other rings.

1033—1035. Funnel-shaped ornaments (»tutuli») of bronze, similar to those of the 2nd period, but with a far higher point terminating in a knob; this is at first small and plain, but it gradually gets larger and decorated with designs, punched or inlaid with resin;

these latter belong to the transition between the 3rd and 4th period.

MADSEN, *Afbildn., Br.*, I, pl. 39 f. 4. — SPLIETH, *Inventar*, f. 110. — BELTZ, *Altert. Mecklenb.*, pl. 33 f. 104, p. 189.

1033, 1034. Ekndden, Söd.; hoard (see f. 950).

1035. Söndrum, Hal.; little stone-cist, with burnt bones. This tomb and 5 similar ones were found in a barrow of stones. — *Sv. Fornm.-för. tidskr.*, 5, p. 23.

1036—1039. Buttons of bronze; in several cases the tops are lengthened, resembling antennae, which are either blunt or terminate in a knob. During the 4th period the antennae became far longer (see f. 1128).

RYGH, *Norske Olds.*, f. 122. — MÜLLER, *Ordning, Br.*, f. 207. — BELTZ, *Altert. Mecklenb.*, pl. 33 f. 109. — LISSAUER, *Bronzez. in Westpreussen*, pl. II f. 17.

1036. Hammarlöf, Sk.; barrow (»Bonhöög»; see f. 656): a little coffin of oak contained burnt bones, a sword (f. 1079), a knife (f. 1108), a pincette (f. 1119) and an awl with handle of amber (f. 1089). The two halves of the coffin had been kept together with resin. Transition to the 4th period.

1037. Ryssby, Sm.; barrow of stones: with 2 similar buttons, the blade of a dagger and a spear-head (= f. 1085).

1038. Tosterap, Sk.; barrow: with a skeleton, a sword (= f. 1000 or 1002) and a fibula (= f. 972—975).

1039. Köpinge, Sk. (see f. 971); barrow no III: secondary tomb, with a knife, a pincette, an awl, etc.

1040, 1041. Small tongs (»pincettes») of bronze, narrow, even at the opening. See f. 977.

MÜLLER, *Ordning, Br.*, f. 87. — SPLIETH, *Inventar*, f. 94.

1040. Stora Köpinge, Sk.; barrow: with a skeleton, a sword (= f. 1009), a fibula (= f. 972) and 2 knives (= f. 924 and 1013), all of bronze, and a little spear-head of flint.

1041. Kastlösa, Öl. (in 1849); with a skeleton and the blade of a dagger. — *Sv. Fornm.-för. tidskr.*, 4, p. 281.

1042—1047. *Gold* rings. Some of them are open bracelets, often twisted or grooved as f. 1043 and 1047; others are spiral rings of single or double gold thread.

MONTELIUS, *Fornv.*, 1916, p. 29.

1042 (see f. 1046). Spiral rings of narrow, single or double *gold* thread. In size about that of a finger-ring; but several finds show that such rings were not only worn as finger rings, but also as hair ornaments (f. 1042), or sometimes hanging from a neck-lace. Spiral rings of gold were also used for payment. — Similar spiral rings of bronze have also been found in the Northern region, as elsewhere.

Fornv., 1916, p. 60. — BOYE, *Egekister*, p. 150 (finger rings). — SEHESTED, *Archæol. Undersøgelser*, pl. IV (finger rings). — BELTZ, *Altert. Mecklenb.*, p. 188.

1042. Hammarlöf, Sk.; barrow (»Björnhög»; see f. 924): with a similar ring. One of the rings was found to the right, the other to the left of the head.

1043 (see f. 1047). Open bracelets of *gold*, twisted or spirally grooved.

Fornv., 1916, pp. 37, 38.

1043. Weight: 25 gr. (88.65 % gold). — Hvellinge Sk. (in 1837). — *Ant. suéd.*, f. 126.

1044, 1045. Bracelet of gold (see f. 1304); weight: 54.6 gr. Encircled with 5 long spiral rings of gold (f. 1045). Total weight of the 6 rings: 187 gr. (85.4 % gold). — Gantofta, Sk. (in 1811).

1046. Spiral ring of a double gold thread. — Simris, Sk.; barrow: with a similar ring. Total weight: 15.48 gr. (92 % gold). — *Ant. suéd.*, f. 128.

1047 (see f. 1043). Gold bracelet; the bifurcated ends have probably formed spirals. Weight: 30.6 gr. (91 % gold). — Blixterp, Hal.

1048. Woollen stuff, coarse, thick, generally two-thread.

MÜLLER, *Ordning, Br.*, f. 1—3.

1048. Dömmestorp, Hal.; barrow (see f. 1006).

1049, 1050. Round bronze boxes, with flat bottom and lid; this was fastened by a wooden bolt, shut through the projecting loops placed on the border of the box and a third on the middle of the lid. They are bronze copies of wooden boxes; raised rims round the border of the box are imitations of the wooden binding which kept the wooden boxes together. On the bottom are star-shaped ornaments, inlaid with resin; similar ornaments were burnt in the wooden boxes. These bronze boxes, some of which contained golden spirals and the like, are found only in the Northern region. For descendants of this type in the 4th period see f. 1158—1160.

Evolution: MONTELIUS, *A. T.*, 3, p. 275. — *Id.*, *Congr. St.*, 1874, p. 496. — *Id.*, *Tidsbestämning*, p. 74. — *Id.*, *Die typolog. Methode*, p. 58.

Boxes with flat bottom: *Tidsbestämning*, p. 239 (list of such boxes known of in 1885). — *Sv. Fornm.-för. tidskr.*, 5, p. 18, f. 2. — MÜLLER, *Ordning, Br.*, f. 123. — *Id.*, *Aarb.*, 1891, p. 222. — MADSEN, *Afbildn. Br.*, I, pl. 37 f. 4. — MESTORF, *Alterth. Schlesw.-Holst.*, f. 349. — SPLIETH, *Inventar*, f. 117. — BELTZ, *Alterth. Mecklenb.*, pl. 34 f. 111, p. 191.

1050. Kabusa, Sk.; barrow: with a knife (= f. 926), a fibula (= f. 1032), 2 rings (= f. 1043) and a belt-ornament (= f. 1033—1035). — *Sv. Fornm.-för. tidskr.*, 6, p. 18.

1051. Bronze vessels, supported by bronze cars on four wheels; probably intended for sacral use. They have been found in Scandinavia and North Germany, and were doubtless imported from Central Europe, where similar small bronze cars occur.

Mbl., 1873, p. 4. — *Sv. Fornm.-för. tidskr.*, 12, p. 18.

1051. The vessel — lost before the find was made — is drawn after a complete specimen that has been discovered in Mecklenburg. Analysed: 92.49 % copper, 6.34 tin, 0.63 iron and 0.54 nickel; no trace of zinc. — Near Ystad, Sk.; peat-bog (in 1855). — *Ant. sued.*, f. 255; MONTELIUS, *Mbl.*, 1873, p. 4.

The fourth period.

From the beginning of the 11th to the middle of the 10th century B. C.

During this period there can be distinguished:

an earlier part, characterized, among other things, by such fibulae as f. 1148 and 1149;

and a later part, characterized, among other things, by such fibulae as f. 1150.

MONTELIUS, *Tidsbestämning*, pl. 4.

1052. Winged axes of bronze, imported from central Europe, where they are general; in the Scandinavian region they occur only exceptionally. The wings, sprung from the flanges that were growing high in the middle, consequently had their place at first at or near the middle of the axe; in the beginning they were upright and not bent round the shaft. But they were gradually removed far higher up, until they ended by assuming a place close to the butt end. At the same time they were generally bent round the shaft. On such axes, a loop is often seen for binding the axe to the shaft. — Axes with the wings near the middle are contemporary with our 3rd period. Axes on which the wings are placed as in f. 1052, and somewhat farther below, are contemporary with the late part of our 4th period, or transition to the 5th. Contemporary with the last-named period are those on which the wings are placed close to the upper edge (f. 1168).

MONTELIUS, *Die typolog. Methode*, p. 22. — *Id.*, *L'Anthropologie*, 1901, pp. 617, 619.

Wings near the centre, not hammered over: *Mémoires*, 1908—1909, p. 98, f. 87 (found in a grave, with a sword = f. 889). — SPLIETH,

Inventar, f. 28. — BELTZ, *Alterth. Mecklenb.*, pl. 22 f. 6 (in tombs; 3rd period).

Wings higher up, hammered over: MÜLLER, *Ordning, Br.*, f. 343 (in 1891, at least 28 winged axes were known of from Denmark). — MADSEN, *Afbildn., Br.*, I, pl. 22 f. 15, 16. — SPLIETH, *Inventar*, f. 136. — BELTZ, *Alterth. Mecklenb.*, pl. 37 f. 10 (wings near the middle of the axe, hammered over; with a fibula = f. 1148).

1052. Köpings klint, Öl. (not Sk.); with 3 socketed axes and the upper part of a sword with tang.

1053—1066. Socketed axes of bronze.

1053. Wooden shaft, broken. — Hässjö, Mpd.

1054, 1055. Almost uniform in breadth; descendants of the socketed axes of the third period f. 992—997. Like the latter, they are adorned with raised narrow lines; in the 4th period these lines no longer go in one direction only, but also crosswise at the loop that is placed at some distance below the upper end. — Many axes of this type have been met with in the district of Lake Mälaren and in adjacent parts of middle Sweden, where they have clearly been made. In southern Sweden the type is unusual; and in Denmark it does not occur. Such socketed axes have been found in Norway, and the same is the case in Finland, and

those districts of Russia which touch the upper Volga and its tributaries: a witness to the connection between these districts and our country, so early as 3,000 years ago.

MONTELIUS, *A. T.*, 3, p. 341. — SALIN, *Uppland*, 1, p. 176. — LINDQVIST, *Opuscula*, p. 86. — RYGH, *Norske Olds.*, f. 98. — A. W. BRØGGER, in a publication dedicated to prof. L. Dietrichson, — W. C. BRØGGER, *Oldtiden*, 1916, p. 37. — *Oldtiden*, 111, Thronhj. M., p. 6; VI, p. 184; VII, p. 39. — HACKMAN, *Studier tillägnade Ö. Montelius* (1903), p. 1. — TALLOREN, *Die Kupfer- u. Bronzezeit in Nord- u. Ostrussland*, p. 169. — ID., *Sveriges förbindelser med Ryssland under bronsåldern* (*Finsk tidskrift*, 1916, p. 368, with a map showing the distribution of these later axes east of the Baltic).

1060. Remains of the wooden handle in the socket. — Bräcke, Dal, near Lake Vänern; hoard (in 1863). A clay vessel contained a quantity of bronzes, most of them broken: socketed axes, swords, saws (f. 1068), a bracelet (f. 1138), other rings, a belt-ornament (f. 1154), buttons (1 = f. 1039; 2 = f. 1141), a fish-hook (f. 1152), jets (f. 1071, 1072) etc. No hones. — *Ant. suéd.*, f. 182.

1066. Vemmerlöf, Sk.; near the surface of a peat-bog (in 1812): with 2 socketed axes of the same type, a knife (f. 1114), 5 hollow collars (f. 1125), a belt-ornament (f. 1157) and 3 vessels of bronze (f. 1159, 1161, 1163). — *Iduna*, 6, p. 49, pl. I; *Tidsbestämning*, f. 71, 82, 90.

1067. Moulds of stone for casting socketed axes of bronze, resembling f. 1058 (see f. 998).

1068. Saws of bronze with plugs on the upper border for fastening the tool to its handle. The type, general in the Scandinavian region during periods 4 and 5 (f. 1269), has been developed out of the one illustrated in f. 932. Several moulds for saws of this type are known from Sweden and Denmark (f. 1069).

Many saws of this type have been found in Sweden (most of them are broken). — WORSAAE, *Nord. Olds.*, f. 157. — MÜLLER, *Ordning, Br.*, f. 344. — MADSEN, *Afbildn., Br.*, I, pl. 26 f. 5; II, pl. 13 f. 23, pl. 29 f. 5, 6. — MESTORF, *Alterth. Schl.-Holst.*, f. 246.

1068. Bräcke, Dal; hoard (see f. 1060).

1069, 1070. Stone moulds for saws and knives of bronze. Several such moulds for casting three or four saws at one time, have been found in the Scandinavian peninsula, and in Denmark.

MÜLLER, *Ordning, Br.*, f. 346. — MADSEN, *Afbildn., Br.*, II, supplement pl. I.

1069. Mould for 4 saws. — Bottna, Boh. — *Boh. bidr.*, 2, p. 231.

1071, 1072. Jets, or waste pieces, that part of the molten bronze which fills the funnel of the mould, during the casting, and also fills the channels leading from it to the interior of the mould. The jet generally shows how many channels there were. — These jets, which seem to be of very little value, have great importance for archaeologists, because they prove that the casting of bronzes has taken place at or near the spot where they are encountered. In Sweden and Denmark many such discoveries have been made. See f. 998.

1071, 1072. Bräcke, Dal.; hoard (see f. 1060).

1073—1080. Bronze swords.

1073—1078. Swords with a flanged tang, which is somewhat narrower than in the previous period; rivet holes both in the tang and at the base of the blade (cf. 888, 889).

Tidsbest., pl. 4 f. 74. — LINDQVIST, *Opuscula*, p. 84, f. 12—14; the ornamentation of the tang-sides is different in Sweden and in Denmark. — MÜLLER, *Ordning, Br.*, f. 175, 176. — *Aarb.*, 1876, p.

201 (the sword, with a round pommel, had been placed in a sort of wooden box, f. 17). — MADSEN, *Afbildn., Br.*, I, pl. 6 f. 16—18; cf. f. 15. — MESTORF, *Alterth. Schl.-Holst.*, f. 150. — SPLIETH, *Inventar*, f. 127. — BELTZ, *Alterth. Mecklenb.*, pl. 35 f. 2, 3.

1074—1076. The flanges of the tang are overlaid with gold; pommel of massive gold (f. 1075); small nails of gold (f. 1076) in the wooden handle. — Håga, Upl., near Upsala: great barrow (in 1903). An oak coffin, 2.50 m. long, placed in a wooden chamber (see f. 1101), contained burnt bones, the sword, 2 knives (f. 1109, 1111), 2 pincettes (f. 1116, 1117), a brooch (f. 1149), 6 buttons (2 with long antennae, f. 1129, 1141; 2, f. 1142; 2, f. 1147), several very small spirals of gold (f. 1130) and other things (f. 1095, 1096, 1140). Several bronzes are overlaid with gold. At the bottom of the barrow, there was a layer of charcoal, evidently the remains of the funeral pile. — Ö. ALMGREN, *Kung Björns hög och andra fornlämningar vid Håga* (Sthlm, 1905); *Foruv.*, 1916, p. 25; see f. 45 (the sword-hilt with the pommel of gold, in full size).

1077, 1080. Vattholma, Upl. (in 1833); hoard: with a similar sword, the hilt of a third sword (f. 1080) and 4 spear-heads (f. 1085). — *A. T.*, 3, p. 189; *Ant. suéd.*, f. 154, 159; EKHMOLM, *Uppl. bronsåld.*, p. 236.

1079. Thin gold plate round the tang. — Hammarlöf, Sk.; barrow (»Bonhög»); see f. 1036.

1081—1083. Symbolical swords (miniatures) in bronze, see f. 908, 909 (2nd period) and 1204—1206 (5th period). The shape of the handles show that f. 1081—1083 belong to the same time as the real swords with hilts like f. 1080.

RYGH, *Norske Olds.*, f. 109. — WORSAAE, *Nord. Olds.*, f. 156. — MÜLLER, *Ordning, Br.*, f. 172, 173. — MADSEN, *Afbildn., Br.*, I, pl. 12 f. 1—3; II, pl. 14 f. 9, 10, pl. 15 f. 5. — SPLIETH, *Inventar*, f. 130. — BELTZ, *Alterth. Mecklenb.*, pl. 35 f. 9.

1084—1086. Spear-heads of bronze with a socket, which generally terminates at a short distance below the edges of the blade; many are unusually thin.

MÜLLER, *Ordning, Br.*, f. 365. — SPLIETH, *Inventar*, f. 133. — BELTZ, *Alterth. Mecklenb.*, pl. 37 f. 18.

1084. The clay core rests in the interior. — Gällstad, V. G.; probably with a socketed axe (= f. 1060).

1085. Vattholma, Upl.; hoard (see f. 1077).

1086. Slågarp, Sk. (in 1848); peat-bog (»Åmossen»), with 4 similar spear-heads. — *Ant. suéd.*, f. 175.

1087, 1088. Arrow-heads of bronze with a long tang.

MÜLLER, *Ordning, Br.*, f. 179, 179 a (cf. 279). — *Aarb.*, 1891, p. 226. — MADSEN, *Afbildn., Br.*, I, pl. 14; II, pl. 15. — SPLIETH, *Inventar*, f. 134, 135. — BELTZ, *Alterth. Mecklenb.*, pl. 38 f. 20.

1087. Köpinge, Sk. (see f. 971); barrow no X: with a button ending in antennae and an awl, in an urn of clay, covered with a little slab.

1089—1091. Bronze awls; see f. 982.

1089. Shaft of amber. — Hammarlöf, Sk.; barrow (»Bonhög»); see f. 1036.

1090. Shaft of bronze. — Skåne.

1091. Nöbbelöf, Sk.; barrow, with 2 knives, a pincette (= f. 1121) and an arrow-head (= f. 1087). — *Ant. suéd.*, f. 204.

1092—1094. Sewing needles of bronze; needles of bone were also used during the Bronze Age. The eye (oblong or round) is placed sometimes near the middle, sometimes at the butt end. Such needles of bone were in use already before the commencement of the Bronze Age.

MÜLLER, *Ordning, Br.*, f. 202—204. — MADSEN, *Afbildn., Br.*, I, pl. 27 f. 22—24. — MESTORF, *Alterth. Schl.-Holst.*, f. 282 (the eye, at the top, formed by bending over of the upper part of the needle), 283, 285, 286. — SPLIETH, *Inventar*, f. 114, 115. — BELTZ, *Alterth. Mecklenb.*, pl. 39 f. 54.

1092, 1093. Reng, Sk.; perhaps with a sword and a pin. — *Ant. suéd.*, f. 206, 205.

1094. Bjärtsgård, Sk.; barrow: at its centre stood an urn of clay with burnt bones, the needle, an awl, a knife and a button ending in antennae, all of bronze, and 5 flint chips.

1095, 1096. Pendant ornaments of bronze.

1095, 1096. Håga, Upl.; barrow (see f. 1074).

1097—1100. Pieces of clay mortar on buildings.

1097—1100. Fragments of clay that had covered the walls of an oval hut. — Boda, Upl.; in the ruins of the hut the brooch f. 1151 was found. — ALMGREN, *Fornv.*, 1912, p. 132.

1101. Bits of resin with the impressions of wood.

1101. Håga, Upl.: barrow (see f. 1074).

1102—1115. Bronze knives.

1102—1110. Commonly called »razors»; descendants of knives in use during the 2nd and 3rd period, the shafts of which terminates in an animal's head, by this time so degenerated as in many cases to be almost unrecognizable; a little raised point in the place of the eye may however be detected. The neck is often distinctly bent, almost like a swan's neck. The end of the blade is generally broad, rectilinear and rectangular (see f. 927, 1013, 1111, 1241).

MÜLLER, *Ordning, Br.*, f. 184—189. — SPLIETH, *Inventar*, f. 143—146. — BELTZ, *Altert. Mecklenb.*, pl. 38.

1102. Köpinge, Sk. (see f. 971); barrow no III: little stone-cist, 1.20 m. long, with burnt bones, an arrow-head (= f. 1087), a pincette and an awl.

1106. Karpalund, Sk.; urn of clay, with burnt bones and 2 flint chips. — *Mbl.*, 1891, p. 177.

1107. Shaft in the shape of a man. — Simris, Sk. — *Mbl.*, 1886, p. 42.

1108. Hammarlöf, Sk.; barrow (»Bonhöög»; see f. 1036).

1109. Shaft encircled by a gold thread. — Håga, Upl.; barrow (see f. 1074).

1110. Transition to the 5th period. — Fleringe, G.; barrow of stones: urn of clay, with burnt bones.

1111—1113. The shaft, which is not bent back, ends in a spiral; similar knives were in use as early as the 2nd period (BOYE, *Egekister*, pl. XIX f. 8).

Fornv., 1908, p. 260, f. 133 (Gestrikland). — MÜLLER, *Ordning, Br.*, f. 186. — BELTZ, *Altert. Mecklenb.*, pl. 38 f. 21, p. 242.

1111. Håga, Upl.; barrow (see f. 1074).

1112. Köpinge, Sk. (see f. 971); barrow no VIII: with a similar knife the blade of a little dagger, an awl, a pincette and a button (= f. 1036).

1114. Narrow tang; a round hole at the beginning of the blade.

1114. Vemmerlöf, Sk.; peat-bog (see f. 1066).

1115. The shaft resembles the upper part of such sword-hilts as f. 1080.

Sv. Fornm.-för. tidskr., 5, p. 29, f. 8 (Halland). — MÜLLER, *Ordning, Br.*, f. 180.

1115. Little thin gold-plate upon the shaft. — Dagstorp, Sk. — *Fornv.*, 1916, p. 2.

1116—1122. Small bronze tongs (»pincettes»); sometimes of gold (f. 1121). As during the 3rd period (f. 1040), some are narrow, and a little broader below than above. The majority are considerably broader below, often ornamented with 3 small bosses on either

side, and simple, punched decoration; they belong to the end of the 4th period and the transition of the 5th. See f. 977.

MÜLLER, *Ordning, Br.*, f. 194—198. — SPLIETH, *Inventar*, f. 149—151. — BELTZ, *Altert. Mecklenb.*, pl. 38 f. 36. — *Mittheil. Anthr. Ges., Wien*, XIX (1899), p. 141 (3 round bosses; Bosnia).

1116, 1117. Håga, Upl.; barrow (see f. 1074).

1119. Hammarlöf, Sk.; barrow (»Bonhöög»; see f. 1036).

1120. Spärlinge, Sk.; barrow (see f. 1017): with burnt bones and a knife (f. 1250). Transition to the 5th period.

1121. Gold. Weight: 8.08 gr. (80.6 % gold). — Vessige, Hal., barrow (in 1852). — *Ant. suéd.*, f. 201; *Fornv.*, 1916, p. 11.

In Denmark, two small pincettes of gold have been found: MÜLLER, *Ordning, Br.*, p. 32; MADSEN, *Afbildn., Br.*, II, pl. 11 f. 5. — In Jutland a gold-plate has been discovered that once was laid upon such a pincette. BOYE, *Fortegnelse*, p. 27, f. a.

1122. The small round disc is on one side covered with gold. — Skåne. — *Fornv.*, 1916, p. 1.

1123—1127 (see f. 1132, 1133). Bronze collars.

1123, 1124. Twisted or grooved, as imitated twisted rings; the same direction of the grooves throughout the whole ring. Both ends terminate in hooks which can catch over each other. From this type, such rings as f. 1125—1127 and 1132 are developed.

MADSEN, *Afbildn., Br.*, II, pl. 23 f. 4—6 (2 of bronze, one of gold).

1123, 1124. Sylstorp, Sk.; hoard (in 1883): with 8 other collars (1 = f. 1123, 3 = f. 1124, 2 = f. 1132 and the originals of f. 1126 and 1127), 2 spiral bracelets (f. 1131) and 3 great belt-ornaments (f. 1155, 1156). — *Mbl.*, 1884, p. 180.

1125—1127 (see f. 1132). Collars of a type developed out of f. 1123, 1124. One portion of the ring, about $\frac{1}{4}$ or $\frac{1}{5}$, is detachable. The broader end of the loose piece can be inserted in the ring itself; the narrower end is either hook-shaped and receives the hook, in which the other end of the ring terminates, or else it goes with a short plug into a hollow in the last-mentioned. In this way the loose piece is held fast by the elasticity of the bronze. Such rings are sometimes massive (f. 1127), but generally more or less concave on the lower side; not seldom they are quite thin and broad. Sometimes, by being placed above each other, several such rings formed a neck-ornament (MÜLLER, *Ordning, Br.*, f. 314). Very seldom broad hollow rings are found, which for the rest resembles those here described, but are made in one piece; it was generally necessary to make them in two pieces, else they could not have been opened and placed round the neck. — The type occurs both in Scandinavia, and in the southern portion of the peninsula of Jutland; it does not occur (otherwise than by exception) outside the Scandinavian region. See f. 1273—1275.

Ant. suéd., f. 233. — EKHOLM, *Uppl. bronsälder*, f. 28. — WORSAAE, *Nord. Olds.*, f. 224. — MÜLLER, *Ordning, Br.*, f. 373. — *Id.*, *Aarb.*, 1891, p. 241. — MADSEN, *Afbildn., Br.*, I, pl. 33 f. 4 (cast in one piece); II, pl. 29 f. 7, 8. — MESTORF, *Alterth. Schl.-Holst.*, f. 289. — SPLIETH, *Inventar*, f. 153.

1125. Vemmerlöf, Sk.; peat-bog (see f. 1066).

1126, 1127. The latter is massive. — Sylstorp, Sk.; hoard (see f. 1123).

1128, 1129 (see f. 1141). Buttons of bronze with very long »antennae». The type arose by the elongation

of the comparatively short point which is seen on buttons during the 3rd period (f. 1036).

MÜLLER, *Ordning, Br.*, f. 77. — MADSEN, *Afbildn., Br.*, I, pl. 29 f. 17, 18; II, pl. 14 f. 11—13, pl. 29 f. 4. — SPLIETH, *Inventar*, f. 155. — BELTZ, *Altert. Mecklenb.*, pl. 33 f. 109, pl. 41 f. 79.

1128. Sandhammaren, Sk. (not Bl.).

1129. Håga, Upl.; barrow (see f. 1074).

1130. Round *gold* thread, which has been evidently twisted round some cord or the like.

1130. Håga, Upl.; barrow (see f. 1074).

1131. Spiral bracelets of bronze. Very early, man had learned to wind a narrow wire of metal several turns, as a spiral, round the arm for an ornament. Spiral armlets of copper (or bronze, with a slight admixture of tin), have been discovered in several European countries. During the Bronze Age such rings are quite common. In Scandinavian graves of women, but not in those of men, spiral arm-rings of bronze are frequently found from the 2nd period; these ornaments therefore appear, at least in that time, to have been worn by women only, not by men. — The bronze wire which composes the spiral ring, is generally flat on the inside; outside it is either rounded, angular (f. 1131) or flat. Throughout the whole length it is of the same slight breadth, but the ends are sometimes a little flattened out and consequently broader than the rest. In the later Bronze Age, however, the middle turns were frequently broader than the other. The ends are often rolled up into spirals, which sometimes are rather large. The number of turns is often very great; in such cases a considerable part of the arm was covered by the ring.

Other spiral bracelets are of narrow round double thread, either of *gold* or bronze (see f. 1302). Smaller spiral rings, for the finger or the hair, were also worn (f. 1042, 1045, 1046).

Copper, pure or mixed with very little tin: *Chronol. ält. Br.*, f. 76, 255 (cf. our f. 845). — Bronze: *Ant. suéd.*, f. 236. — MÜLLER, *Ordning, Br.*, f. 55. — MADSEN, *Afbildn., Br.*, I, pl. 34. — *Nord. Fortidsminder*, pl. XV, XVIII. — SPLIETH, *Inventar*, f. 158. — BELTZ, *Altert. Mecklenb.*, pl. 21, 22, 41. — *Photogr. Album Berlin*, 1880, II, pl. 22; III, pl. 1 (Pomerania). — HAMPEL, *Bronzez. in Ungarn*, pl. XXXVI, CXVI, CXXI.

The central coils are broader than the others: MADSEN, *Afbildn., Br.*, II, pl. 22, 34. — BELTZ, *l. c.*, pl. 32, 41. — *Chronol. ält. Br.*, f. 128. — *Photogr. Album Berlin*, II, pl. 22; III, pl. 1. — HAMPEL, *l. c.*, pl. XLIV, XLV, CXXVII.

End in spirals: BELTZ, *l. c.*, pl. 32. — *Chronol. ält. Br.*, f. 128. — *Photogr. Album Berlin*, III, pl. 1, 4. — HAMPEL, *l. c.*, pl. XXXVI XLIV, XLV, XCVI, CXIII, CXXVII.

In graves of women: *Aarb.*, 1886, p. 290; 1891, pp. 200, 202.

1131. Sylstorp, Sk.; hoard (see f. 1123).

1132, 1133. Collars of bronze (see f. 1123).

1132. Sylstorp, Sk.; hoard (see f. 1123).

1133. Hollow: is evidently one of three similar rings that, laid upon each other, formed such a neck-ornament as f. 374 in MÜLLER's *Ordning, Br.* The 'lock' is formed by a separate piece. — Löderup, Sk. — WORSAAE, *Nord. Olds.*, f. 225; MÜLLER, *Ordning, Br.*, f. 374; *Nord. Fortidsminder*, I, pl. XIX.

1134—1137. Bracelets of thin *gold*; the ends, usually bifurcated, terminate in spirals.

MONTELIUS, *Fornv.*, 1916, pp. 31, 38 (literature).

1134. The borders rolled inward. Thin and pale gold, strengthened by a bronze ring. Weight (with the bronze): 26.75 gr. (80 % gold). — Reng, Sk. (in 1873): with a similar bracelet. — *Fornv.*, 1916, p. 3.

1135. The borders rolled inward. Weight: 28.42 gr. — Skärje, Boh. (in 1854); hoard, beneath a block of stone; with 4 spiral bracelets of thin, double gold-thread, weighing 49.23 gr. Total weight: 77.65 gr. — *Ant. suéd.*, f. 240; *Fornv.*, 1916, p. 14.

1136. Weight: 23.2 gr. (82.3 % gold). — Enbjänne, G. (in 1848). — *Fornv.*, 1916, p. 20.

1137. Weight: 23.5 gr. (81.3 % gold, 16 silver). — Dverstorp, V. G.; peat-bog. — *Fornv.*, 1916, p. 16.

1138. Bronze bracelets, uniform in breadth, with straight ends, and raised rims along the borders and the middle. A few triangular holes are sometimes seen near each end.

MÜLLER, *Ordning, Br.*, f. 375 (cf. f. 376, 377, different, large). — MADSEN, *Afbildn., Br.*, II, pl. 22, 32. — BELTZ, *Altert. Mecklenb.*, pl. 40 f. 65, p. 248.

1138. Bräcke, Dal.; hoard (see f. 1060. — *Ant. suéd.*, f. 242.

1139. Bronze finger rings; each end rolled up into a spiral in various directions, as in f. 1136. Age difficult to decide.

1139. Fifvelstad, Ö. G. — *Sv. Fornm.-för. tidskr.*, 12, p. 292.

1140. Small round buckle of thin *gold*, with 2 hooks.

1140. Håga, Upl.; barrow (see f. 1074).

1141—1147. Buttons of bronze.

1141, 1142. Overlaid with *gold* (see f. 1128). — Håga, Upl.; barrow (see f. 1074).

1143. One of the plates has the shape of a four-spoked wheel. Probably from an earlier period than the 4th (see f. 985—989). — Tanum, Boh. (in 1816); at the bottom of a barrow of stones, a stone-cist was discovered, which measured 2 m. in length, and beside this button contained another one and the blade of a dagger, all of bronze, and a spear-head of flint. — *Boh. bidr.*, 1, p. 392.

1144. Leråkra, Bl.; little barrow of stones: urn of clay, with burnt bones, 2 buttons (= f. 1141), etc.

1145. Overlaid with *gold*. — Heda, Ö. G.; stone-cist with a skeleton, a sword with narrow tang and a pin. — *Fornv.*, 1916, p. 21.

1147. Overlaid with *gold*; remains of leather. — Håga, Upl.; barrow (see f. 1074).

1148—1150. Brooches of bronze, »spectacle-shaped»; the external and thicker coil of the original spiral remains, but all the inner ones have been united into one plate (fig. 1148, 1149). At a later date the external coil also became a part of the plate, so that all traces of the spiral disappeared (see f. 1338—1353).

Tidsbestämning, p. 70, f. 97, 98. — *Die typolog. Methode*, p. 56, f. 200—202. — BELTZ, *Zeitschr. f. Ethnol.*, 1913, p. 677.

1148. Slågarp, Sk.; peat-bog (»Åmossen»; in 1846). — *Ant. suéd.*, f. 222.

1149. Covered with *gold*. — Håga, Upl.; barrow (see f. 1074).

1151. Bronze brooches of a type which has been developed from f. 1031—1032.

1151. Boda, Upl.; hut (see f. 1097. — In Bornholm, a bronze brooch has been found, which is an intermediate type between f. 1031 and 1151 (the same ornamentation as on f. 1151). — *Aarb.*, 1915, p. 136, f. 2.

1152. Fish hooks of bronze; same shape as those of our day, with a barb. The type, which was complete

as early as in the Stone Age (see f. 614—626), occurs generally in bronze both during the earlier and the later Bronze Age in Scandinavia as well as in other countries. Occasionally found in graves.

With a barb: MÜLLER, *Ordning, Br.*, f. 98. — MADSEN, *Afbildn., Br.*, I, pl. 26. — AARB., 1886, p. 283, f. 12. — *Mém. Ant. du Nord*, 1884—1889, p. 267. — V. SACKEN, *Das Grabfeld v. Hallstatt*, p. 90, pl. XIX f. 18. — HAMPEL, *Die Bronzezeit in Ungarn*, pl. XVII f. 10. — CHANTRE, *Age du bronze*, I, p. 87; II, p. 279. — DE MORTILLET, *Musée préhist.*, pl. LXXXVII f. 1022—1025 (one double). — DÉCHELETTE, *Manuel*, II, p. 277. — KELLER, *Pfahlb.*, 2, pl. II f. 2—8 (some of them are big); 3, pl. VII f. 27 (big); 6, pl. V f. 21, 23, pl. IX f. 39, 40; 7, pl. XIV f. 4 (big); 9, pl. VII f. 1—4, pl. XXI f. 23 (with a short chain of bronze). — GROSS, *Protohelvètes*, p. 50, pl. XXI. — PERRIN, *La Savoie*, pl. XII f. 21, 22. — MONTELIUS, *Civil. primit. en Italie*, pl. 2 f. 9, pl. 3 f. 24, pl. 9 f. 11. — *Id.*, *L'âge du bronze en Égypte (L'Anthropologie, 1890, pl. VI f. 45)*. — FLINDERS PETRIE, *Kahun, Gurob and Hawara* (Egypt), pl. XVII f. 12, 13 (XII. dynasty).

No barb: DE MORTILLET, *l. c.*, pl. LXXXVII f. 1020, 1021, 1026, 1027. — KELLER, *l. c.*, 2, pl. II f. 1 (big), 9, 10, 12, 13, 14, 15 (doubles); 6, pl. V f. 22; 9, pl. VII f. 5, 6. — MUCH, *Die Kuperzeit in Europa*, 2nd edit., p. 11, f. 23 (copper; Austria). — GROSS, *l. c.*, pl. XXI. — PERRIN, *l. c.*, pl. XII f. 23, 24. — MONTELIUS, *Civil. primit.*, pl. 3 f. 25. — DE MORGAN, *Recherches sur les origines de l'Égypte*, p. 200 f. 535. — FLINDERS PETRIE, *Nagada and Ballas*, pl. LXV f. 17 (copper). — *Id.*, *Kahun*, etc., pl. XVII f. 11 (XII. dynasty), f. 44, 45 (XVIII—XIX. dynasty).

1152. Bräcke, Dal.; hoard (see f. 1060).

1153. A small coffin with a lid, made out of one piece of oak, split and hollowed out, only 43 cm. long inside.

1153. Viarp, Sk.; contained burnt bones and a pincette.

1154—1157. Belt-ornaments of bronze. Some (as f. 1156) have descended from such belt-ornaments as f. 1034 and 1035 that were in use during the 3rd period; like them, they originate from the «tutuli» of the 2nd period. During the 4th period, they are often very large, though the diameter is not so great as in several of the round belt-plates that occur in the 2nd period (f. 953, 954). The round button on the top is likewise larger than before, and is frequently decorated with an inlay of resin. Like the tutuli, these ornaments have a cross bar in the centre of the under side. — Others (f. 1154 and 1157) are descendants of such buttons as f. 1037. These, too, are considerably larger than the earlier ones, and they become funnel-shaped during the 4th period. The lower part, which is far smaller than the upper one, is often wheel-shaped (generally four-spoked: cf. f. 1143).

Tutulus-formed = f. 1156: WORSAAE, *Nord. Olds.*, f. 207. — MÜLLER, *Ordning, Br.*, f. 370. — MADSEN, *Afbildn., Br.*, I, pl. 39 f. 3; II, pl. 22 f. 7, pl. 29 f. 2, 3, pl. 33 f. 5, 6. — *Nord. fortidsminder*, I, pl. XVIII.

Big buttons = f. 1154: MÜLLER, *Ordning, Br.*, f. 371. — MADSEN, *Afbildn., Br.*, I, pl. 29 f. 14 (cf. f. 13, 19).

Funnel-shaped = f. 1157: MÜLLER, *Ordning, Br.*, f. 369. — MADSEN, *Afbildn., Br.*, II, pl. 22 f. 8. — V. ESTORFF, *Alterth. d. Gegend v. Uelzen* (Hannover), pl. XII f. 5, 6. — HAHNE, *Vorzeitfunde aus Niedersachsen*, II, pl. 111.

1154. Bräcke, Dal.; hoard (see f. 1060).

1155, 1156. Sylstorp, Sk.; hoard (see f. 1123).

1157. Vemmerlöf, Sk.; peat-bog (see f. 1066).

1158—1163. Vessels of bronze. Some (1158) are ornamented with inlay of resin; other have punched ornaments of the same shape. Evidently these vessels have been developed from bronze boxes like f. 1049—

1050. But opinions are still divided as to their use. It seems far from probable, as has been supposed (*Nordiske Fortidsminder*, I, p. 93), that they and the bronze vessels from the 5th period (f. 1395—1398) were worn at the belt.

For evolution and distribution, see *Tidsbestämning*, pp. 75, 239. — *Die typolog. Methode*, p. 60. — Cf. our f. 1049.

1158. Herrestad, Sk.; f. with a similar vessel. — *Ant. suéd.*, f. 247.

1159, 1161, 1163. All these vessels are of the same type. — Vemmerlöf, Sk.; peat-bog (see f. 1066). — *Typolog. Methode*, f. 212, 215—217.

1162. Ornamentation of a vessel = f. 1160. — Östra Torp, Sk.; peat-bog, with a brooch (= f. 1150).

1164. Bronze shields, thin, hammered, with repoussé ornaments. Imported from the south into Scandinavia, similar bronze shields being met with in Central Europe. Other bronze shields came to the North from the British Isles.

MONTELIUS, *Sv. Fornm.-för. tidskr.*, 11, p. 62. — *Id.*, *ibid.*, 7, p. 129 (a British bronze shield found in Denmark; a similar shield figures on a rock-carving in Bohuslän). — MÜLLER, *Ordning, Br.*, f. 363 (4 bronze shields known of from Denmark; in 1920 two such shields were found). — MADSEN, *Afbildn., Br.*, I, pl. 15—17. — LINDENSCHMIT, *Altert.*, III: 7, pl. 2 f. 1, 2. — *Photogr. Album, Berlin*, 1880, VI, pl. 8. — EVANS, *Br. Implem.*, p. 343, f. 428—437.

1164. Analysed: 87.21 % copper, 1.76 tin, 7.66 zink (!), 1.21 lead. — Nackhålle, Hal.; peat-bog (in 1865). — *Ant. suéd.*, f. 179; *Hall. Fornm.-för. årskr.*, pp. 60, 69.

1165, 1166. Golden bowls, thin, hammered, with repoussé ornaments. Only two such vessels have been found, so far as is known, on the Scandinavian peninsula, but many similar ones have occurred in the southern portion of the Northern sphere: from Denmark 27 are known and from northern Germany 20. From only one place outside this region, in Central France, is a golden bowl known that belongs to the same group as the Scandinavian. But many golden vessels of other kinds from the Bronze Age have been found in various parts of Europe (2 in northern Germany). It is thus manifest that both the two Swedish golden bowls and all that resemble them have been made here in the North.

MONTELIUS, *Fornv.*, 1916, pp. 30, 46. — C. SCHUCHHARDT, *Der Goldfund vom Messingwerk bei Eberswalde* (Berlin 1914).

1165. Weight: 70.13 gr. (82 % gold). — Skrea, Hal.; found (in 1859) upon a mountain called «Smörkulleberget», which name indicates a place for worship. — *Ant. suéd.*, f. 249; *Fornv.*, 1916, p. 11.

1166. Weight: 74.8 gr. (80 % gold). — Nätraby, Bl.; near the sea-shore (in 1847). — *Fornv.*, 1916, p. 17.

1167. Bronze vessels, hammered, with repoussé ornaments. Specimens like this are made of two pieces, which are riveted to each other at about the middle of the vessel. Imported from the south. Several vessels of this kind, some of the same shape as f. 1167, some of other shapes, but with similar decorations, have been found in Denmark, northern Germany, central Europe, and in Italy. They have been brought thence northwards, probably by trade.

MONTELIUS, *Ett i Sverige funnet fornitaliskt bronskärl (Sv. Fornm.-för. tidskr.)*, 11, p. 1; for the chronology, see p. 88).

1167. Bjärsjöholm, Sk.; peat-bog (in 1886). — MONTELIUS, *Sv. forn.-för. tidskr.*, 11, p. 1.

The fifth period.

From the middle of the 10th till the middle of the 8th century B. C.

During this period there may be distinguished:

an earlier part, characterized, among other things, by brooches with low convex plates like f. 1338—1346; and a later part, characterized, among other things, by brooches with high convex plates like f. 1352, 1353.

MONTELIUS, *Tidsbestämning*, pl. 5.

1168. Bronze axe with wings at the butt-end, and a loop; imported from the south (see f. 1052).

1169—1178 (and 1186—1192). Socketed axes of bronze. Scandinavian types.

MÜLLER, *Ordning, Br.*, f. 380—383. — SPLIETH, *Inventar*, f. 179—181.

1169. Cast relief ornaments. — Baldinge, Sk.

1171. Hyndevad, Söd.; on the bottom of a river (>Eskilstunaån>; see f. 778).

1175, 1176. Vegestorp, Boh.; peat-bog (in 1839): with a similar axe, broken, the lower part of a 3rd socketed axe, 3 saws (= f. 1269), an awl, a spear-head (= f. 1227), a pin (= f. 1322), 3 brooches (= f. 1340), a broken brooch (f. 1341), 4 collars (f. 1273, 1276), 2 belt-ornaments (f. 1391, 1392), a jet, etc. A great bronze vessel (= f. 1397), found at the same place in 1825, had evidently been deposited with these objects. — MONTELIUS, *Boh. bidr.*, 2, p. 271.

1179, 1180. Socketed axes of bronze (or copper); Russian types.

TALLGREN, *Die Kupfer- und Bronzezeit in Nord- und Ost-russland*, p. 193.

1179. Lyeksele, Lappl. — *Congr. St.*, 1874, p. 491.

1180. Gamla Upsala, Uppl. — EKHOLM, *Uppl. bronsåld.*, f. 58.

1181—1184. Moulds of stone for socketed axes (see f. 998).

1182. Alfshög, Hal.; with 6 other moulds for socketed axes (= f. 1183), and a mould for chisels (f. 1194). Both halves were found of all these moulds.

1184. Mould for socketed axes with 2 loops. — Flädie, Hal. — *Sv. Fornm.-förs. tidskr.*, 5, p. 29.

1185. Moulds of bronze for socketed axes. Besides moulds of stone for axes and other tools, some of bronze have also been found, though in far less number; they date both from the earlier and from the later Bronze Age. See f. 998.

MONTELIUS, *Mbl.*, 1872, p. 97. — MÜLLER, *Ordning, Br.*, f. 150. — EVANS, *Bronze Implements*, pp. 81, 174, 438. — MONTELIUS, *Civil. prim. en Italie*, pl. 30.

1185. Gervede, G. — *Ant. suéd.*, f. 212.

1186—1191. Socketed axes of bronze (see f. 1169—1178).

1188. Rare type (cf. f. 1191). — Mellby, Sk.; peat-bog. — MÜLLER, *Ordning, Br.*, f. 383; SPLIETH, *Inventar*, f. 181.

1191 (cf. 1188). — Billeberga, Sk.; hoard, with 6 other socketed axes (5 = f. 1061), 2 swords with narrow tangs, 3 collars, 6 brooches (= f. 1349) and 2 belt-ornaments (= f. 1383—1394).

1192, 1193. Socketed chisels of bronze. Such tools were used in the North during both the earlier and later Bronze Age.

Södermanland: 3 in a hoard from the earlier Bronze Age (f. 950). — MÜLLER, *Ordning, Br.*, f. 143, p. 24 (2nd period and later). — SPLIETH, *Inventar*, f. 29 (2nd per.), 141. — BELTZ, *Altert. Mecklenb.*, pl. 22 f. 8, pl. 27 f. 45.

1193. Långbro, Söd.; peat-bog (in 1859), with 2 socketed axes, 2 great pins (f. 1331), 2 great brooches (= f. 1350), a >diadem> (f. 1300), 7 collars (= f. 1297), 4 spiral bracelets (f. 1303) and another ring, all of bronze; a thick ring of tin (weight: 510 gr.; analysed: 95.81 % tin and 3.79 lead). — *Ant. suéd.*, f. 144; *A. T.*, 3, p. 258.

1194. Moulds of stone for socketed chisels (see f. 998).

1194. (²/₃, not ¹/₂). Alfshög, Hal.: see f. 1182.

1195. Bronze hammers with a socket. Such tools have been used both in the Northern region and in many other European lands. Here in Scandinavia they seem to belong to the 4th or 5th period.

MÜLLER, *Ordning, Br.*, f. 348. — *Id.*, *Aarb.*, 1891, p. 241 (end of the 4th period), 245, 253 (5th period). — MADSEN, *Afbildn., Br.*, I, pl. 13 f. 15. — OLSHAUSEN, *Verhandl. Berl. Anthr. Ges.*, 1885, p. 458. — MESTORF, *Altert. Schl.-Holst.*, f. 206. — SPLIETH, *Inventar*, f. 140. — EVANS, *Br. Implem.*, p. 177 (British Isles, France and other countries). — DÉCHELETTE, *Manuel*, II, p. 275 (literature). — CHANTRE, *Age du bronze*, pl. LV f. 4—6. I, p. 38. — DE MORTILLET, *Musée préhist.*, pl. LXXVI f. 801—805 (France and Switzerland), 806 (mould for such hammers: Möriegen, Switzerland). — KELLER, *Pfahlbauten*, 7, pl. VII f. 6, 7, 9, 10; pl. XVII f. 4 (above-mentioned mould). — GROSS, *Protohelvètes*, pl. XXVII f. 1, 2, 4, 5, 7; pl. XXVIII f. 3 (mould); pl. XXIX f. 7; p. 44. — HANPEL, *Bronzezeit in Ungarn*, pl. X. — K. v. MISKE, *Die prähist. Ansiedlung Velem St. Vit (Hungary)*, pl. XXIX. — *Mittheil. Anthr. Ges. Wien*, 1899, p. [6], f. 1—6; the same locality). — MONTELIUS, *Civil. primit. Ital.*, pl. 30 f. 8 (irregular socket); pl. 16 f. 12 (hammer without any socket). — ZANNONI, *La fonderia di Bologna*, pl. XLIV f. 105—107.

1195. Vanås, Sk.; peat-bog, with a wooden handle (which no longer exists).

1196—1203 (see 1207—1214). Bronze swords.

1196—1200. Bronze swords with tang for hilt; its edges are very slightly raised, sometimes scarcely enough to be observed. Narrow rivets both in the hilt-tang and on the base of the >leaf-shaped> blade. Frequent dents on the blade edges, near the handle. The type is common in middle and western Europe, at the beginning of the >Hallstatt period>, and imported to the North during the 5th period.

The blade is sometimes of considerable length. Several of the latest swords now in question have the hilt-tang above lengthened by a narrow piece for a stud made of material different from the sword. — The type has been copied in iron, when this metal came into use (see f. 1442).

EKHOLM, *Uppl. bronsåld.*, f. 51. — RYGH, *Norske Olds.*, f. 102, 103. — MÜLLER, *Ordning, Br.*, f. 390, p. 50. — MADSEN, *Afbildn.*,

Br., I, pl. 6 f. 21; II, pl. 30 f. 1 (hoard from the beginning of the 6th period). — SPLIETH, *Inventar*, f. 171. — LINDENSCHMIT, *Alterth.*, II: I, pl. 5 (bronze and iron), III: 6, pl. 2. — PÍČ, *Cechy před-historické*, 2, pl. XXIX. — V. SACKEN, *Das Grabfeld v. Hallstatt*, pl. V. — NAUE, *Die vorrömischen Schwerter*, pl. XI, XII, XLIV (grave), p. 26. — DÉCHELETTE, *Manuel*, II, p. 722.

1197. On the bottom of a lake (Långsjön), Upl. (in 1849); with 2 other swords (1 f. 1202; the other with similar tang, but without the bronze hilt) and a great spear-head, broken (ornamentation = f. 1229). — *Ant. suéd.*, f. 156; *A. T.*, 3, p. 204; EKHOLM, *Uppl. bronsäld.*, f. 50.

1199. Actual length: 90.5 em. — Skepptuna, Uppl. — EKHOLM, *Uppl. bronsäld.*, f. 53.

1200. Length: 96 cm. (?). — Smedstorp, Sk.

1201. Sword, with round pommel. — Å, Mpd (in 1859); beneath a block of stone. — *Ant. suéd.*, f. 157; *A. T.*, 3, p. 181. — A similar sword (with round pommel), but not exactly of the same type, has been found in England. EVANS, *Bronze Implem.*, p. 286, f. 349.

1202, 1203. Bronze swords with bronze hilts, which terminate above with two spirals turned towards each other (épées à antennes, »Antennenschwerter«). Common in central Europe; imported thence to the Germanic sphere, but uncommon on the British Isles. Several have been found in Italy. — Here in the North there have been found both small, symbolical swords with such hilts, and several bronze knives, the handles of which likewise terminate in two spirals.

MONTELIUS, *Congr. St.*, 1874, p. 909 (literature). — ID., *Tidsbestämm.*, pp. 123, 164 (5th period in the Scandinavian region). — ID., *L'Anthropologie*, 1901, p. 616 (5th period in the Celtic region). — ID., *Die vorklass. Chronol. Italiens*, pl. XXIII. — *Atlas f. nord. Oldkynd.*, pl. IV f. 39—42 (Denmark). — DÉCHELETTE, *Manuel*, II, p. 209. — NAUE, *Die vorrömischen Schwerter*, pl. XXXIV—XXXVI.

Symbolical swords: our f. 1204 (of iron). — WORSAAE, *Nord. Olds.*, f. 154, 155. — MÜLLER, *Ordning, Br.*, f. 276—278. — MADSEN, *Afbildn., Br.*, I, pl. 12; II, pl. 16 f. 1. — MESTORF, *Alterth. Schl.-Holst.*, f. 199, 201.

Knives: our f. 1258—1263. — MÜLLER, *Ordning, Br.*, f. 283—285. — MADSEN, *Afbildn., Br.*, I, pl. 23; II, pl. 16 f. 2, pl. 32 f. 8. — MESTORF, *Alterth. Schl.-Holst.*, f. 261, 263, 264.

1202. Långsjön, Upl.: see f. 1197.

1204—1206. Miniature (symbolical) swords of bronze and iron. Cf. f. 828, 1081.

1204. Iron. — Bjärsgård, Sk.; with 2 knives (= f. 1242, without ornaments), an arrow-head, a pincette (= f. 1121), 2 awls, all of bronze, and burnt bones in an urn of clay.

1205. Bronze. — Tune, G.

1206. Bronze. — Flädie, Hal. (in 1852); barrow of stones, with a knife (f. 1249), a comb (f. 1366) and an awl. — *Hall. Fornm.-förr.*, p. 66.

1207—1214. Bronze swords; see f. 1196

1207. Hilt of horn. — Espenäs, Sk.

1208—1210. Bronze swords with bronze hilts which terminate above in an oval rather thin pommel, generally somewhat concave. Common in central Europe (a casting mould for such hilts has been found in Bavaria); thence imported to the Germanic sphere. Several have been found in Sweden, one in Finland, but none in Denmark; this hints that the swords discovered in Sweden have come directly from Germany. Swords of this type do not occur either in the British Isles or in Italy.

MONTELIUS, *Congr. St.*, 1874, p. 904 (literature). — ID., *Tidsbestämming*, pp. 123, 164 (per. 5 in the Scandinavian region). — ID., *L'Anthropologie*, 1901, p. 618 (per. 5 in the Celtic region). — DÉCHELETTE, *Manuel*, p. 209. — NAUE, *Die vorröm. Schwerter*, pl. XXXI, XXXII.

1208. Rud, Vrm.: hoard (in 1843 and 1846), with a similar sword (*Ant. suéd.*, f. 158), 2 collars (I, f. 1277), 2 spiral bracelets (f. 1301), another bracelet, 2 brooches (I = f. 1353), a vessel (= f. 1395—1388), etc. — *A. T.*, 3, p. 374.

1209. Allatorp, Bl.; stood upright in the earth.

1210. The upper part of the hilt probably = f. 1209. — Östad, V. G.; peat-bog. — *Sv. Fornm.-förr. tidskr.*, 5, p. 27.

1212—1214. Bronze swords with tang without rivet holes.

1212. Traces of ties that have surrounded the sheath. — Norrvära, Hal.; peat-bog, with 2 similar swords. — Cf. *Zeitschr. f. Ethnol.*, 1908, pp. 196, f. 2; *Jahresschr.* (Halle), 7, p. 11, pl. 1V.

1213. Has been longer; the actual tang is evidently secondary. — Mon, Mpd.; barrow, with a socketed axe and a knife (f. 1268). — *Mbl.*, 1897, p. 78.

1214. Ornamentation = f. 1213. — Hellestad, Sk. (in 1670!); barrow. This sword is the first prehistoric object obtained for the collection of antiquities that was instituted by order of the Government in 1667: the beginning of the National Museum of Antiquities in Stockholm. — *Ant. suéd.*, f. 164. — For similar sword discovered in Öland, see ABERG, *Kalm. l. bronsäld.*, p. 68.

1215, 1216. Bronze daggers with tang without rivet holes. — Bronze daggers, which were common under the 1st and 2nd period, are rare during the last periods of the Bronze Age.

1217—1227. Bronze spear-heads; the socket generally continues far below the edges. Some are decorated with punched ornaments. Similar spear-heads with long sockets occur also outside the Scandinavian region, often decorated with concentric semicircles.

MÜLLER, *Ordning, Br.*, f. 366, 391. — SPLIETH, *Inventar*, f. 176. — BELTZ, *Alterth. Mecklenb.*, pl. 37 f. 19. — EVANS, *Bronze Implem.*, p. 319, f. 390, 391. — DÉCHELETTE, *Manuel*, II, p. 220, f. 70. — DE MORTILLET, *Musée préhist.*, f. 939, 940. — KELLER, *Pfahlbauten*, 7, pl. III f. 14, 18. — GROSS, *Protohelvètes*, pl. XV. — HEIERL, *Der Pfahlbau Wollishofen*, pl. I f. 7, 8.

1219. Small. — Vemmerlöf, Sk. — *Ant. suéd.*, f. 172.

1220. No hole for a pin. — Härkevi, Upl.; hoard (in 1902); with the point of a sword, 3 socketed axes, a knife, 3 saws (f. 1270), 2 spiral bracelets (f. 1285), a smaller spiral ring of double wire (= f. 1302), 12 pins (8, f. 1329, 1330; 2, f. 1320, 1321), a brooch (= f. 1338—1353), a belt-ornament (f. 1386), 2 pendant ornaments, wheel-shaped (f. 1235), 13 buttons (one with remains of leather; f. 1376—1378), a vessel (= f. 1395—1398), fragments of other vessels, 2 jets, etc. Several bronzes are broken and incomplete. All the other objects were placed in the bronze vessel that was enveloped in leather. — *Mbl.*, 1903, p. 26.

1222. Probably from the 2nd period. — Köpings, Sk. (see f. 971); barrow no IX: with a skeleton, a sword (remains of the wooden sheath), etc.

1225. Spelvik, Söd.; hoard (in 1838); beneath a block of stone, with a similar spear-head, 2 socketed axes (*Ant. suéd.*, f. 150), a collar with broad oval ends (*Ant. suéd.*, f. 230), 16 other collars (= f. 1297) and a bronze vessel (= f. 1395—1398), without ornaments. — *Ant. suéd.*, f. 174; *A. T.*, 3, p. 270.

1226. Probably from an earlier period than the 5th. — Hogstad, Ö. G.

1227. Rovalls, G.; peat-bog (in 1897); with 2 spiral bracelets, 4 other bracelets, a pin (f. 1337), a pincette etc., all of bronze, and a bracelet of gold, with cup-shaped, very much worn ends (*Fornv.*, 1916, p. 20, f. 39). — *Mbl.*, 1897, p. 66.

1228, 1229. Long, cylindrical bronze ferrules for spears; the lower end flat or convex; some are richly ornamented. Similar ferrules occur also in other countries outside the Scandinavian region, but there they generally lack ornaments.

DE MORTILLET, *Musée préhist.*, pl. LXXXIII f. 950. — BREUIL, *L'Anthropologie*, 1903, p. 513, f. 7: 1—4. — DÉCHELETTE, *Manuel*, II, f. 68: 5, 6. — EVANS, *Bronze Implem.*, f. 423, 424.

1228. Mörbylånga, Öl.: with a dagger blade. — ÅBERG, *Kalm. l. bronsäld.*, p. 68.

1229. Grönhult, Sk.; hoard: with a spear-head, 2 fragments of a sword blade, a knife (= f. 1108), 2 parts of a collar (= f. 1274; *Mbl.*, 1891, p. 179, f. 63), a brooch (f. 1348), 2 belt-ornaments (f. 1385, 1389), a vessel (= f. 1395), a bit of a similar vessel, etc. — *Mbl.*, 1891, p. 177, f. 59—63.

1230. Socketed bronze chisel from the 2nd period. — Bosgården, Sk.; barrow (see f. 932).

1231—1233. Bridle bars (f. 1231) and ornaments of bronze for bridle and reins.

1231—1233. Nymö, Sk.; hoard, formed of 2 bars (f. 1231), 4 oval plates, perforated (hooks on the borders; f. 1232) and 4 round plates (f. 1233). — MONTELIUS, *Führer durch das Museum in Stockholm*, p. 31, f. 36—38; *Mbl.*, 1887, p. 156.

1234. Round bronze discs, hanging in loop, all cast at one time. Like other similar works, they testify to the founders' great skill during the Bronze Age. Similar round discs hung as ornaments to bridles and other articles (f. 395 in MÜLLER's, *Ordnung, Br.*; cf. our f. 1455.

MONTELIUS, *Sveriges (illust.) historia*, 1, p. 130, f. 188. — MADSEN, *Afbildn., Br.*, I, pl. 40 f. 16, 20; II, pl. 16 f. 12. — MESTORF, *Alterth. Schl.-Holst.*, f. 223, 335. — SPLIETH, *Inventar*, f. 234, 235. — BELTZ, *Alterth. Mecklenb.*, pl. 42 f. 86. — *Photogr. Album Berl.*, 1880, II, pl. 23, 24 (per. 4).

1234. Ekcs, G.; hoard, beneath a block of stone: with 10 small rings (2 of them combined), a button with cross-piece (= f. 1359), a spear-head, a knife and an awl. — *Ant. suéd.*, f. 226.

1235. Wheel-shaped pendants of bronze. The wheel was, as we have seen (f. 847), a religious symbol, representing the orb of the sun rolling on the heavens.

1235. Härnevi, Upl.; hoard (see f. 1220): with another pendant ornament in the shape of a wheel. — *Mbl.*, 1903—1905, p. 29, f. 35, 36; MONTELIUS, *Hjulformiga spännen (Fornv., 1909)*, p. 109.

1236—1239. Bronze trumpets, cast with great artistic skill (in several pieces, which were cleverly joined together). Such instruments, entirely or partially made of bronze, belong to various parts of the Bronze Age. The ornamentation and the circumstances of the discoveries prove that several date from the 5th; others, found in Denmark, date from the 4th (*Prähist. Zeitschr.*, 1915, p. 132, f. 23—26). From an earlier part of the Bronze Age date some instruments which are only partially of bronze (BELTZ, *Alterth. Mecklenb.*, p. 192). Lately, after the arrangement of the plates in this work, — where all Swedish types are given on the same plate, to facilitate a survey, — was definitively finished, the opinion has been expressed that the trumpets f. 1236 and 1237 date from the 3rd period. — Trumpets are often met with in pairs. On certain Swedish rock-carvings of the Bronze Age performers on the instrument are seen. — Many bronze trumpets are known from the northern region, most of them found in peat-bogs: 3 or 4 from Norway, 9 from Sweden, as many as 25 from Denmark, and some from the northern part of Germany (Hanover, Mecklenburg, Pomerania). No bronze trumpets like ours are found in other countries, a fact proving that these instruments were really made here in the North.

Årsberetn., 1894, p. 152; 1897, p. 81. — WORSAAE, *Nord. Olds.*, f. 199—201. — MÜLLER, *Ordnung, Br.*, f. 368 (literature). — *Atlas*

f. nord. Oldkynd., pl. VII. — MADSEN, *Afbildn., Br.*, I, pl. 18, 19. — A. HAMMERICH, *Aarb.*, 1893, p. 141; 1903, p. 62. — K. KROGMAN, *Aarb.*, 1902, p. 73; 1904, p. 65. — OLSHAUSEN, *Verhandl. Berl. Anthr. Ges.*, 1891, p. 847. — HUBERT SCHMIDT, *Prähist. Zeitschr.*, 1915, p. 85 (distribution and literature). — HAHNE, *Vorzeitfunde aus Niedersachsen*, p. 41.

1236. Near Lund, Sk.; peat-bog. — *Ant. suéd.*, f. 178.

1237. Päärp, Sk.; peat-bog.

1238, 1239. Långlöt, Öl.; peat-bog, with 2 bronze chains (f. 1355, 1356) and bones of horse and swine.

1240. Bronze fittings with repoussé ornaments.

1240. Orust, Boh.

1241—1268. Bronze knives.

1242—1247. »Razors». The handle recurved towards the back; its end twisted up into a spiral plate. Although every trace of an animal's head has disappeared, it is obvious that these knives, typologically, are descendants of such knives from the 4th period as f. 1102—1106 and 1108, just as these in their turn are descendants of those knives which belong to a still earlier date as f. 927—930, 1013—1015. Knives like f. 1242—1247 occur only in the Scandinavian region. On these knives, ships etc. are sometimes punched.

MONTELIUS, *A. T.*, 3, p. 333. — *Id.*, *Tidsbestämning*, p. 61. — ÅBERG, *Kalm. l. bronsåld.*, f. 44. — *Fornv.*, 1910, p. 7, f. 12. — MÜLLER, *Ordnung, Br.*, f. 228 a, b. — MADSEN, *Afbildn., Br.*, I, pl. 24; II, pl. 12—14, 19. — WORSAAE, *The industrial Arts of Denmark (London, 1882)*, p. 95, f. 124—132 (ships). — MESTORF, *Alterth. Schl.-Holst.*, f. 249. — SPLIETH, *Inventar*, f. 182 (about 50 such knives known of from Sleswig-Holstein). — BELTZ, *Alterth. Mecklenb.*, pl. 38 f. 24, p. 243. — SCHUMANN, *Kultur Pommerns*, pl. 3 f. 9. — J. H. MÜLLER, *Alterth. Prov. Hannover*, pl. VII f. 62, 64.

1243. Dömmestorp, Hal. (see f. 966); barrow: small stone-cist, with burnt bones. — *Hall. Forum-för. årsskr.*, p. 96.

1247. Augerum, Bl.; beneath the remains of a hut from the 10th century A. D. Several urns of clay were found, containing burnt bones and dating from the later Bronze Age (see f. 1359, 1433, 1437, 1439). The razor had been placed in one of these urns.

1249. Flädie, Hal.; barrow (see f. 1206).

1250. Spärlinge, Sk.; barrow (see f. 1120).

1251—1254. Bronze knives from central Europe, where similar ones are general and where moulds for such knives have been found.

KELLER, *Pfahlbauten*, I, pl. V; 7, pl. V, XVII (moulds). — GROSS, *Protohelvetes*, pl. XV, XIX, XX, XXVIII, XXX (moulds). — NAUE, *Die Bronzezeit in Oberbayern*, pp. 100, 114. — DÉCHELETTE, *Manuel*, II, p. 259.

1252. Hilt overlaid with bone or horn. — Espö, Sk.

1255, 1256. Knives with the handle bifurcated and terminating in two spirals going outwards.

MÜLLER, *Ordnung, Br.*, f. 277, 278 (miniature-swords). — MESTORF, *Alterth. Schl.-Holst.*, f. 263, 264 (one with the blade of iron, the other entirely of bronze; found together).

1256. Skedala, Hal.; barrow: in an urn of clay containing burnt bones.

1258—1263. Knives with a handle like the hilt on such a sword as f. 1202 and 1203: the handle terminates in two spirals going inwards, towards each other. Many such specimens have been found in Denmark, but they are rare in other parts of the Northern region and unknown in other regions.

MÜLLER, *Ordnung, Br.*, f. 283 (about 20 knives). — MADSEN, *Afbildn., Br.*, I, pl. 23 f. 1, 9. — MESTORF, *Alterth. Schl.-Holst.*, f. 261 (knife or miniature-sword?). — BELTZ, *Alterth. Mecklenb.*, p. 243.

1258. Åsted, V. G.; peat-bog (in 1869): near a great stone, with 9 socketed axes, a socketed chisel, several spear-heads, bits of 4 sword-blades, a great number of broken saws (= f. 1269), of knives and rings, 2 pins (f. 1327), a brooch (= f. 1338—1353), 3 vessels (= f. 1395), 2 jets, etc. — *Ant. suéd.*, f. 188.
- 1259, 1260. Snöstorp, Hal.; with 2 knives. — *Ant. snéd.*, f. 187.
1263. Köpings. Sk. (see f. 971); barrow no 1: urn of clay, with burnt bones, a button (f. 1381) and an awl (f. 1372).
1264. Hammarlöf, Sk.; barrow (>Bönhög>; see f. 656): small coffin of oak, containing burnt bones, the knife, an awl and a button.

1265—1267. Knives with the handle terminating in a ring. In countries which do not belong to the Northern region there have, it is true, been found bronze knives with the handle terminating in a ring; but these are unlike those now considered (see f. 1252, 1254).

MÜLLER, *Ordning, Br.*, f. 287 (about 25 knives). — MADSEN, *Afbildn., Br.*, I, pl. 23 f. 7, 13 (oval ring). — BELTZ, *Alterth. Mecklenb.*, pl. 38 f. 29 (one with the blade of iron).

Bronze knives of foreign types: DE MORTILLET, *Musée préhistor.*, pl. LXXIX f. 877, 878. — Cf. BELTZ, *l. c.*, pl. 38 f. 28.

1267. Alfshög, Hal.; barrow of stones.
1268. Mon, Mpd.; barrow (see f. 1213).

1269—1271. Bronze saws (see f. 1068).

1269. Högstorp, Boh.; hoard (in 1874): with 6 similar saws, a socketed axe, bit of a similar axe, the point of a sword, a collar (f. 1272), 2 spiral bracelets (f. 1302), a small ring, a pin, a belt-ornament (f. 1387), a vessel (f. 1395), a jet, etc. Beneath the vessel, which lay upside-down, all the other bronzes were found, except the collar. — *Boh. bidr.*, I, p. 281.
1270. Härnevi, Upl.; hoard (see f. 1220).
1271. Stora Dalby, Öl.; hoard (in 1894): with 6 similar saws, 2 earrings (f. 1280), 2 brooches (f. 1338, 1344), a belt-ornament (f. 1394) and a vessel (f. 1396). — *Fornv.*, 1907, p. 205.

1272—1279 (see f. 1288—1299). Collars of bronze.

1272. For the >clasp> see f. 1272 b; degenerated end-spirals. — Högstorp, Boh.; hoard (see f. 1269).

1273—1275. Collars with >clasps>. As during the earliest part of the Bronze Age, several rings laid upon each other could form a neck-ornament, and these rings finally grew together with each other (*Chronol. ält. Bronzetz.*, f. 78—81), so also during the later Bronze Age, the same person often wore two or more collars, which sometimes were held together by means of a cord, or a pin, and sometimes by means of a >clasp>: a separate piece of bronze, often open-worked, in which the ends of the rings were fastened with pins. These rings too, which were sometimes hollow and rather wide (see f. 1125—1127), might well at least grow together with each other. — In several districts of northern Germany, neck-ornaments were worn during the later Bronze Age, formed in almost the same manner as those of Scandinavia, but varying from them in details.

Mbl., 1891, p. 179, f. 63 (3 rings grown together. See f. 1229).

WORSAAE, *Nord. Olds.*, f. 225 (3 separate rings). — MÜLLER, *Ordning, Br.*, f. 374 (3 separate rings). — MADSEN, *Afbildn., Br.*, I, pl. 33 f. 3 (4 separate rings), 2 (5 separate rings; earlier?). — *Nordiske Fortidsminder*, I, pl. XIX. — MESTORF, *Alterth. Schl.-Holst.*, f. 295 (4 separate rings). — SPLITTH, *Inventar*, f. 151.

Northern Germany, more or less different types: SCHUMANN, *Die Kultur Pommerns in vorgeschichtlicher Zeit* (Berlin, 1897), pl. 3 f. 5, 7. — *Photogr. Album Berlin, 1880*, II, pl. 17; III, pl. 6 (Pomerania). — LISSAUER, *Bronzetz. Westpreussen*, pl. V f. 7, pl. XIV (beginning of the Iron Age). — *Mannus*, IV, p. 220 (Oldenburg).

1273. Free rings (not united). — Vegestorp, Boh.; hoard (see f. 1175).

1274. Neck-ornament of 2 collars placed upon each other; each formed of 3 united rings. — Torstorp, Sm.; hoard (in 1826): with a belt-ornament (f. 1384) and a vessel (= f. 1395, 1396; see f. 1409). — ÅBERG, *Kalm. l. bronsåld.*, pp. 49, 57.

1275. United rings. In the middle of the >clasp> there is a little four-spoked wheel. — Årap, Sk.; hoard: with other collars, 6 brooches (= f. 1338—1353), 2 belt-ornaments (= f. 1383—1394), 5 vessels (= f. 1395—1398), 2 broken swords and 7 socketed axes. The bronzes had been placed in a great vessel of burnt clay; they belong all to the 5th period.

1276—1279 (see f. 1288—1299). Bronze collars that, like the older ones, were twisted — or seemed to be twisted — in *one* direction (not as f. 1296 now to the right and now to the left). Towards the ends they are widened to an oval disc, which at first is rather narrow but gradually grows broader; it is frequently decorated with punched ornaments. Some of these rings are kept together with simple hooks, gripping each other, but most of them terminate in spiral discs, which are at times very great. Sometimes (f. 1289), though very seldom, each hook terminates in two spiral discs. Most of the rings of this class are massive, but some very large ones are cast hollow (they are not open on the lower side, as f. 1125). Certain specimens are so cast that they cannot be opened: the spirals are then often degenerated (see also f. 1299). — Many such rings are found in Scandinavian countries, in Sleswig-Holstein, and in Mecklenburg. In other parts of northern Germany, belonging to the northern region, they are uncommon, and outside this district they are not found, in so far as they have not been imported thither, by way of traffic or the like.

Ant. suéd., f. 230—232. — RYGH, *Norske Olds.*, f. 130. — WORSAAE, *Nord. Olds.*, f. 220, 221. — MADSEN, *Afbildn., Br.*, I, pl. 32; II, pl. 19, 20. — *Nord. Fortidsminder*, I, p. 21, pl. IV. — MÜLLER, *Ordning, Br.*, f. 410 (hooks), 411 (spirals). — MESTORF, *Alterth. Schl.-Holst.*, f. 276, 277. — SPLITTH, *Inventar*, f. 223—224. — BELTZ, *Alterth. Mecklenb.*, pl. 41 f. 62, p. 248. — LINDENSCHMIT, *Alterth.*, II: 3, pl. 1.

1276. Vegestorp, Boh.; hoard (see f. 1175).

1277. Rud, Vrml.; hoard (see f. 1208).

1280. Smaller bronze rings, obviously earrings. Similar ornaments were worn as early as the older Bronze Age.

SEHESTED, *Archæol. Undersög.*, pl. V f. 1, 4 (Fyen; in a grave from the 2nd period). — MÜLLER, *Ordning, Br.*, f. 217. — MESTORF, *Alterth. Schl.-Holst.*, f. 316. — SPLITTH, *Inventar*, f. 163 (4th per.). — EVANS, *Br. Implem.*, p. 392, f. 491 (cf. f. 490, 492).

1280. Stora Dalby, Öl.; hoard (see f. 1271).

1281—1287 (see f. 1301—1310). Bracelets of bronze and gold.

1282. Bronze; four-spoked wheel (see f. 847). — Åsted, V. G.
1283. Gold. Weight: 10.24 gr. (88 % gold). — Timmersdala, V. G.; peat-bog (in 1880). — *Fornv.*, 1916, p. 15.
1284. Gold, very thin; has probably been laid over a bracelet of bronze (see f. 1134, 1306). Weight: 7.86 gr. (90 % gold). — Bjärkered, Hal. (in 1865). — *Fornv.*, 1916, p. 10.
1285. Bronze. — Härnevi, Upl.; hoard (see f. 1220).

1288—1299. Collars of bronze (see f. 1272—1279).

1288—1295. Collars of bronze with oval ends terminating in upturned spirals (see f. 1278, 1279).

1289. The narrow end of the oval plate is recurved and bifurcated; it forms 2 spirals. — Bettorp, Öl.; peat-bog. — ÅBERG, *Kalm. l. bronsåld.*, f. 87.
1291. Ends united. — Näs, V. G.; hoard: with a collar, a bracelet, 2 brooches (= f. 1338—1353), and a fragment of a belt-ornament (= f. 1383—1394).
1295. Fageråkra, Hal. (not Boh.); peat-bog (in 1869): with 2 collars (= f. 1296) that were enveloped in bast. — *Hall. Fornm.-för. årsskr.*, p. 181.

1296, 1297. Collars of bronze, twisted alternately to the right and to the left. As similar rings from the same time (*Tidsbestämning*, f. 112), that are only twisted in *one* direction, they generally terminate in simple hooks, but sometimes in spirals. They were quite common in the Northern region, both in the Scandinavian and the North German parts, and belong to the latter part of the 5th period. Descendants of this type occur during the 6th period (f. 1457—1461).

Ant. suéd., f. 227. — *Tidsbestämning*, f. 123. — MADSEN, *Afbildn., Br.*, II, pl. 19 f. 13, 14. — MÜLLER, *Ordning, Br.*, f. 405. — SPLIETH, *Inventar*, f. 225 (ending in spirals). — BELTZ, *Altert. Mecklenb.*, pl. 40 f. 59.

1297. Stenbro, G.; hoard (in 1884); with 6 similar collars, 15 bracelets, a great brooch (f. 1350) and a magnificent vessel (= f. 1397, but with 2 oblong holes instead of loops). The vessel, lying upside-down, covered the other bronzes. — *Sv. Fornm.-för. tidskr.*, 6, p. 72.
1298. Lilla Beddinge, Sk.; hoard: with 31 other collars (20 = f. 1298, 11 = f. 1296). — Quite similar collars have been found in Gotland. *Sv. Fornm.-för. tidskr.*, 6, p. 219, f. 6.
1299. Terminating in small round plates. — Tjurby, Hal.; peat-bog: with another collar. — *Ant. suéd.*, f. 228.

1300. Bands of thin bronze, uniform in width, or nearly so, with repoussé ornamentation, consisting of larger or smaller dots; not made here in the North, but imported from the South. Similar bands of bronze occur both in northern Germany and in Central Europe.

MONTELIUS, *Sv. Fornm.-för. tidskr.*, 11, p. 67 (literature). — MADSEN, *Afbildn., Br.*, I, p. 32 f. 10. — MÜLLER, *Ordning, Br.*, f. 421. — *Nord. Fortidsminder*, I, p. 100, f. 19, 20. — SPLIETH, *Inventar*, f. 228. — LINDENSCHMIT, *Alterth.*, II: 2, pl. 3.

1300. Långbro, Söd.; peat-bog (see f. 1193). — *Ant. suéd.*, f. 237; *Congr. St.*, 1874, p. 507.

1301. Spiral bracelets in many coils, of a simple commonly triangular wire, which terminate in ends bent back and rolled up into a little spiral.

MADSEN, *Afbildn., Br.*, I, pl. 34 f. 2. — Cf. *Fornv.*, 1916, p. 36, f. 55 (Hungary; ending in great spirals).

1301. Rud, Vml.; hoard (see f. 1208).

1302, 1303. Spiral bracelets in few coils, of a double, round bronze wire, the ends of which are twisted round each other, as shown either f. 1302 or 1303 (cf. f. 841). Similar rings of narrow double gold thread were also in use here both during the 4th and 5th periods.

Bronze. MADSEN, *Afbildn., Br.*, II, pl. 14 f. 6. — *Gold. Fornv.*, 1916, p. 14, f. 26, 28. — MADSEN, *Afbildn., Br.*, I, pl. 35 f. 10.

1302. Hogstorp, Boh.; hoard (see f. 1269).

1303. Långbro, Söd.; peat-bog (see f. 1193).

1304—1307. Bracelets of gold and bronze; both ends in the form of cups. Such rings are common in Sweden, Denmark and northern Germany. The type is developed from bracelets with widened ends (f. 1044):

these, at first slightly projecting, gradually became larger with a circular section; for a long time they were massive and cut off flat, but finally they became concave and cup-shaped. As usual during the Bronze Age, these bracelets were open, but the space between their ends diminished in many cases, so that the ends came into contact with each other, and sometimes quite melted together (f. 1308—1310). The gold rings of this type were originally solid, with a round or oval section; the inside, however, later became more or less concave, and the ring was often of thin gold, with the borders turned inwards. Sometimes the gold was so thin that a bronze ring had to be laid inside in order to give the bracelet adequate strength.

Fornv., 1916, pp. 32, 43. — KOSSINNA, *Mannus*, 1917, p. 1.

1304. *Gold*. Weight 43,02 gr. (75 % gold). — Hofby, Sk. (in 1869). — *Fornv.*, 1916, p. 6.
1306. *Gold*, thin, laid over a bronze ring. — Karsholm, Sk. — *Fornv.*, 1916, p. 9.
1307. *Gold*, solid. Weight: 187 gr. (81.6 % gold). — Kvistofta, Sk. (in 1837). — *Fornv.*, 1916, p. 10.

1308—1310. Bracelets of bronze. Descendants of the rings with cup-shaped ends (f. 1304—1307). The joined ends are cut off on the inside.

MONTELIUS, *Fornv.*, 1916, p. 44.

1310. Köpinge, Sk. (see f. 971); harrow no VI: found with an urn of clay containing burnt bones and a small piece of bronze.

1311—1337. Bronze pins.

1311, 1312 (see 1319, 1320). Bronze pins rolled up at the top into an erect spiral; the pin is only a little bent where it passes into the spiral.

WORSAAE, *Nord. Olds.*, f. 236. — MADSEN, *Afbildn., Br.*, I, pl. 27 f. 11; II, pl. 13 f. 20. — MÜLLER, *Ordning, Br.*, f. 306. — SPLIETH, *Inventar*, f. 221 (small spiral). — BELTZ, *Altert. Mecklenb.*, pl. 39 f. 44, 52. — *Photograph. Album Berlin*, 1880, III, pl. 12. — *Verhandl. Berl. Anthr. Ges.*, 1886, p. 415, f. 4 (Lusatia). — *Niederlausitzer Mittheilungen*, 2 (Guben, 1892), pl. 6 f. 1, p. 285. — PÍČ, *Cechy, předhistorické*, II, pl. IV f. 1 (straight up to the spiral). — MONTELIUS, *Die vorclassische Chronologie Italiens*, pl. 4 f. 10 (straight up to the spiral; earlier than our 5th period).

1311. Hyndevad, Söd.; on the bottom of the river Eskilstunaån (see f. 778).

1313. Köpinge, Sk. (see f. 971); harrow no III: small stone-cist; with burnt bones, a razor, an arrow-head, a pincette and an awl (rather 4th than 5th period).

1314. Head forming a *horizontal*, round, convex plate (see f. 1335). — Torsbo, Boh.

1315—1317. Straight bronze pins, with bowl-shaped ends. They belong to the end of the 5th period; some of them possibly may be attributed to the 6th.

Ant. suéd., f. 216. — MADSEN, *Afbildn., Br.*, II, pl. 18 f. 7 (small cup; great hoard from the end of the 5th period). — MÜLLER, *Ordning, Br.*, f. 314. — SPLIETH, *Inventar*, f. 220 (cf. f. 219). — BELTZ, *Altert. Mecklenb.*, pl. 39 f. 40. — *Verhandl. Berl. Anthr. Ges.*, 1893, p. 125, f. 2 (Dessau; in a hut-urn).

1316. Length: 29,8 cm. — Hörsne, G.

1317. Colossal; length 70,5 cm.; diam. of the cup: 11,5 cm (!). — Hultungs, G. (in 1877). — *Sv. Fornm.-för. tidskr.*, 6, p. 210.

1318. Head in the shape of a four-spoked wheel. — Gotland. — *Sv. Fornm.-för. tidskr.*, 6, p. 227.

1319, 1320. Bronze pins, the upper portion of which terminates in a spiral, but this is not erect as

f. 1311 and 1312, but pendant because the pin is bent round.

WORSAAE, *Nord. Olds.*, f. 242. — MÜLLER, *Ordning, Br.*, f. 414.
1320, 1321. Härnevi, Upl.; hoard (see f. 1220).

1322. Bronze pins; at the top bent to a right angle, terminating in a round knob, with four small projections.

Ant. suéd., f. 215. — WORSAAE, *Nord. Olds.*, f. 238. — MADSEN, *Afbildn., Br.*, I, pl. 27 f. 9; II, pl. 11 f. 6 (gold). — MÜLLER, *Ordning, Br.*, f. 214 (cf. f. 212, 213). — SPLIETH, *Inventar*, f. 211. — BELTZ, *Altert. Mecklenb.*, pl. 39 f. 50.

1322. Vegestorp, Boh.; hoard (see f. 1175).

1323, 1324. Bronze pins, terminating at the top in a cross-piece which is generally round with ends cut off square. During the 5th period, the cross-piece is quite narrow and solid, but during the 6th it becomes very thick and hollow (f. 1473). Sometimes the ends bent back in spiral shape.

Ant. suéd., f. 219. — ÅBERG, *Kalm. l. bronsåld.*, f. 77, 81. — WORSAAE, *Nord. Olds.*, f. 241 (cross-piece ending in cups). — MADSEN, *Afbildn., Br.*, I, pl. 27 f. 7, 8; II, pl. 13 f. 19. — MÜLLER, *Ordning, Br.*, f. 304. — MESTORF, *Alterth. Schl.-Holst.*, f. 284. — BELTZ, *Altert. Mecklenb.*, pl. 39 f. 53.

1325—1332. Bronze pins, bent at a right angle at the top (otherwise straight) and terminating in a round perpendicular disc, ornamented with concentric circles, which are cast, not chased. The disc is first comparatively small, but gradually it gets large. It is generally flat, but sometimes (f. 1332) slightly convex. Such pins were common in Scandinavia in the 5th period; they are also found in North Germany.

Ant. suéd., f. 217, 218. — WORSAAE, *Nord. Olds.*, f. 239. — MADSEN, *Afbildn., Br.*, I, pl. 27 f. 4; II, pl. 14 f. 4, pl. 15 f. 7 (plate covered with gold), pl. 16 f. 8, pl. 19 f. 12. — SEHESTED, *Fortidsminder*, pl. XXII f. 10. — SPLIETH, *Inventar*, f. 212. — BELTZ, *Altert. Mecklenb.*, pl. 39 f. 51. — *Niederlausitzer Mittheilungen*, 2 (Guben, 1892), p. 386, pl. 9 f. 3. — *Verhandl. Berl. Anthr. Ges.*, 1891, p. 584.

1326. Ljunga, Ö. G.; with burnt bones in an urn of clay (f. 1441). Beneath a barrow from the Iron Age.

1327. Åsted, V. G.; peat-bog (see f. 1258).

1328. Ifvetofta, Sk.; harrow: in an urn of clay. — *Iduna*, 8, p. 105, pl. 1 f. 7.

1329, 1330. Härnevi, Upl.; hoard (see f. 1220).

1331. For the elevated lines upon the back-side of the disc (f. 1331 c), see *Verhandl. Berl. Anthr. Ges.*, 1885, pp. 449, 446. — Långbro, Söd.: peat-bog (see f. 1193).

1332. Thin, convex disc. — Berga, Vstml.; hoard: with 2 collars (= f. 1296), a spiral bracelet and a belt-ornament (f. 1383). — ESKIL OLSSON, *Västmanland under sten- och bronsåldern*, p. 20.

1333. Pins with three perpendicular, round plates: placed either as in f. 1333, or in one row. The plates are ornamented with cast (not chased) raised circles, concentric round the centre. — Other pins have at the top several small round plates.

MADSEN, *Afbildn., Br.*, I, pl. 27 f. 17 (= f. 1333). — VEDEL, *Bornholms Öltidsminder*, p. 39, f. 40 (3 round plates in a row). — MÜLLER, *Ordning, Br.*, f. 415 (3 small round plates in a row and 2 similar plates at each end of this). — MADSEN, *Afbildn., Br.*, II, pl. 18 (the same needle; great hoard from the end of the 5th period).

1335. Head in the shape of a horizontal disc (see f. 1314). — Hemse, G.

1336. Head in the shape of a duck, solid. — Gotland. — *Sv. Fornm.-för. tidskr.*, 6, p. 227.

1337. Head in the shape of a human head etc. (all cast in one piece). — Rovalls, G.; hoard (see f. 1227).

1338—1353. Bronze brooches in the shape of spectacles. The type is developed from those that occur in the 4th period (f. 1148—1150). At the beginning of the 5th period the plates are slightly convex, and are seldom, if ever, decorated with raised lines; they later became more convex or vaulted, and generally embellished with raised ornamentation. Concentric circles are frequently seen among them; there are, like the rest of the ornamentation, always cast, not chased. The decoration generally varies in the different parts of the Northern region, and hence it may be decided, in many cases, whether a brooch was made in Sweden, or some other northern country. — On the back of the convex plates, narrow raised lines are often seen (f. 1338, 1342, 1350). — sometimes in the form of a hand or a cross — which have been shaped in narrow grooves introduced into the form, partly to strengthen a weak point of the bronze, and partly to facilitate the spread of the molten metal to the thin edges of the form.

Tidsbestämning, p. 70, f. 126—129. — *Die typologische Methode*, p. 57, f. 203, 204. — BELTZ, *Zeitschr. f. Ethnol.*, 1913, p. 766. — For the elevated lines on the back, see OLSHAUSEN, *Verhandl. Berl. Anthr. Ges.*, 1885, pp. 420—438, 446.

1338. St. Dalby, Öl.; hoard (see f. 1271).

1340—1342 (see f. 1353). The decoration is formed of raised, curved lines, enclosed by other lines. Brooches with such decoration are common in Sweden, but do not occur in Denmark or North Germany, otherwise than in some rare exceptions. In south-east Norway a few such brooches have been found. — Cf. f. 1344.

1341. Äpplerum, Öl., with 3 similar brooches. — ÅBERG, *Kalm. l. bronsåld.*, f. 83.

1342. Broken. — Vegestorp, Boh.; peat-bog (see f. 1175).

1343. Part of a brooch; the hook for the pin's end has the shape of a bird. — Slimminge, Sk.; with a bronze vessel (= f. 1395, 1396).

1344, 1345. The decoration is formed of raised, curved lines, placed within each other, but the outer ones do not enclose the inner, as in f. 1340—1342. This type is common in Denmark, but rare in Sweden.

1344. Stora Dalby, Öl.; hoard (see f. 1271).

1345. Öllöf, Sk.; hoard (in 1904): with a belt-ornament (f. 1390), a great vessel (f. 1403; a hole has been filled up with resin) and a spiral bracelet etc.

1347. Äleklinta, Öl.; peat-bog: with a belt-ornament (= f. 1391) and a vessel (= f. 1395—1398).

1348. Grönhult, Sk.; hoard (see f. 1220).

1350. Stenbro, G.; hoard (see f. 1297).

1352. Vaulted in an unusual way. — Ullstorp, Sk.; with a vessel (f. 1398) and a collar (= f. 1277).

1353. The half of a very thin brooch; transition to the 6th period. — Håradshammar, Ö. G. (not G.); peat-bog: with a collar (f. 1457). — *Sv. Fornm.-för. tidskr.*, 12, p. 301.

1354—1360. Clasps of bronze, with a cross-bar and loop (seldom two loops). The bar, generally straight, more or less long, sometimes terminates in transverse discs. See f. 1367—1369.

Ant. suéd., f. 225. — *Fornv.*, 1912, p. 114, f. 51 (big). — MADSEN, *Afbildn., Br.*, I, pl. 29; II, pl. 12 (two of gold, one of bronze),

14 (with a pincette), 15. — MÜLLER, *Ordning, Br.*, f. 318—323. — SEHESTED, *Fortidsminder*, pl. XXII f. 13. — MESTORF, *Alterth. Schl.-Holst.*, f. 306 (with an eye = f. 1367). — SPLIETH, *Inventar*, f. 208. — BELTZ, *Alterth. Mecklenb.*, pl. 41 f. 80 (with a pincette).

1354. Köpinge, Sk. (see f. 971): barrow no VIII: in an urn of clay, with burnt bones and a finger-ring of bronze.

1355, 1356. Chains of bronze, probably worn as belts; in each a clasp with cross-bar. They seem to have been developed from belts formed of bronze tubes like f. 937 (cf. a belt of such tubes from the 4th period, MADSEN, *Afbildn., Br.*, II, pl. 22 f. 14), because the cords, too, which were covered by these tubes, are also copied in bronze. The chains f. 1355, 1356 are cast with admirable skill; all the links are moveable, though cast into each other, and though the length of such a chain can rise to 75 cm. Bronze chains of this kind are only found in the northern region, and this shows that they were made here.

Tidsbestämning, p. 155. — MÜLLER, *Ordning, Br.*, f. 327. — MESTORF, *Alterth. Schl.-Holst.*, f. 305. — SPLIETH, *Inventar*, f. 201.

1355, 1356. Långlöt, Öl.; hoard (see f. 1238).

1357—1359. Bronze clasps with a cross-bar (see f. 1354).

1357. Hvellinge, Sk.; in a little coffin of oak, surrounded with stones: with burnt bones, a knife (= f. 1244; no ornaments), a pincette (f. 1362) and an awl. — *Fornv.*, 1910, p. 6. Cf. MÜLLER, *Ordning, Br.*, f. 323.

1359. Angerum, Bl.; see f. 1247.

1360—1365. Bronze tongs (pincettes), most of them are broader than those of the 4th period, often decorated with chased knobs or punched ornaments. Some are narrow and of uniform breadth (f. 1365). See f. 977.

Broad. MADSEN, *Afbildn., Br.*, I, pl. 28; II, pl. 14 f. 2 (with a cross-bar). — MÜLLER, *Ordning, Br.*, f. 295, 296. — SPLIETH, *Inventar*, f. 190. — BELTZ, *Alterth. Mecklenb.*, pl. 41 f. 80 (with a cross-bar).

Narrow. MÜLLER, *Ordning, Br.*, f. 297. — SPLIETH, *Inventar*, f. 191. — BELTZ, *Alterth. Mecklenb.*, pl. 38 f. 37.

1360. Clasp with a cross-bar. — Björke, G.; little stone-cist: with burnt bones and a small ring.

1361. Jordslunda, Upl.; little barrow of stones: with burnt bones. — EKHOLM, *Uppl. bronsålder*, p. 240.

1362. Hvellinge, Sk.; tomb (see f. 1357).

1366. Bronze combs. These were used during the earlier as well as the later Bronze Age (f. 935). Of course, the great majority of the combs were of bone or horn.

MADSEN, *Afbildn., Br.*, I, pl. 30. — MÜLLER, *Ordning, Br.*, f. 201 (two wheels with four spokes). — SPLIETH, *Inventar*, f. 189.

1366. Wheel with four spokes. — Flädie, Hal.; barrow (see f. 1206).

1367—1369. Large eye of bronze thread. The ends were originally rolled up into spirals. Sometimes found together with a clasp, like f. 1354—1360.

WORSAAE, *Nord. Olds.*, f. 227 (not found together). — MADSEN, *Afbildn., Br.*, I, pl. 29 f. 32 (eye and cross-bar); II, pl. 30 f. 6 (different; from the 6th period). — MÜLLER, *Ordning, Br.*, f. 326. — MESTORF, *Alterth. Schl.-Holst.*, f. 306 (eye and cross-bar). — *Fornv.*, 1909, p. 226, f. 12 (hook and eye of silver, both ending in two spirals; from the Iron Age).

1367. Köpinge, Sk. (see f. 971); barrow no IV: with burnt bones, and the half of a gigantic clasp with a cross-bar (= f. 1354), in an urn of clay.

1368. Hyndevad, Söd.; see f. 778.

1369. Probably from the Iron Age. — Stånga, G. — Cf. ASPELIN, *Antiquités du Nord Finno-Ougrien*, f. 1535.

1370. Chisels, or punches, of bronze.

1370. Köpinge, Sk. (see 971); barrow no VI: with burnt bones, a razor, an arrow head and an awl (f. 1371), in an urn of clay (f. 1428).

1371, 1372. Awls of bronze, round with quadri-lateral tangs (see f. 982).

1371. Handle of wood. — Köpinge, Sk. (see f. 1370).

1372. Köpinge, Sk.; barrow no I (see f. 1263).

1373—1375. Quadrilateral (fringe) fittings of bronze.

1373—1375. Köpinge, Sk. (see f. 971); barrow no X: about 40 small bronzes = f. 1373—1375 were found with burnt bones, 3 buttons (1, f. 1380) etc., in an urn of clay.

1376—1382. Bronze buttons, mostly with two plates; more rarely such buttons have a loop on the under side, as in f. 1377, 1380.

1376—1378. Härnevi, Upl.; hoard (see f. 1220).

1380. Köpinge, Sk.; barrow no X (see f. 1373).

1381. Köpinge, Sk.; barrow no I (see f. 1263).

1383—1394. Bronze belt-ornaments, vaulted; as a rule richly ornamented, with buttons or loops on the inside, for fastening to the belt. They are developed from ornaments like f. 1157. Common in the Scandinavian and German parts of the Northern region, but not occurring, apart from very rare exceptions, in other districts. — They were previously taken to have been a kind of cover to such vessels as f. 1395—1398.

Tidsbestämning, pp. 73, 239 (literature).

1383. Berga, Vstml.; hoard (see f. 1332).

1384. Torstorp, Sm.; hoard (see f. 1274).

1385. Grönhult, Sk.; hoard (see f. 1229).

1386. Härnevi, Upl.; hoard (see f. 1220).

1387. Hogstorp, Boh.; hoard (see f. 1269).

1389. Grönhult, Sk.; hoard (see f. 1229).

1390. Öllöf, Sk.; hoard (see f. 1345).

1391, 1392. Vegestorp, Boh.; peat-bog (see f. 1175).

1394. Stora Dalby, Öl.; hoard (see f. 1271).

1395—1398 (see f. 1399—1411). Bronze vessels, deeper than those of the previous period (f. 1158—1163), but developed from them. Common in both Scandinavian and German part of the Northern region. Outside of this, so far as is at present known, only some very few such vessels have been found (in France and Switzerland)

Tidsbestämning, pp. 239, 327 (literature), pl. 5 f. 118, 119.

1395. Hogstorp, Boh.; hoard (see f. 1269).

1396. St. Dalby, Öl.; hoard (see f. 1271).

1397. On the inside of the mouth, a horizontal and perforated border; the vessel has an unusually rich ornamentation (cf. f. 1406, 1407). — Slättäng, V. G.; peat-bog (in 1874); with 2 belt-ornaments (= f. 1387, 1392; cf. f. 1402) and 2 brooches (= f. 1338—1353). — MONTELIUS, *Sv. (illustr.) hist.*, 1st edit., I, f. 168, 167 (one of the belt-ornaments); *Id.*, *Kulturgesch.*, f. 163; *Id.*, *Meisterstücke*, pl. 6.

1398. Horizontal and perforated border (cf. f. 1397). — Ullstorp, Sk.; hoard (see f. 1352).

1399—1411. Ornamentation, punched on bronze vessels and vaulted belt-ornaments (except f. 1400).

MONTELIUS, *Om den nordiska bronsålderns ornamentik*, Mbl. 1891, p. 17.

1400. The knife f. 1259.

1404. Vessel (= f. 1395, 1396). — Senäte, V. G.; peat-bog (in 1850): with a similar vessel, a belt-ornament (= f. 1383—1394), 4 collars (1 = f. 1278; 1 = f. 1296, but twisted only in one direction; 2 — the rings of f. 1273) and 1 brooch (= f. 1338—1353). — *Ant. suéd.*, f. 248 (one of the vessels: cf. our f. 1411); MONTELIUS, *Sve- riges historia*, 1st edit., 1, f. 179 (the brooch).

1412. Bronze vessels with two moveable handles in eyelets with cross-shaped fittings. Imported from the South. Several such specimens have been found in central Europe and Italy.

Sv. Fornm.-förs. tidskr., 11, p. 45 (literature).

1412. Hjärnarp, Sk.; peat-bog: contained 2 vessels (= f. 1395, 1396). — *Sv. Fornm.-förs. tidskr.*, 11, p. 45.

1413, 1414. Cups of thin bronze, hammered (not cast), with chased decoration; without handles. Imported from the South. In central Europe and in Italy, a quantity of cups and other works manufactured in thin bronze have been found, with similar chased decorations (circles, dots and lines); whereas such specimens within the Northern region are so rare that they have obviously been imported thither.

Sv. Fornm.-förs. tidskr., 11, p. 28.

1413, 1414. Badelunda-åsen, Vstml.; hoard (in 1875): with a collar (= f. 1296) and 4 spiral bracelets of double bronze wire (3 = f. 1303, 1 = f. 1302). — ESKIL OLSSON, *Västmanl. under sten- o. bronsåld.*, f. 28, 29. — In the immediate neighbourhood of this place, a hoard was deposited in the 6th period (f. 1458).

1415—1441. Pottery, hand-made of coarse material, baked at an open fire. Most of the pottery from the Bronze Age that has been found in Sweden consists of cinerary urns, for the preservation of burnt bones.

MADSEN, *Afbildn., Br.*, I, pl. 41—43. — MÜLLER, *Ordning, Br.*, f. 234—275.

1415—1418. Hut-urns of baked clay: pottery more or less resembling a hut, in which the burned bones of the deceased were laid, in the same manner as the bodies which were not burned have often been buried in graves like the houses inhabited by the living. The custom of using such hut urns came from Italy to North Germany — the region round the lower Elbe — and Scandinavia.

MADSEN, *Afbildn., Br.*, I, pl. 41. — MÜLLER, *Ordning, Br.*, f. 269. — MONTELIUS, *Ymer*, 1891, p. 69. — *Id.*, *Corresp.-Blatt Deut-*

sch. Gesellsch. f. Anthrop., 1897, p. 123. — *Id.*, *Civ. Ital.*, col. 657 (literature).

1415. Rounded. *Painted in black and red*. No door-opening, but a great rectangular door is indicated by black colour, on both sides of the hut. Round opening in the middle of the roof, representing the opening through which the smoke escaped; with a cover. — Stora Hammar, Sk.; barrow (in 1890): secondary tomb. The hut-urn, enveloped in well preserved sea-weed contained burnt bones, a knife, an awl and a button from the 5th period. — *Foruv.*, 1912, p. 143.

This is the only painted vessel from the Bronze Age that is known of from Sweden.

1416. Four-sided door, which was kept in place by a piece of wood going through holes in knobs on the door and the hut close by the door. Round opening in the middle of the roof, with a cover. — Fällö, Sm.; barrow of stones. — ÅBERG, *Kalm. l. bronsåld.*, p. 56.

1417. Four-sided door. No difference in shape between the wall and the roof. Round opening in the middle of the roof. — Tofta, G.; with a bracelet.

1418. Round door. The upper part of the urn is lost. — Slite, G. Stones placed in such a way that they indicated the form of a boat (!); little stone-cist: with burnt bones, a knife (= f. 1242; no ornaments), a pincette (= f. 1361), an arrow-head (= f. 1087—1088), an awl and a button.

1419—1421. Cups with one or two ears.

1419. Ran, Sk. No barrow. The cup covered an urn of clay containing burnt bones, a bit of a bronze saw and a chip of flint.

1420. Bläsnungs, G. Barrow of stones, with a stone-cist from the Stone Age in the centre. Near the border of the barrow stood a small stone-cist, containing burnt bones, the cup (f. 1420), a knife and an arrow-head of bronze. — *Sv. Fornm.-förs. tidskr.*, 7, p. 46.

1421. Dömmestorp, Hal. (see f. 966); barrow no 2. The cup, surrounded by flat stones, contained burnt bones, a razor, an awl and a button (= f. 1378). Four other tombs in the barrow.

1422—1427. Cinerary urns, covered with lids.

MADSEN, *Afbildn., Br.*, I, pl. 42.

1422. Klippan, Sk. No barrow. The urns stood near another (f. 1434); each of them was surrounded by flat stones.

1425. Öinge, Hal.; with a similar vessel, near the upper part of a stone-cist containing skeletons. In the urns: burnt bones, a fish-hook and 2 awls.

1427. Kvistälånga, Sk.; with a knife (= f. 1244; no ornaments).

1428. Köpinge, Sk.; barrow no VI (see f. 1370).

1429. Small. — Köpinge, Sk. (see f. 971). Barrow no V: upon the covering stone of a little stone-cist containing burnt bones. The vessel was placed upside-down.

1431. Vallkärra, Sk. No barrow; with other cinerary urns from the end of the 5th and from the 6th period (see f. 1448, 1449).

1433. Augerum, Bl.; see f. 1247.

1434. Klippan, Sk.; see f. 1422.

1435, 1436. Augerum, Bl.; see f. 1247.

1441. Ljunga, Ö. G.; barrow (see f. 1326).

The sixth period.

Transition to the Iron Age.

From the middle of the 8th to the end of the 7th century B. C.

I originally (in 1885) referred to the 6th period of the Bronze Age those types which since 1892 I have reckoned as belonging to the 1st period of the Bronze Age. Iron, however, was already in that period, which is now called the 6th of the Bronze Age, used so commonly that this time could be assigned to the Iron Age. Nevertheless, in order not to cause confusion, there seems reason to retain the nomenclature «6th period of the Bronze Age».

Tidsbest., pl. 6. — MONTELIUS. *Sw. Fornm.-förs. tidskr.*, 8, p. 140.

1442. Iron swords of a type common in central Europe during the earliest part of the Iron Age («Hallstatt swords»).

1443. Bronze chapes for sword-sheaths.

LINDENSCHMIT, *Alterth.*, III: 6, pl. 2.

1444—1449. Knives of bronze and iron («semilunar»). The edges of the majority are strongly curved outwards, sometimes almost semicircular, and the back curved in.

MONTELIUS. *Die vorklassische Chronologie Italiens*, p. 206.

1444. Bronze. — Skåne.

1445. Bronze. — Dömmestorp, Hal. (see f. 966); barrow no 14: in a little stone-cist, with an urn of clay and burnt bones.

1446. Bronze. — Snårestad, Sk.; barrow: in an urn of clay, with burnt bones and a pin with cross-bar (cf. f. 1323 and 1473).

1447. Bronze. — Nöbbelöf, Sk.; barrow.

1448 (bronze) and 1449 (iron). — Vallkärra, Sk.; tombs; no barrows (see f. 1431). Both knives lay, with burnt bones, in the same urn of clay.

1450. Bridles of bronze.

MONTELIUS, *Mbl.*, 1887, p. 151. — PIC, *Čechy na úsvitě dějin*, 3, pl. XXX f. 4.

1450. Eskelhem, G.; hoard (in 1886): 2 bridles, — one of them (f. 1450), all of bronze: the other had the bit of iron, but the bars (= f. 1450 b) of bronze (*Fornv.*, 1913, p. 76, f. 33), — a disc (f. 1451), 4 pendant ornaments (f. 1455), 2 open-worked bronzes (f. 1452, 1453), 6 small tubes (f. 1454), 12 round bosses (f. 1456), fragments of a cast vessel (= f. 1482) and of 2 thin cups hammered (f. 1483, 1484) of bronze. — MONTELIUS, *Mbl.*, 1887, p. 145, f. 57 (the bridle of bronze in ¹) and 64 (the cast vessel).

1451. Large round bronze disc, open worked, clearly intended to hang; when moved, the elongated bronze pieces fastened in the rings jingled against each other and against the disc. — This had, without doubt, been placed at the front end of a carriage-pole. The carriage was evidently intended for the image or the symbol of a god, and the wheel-shaped disc announced that it was the Sun-god.

1451. Eskelhem, G.; hoard (see f. 1450). As 2 bridles belong to the hoard, there had been evidently 2 horses put to the carriage, the pole of which bore the disc. — *Mbl.*, 1887, p. 168 (a similar bronze disc, without wheel, found in western Germany).

1452—1455. Bronze ornaments, belonging to harness.

1452—1455. Eskelhem, G.; hoard (see f. 1450).

1456. Round bosses of bronze, with a loop in the middle of the back; belonging to harness: A drawing of an Austrian sword-sheath of bronze from this period shows some horsemen; three round bosses are fastened on each rein on the left side of the horse, and consequently the number of bosses belonging to each horse was six.

Mbl., 1887, p. 165 (f. 90, horseman).

1456. Eskelhem, G.; hoard (see f. 1450): 12 bosses (= 2 horses).

1457—1463. Collars of bronze (see f. 1467, 1468). Many (f. 1457—1461) are, or seem to be, twisted alternately to the right and to the left, as f. 1296, 1297; but they are considerably thicker than those at the end of the 5th period. Others (f. 1467, 1468) show a decoration more or less resembling this twisting. Others again (f. 1462, 1463) have the shape of a narrow, somewhat slanting band, which narrows down to round hooks, bent round each other.

MONTELIUS, *Mbl.*, 1880, p. 100 (literature).

1457. Transition from the 5th to the 6th period. — Häradschammar, Ö. G.; hoard (see f. 1353).

1458. Badelunda-åsen, Vstml.; hoard: with 2 bracelets (= f. 1465). This hoard from the 6th period, had been deposited near another from the 5th (see f. 1413).

1461. Öllöf, Sk.; peat-bog: with a similar collar.

1464—1466. Bronze bracelets. Some (f. 1464, 1465) are very large and hollow.

Mbl., 1880, p. 108.

1465. Tibble, Upl.; with 2 similar bracelets. The rings lay in the earth, near a stone.

1466. Söfvestad, Sk. No barrow. A great urn of clay (*Fornv.*, 1907, p. 274, f. 113) contained a pin (f. 1473), a collar (= f. 1458), 2 bracelets (f. 1466) etc. No burnt bones. — For similar bracelets of iron, found with other objects from the 6th period, see *Nord. Fortidsm.*, 1, pl. XXII, p. 108, f. 28; cf. *Fornv.* 1913, p. 44.

1467, 1468. Collars of bronze (see f. 1457—1463).

1467. Västerhaninge, Söd.; with 4 similar collars.

1469—1474. Bronze pins.

1469—1472. Pins terminating in spirals.

1469. 1470. Mörkhult, Sk.; peat-bog; with 2 collars and 4 bracelets (2 = f. 1464; 2 = f. 1466). — *Mbl.*, 1903—1905, p. 230.
1471. One of the spirals has been repaired with a piece of iron, the rust of which is still visible. — Vallby, Hal: with another pin, etc. — *Sv. Fornm.-f. tidskr.*, 5, p. 31, f. 10, 11 (the other pin).

1473. Pins with a very large, cylindrical hollow cross-bar, like a bobbin. The type, which seems to be confined to Skåne, is due to the gradual thickening of the cross-bar on such pins as f. 1324; to prevent the weight becoming too great, the cross-bar was cast hollow.

1473. Söfvestad, Sk.: hoard (see f. 1466).

1474. Pins bent under the head which forms a small spiral (»swan-neck-pins»). From the end of the 6th or the beginning of the next period. Later forms of these pins are common in the 1st period of the Iron Age.

1474. Köpinge, Sk. (see f. 971); barrow no VI: with burnt bones.

1475. Funnel-shaped bronze belt-ornaments (cf. f. 1383—1394), with oblong four-sided holes near the border.

1476—1481. Bronze statuettes, cast, solid (except f. 1476).

ARNE. *Fornv.*, 1909, p. 175.

1479. Källeberg, Sk.; with burnt bones.

1482. Vessels of bronze, with four oblong four-sided holes instead of loops.

MONTELIUS, *Die typologische Methode*, p. 70, f. 265.

1482. Meander-ornaments on the bottom. — Roma, G.; hoard: with a collar (= f. 1296), a pin (= f. 1330) and a spiral of bronze. — *Mbl.*, 1887, p. 168.

1483, 1484. Bits of thin bronze vessels, imported from the South.

1483, 1484. Eskelhem, G.: hoard (see f. 1450).

1485, 1486. Pottery.

1485. Köpinge, Sk. (see f. 971); barrow no X: the urn contained burnt bones and a little piece of iron. — *Fornv.*, 1912, p. 97.

1486. Råå, Sk.; barrow. The urn contained burnt bones and a »semi-lunar» knife of bronze (cf. f. 1444).

Literature.

Only those works are given here, the titles of which are so much abbreviated that an explanation seemed needful.

Aarb. — *Aarbøger for nordisk Oldkyndighed og Historie* (Kjøbenhavn).

Aarsber. — *Aarsberetning af Foreningen til Norske Fortidsmindesmerkers Bevaring* (Kristiania).

Affaldsdynger — *Affaldsdynger fra stenalderen i Danmark*, af A. P. MADSEN, S. MÜLLER a. o. (Kjøbenhavn).

Ant. suéd. — MONTELIUS, *Antiquités suédoises*.

A. T. — *Antikvarisk tidskrift för Sverige*, utgifven af K. Vitterhets Historie och Antikvitets Akademien.

Boh. bidr. — *Bidrag till kännedom om Göteborgs och Bohusläns fornninnen och historia*.

Chron. ält. Br. — MONTELIUS, *Die Chronologie der ältesten Bronzezeit in Nord-Deutschland und Skandinavien* (offprint from *Archiv für Anthropologie*).

Civil. Ital. — MONTELIUS, *La civilisation primitive en Italie*.

Congr. St. — *Congrès international d'anthropologie et d'archéologie préhistorique, Session à Stockholm, 1874*.

EVANS, Bronze Impl. — J. EVANS, *The ancient Bronze Implements of Great Britain and Ireland*.

EVANS, Stone Impl. — J. EVANS, *The ancient Stone Implements of Great Britain*.

Fornv. — *Fornvännen. Meddelanden från K. Vitterhets Hist. o. Ant. Akademien*.

Jahresschr. (Halle) — *Jahresschrift für die Vorgeschichte der sächsisch-thüringischen Länder* (Halle).

KELLER, Pfahlb. — F. KELLER, *Pfahlbauten (Mittheilungen der Antiquarischen Gesellschaft in Zürich)*.

LINDENSCHMIT, Alterth. — L. LINDENSCHMIT, *Altertümer unserer heidnischen Vorzeit*.

MADSEN, Afbildn. — A. P. MADSEN, *Afbildninger af danske Oldsager og Mindesmærker. Stenalderen og Broncealderen* (I, *Suiter*; II, *Samlede Fund*).

Matériaux — *Matériaux pour servir à l'histoire de l'homme*.

Mbl. — *Månadsblad, utgifvet af K. Vitterhets Historie och Antikvitets Akademien*.

Meisterstücke — MONTELIUS, *Meisterstücke im Museum vaterländischer Altertümer in Stockholm*.

Mémoires, or Mém. Ant. du Nord — *Mémoires de la Société des Antiquaires du Nord* (Kjøbenhavn).

MÜLLER, Ordning — S. MÜLLER, *Ordning af danske Oldsager*.

NILSSON, Ur.-inv. — S. NILSSON, *Skandinaviska Nordens Urinvånare*.

Opuscula — *Opuscula archaeologica Oscari Montelio septuagenario dicata d. IX m. sept. a. MCMXIII*.

Phalbauten — KELLER, *Pfahlbauten* (see above).

Sv. fornt. — MONTELIUS, *Sveriges forntid*.

Tidsbestämning — MONTELIUS, *Om tidsbestämning inom bronsåldern, med särskildt afseende på Skandinavien* (*Vitterh.-Akads. Handlingar*, 30).

Typol. Methode. — MONTELIUS, *Die typologische Methode* (first part of *Die älteren Kulturperioden im Orient und in Europa*).

WORSAAE, Nord. Olds. — J. A. WORSAAE, *Nordiske Oldsager*.

See also the references to literature which are given on pp. 2 and 3 (for the Stone Age) and p. 30 (for the Bronze Age).



Provinces.

Bl. — Bleking.
 Boh. — Bohuslän.
 Dal., Dalsl. — Dalsland.
 Dalarne.
 G. — Gotland.
 Gestr. — Gestrikland.
 Hal. — Halland.
 Hels. — Helsingland.

Härjed. — Härjedalen.
 Jämtl. — Jämtland.
 Lapl. — Lappland.
 Mpd. — Medelpad.
 Ner. — Närke.
 Sk. — Skåne.
 Sm. — Småland.
 Söd. — Södermanland.

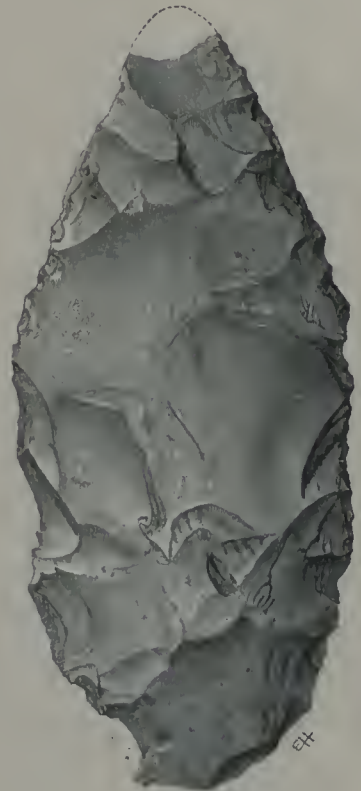
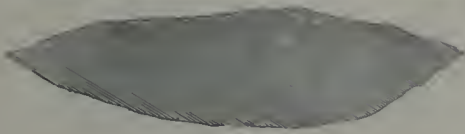
Upl. — Upland.
 Vbtn. — Vesterbotten.
 V. G. — Vestergötland.
 Vrml. — Vermland.
 Vstml. — Vestmanland.
 Ång. — Ångermanland.
 Ö. G. — Östergötland.
 Öl. — Öland.



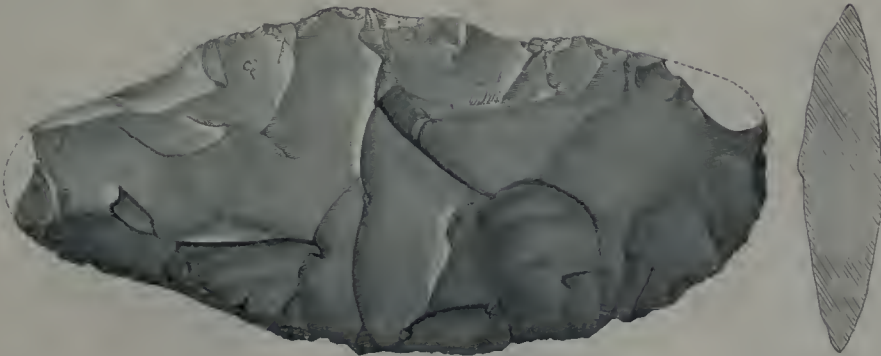
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2 a, b. Boh. 2/3.



3 c. Sk. 1/3.



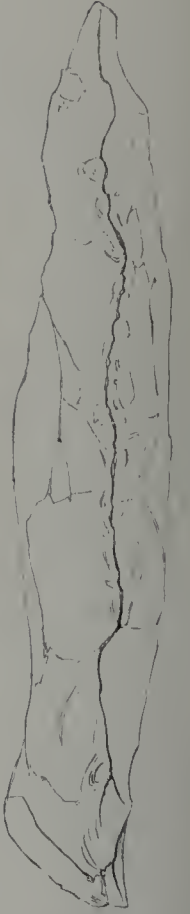
3 a, b. Sk. 1/3.



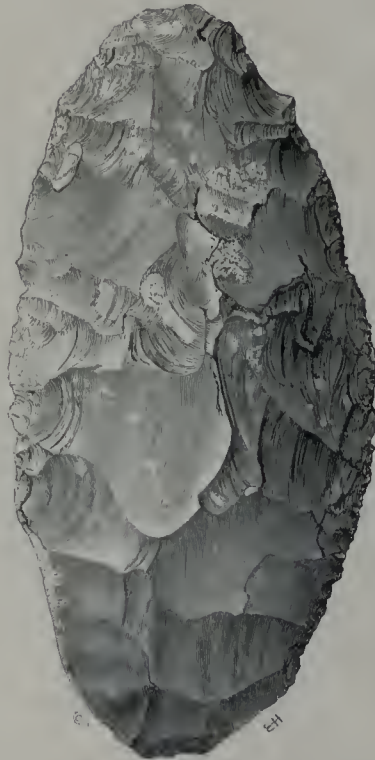
4 a, b. Boh. $\frac{2}{3}$.



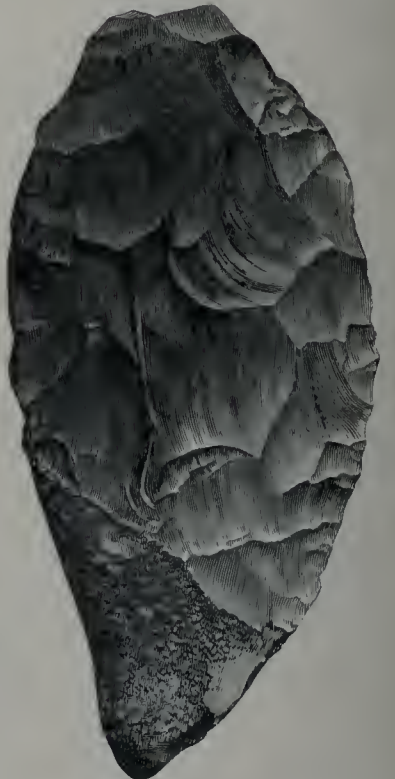
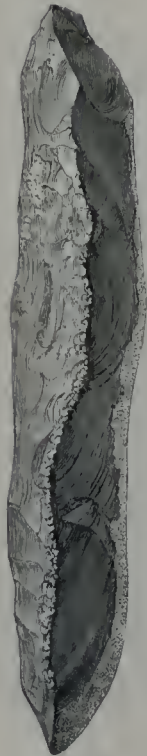
5 a, b. Sk. $\frac{1}{2}$.



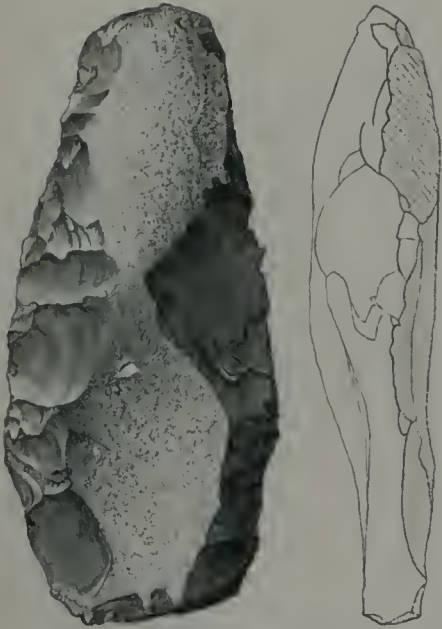
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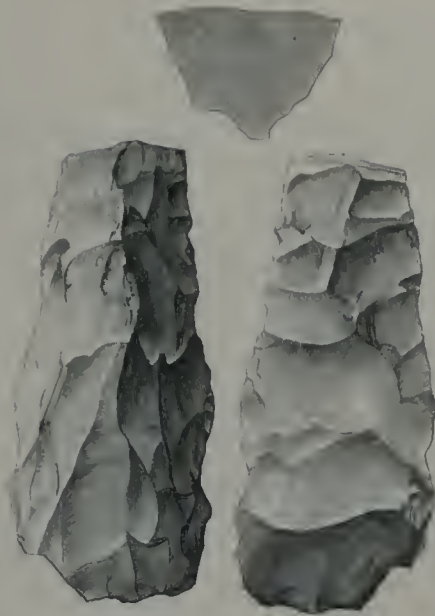
7 a, b. Boh. $\frac{1}{2}$.



8. Boh. $\frac{1}{3}$.



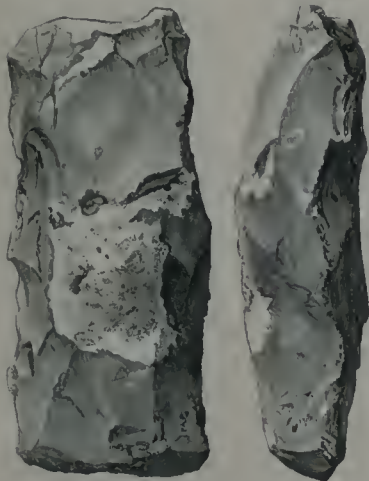
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10 a-c. Boh. 1/2.



11 a, b. Sk. 2/3.



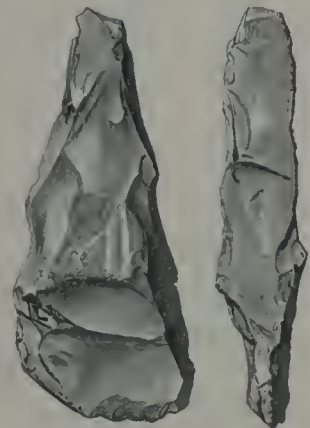
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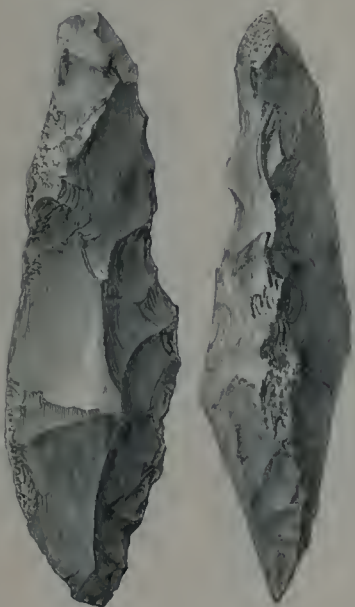
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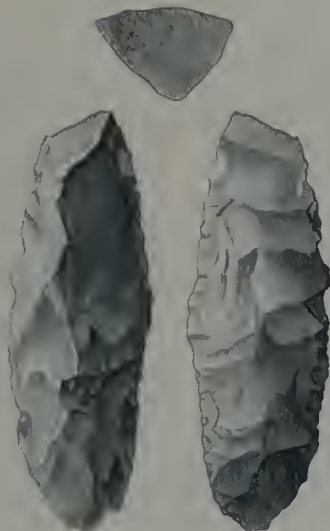
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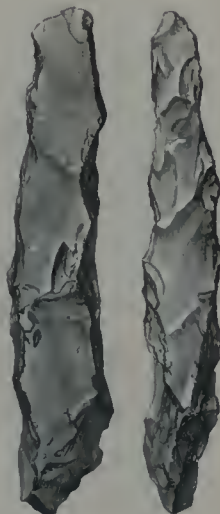
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16 a, b. Sk. 2/3.



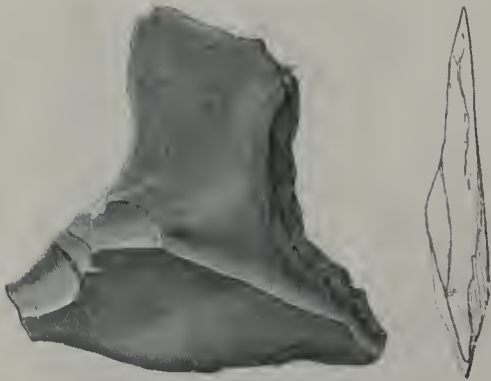
17 a-c. Boh. 1/2.



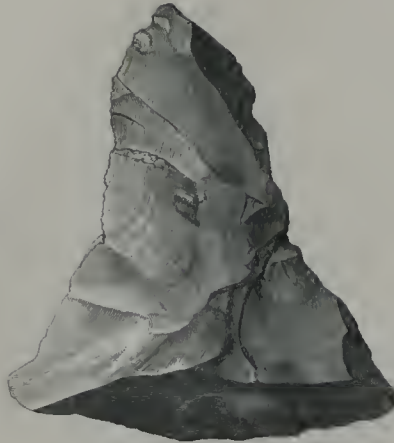
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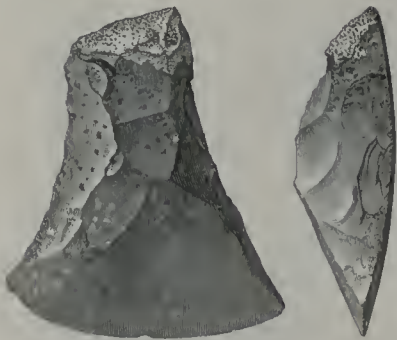
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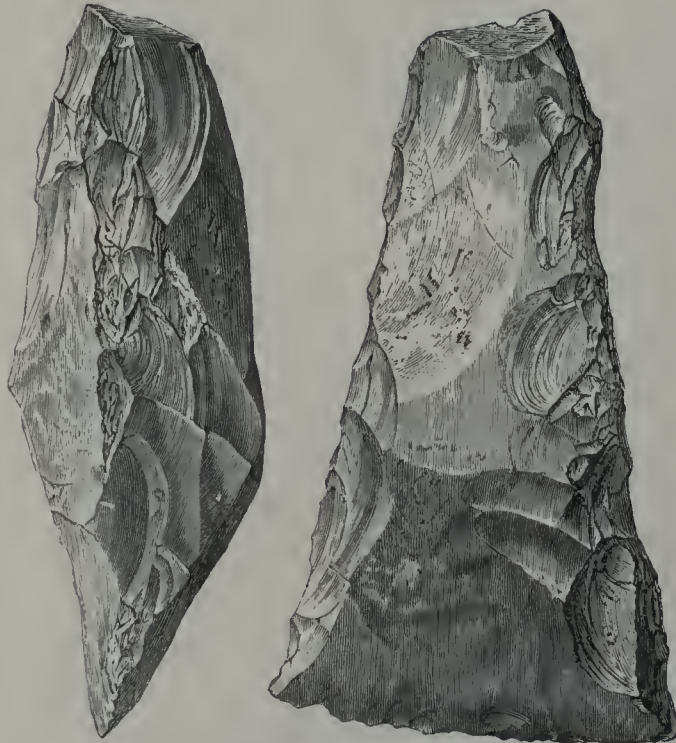
21. Sk. $\frac{2}{3}$.



22 a, b. Sk. $\frac{1}{2}$.



23 a, b. Sk. $\frac{2}{3}$.

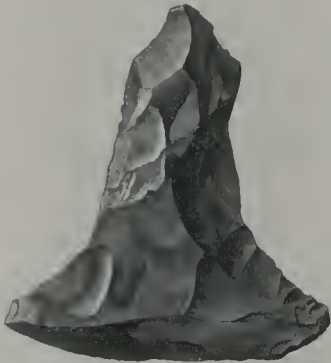


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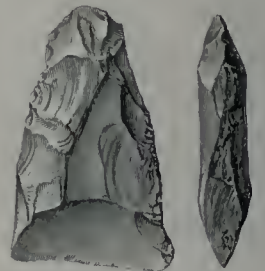
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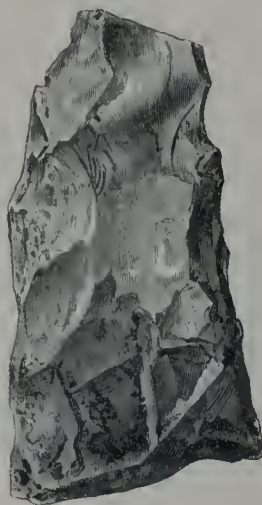
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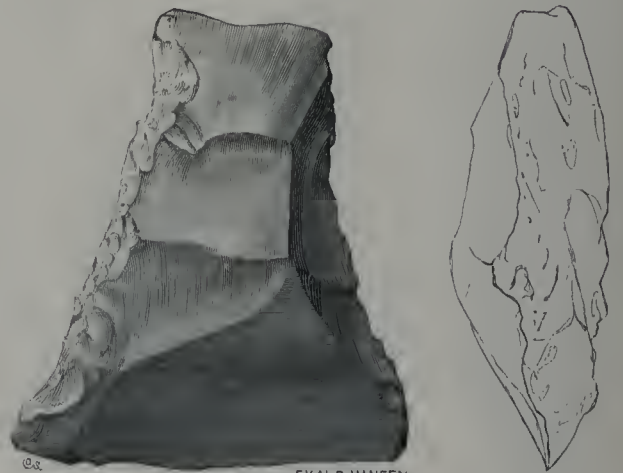
27 a, b. Ö.G. $\frac{1}{2}$.



28 a, b. Sk. $\frac{2}{3}$.



29. Bl. $\frac{2}{3}$.

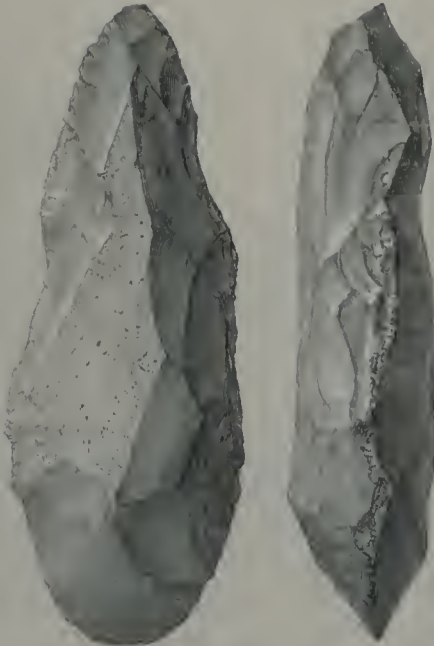


30 a, b. Sk. $\frac{1}{2}$.

EVALD HANSEN.



31 a, b. Sk. 2/3.



32 a, b. Sk. 1/2.



33 a, b. Sk. 1/2.



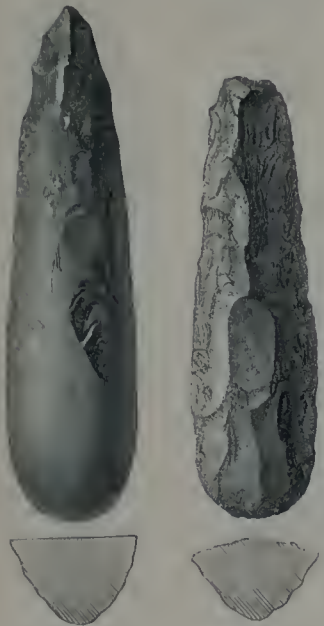
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34 a, b. Sk. 1/2.



36 a, b. Boh. 2/3.



37 a, b. Dal. 1/3.



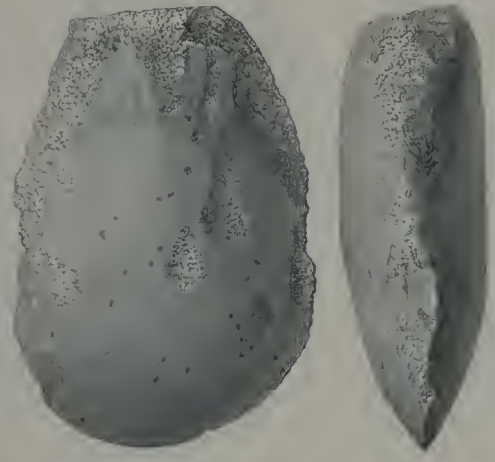
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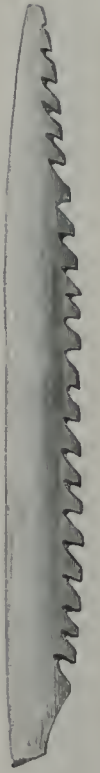
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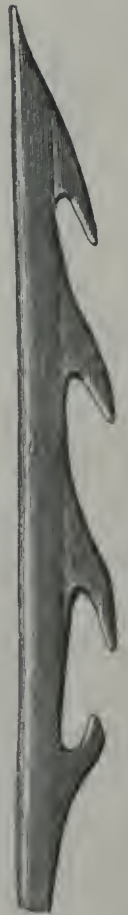
40 a, b. Sk. 1/3.



41 a, b. Sk. 1/2.



42. Öl. 1/3.



43. Dal. 1/2.



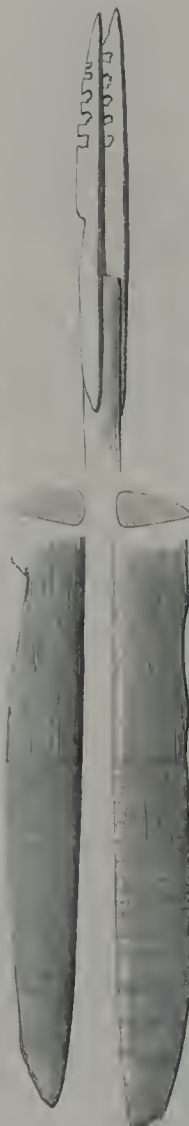
44. Sk. 1/4.



45. Sk. 1/2.



46 a-g. Bl. 2/3 (o. 1/4).



47. Bl. 1/2.



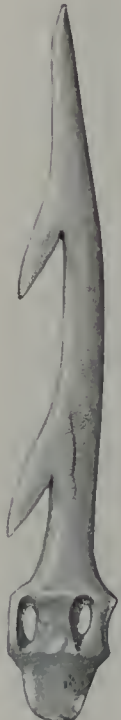
48. Sk. 1/2.



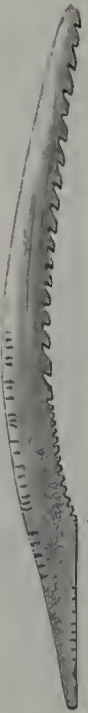
49. Sk. 1/2.



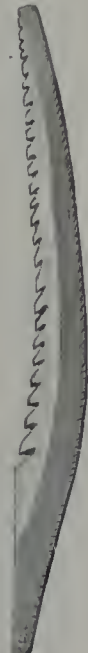
50. Ö. G. 1/2.



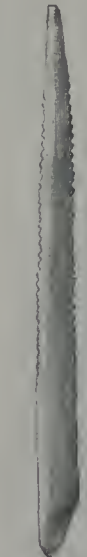
51. Ö.G. 1/3.



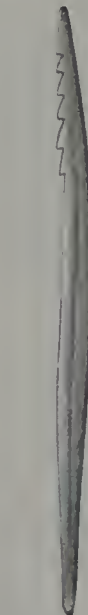
52 a, b. Öl. 1/3.



53. Söd. 1/3.



54. Bl. 1/3.



55. Sk. 1/2.



56. Sk. 1/3.



57. Ång. 1/2.



58. Sk. 2/3.



60 a, b. Sk. 1/2.

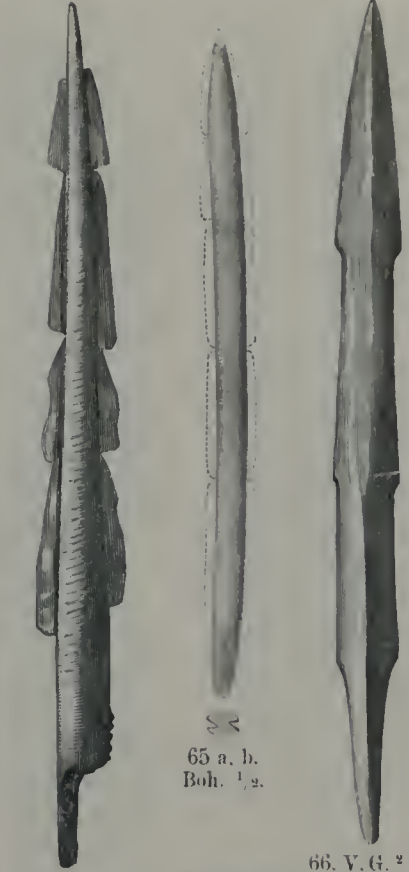
59. Sk. 1/2.

61. Boh. 1/1.



62 a - c. Jämtl. 2/2.

63. Sk. 1/1.



65 a, b. Boh. 1/2.

66. V. G. 2/2.

64. Sk. 1/2.



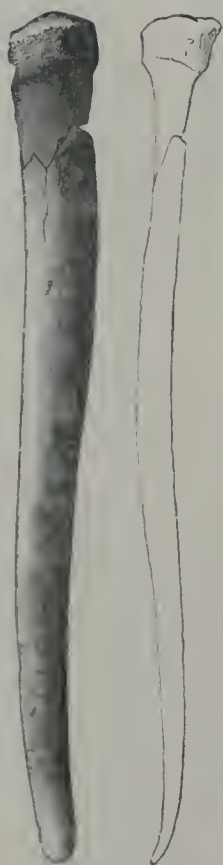
68 a, b. Boh. 1/3.



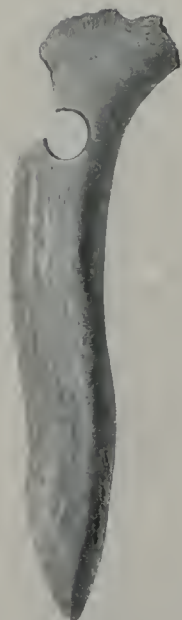
67 a, b. Jämtl. 1/2.



69 a, b. Söd. 1/3.



75 a, b. Sk. 1/4.



70. Ö.G. 1/4.



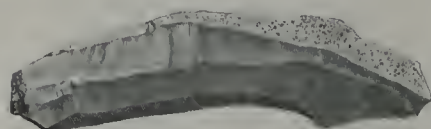
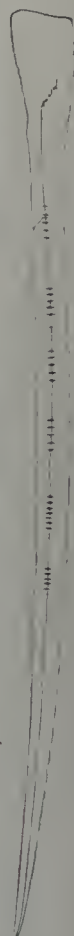
71 a, b. Sk. 1/3.



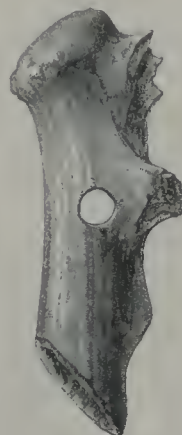
74 a, b. Sk. 1/4.



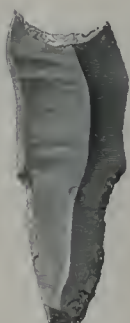
76 a, b. Ö.G. 1/3.



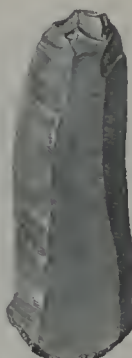
80. Sk. 1/3.



72. Sk. 1/4.



81. Sk. 1/2.



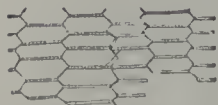
82. Sk. 1/3.



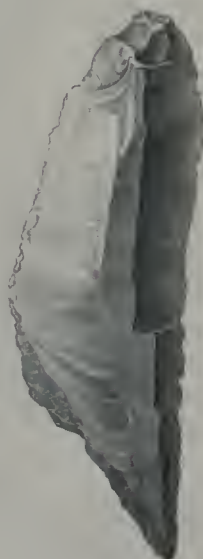
83. Sk. 1/2.



73. Sk. 1/4.



77 a-c. Boh. 1/3.



87. Sk. 2/3.



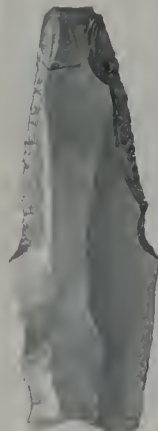
85 a, b. Sk. 1/1.



84. Sk. 2/3.



86 a, b. Sk. 1/1.



88. Sk. 2/3.



90. Sk. 1/3.



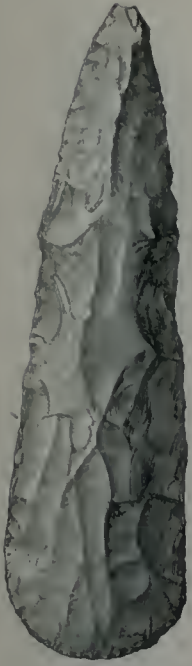
89. Sk. 2/3.



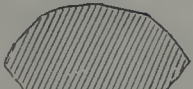
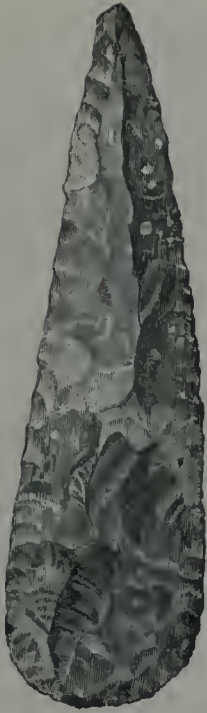
78 a, b. Dalarna. 1/3.



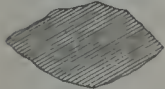
79 a, b. Söd. 1/3.



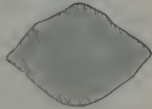
91 a, b. Sk. 1/3.



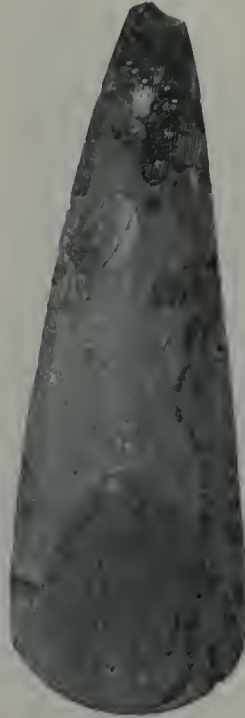
92 a, b. Sk. 1/3.



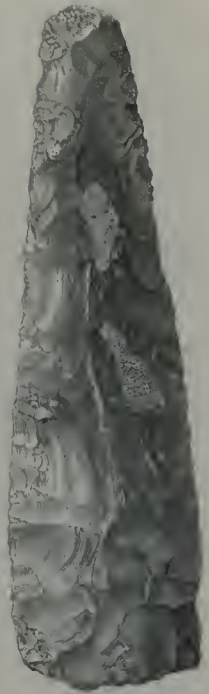
93 a, b. Sk. 1/2.



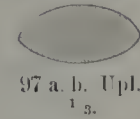
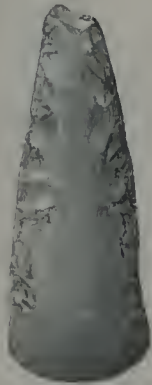
94 a, b. Sk. 1/3.



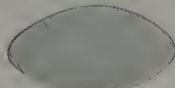
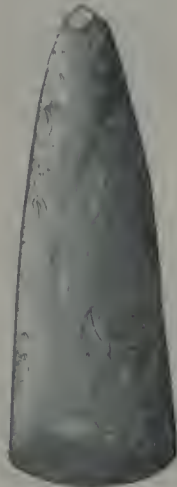
95. Sk. 1/2.



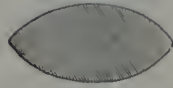
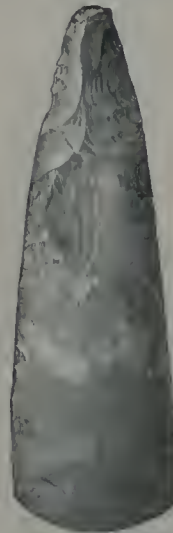
96 a, b. Sk. 1/3.



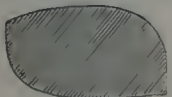
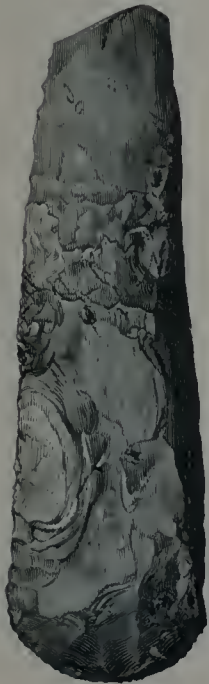
97 a, b. Upl. 1/3.



98 a, b. Ö. G. 1/3.



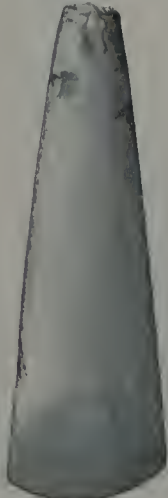
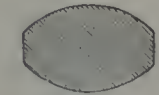
99 a, b. Sk. 1/3.



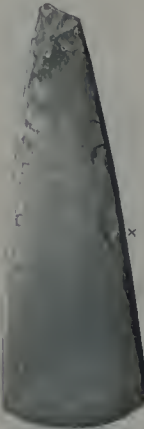
100 a, b. Sk. 1/3.



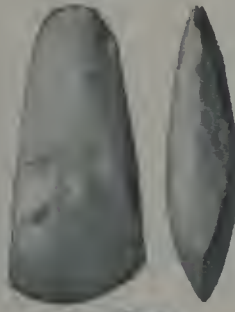
101 a, b. Sk. 1/3.



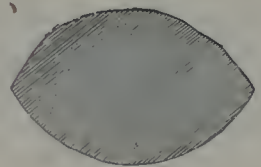
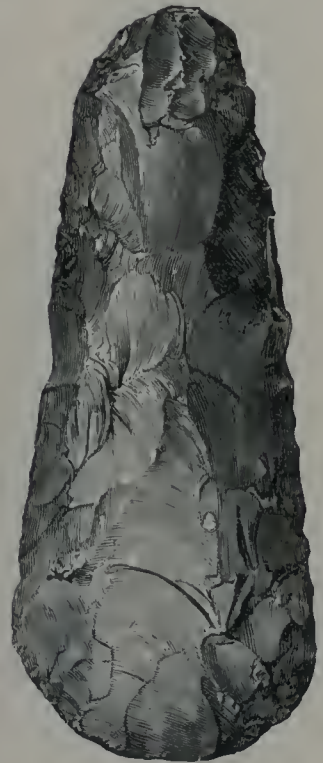
102 a, b. Sk. 1/3.



103 a, b. Sk. 1/3.



104 a-c. Ner. 1/3.



105 a, b. Sk. 1/2.



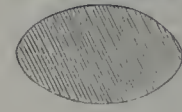
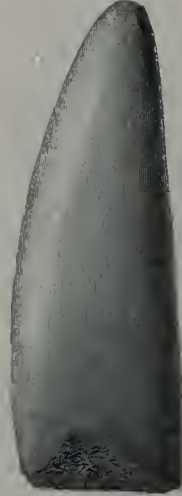
106 a-c. G. 1/8.



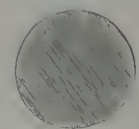
107 a, b. G. 1/4.



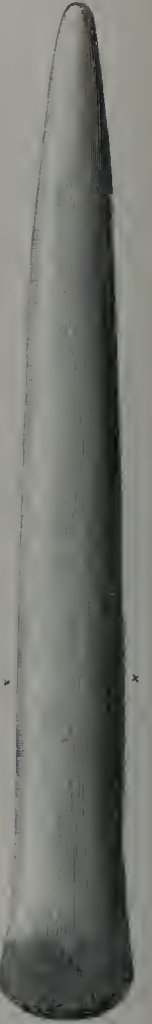
108 a-c. G. 1/8.



109 a, b. G. 1/8.



110 a, b. Vstml. 1/8.



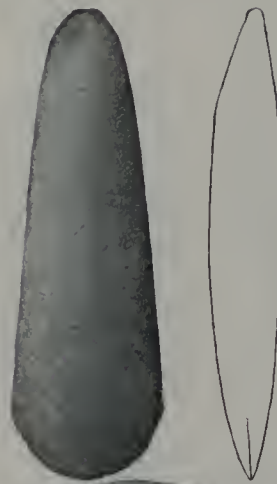
111 a, b. Bl. 1/8.



116 a, b. Sk. 1/2.



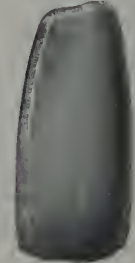
112 a, b. Upl. 1/2.



113 a-c. Ner. 1/8.



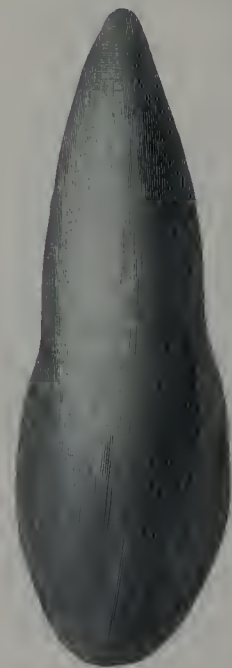
114 a, b. Upl. 1/8.



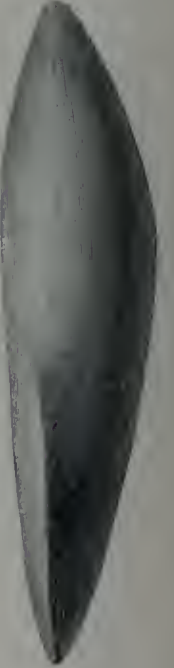
115 a, b. Upl. 1/8.

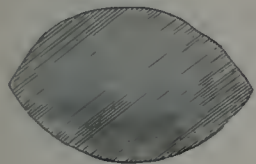
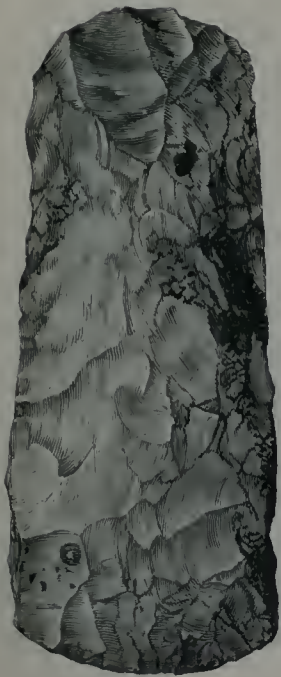


117 a, b. Sm. 1/4.

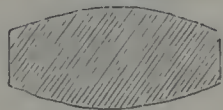


118 a, b. Boh. 1/2.





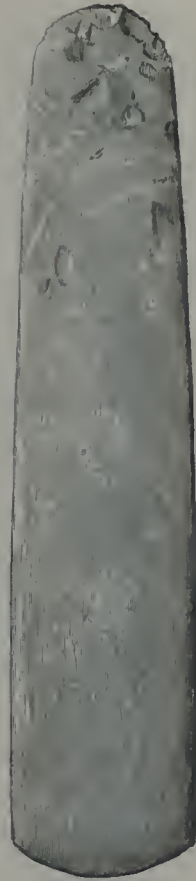
119 a, b. Sk. 1/2.



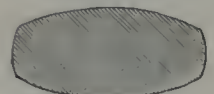
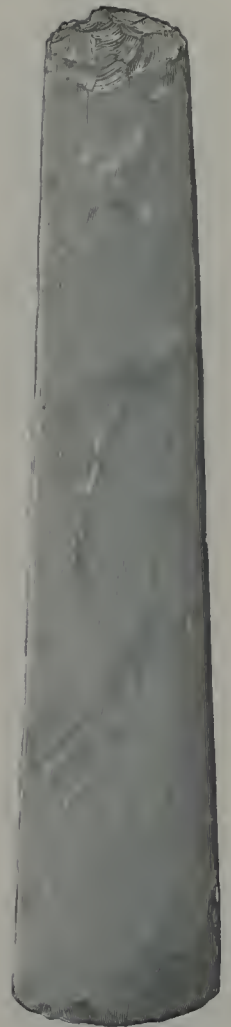
120 a, b. Sk. 1/3.



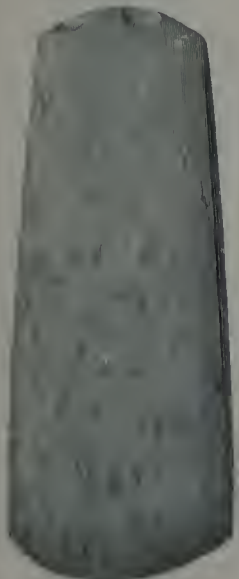
121. Sk. 1/3.



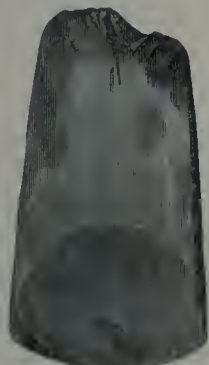
122. G. 1/3.



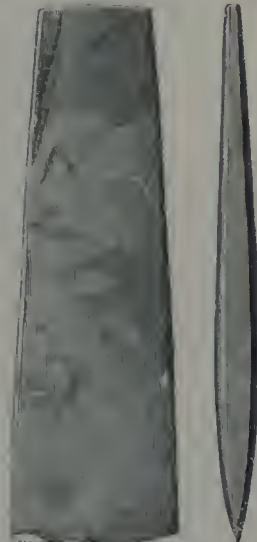
123 a, b. Boh. 1/3.



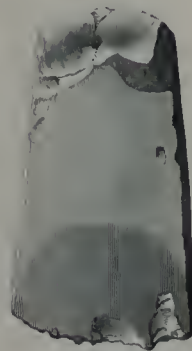
127. V. G. 2/3.



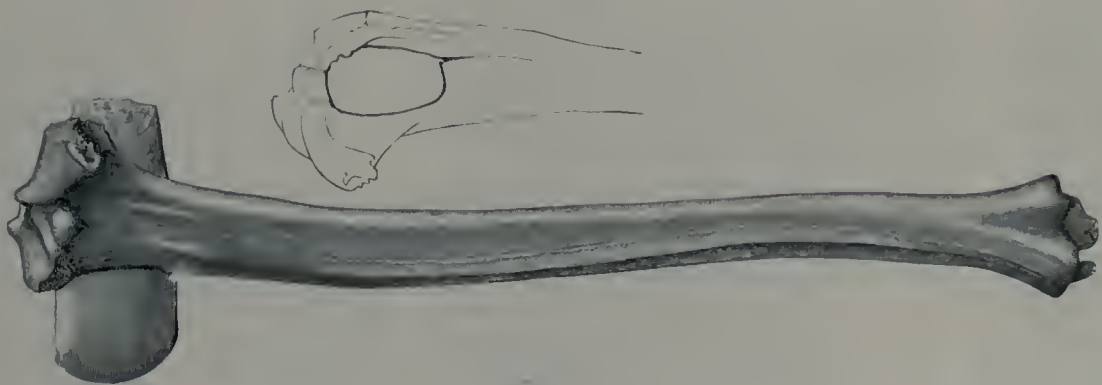
124. Boh. 1/3.



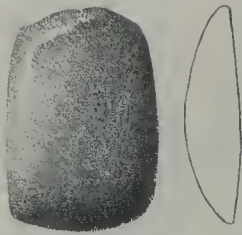
125 a, b. Sk. 1/2.



126. Hcls. 1/3.



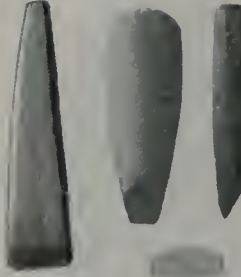
128 a, b. Sk. 1/3.



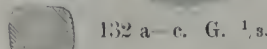
129 a, b. Ö. G. 1/2.



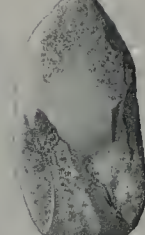
130 a, b. Upl. 1/3.



131 a, b. Upl. 1/3.



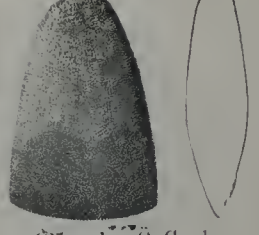
132 a-c. G. 1/3.



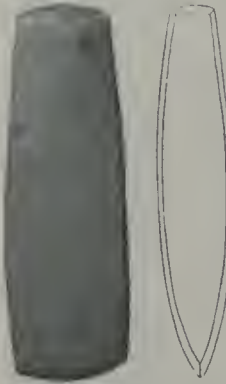
133. Upl. 1/2.



134 a, b. Sm. 1/3.



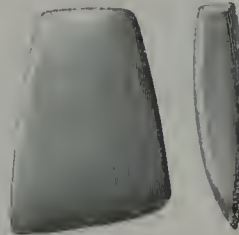
135 a, b. Ö. G. 1/2.



136 a, b. Ner. 1/3.



137 a, b. Upl. 1/2.



138 a, b. Upl. 1/2.

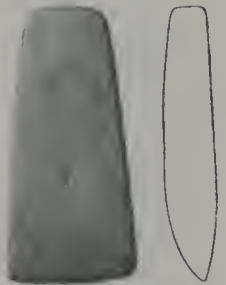


139 a, b. Ö. G. 1/3.



140 a, b. Upl. 1/3.

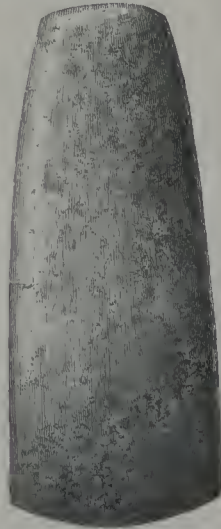
141 a, b. Ö. G. 1/3.



142 a-c. Ner. 1/3.



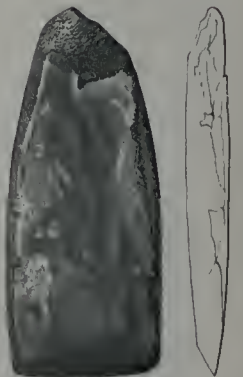
143 a, b. Upl. 1/3.



144 a, b. Ö. G. 1/2.



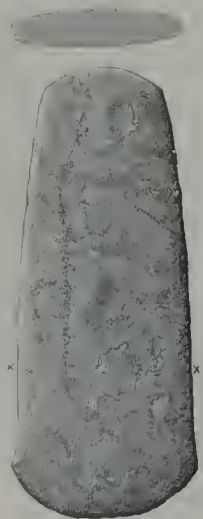
145 a, b. Ner. 1/3.



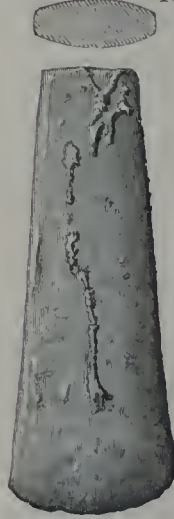
146 a, b. Sm. 1/2.



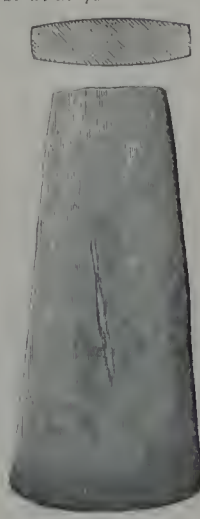
147 a-c. Sk. 1/2.



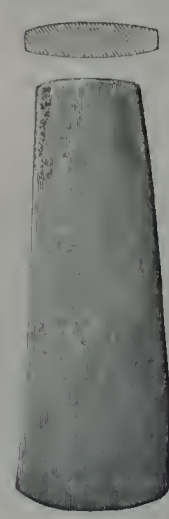
148 a, b. Sm. 1/2.



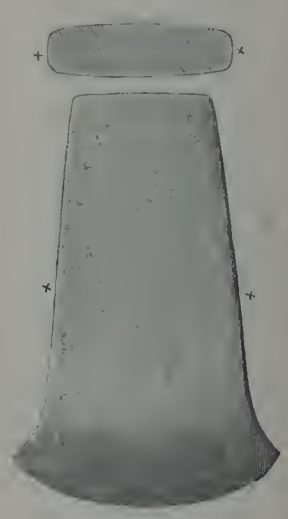
149 a, b. Sk. 1/2.



150 a, b. Sk. 1/2.



151 a, b. Sk. 1/2.



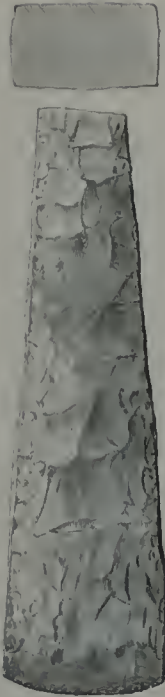
152 a, b. Sk. 1/2.



153 a, b. Sk. 1/3.



151 a, b. Sk. 1/2.



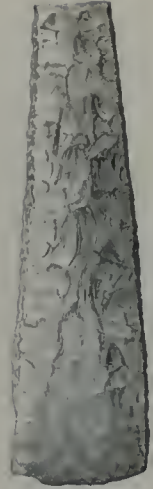
155 a, b. Sk. 1/3.



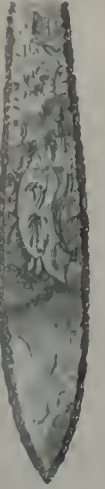
156 a, b. Sk. 1/4.



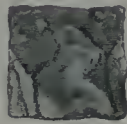
157. Hal. 1/2.



158 a, b. Ner. 1/3.



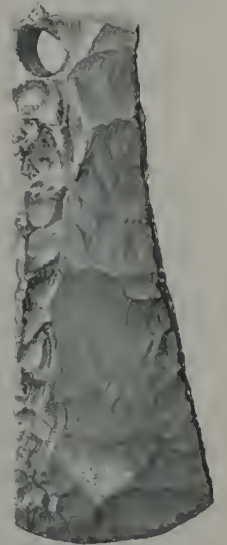
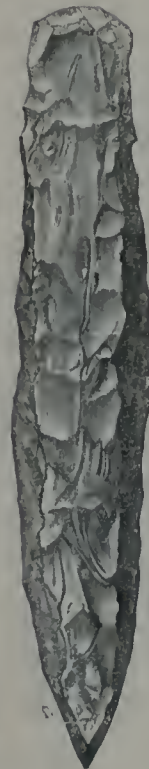
159. Sk. 1/2.



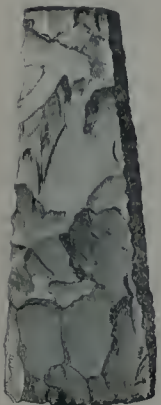
162 a, b. Sk. 2/3.



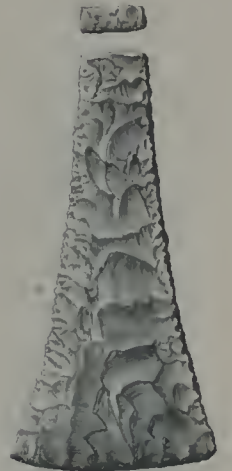
163 a, b. Söd. 2/3.



160. Sk. 1/3.



161. Hels. 1/3.

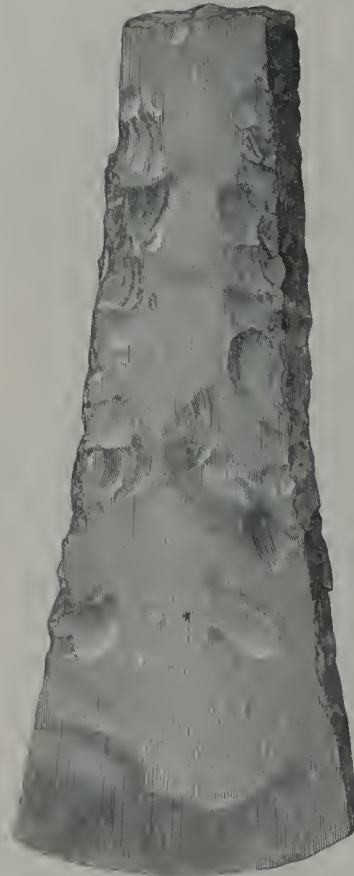


164 a, b. Sk. 1/3.

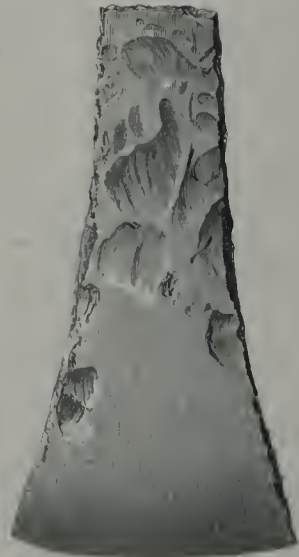


165 a, b. Sk. $\frac{1}{3}$.

166 a-c. Sk. $\frac{1}{2}$.



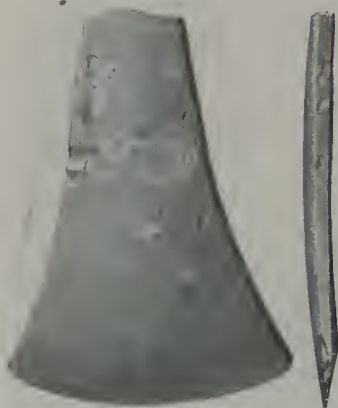
167. V.G. $\frac{2}{3}$.



168. Sk. $\frac{3}{4}$.



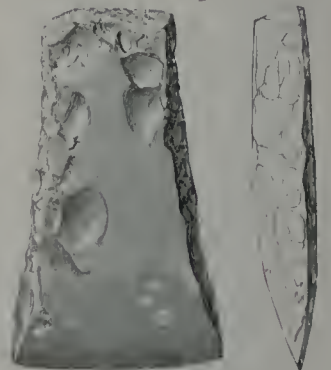
169 a, b. Ö.G. $\frac{1}{3}$.



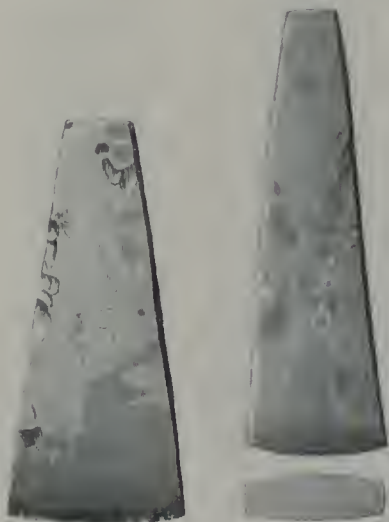
170 a, b. V. G. $\frac{1}{3}$.



171. Upl. $\frac{1}{3}$.



172 a-c. Söd. $\frac{1}{2}$.



173. Hcls. $\frac{1}{3}$.

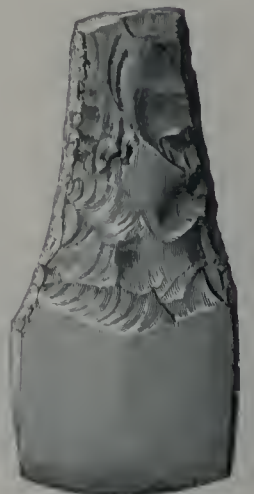
174 a, b. Sk. $\frac{1}{3}$.



175 a, b. Sk. $\frac{2}{3}$.



176. Sk. $\frac{1}{2}$.





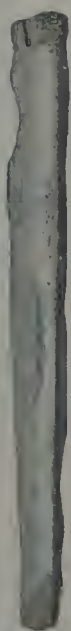
177. Sk. 1/2.



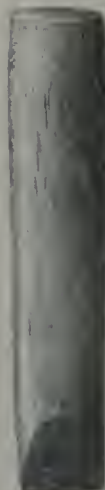
180 a, b. Ö.G. 1/2.



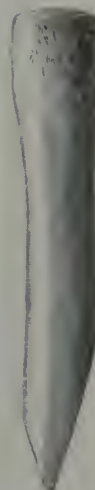
181. Ö.G. 1/2.



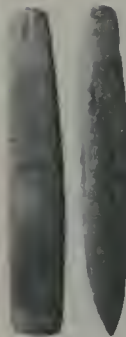
185 a, b. Lapl. 1/2.



182 a, b. Ö.G. 1/2.



178 a-c. G. 1/2.



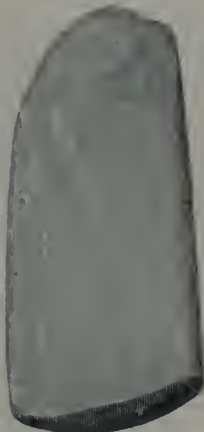
179 b.



179 a. Sk. 1/2.



186 Vbfn. 1/2.



187. Mpd. 1/3.



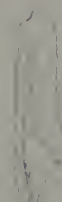
183. G. 2/3.



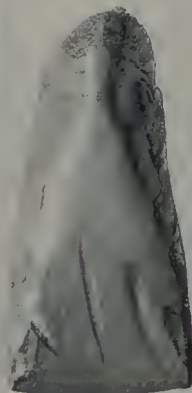
188 a, b. G. 1/1.



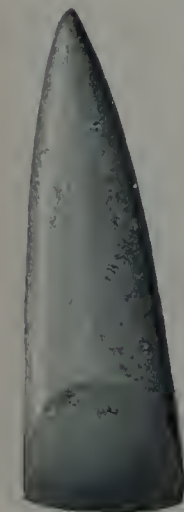
189 a, b. Hels. 1/2.



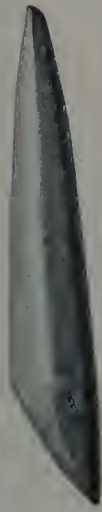
184. Ö.G. 1/3.



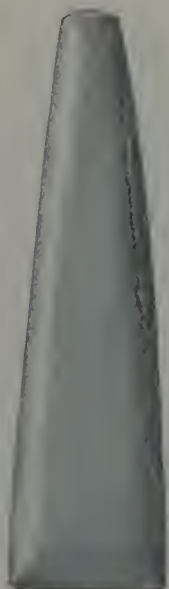
190 a, b. Vbfn. 1/3.



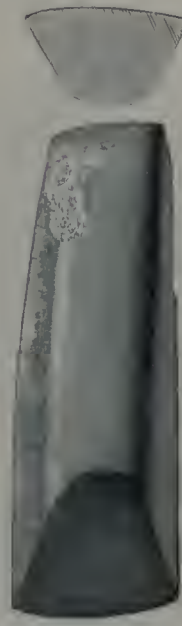
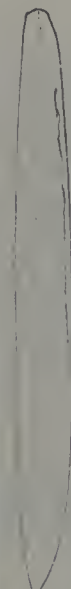
191 a, b. G. 1/2.



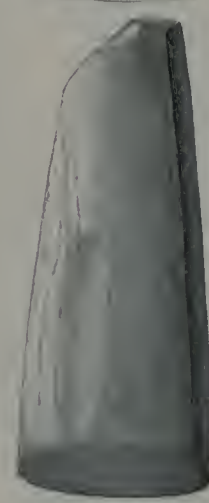
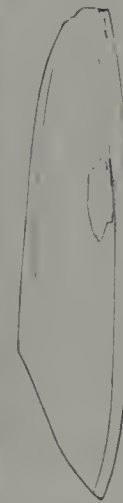
192 a, b. Upl. 1/3.



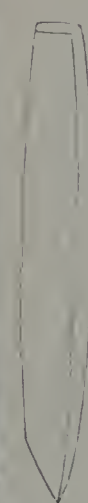
193 a, b. Ner. 1/3.

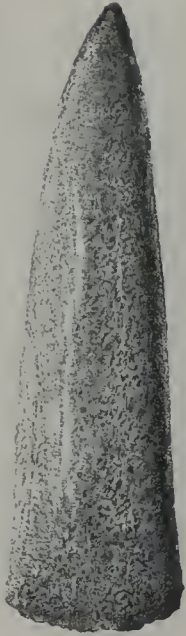


194 a-c. Upl. 1/2.

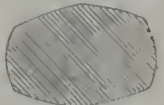
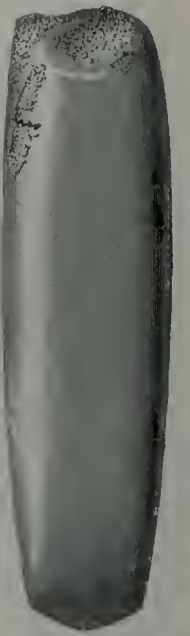


195 a-c. Upl. 1/2.





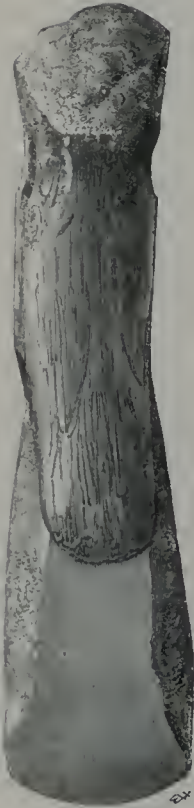
198 a, b. Upl. ²/_s.



196 a, b. G. ¹/_s.



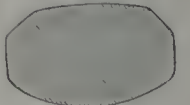
197 a, b. G. ¹/_s.



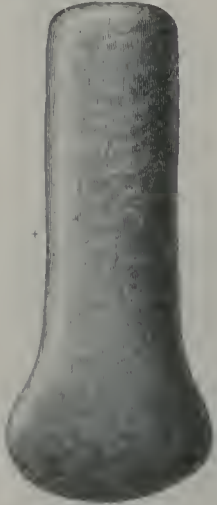
202 a, b. Sk. ¹/_s.



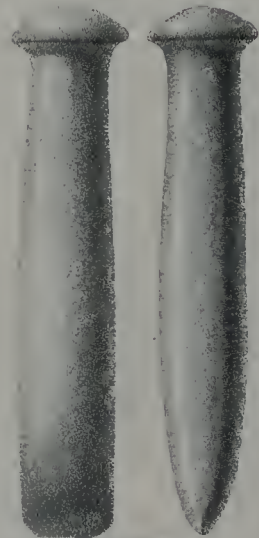
199 a, b. Upl. ¹/_s.



200 a, b. Upl. ¹/_s.



203 a, b. Hal. ¹/_s.



205. Boh. ¹/_s.



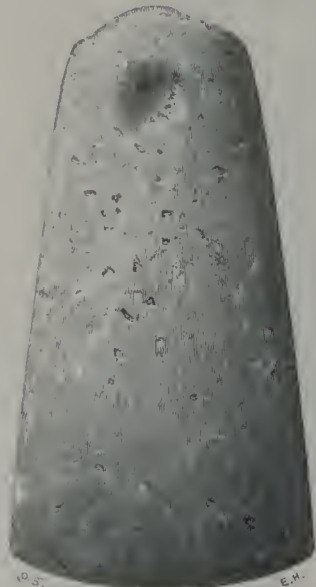
201 a, b. Sk. ¹/_s.



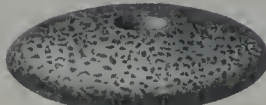
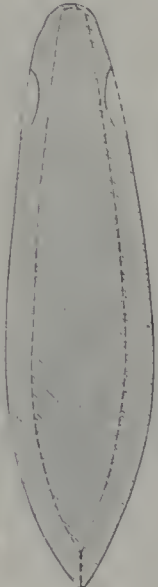
208. Sm. ²/_s.



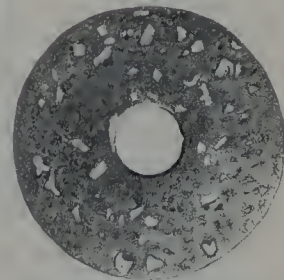
204 a-c. Hal. ¹/_s.



206 a, b. Sk. ¹/_s.



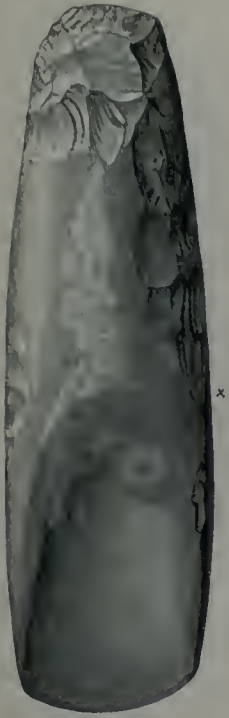
209 a, b. Sk. ¹/_s.



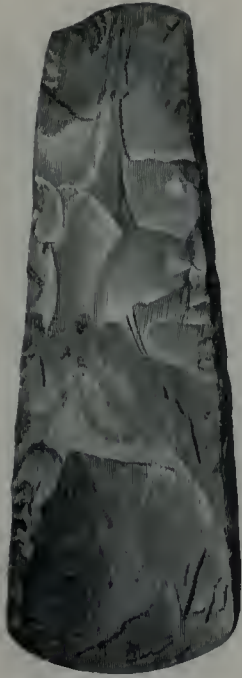
210 a, b. ¹/_s.



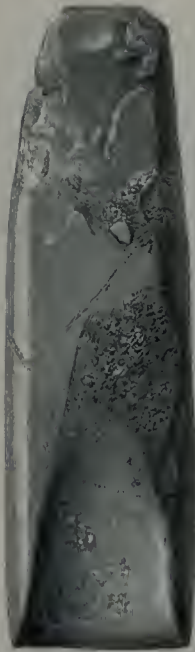
207. Sk. ¹/_s.



212. V. G. 2/3.



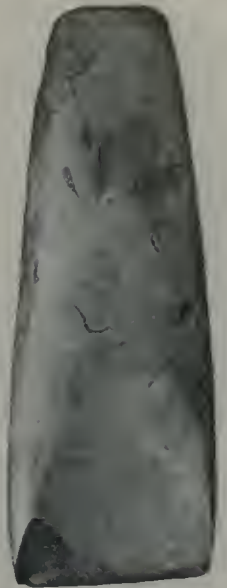
213. Gestr. 2/3.



214. Sk. 1/2.



215. Boh. 1/2.



216. Ö. G. 1/2.



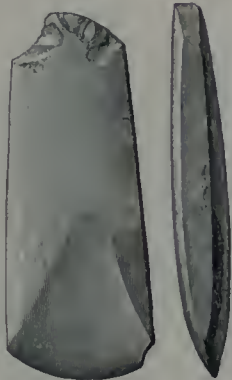
211 a, b. Sk. 1/2.



217 a, b. Vbtn. 1/2.



218 a, b. Sm. 1/3.



219 a-c. Bl. 1/2.



220 a-c. Vrml. 1/3.



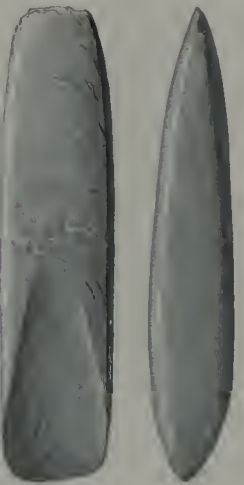
221 a, b. Sk. 2/3.



222 a, b. Ner. 1/3.



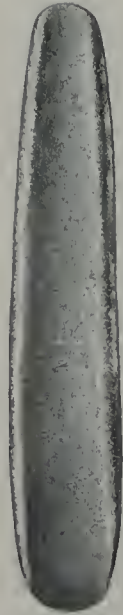
223 a-c. Upl. 2/3.



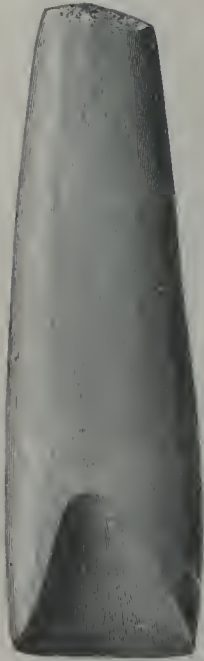
224 a, b. Lapl. 1/3.



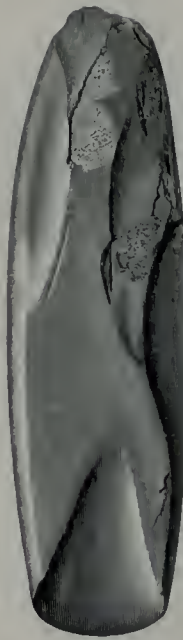
225. Hels. 1/3.



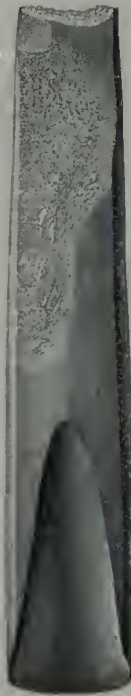
227 a, b. Bl. 1/3.



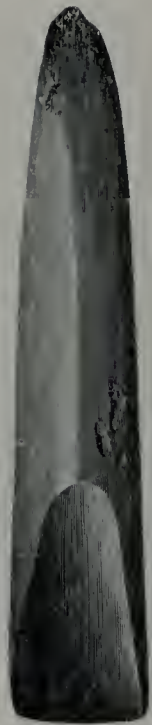
228 a, b. Sk. 1/3.



229 a, b. Vbtn. 1/3



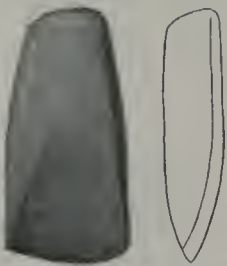
230 a, b. Vbtn. 1/3.



231. Vbtn. 1/3.



236 a, b. Sm. 1/2.



226 a, b. Ner. 1/3.



232 a, b. Ner. 1/3.



233 a, b. G. 1/2.



234 a, b. Mpd. 1/2.



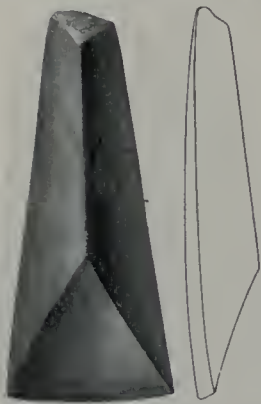
235 a, b. Ö. G. 1/3.



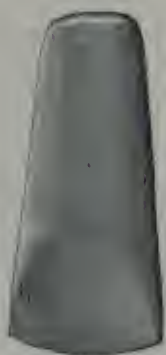
237 a, b. Bl. 1/5.



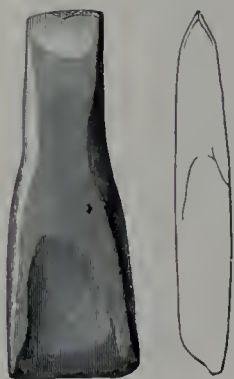
238 a, b. G. 1/3.



239 a-d. Ängl. 1/3.



240 Ner. 1/3.



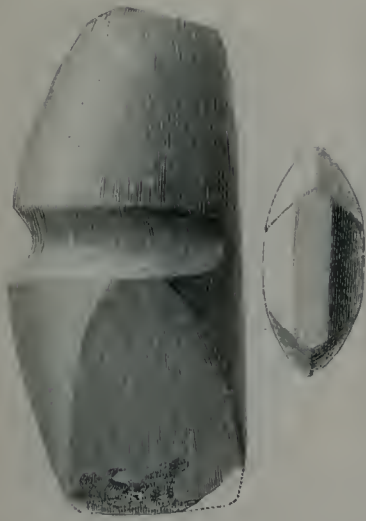
241 a, b. Upl. 2/3.



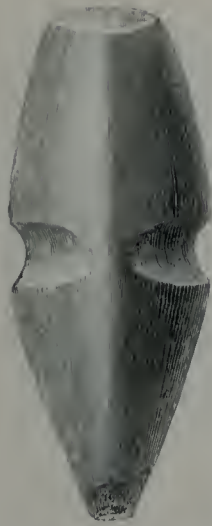
242 a, b. Sk. 1/3.



243 a-c. Lapl. 1/3.



244 a-c. Hal. 1/2.



245. Boh. 2/3.



246. Sm. 1/3.



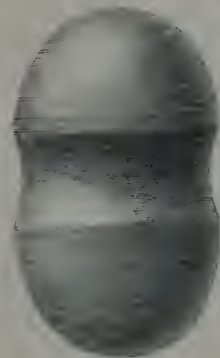
247 a, b. Boh. 1/3.



248 a, b. G. 1/3.



250 a, b. Sk. 1/3.



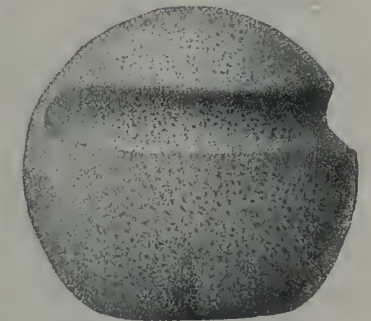
251. Boh. 1/3.



252. Sk. 1/3.



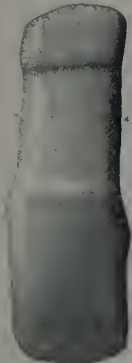
249. Sk. 1/3.



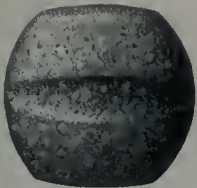
254. Jämtl. 1/3.



255 a, b. Bl. 1/3.



256. Lapl. 1/3.



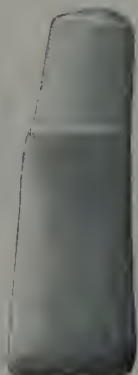
257. Sk. 1/3.



258 a, b. Sk. 1/3.



259. Sk. 1/3.



260 a-c. Sk. 1/3.



261. Hal. 1/3.



262 a, b. Sk. 1/3.



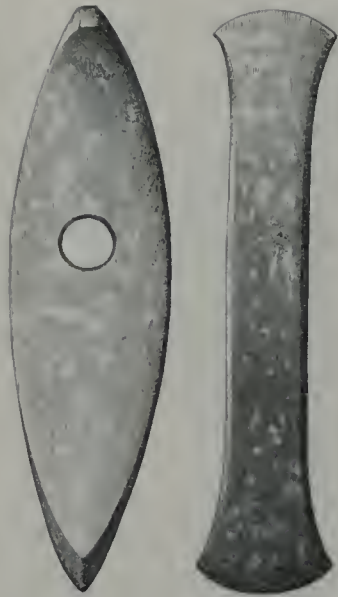
263. Sm. 1/3.



253. Sk. 1/3.



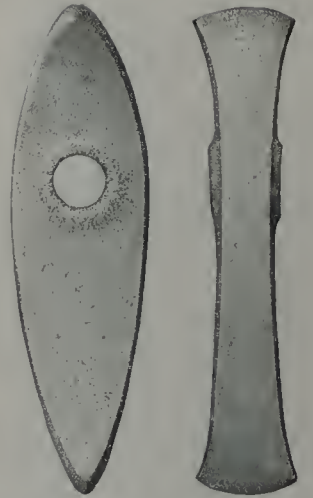
264 a-c. Vrml. 1/3.



265 a, b. Söd. 1/3.



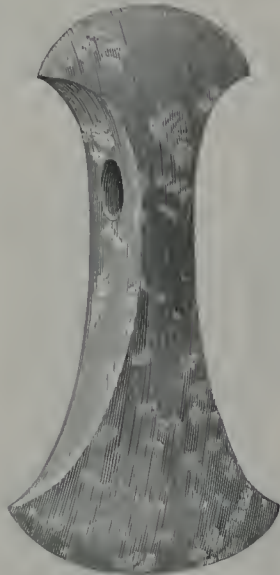
266 a, b. Sk. 1/2.



267 a, b. Boh. 1/3.



268 a, b. ÖL. 1/3.



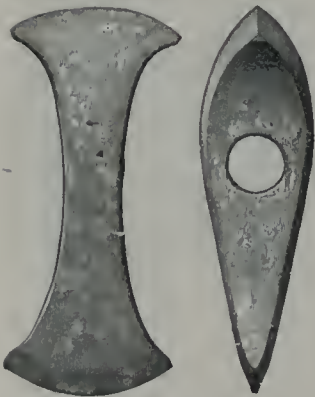
271. Sk. 1/2.



272 a, b. Sm. 1/2.



269 a, b. Hels. 1/2.



270 a, b. Sk. 1/3.



273. Hal. 1/3.



274 a, b. Hal. 1/3.



275. 1/3.



276. Boh. 1/3.



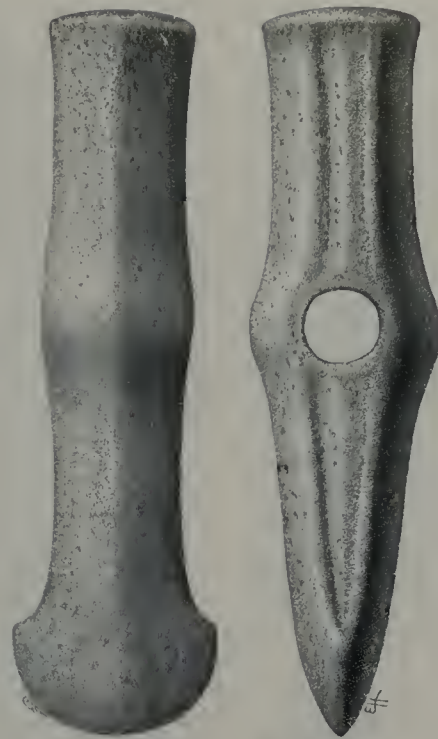
277 a, b. Sk. 1/3.



278 a, b. Sk. 1/2.



279 a, b. Boh. 2/3.



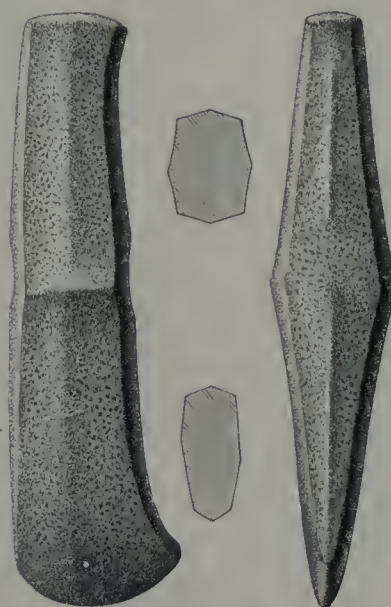
280 a, b. Sk. 1/2.



281 a, b. Sk. 1/3.



282. Dal. 1/2.



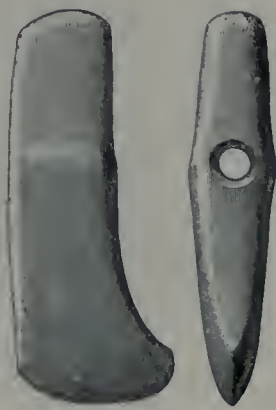
283 a-d. Sk. 1/3.



284 a, b. Sk. 1/3.



285 a, b. Ö. G. 1/3.



286 a, b. Boh. 1/3.



287 a, b. Bl. 1/3.



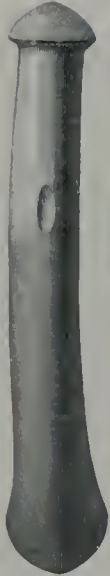
288 a-c. Sk. 1/3.



289 a, b. Sm. 1/3.



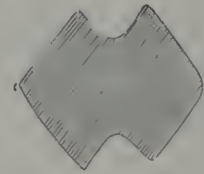
290 a, b. V. G. 1/3.



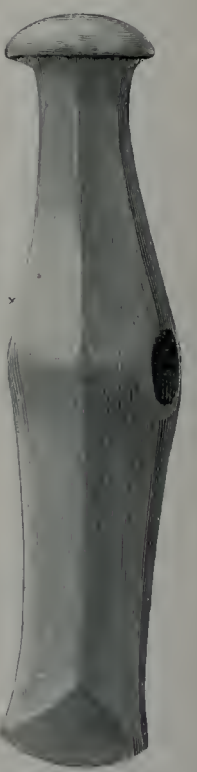
291 a, b. Sk. 1/3.



292 a, b. Upl. 1/3.



294. 1/3.



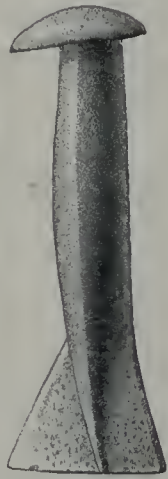
295 a, b. Ö. G. 1/3.



296. Sk. 1/3.



297 a, b. Sk. 1/3.



299 a, b. Dalarna. 1/3.



300 a, b. Sk. 1/3.



301 a, b. Sk. 1/3.

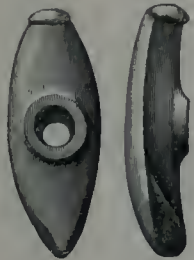


302 a, b. Sk. 1/3.





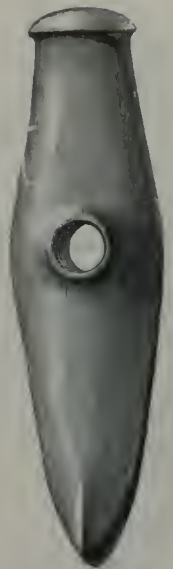
303. Sm. 1/3.



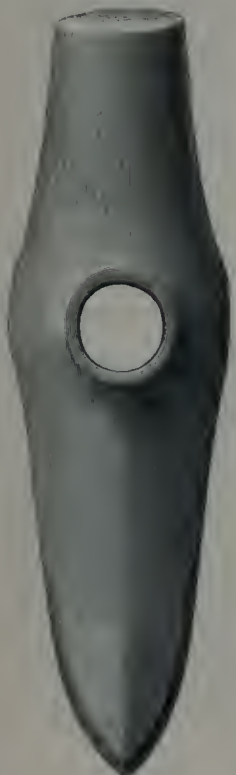
304 a, b. Hels. 1/3.



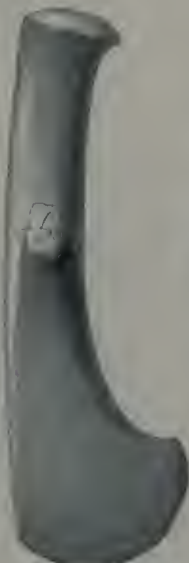
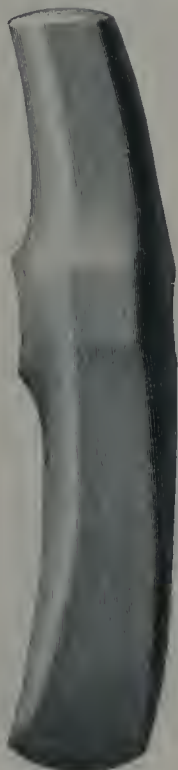
305 a-c. Söd. 1/2.



306. G. 1/3.



307 a, b. Hels. 1/2.



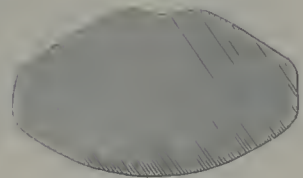
308 a, b. Sk. 1/3.



309 a, b. V.G. 1/3.



310 a, b. V.G. 1/3





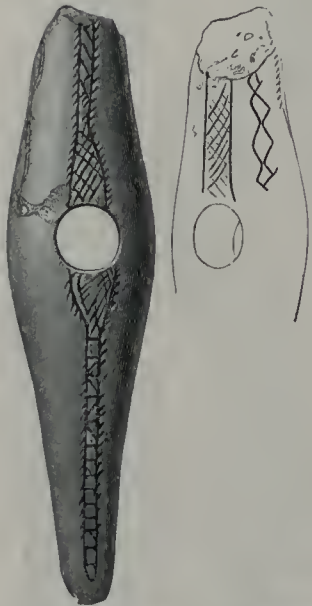
339. Boh. 1/4.



340. Boh. 1/3.



341. Boh. c. 1/3.



344 a, b. Ner. 1/3.



342 a, b. Sk. 1/3.



343 a, b. V. G. 1/3.



349. Härjed. 1/3.



350. Upl. 1/3.



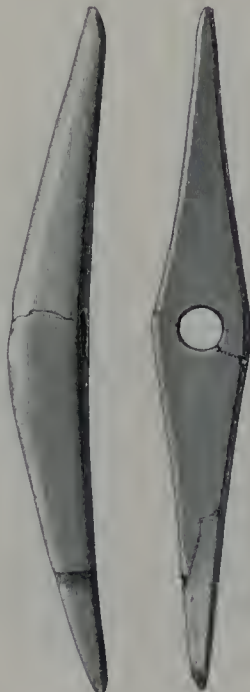
345. Boh. 1/3.



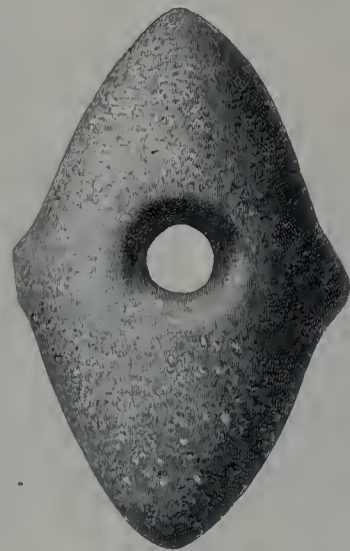
346 a, b. Ö. G. 1/3.



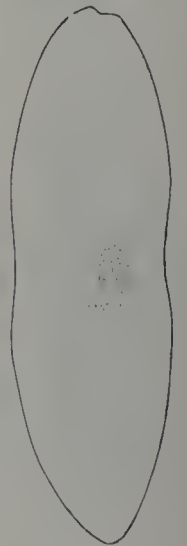
347. Boh. 1/3.



348 a, b. Vrml. 1/4.

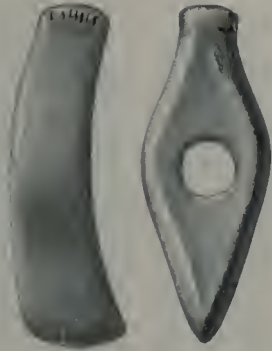


351 a, b. Jämtl. 1/3.





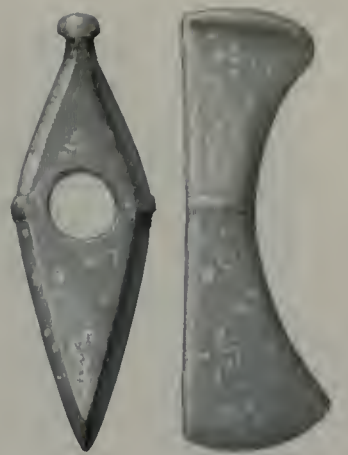
352 a, b. Sk. 1/3



353 a, b. Sk. 1/3.



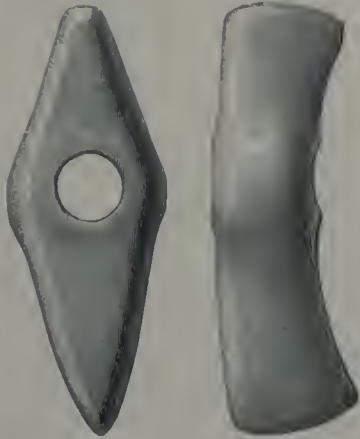
354 a, b. Sk. 1/3.



355 a, b. Sk. 1/3.



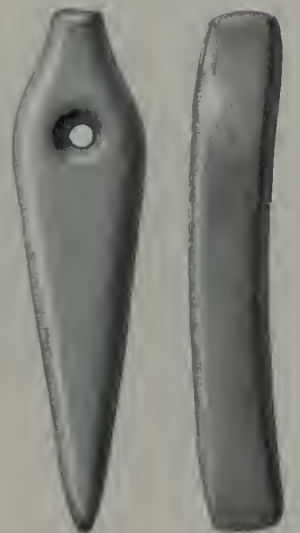
356 a-c. Upl. 1/3.



357 a, b. Sk. 1/3.



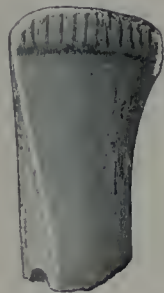
358 a, b. Upl. 1/3.



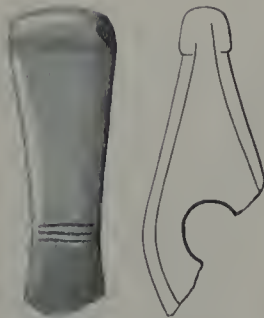
363 a, b. Sk. 1/3.



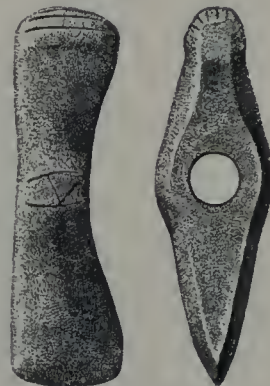
359 a, b. Sk. 1/3.



360. Boh. 1/3.



361 a, b. Sk. 1/3.



362 a, b. Sk. 1/3.



364. Dal. 1/3.



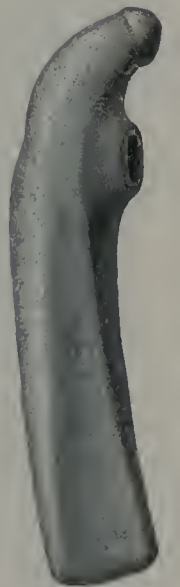
365. Ner. 1/3.



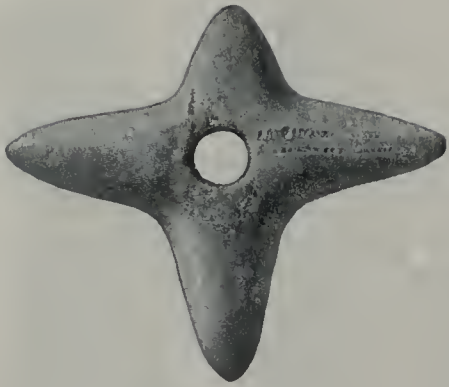
366 a, b. Sk. 1/3.



367 a, b. V. G. 1/3.



368. Härjeåd. 1/3.



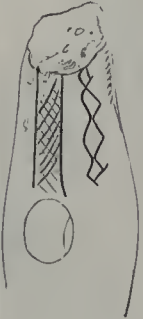
339. Boh. 1/4.



340. Boh. 1/3.



341. Boh. c. 1/3.



344 a, b. Ner. 1/3.



342 a, b. Sk. 1/3.



343 a, b. V. G. 1/3.



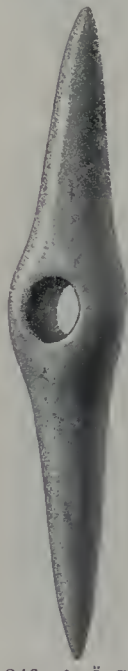
349. Härkead. 1/3.



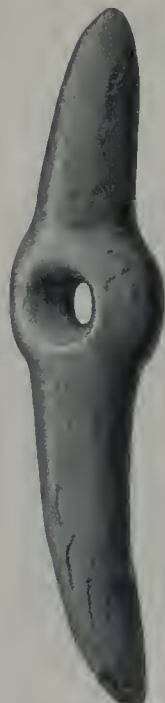
350. Upl. 1/3.



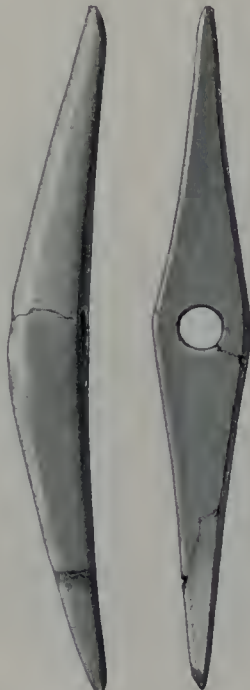
345. Boh. 1/3.



346 a, b. Ö. G. 1/3.



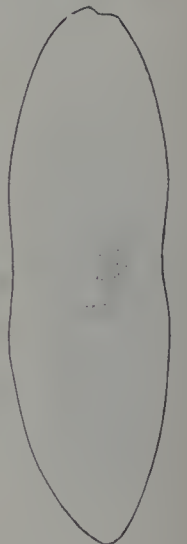
347. Boh. 1/3.



348 a, b. Vrml. 1/4.

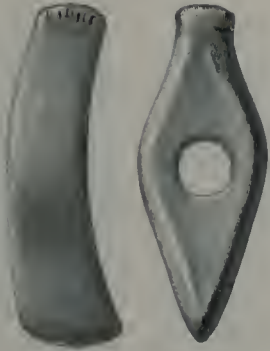


351 a, b. Jämtl. 1/3.





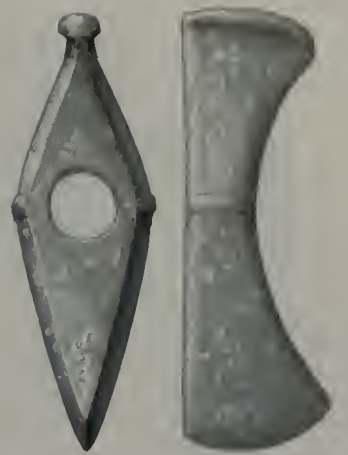
352 a, b. Sk. 1/3



353 a, b. Sk. 1/3.



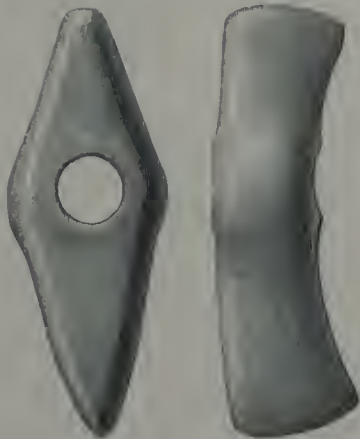
354 a, b. Sk. 1/3.



355 a, b Sk. 1/3.



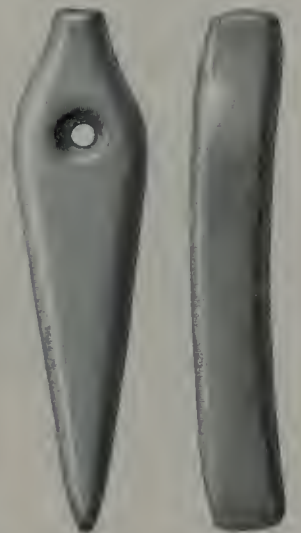
356 a-c. Upl. 1/3.



357 a, b. Sk. 1/3.



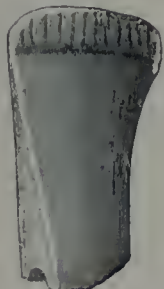
358 a, b. Upl. 1/3.



363 a, b. Sk. 1/3.



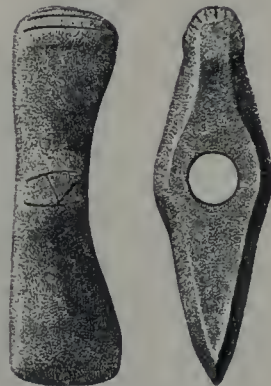
359 a, b. Sk. 1/3.



360. Boh. 1/3.



361 a, b. Sk. 1/3.



362 a, b. Sk. 1/3.



364. Dal. 1/3.



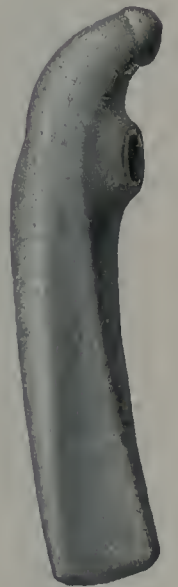
365. Ner. 1/3.



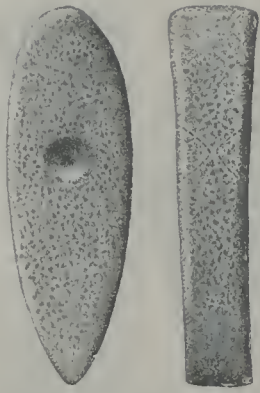
366 a, b. Sk. 1/3.



367 a, b. V. G. 1/3.



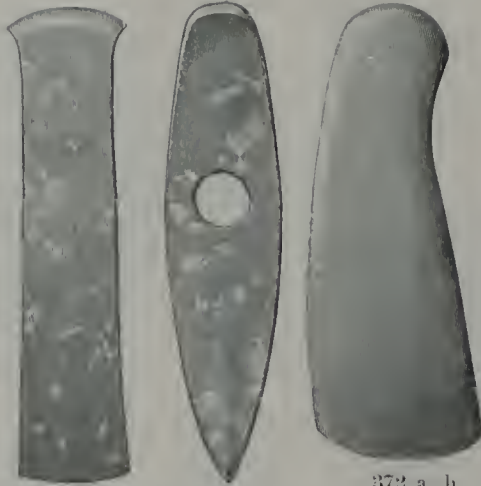
368. Härjeåd. 1/3.



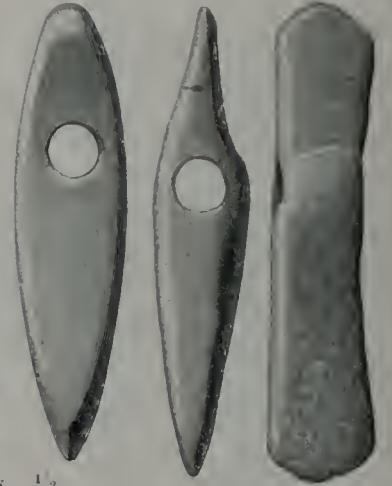
369 a, b. Söd. 1/3.



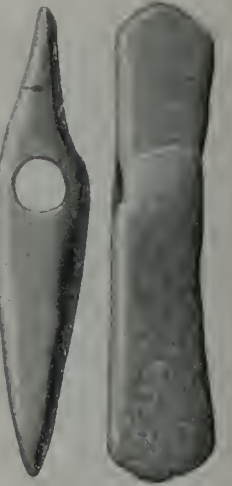
370 a, b. Sm. 1/3.



371 a, b. Söd. 1/3.



372 a, b. Sk. 1/3.



373 a, b. Sk. 1/3.



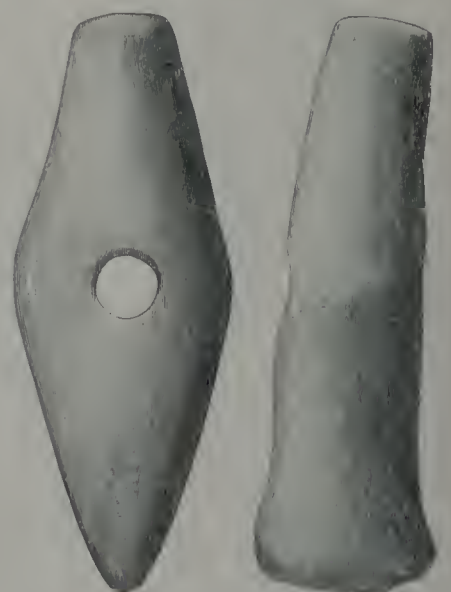
374 a-c. G. 1/3.



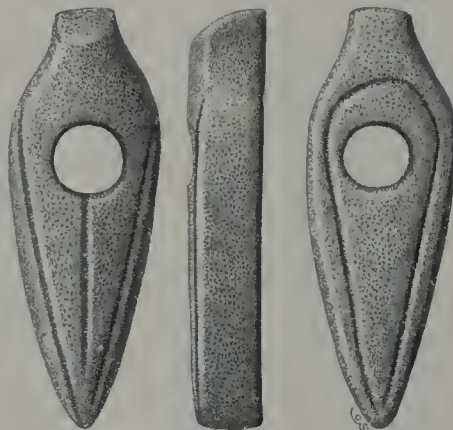
375 a, b. Sk. 1/3.



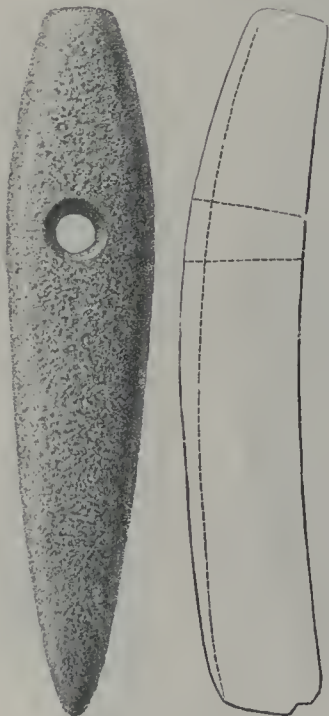
376 a, b. Söd. 1/3.



377 a, b. Sk. 1/3.



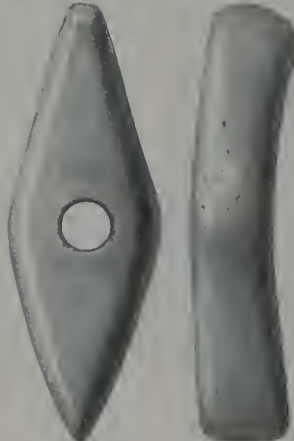
378 a-c. Sk. 1/2.



379 a, b. Sm. 1/4.



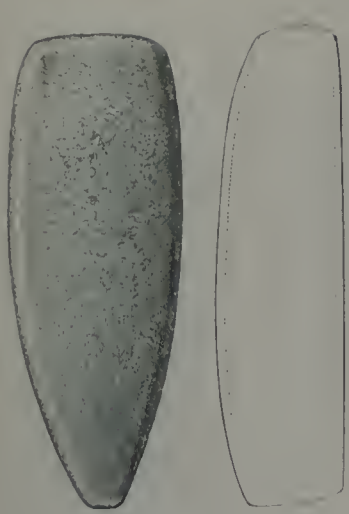
380 a, b. Sk. 1/3.



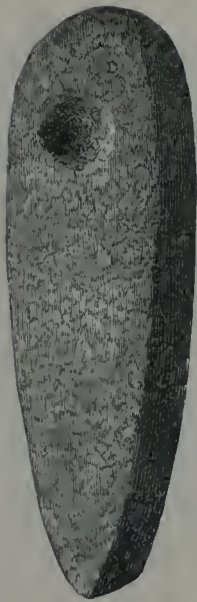
381 a, b. Sk. 1/3.



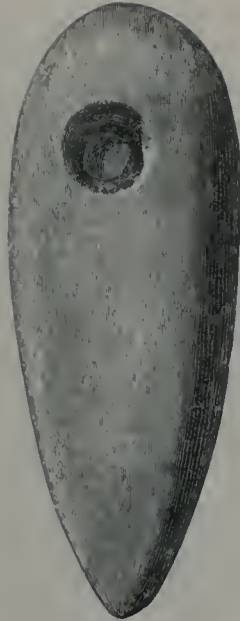
382 a, b. Sk. 1/3.



383 a, b. Söd. 1/4.



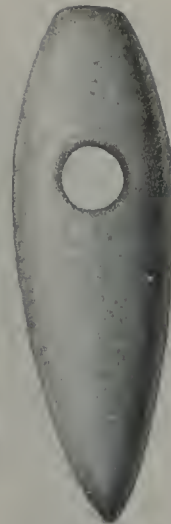
384. Sk. 1/3.



385. Vrml. 1/2.



386. G. 1/3.



387. Ö. G. 1/3.



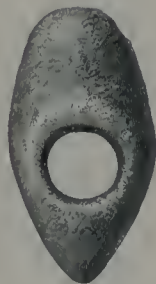
388. Dal. 1/3.



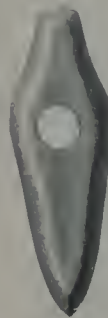
389 a-c. G. 1/3.



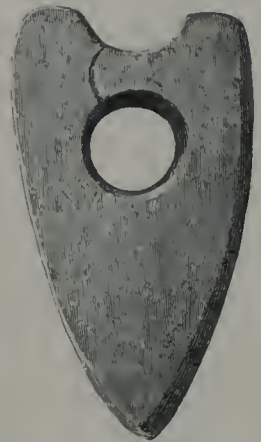
390 a. V. G. 1/4.



391 a, b. Ö. G. 1/2.



394 a, b. Sk. 1/3.



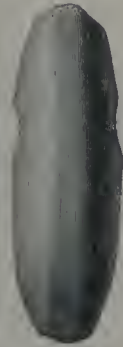
395. Boh. 2/3.



390 b. Sm. 1/2



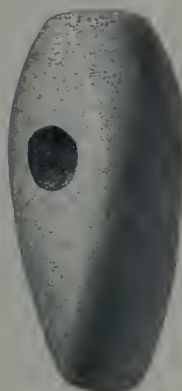
392 a, b. Vstml. 1/3.



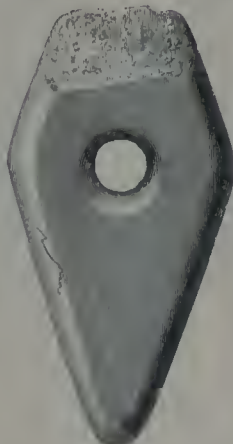
393. Sk. 1/3.



398 a, b. Hal. 1/3.



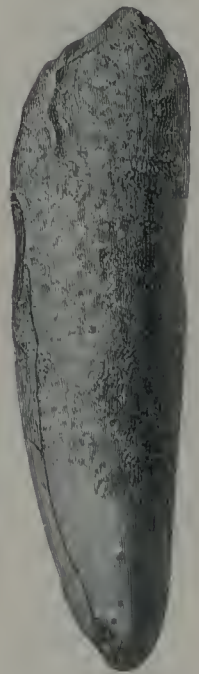
396. Upl. 1/3.



397 a, b. Upl. 1/3.



399 a, b. Boh. 1/3.





402. V. G. 1/2.



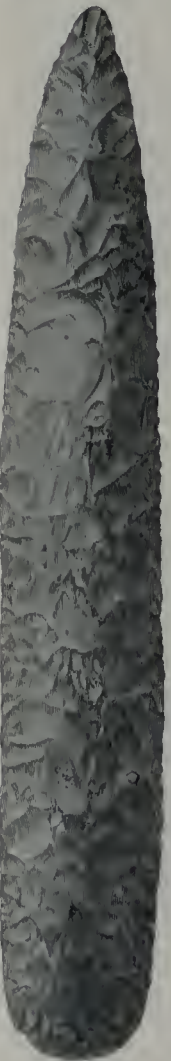
403 a, b. Sk. 1/3.



406 a-c. Sk. 1/3.



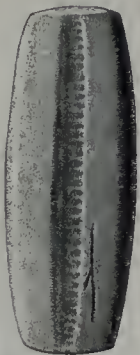
407. Boh. 1/2.



408. Sk. 1/2.



409 a, b. Ö.G. 1/2.



400. Sk. 1/2



404 a-c. 1/3.



405 a-c. Sk. 1/3.



401. Sk. 1/3.



414. V. G. 2/3.



415. G. 1/3.



410. Sk. 1/2.



411 Hal. 1/3.



412. Sk. 1/2.



413. Sm. 2/3.



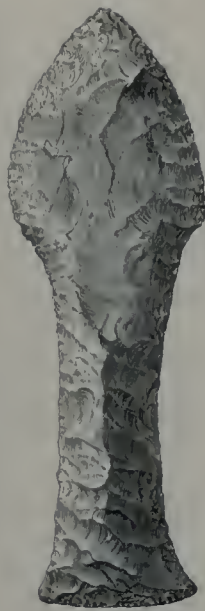
416. Sk. 1/2.



417. Ö. G. 1/2.



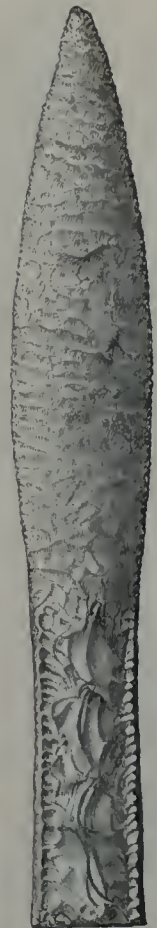
418. Hal. 1/2.



419. Upl. 1/2.



420. V. G. 1/2.



421 a-c. V. G. 1/2.



422. V. G. 1/2.



423 a, b. Boh. 1/3.



426. Sk. 1/3.



427. V. G. 1/2.



424 a, b. Sk. 2/3.



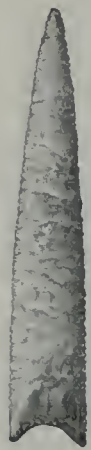
425. Upl. 1/3.



428. Sk. 2/3.



429. V. G. 1/2.



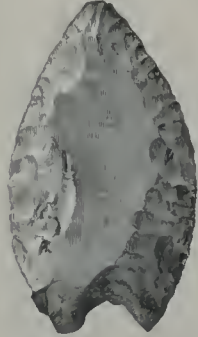
431. Sk. $\frac{1}{3}$.



435. Sk. $\frac{1}{1}$.



442. Sk. $\frac{1}{1}$.



436. Sk. $\frac{1}{1}$.



437. Sk. $\frac{1}{1}$.



438. Sk. $\frac{1}{1}$.



439. V. G. $\frac{1}{2}$.



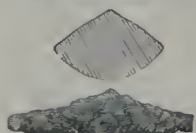
440. G. $\frac{1}{1}$.



443. Bl. $\frac{1}{1}$.



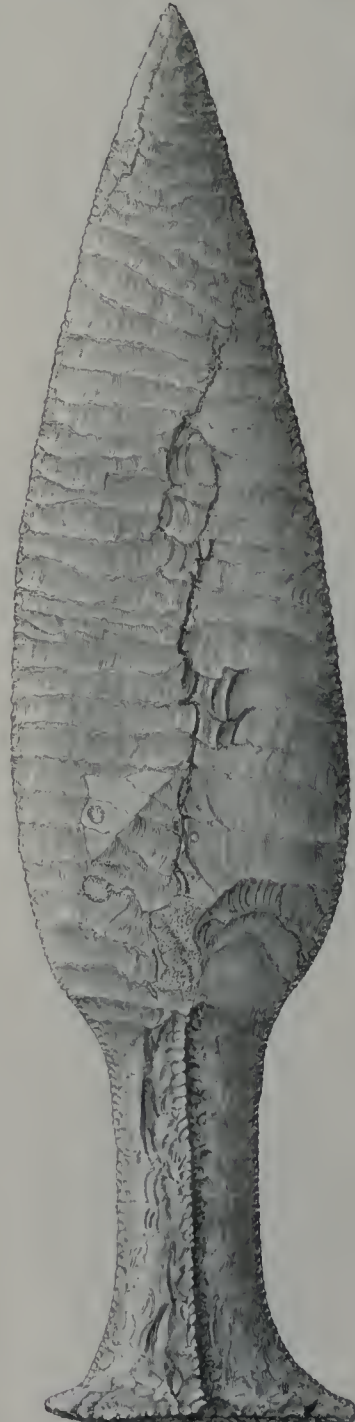
441. Sk. $\frac{1}{1}$.



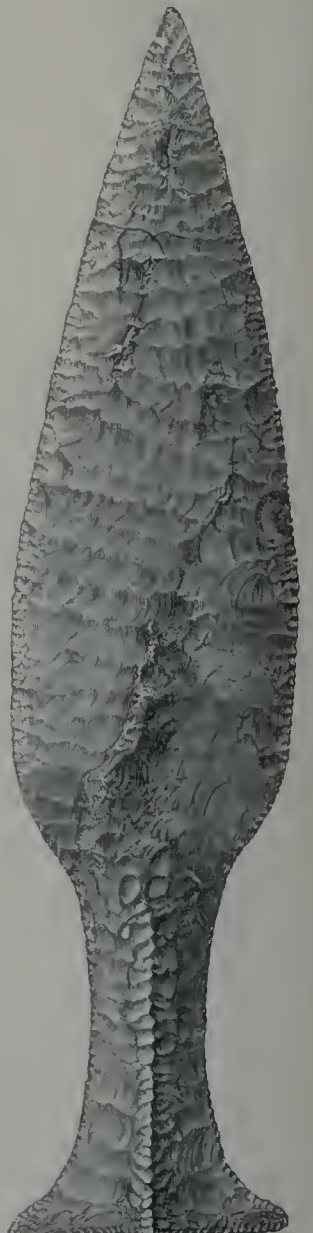
430. Boh. $\frac{1}{2}$.



431. V. G. $\frac{2}{3}$.

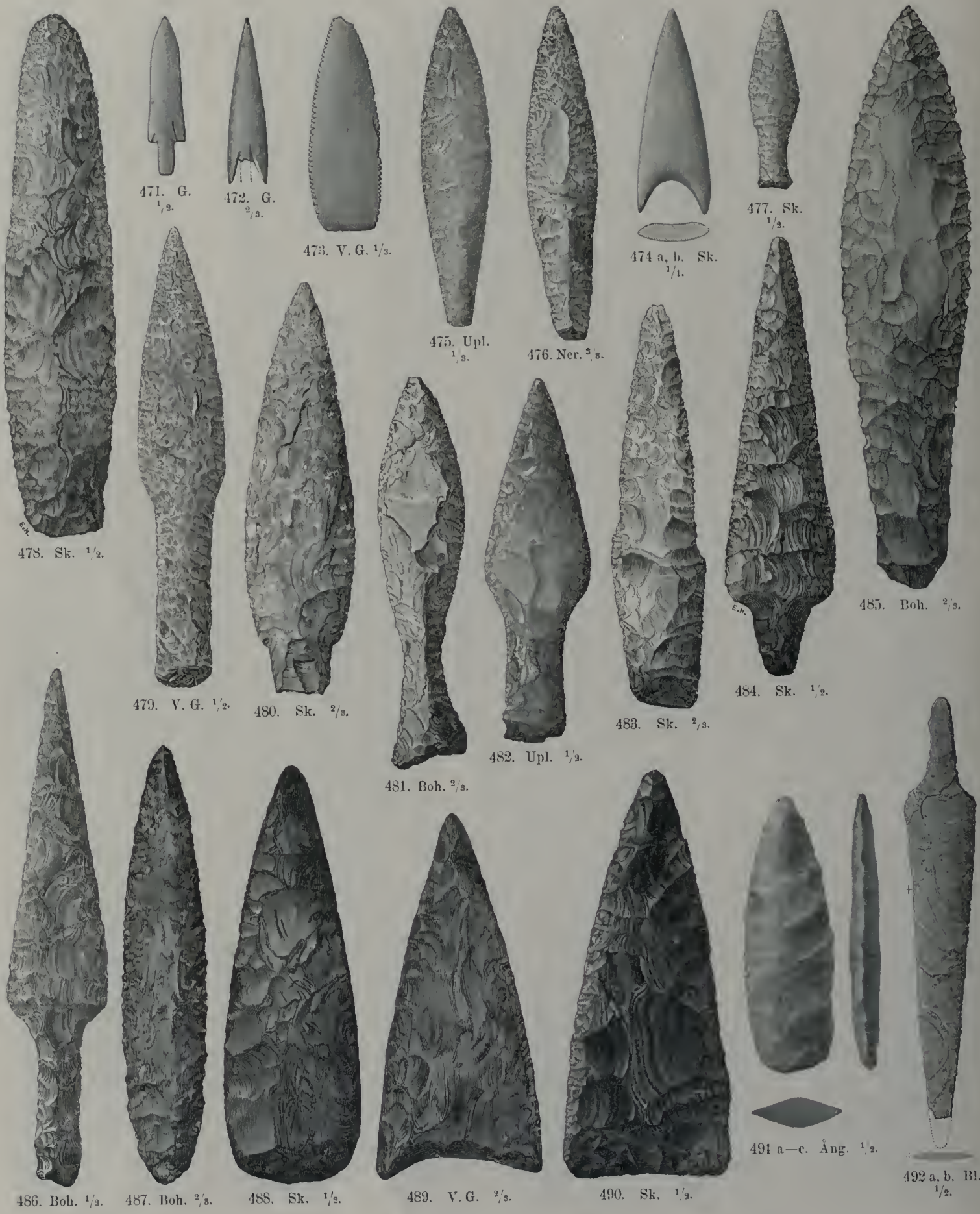


432. Sm. $\frac{1}{3}$.



433. Hal. $\frac{1}{3}$.





471. G. $\frac{1}{3}$.

472. G. $\frac{2}{3}$.

473. V. G. $\frac{1}{3}$.

474 a, b. Sk. $\frac{1}{1}$.

477. Sk. $\frac{1}{2}$.

475. Upl. $\frac{1}{3}$.

476. Ner. $\frac{2}{3}$.

478. Sk. $\frac{1}{2}$.

479. V. G. $\frac{1}{2}$.

480. Sk. $\frac{2}{3}$.

483. Sk. $\frac{2}{3}$.

484. Sk. $\frac{1}{2}$.

485. Boh. $\frac{2}{3}$.

482. Upl. $\frac{1}{2}$.

481. Boh. $\frac{2}{3}$.

486. Boh. $\frac{1}{2}$.

487. Boh. $\frac{2}{3}$.

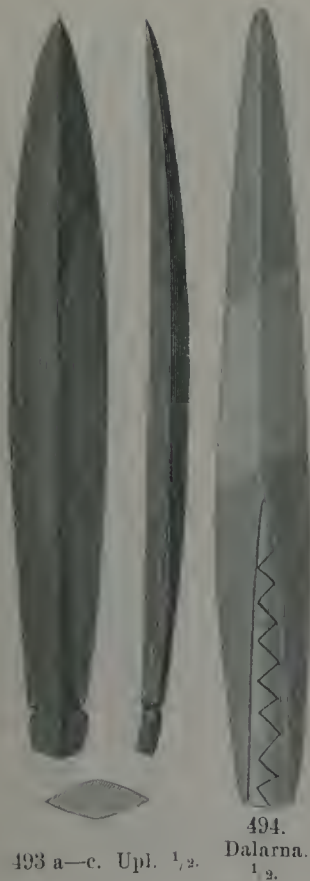
488. Sk. $\frac{1}{2}$.

489. V. G. $\frac{2}{3}$.

490. Sk. $\frac{1}{2}$.

491 a-c. Ång. $\frac{1}{2}$.

492 a, b. Bl. $\frac{1}{2}$.

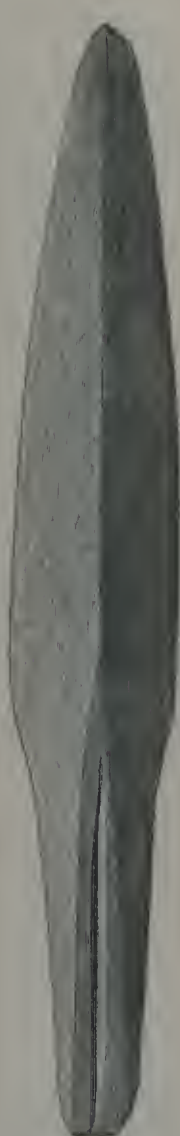


493 a-c. Upl. 1/2.

494. Dalarna. 1/2.



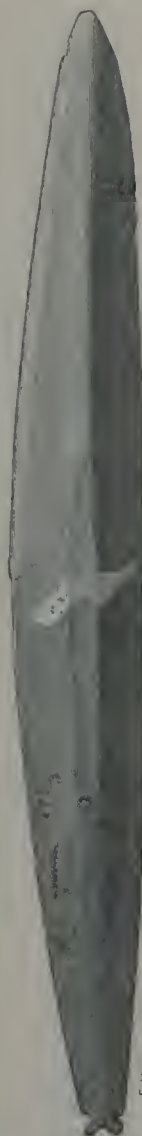
495 a, b. Ång. 1/2.



496. Hels. 1/2.



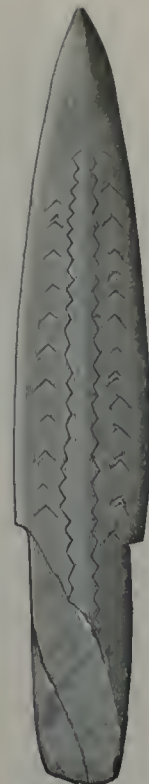
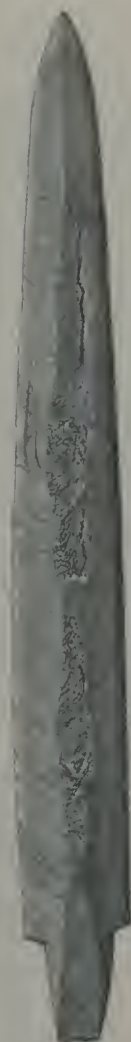
497. Vbth. 1/2.



498 a, b. Bl. 1/2.



499. Ner. 1/2.



500. Vbth. 1/2.



502. Ång. 1/2.



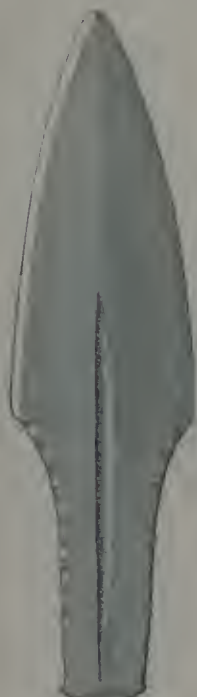
501 a, b. Bl. 2/3.



504. Hels. 1/2.



505. Ång. 1/3.



506. Jmtl. 1/2.



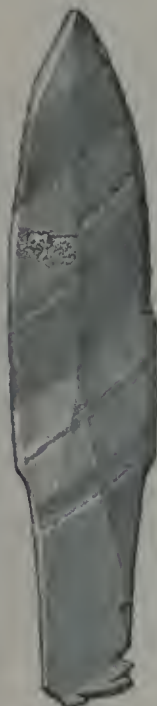
507. Ång. 1/2.



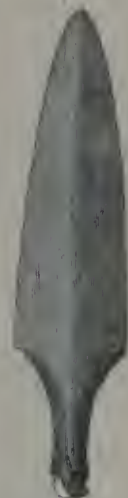
508 a, b. Ner. 1/2.



509. Ång. 1/2.



510. Jämtl. 1/3.



511. Ång. 1/2.



503. Ång. 1/2.



512. Vstml. 1/2.



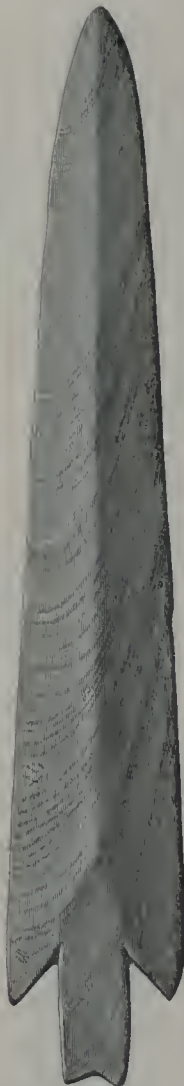
513. Ång.
1/2.



514 a, b.
G. 1/2.



515. Ner.
1/2.



516. Ö. G.
1/2.



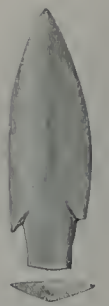
517. G. 1/2.



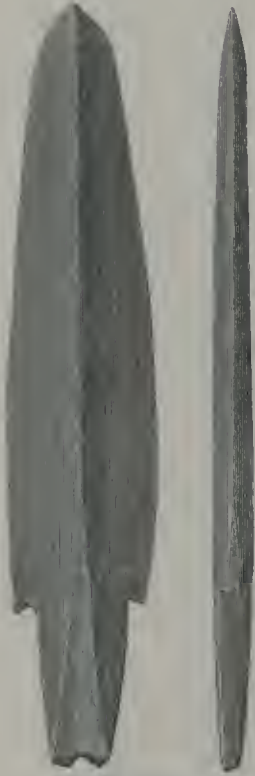
518. Norrl.
1/2.



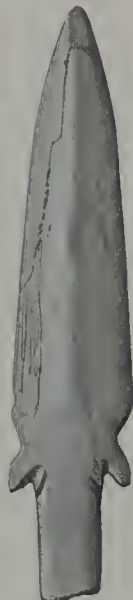
519. Ång.
1/2.



520 a, b.
Söd. 1/2.



521 a-c. Hcls. 1/2.



522. Ö. G.
1/2.



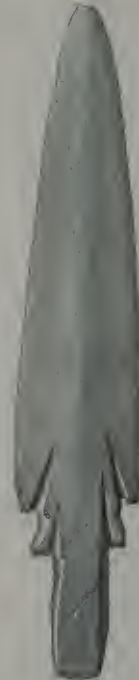
524 a, b. Upl.
1/2.



525. Hcls.
1/2.

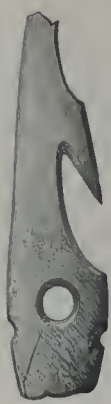


526. Ång.
1/2.

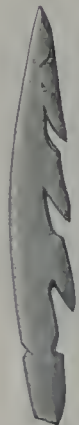


527 a-d. Vbtn.
1/2.

523. Ner.
1/2.



529. G.
1/2.



530. G.
1/2.



531. G.
1/2.



532. G.
1/2.



533 a-c. G.
1/2.



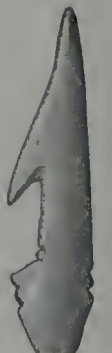
533. G.
1/2.



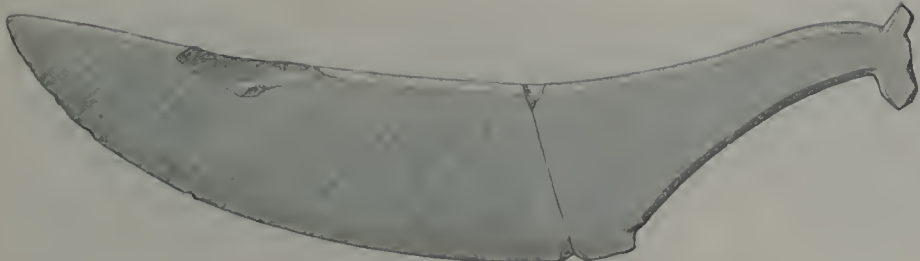
534. G.
1/2.



535. G.
1/2.



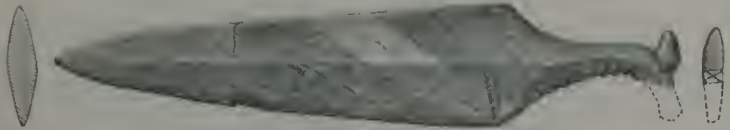
536. G.
1/2.



537. Lapl. 1/2.



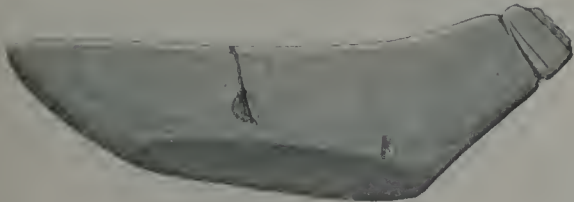
538. Hcls. 1/2.



539_a-c. Lapl. 1/2.



540. Hcls. 1/2.



541. Upl. 1/2.



542 a, b. Upl. 1/2.



543. Ång. 1/2.



544. Ång. 1/2.



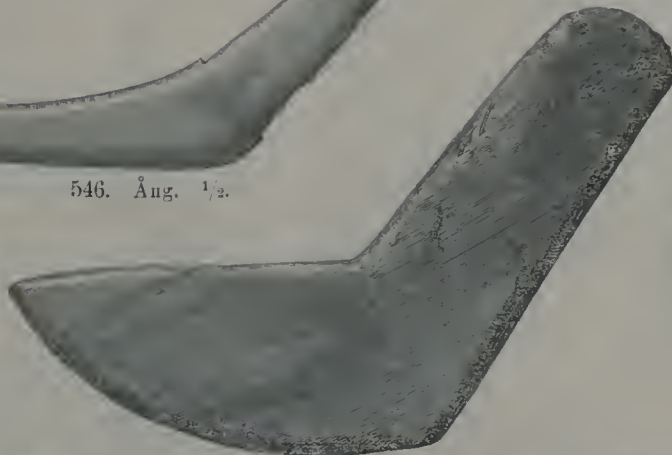
545. Ång. 1/2.



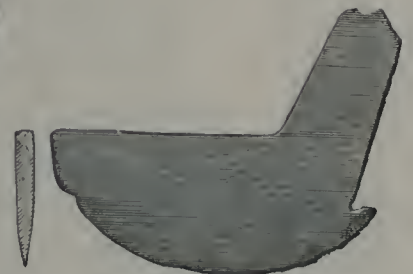
547. Hcls. 1/2.



546. Ång. 1/2.



548 a, b. Ång. 1/2.



549 a, b. Ång. 1/2.



550 a, b. Ång. 1/2.



552. Ång. 1/2.



551. Vbthn. 1/2.



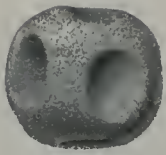
553. Ång. 1/2.



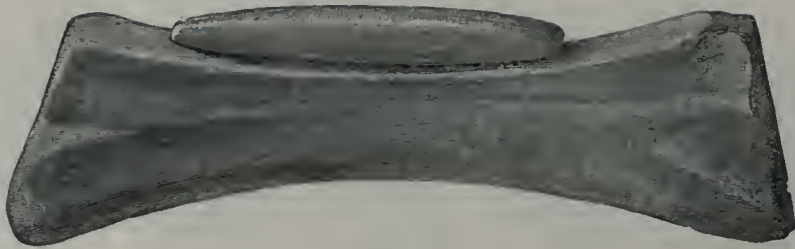
554. Ång. 1/2.



555 a, b. Ång. 1/2.



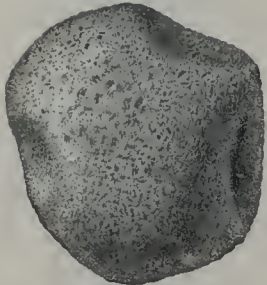
556. Sk. 1/3.



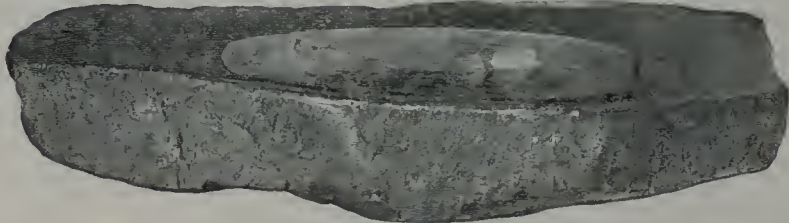
558. Sk. 1/3.



560. G. 1/15.



557. Ö. G. 1/2.



559. Sk. 1/5.

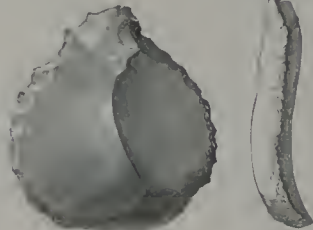


561. Sk. 1/3.

562. Sk. 2/3.



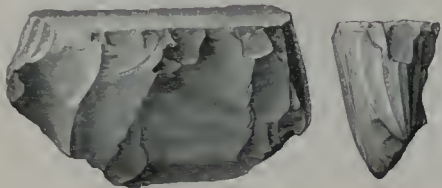
564 a, b. Ång. 2/3.



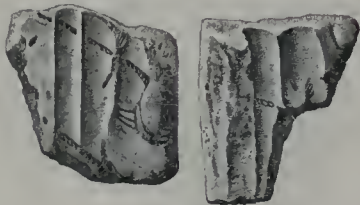
565 a, b. Sk. 1/2.



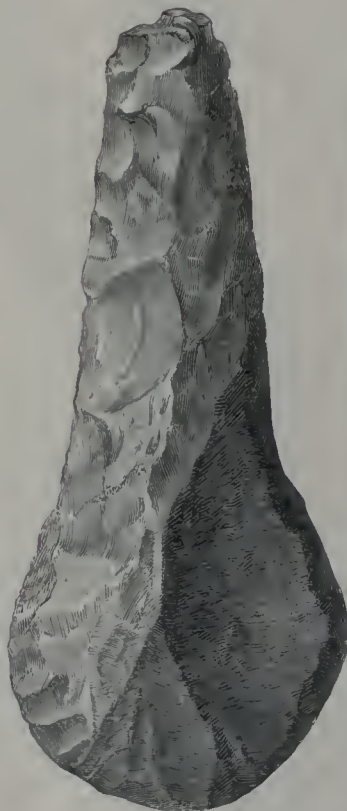
566. a, b. Boh. 1/1.



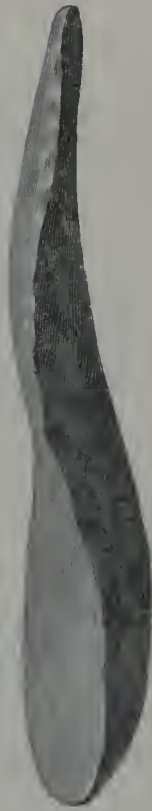
563 a, b. Sk. 1/2.



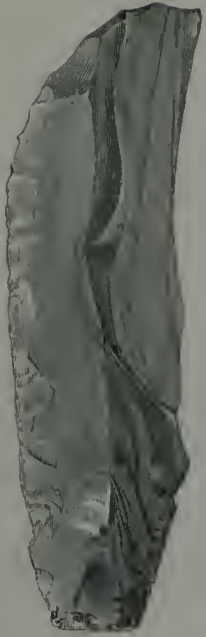
569 a-c. Boh. 1/1.



567 a, b. Boh. 1/1.



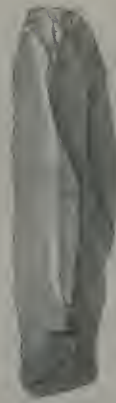
568 a, b. Boh. 1/2.



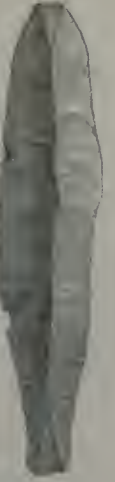
573 a, b. Sk. 1/2.



574. Sm. 1/1.



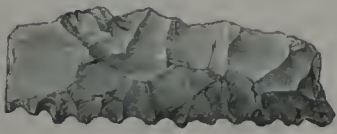
571. Sk. 1/3.



572 a-c. Sk. 1/3.



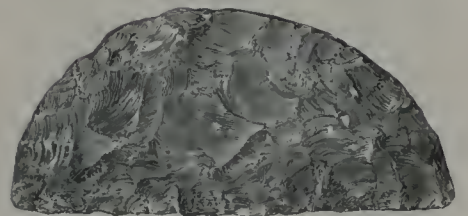
570 a, b. Sk. 1/3.



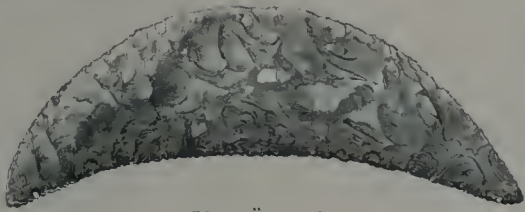
576. Sk. 2/3.



575. Sk. 1/3.



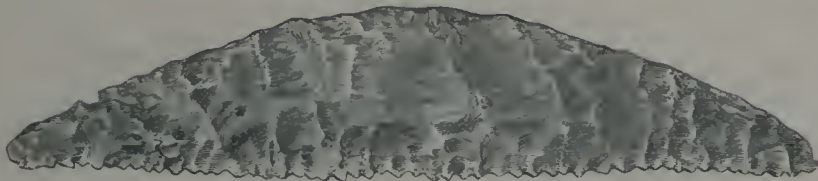
577. Boh. 1/2.



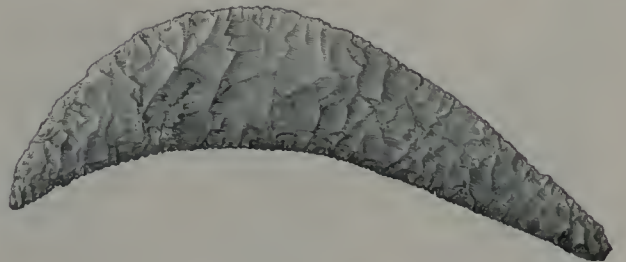
578. Ö. G. 1/2.



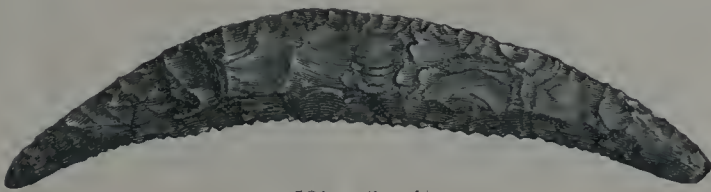
580. G. 1/2.



579. Boh. 1/2.



582. Sk. 1/2.



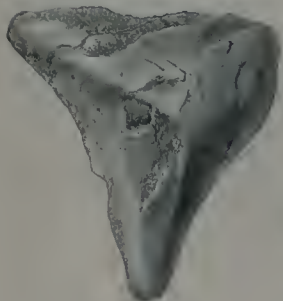
581. Sk. 1/2.



583. Ö. G. 1/2.



587 a-d. Ö. G. 2/1.



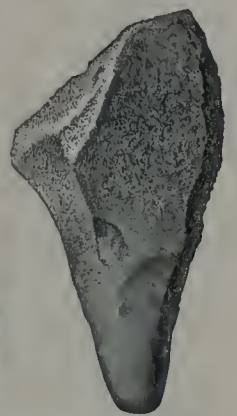
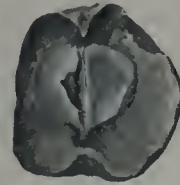
584. Ö. G. 1/2.



586. V. G. 1/3.



588 a, b. Ö. G. 1/1.

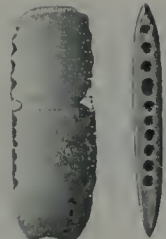


585. Ö. G. 1/2.





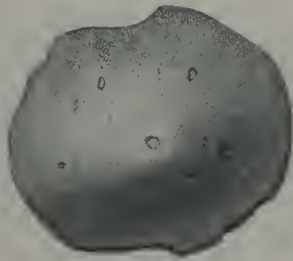
637 a, b. V. G. 1/2.



638 a, b. V. G. 1/2.



639. V. G. 2/2.



640. V. G. 1/1.



641. V. G. 1/1.



642. Ö. G. 1/1.



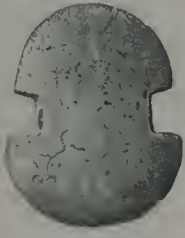
643. Upl. 2/3.



644. V. G. 1/2.



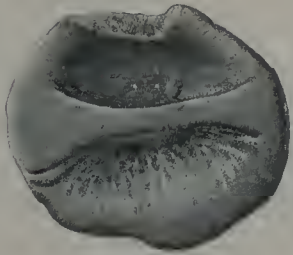
645. Sk. 1/1.



646. V. G. 1/2.



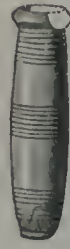
653 a-c. Upl. 1/1.



648. Öl. 1/2.



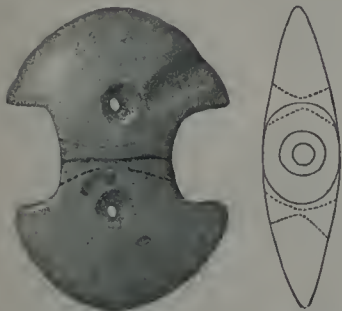
647. Sk. 1/1.



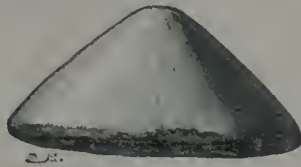
649. V. G. 2/2.



650. V. G. 2/3.



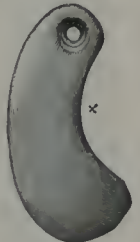
658 a, b. Ö. G. 1/1.



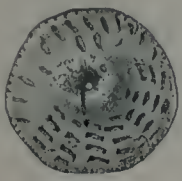
654 a, b. Boh. 1/1.



651. Sk. 1/1.



652 a, b. Sk. 1/1.



660 a, b. Bl. 2/2.



659. V. G. 1/2.



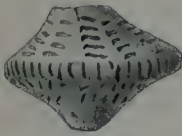
655 a-c. Sk. 1/1.



657 a, b. Sk. 1/1.



669 a, b. G. 2/3.



661. Sk. 1/2.



663. V. G. 1/2.



664. V. G. 1/1.



656 a, b. Sk. 1/1.



665. V. G. 1/2.



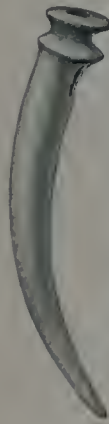
666. V. G. 1/1.



667. V. G. 1/1.



668. V. G. 1/2.



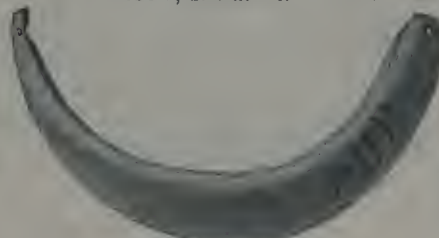
670. Öl. 1/2.



671 a, b. Sk. 2/3.



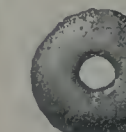
672. Sm. 1/2.



673. G. 1/2.



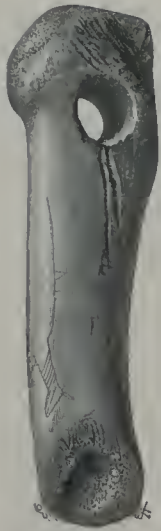
674. Upl. 2/3.



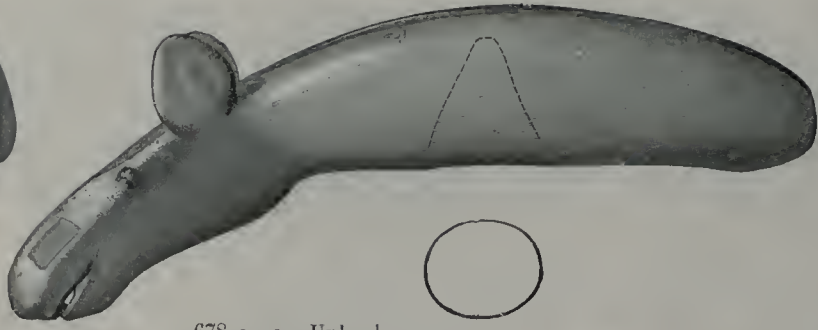
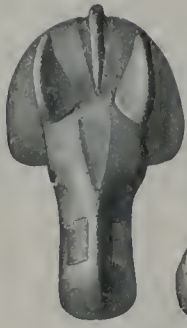
675. Sk. 1/1.



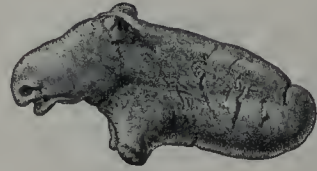
676. Ö. G. 1/2.



677 a. Sk. 1/3



678 a-c. Upl. 1/2



679. Upl. 1/1



681. Upl. 1/2



683. Boh. 2/3



677 b. Sk. 2/3



680 a, b. V. G. 2/3



682 a, b. Upl. 1/1



687 a-c V. G. 1/1



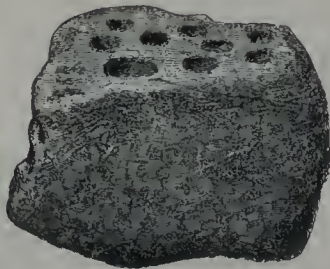
684 a, b. V. G. 1/1



685. V. G. 1/1



686 a, b. Sk. 1/3



689. V. G. 1/3



688 a. G. 2/3



690. Sm. 1/2



688 b. G. 2/3



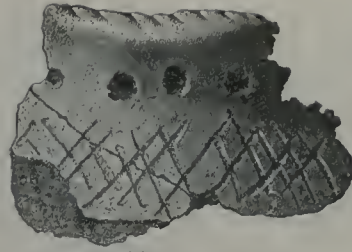
691. Upl. 1/2.



692. Upl. 1/2.



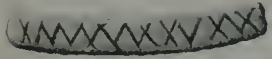
697. Upl. 1/2.



693. Upl. 1/2.



694. Upl. 1/2.



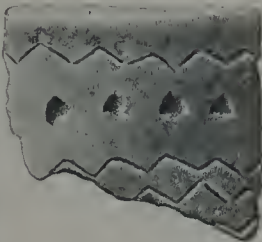
695 a, b. Upl. 1/2.



696. Upl. 1/2.



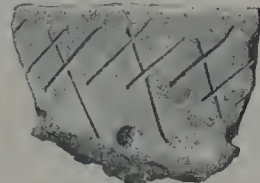
699. Upl. 1/2.



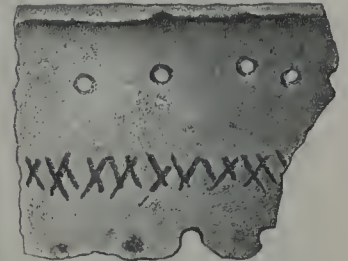
701. Upl. 1/2.



704. Upl. 2/3.



710 a, b. G. 1/2.



707. Bl. 1/2.



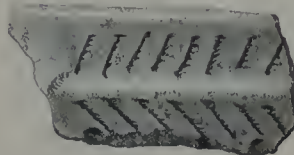
700. Upl. 1/2.



709. G. 2/3.



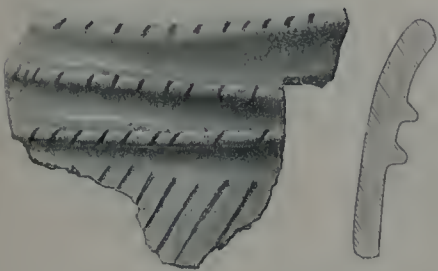
708. Bl. 1/2.



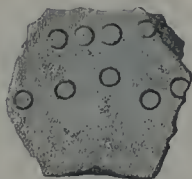
711. G. 1/2.



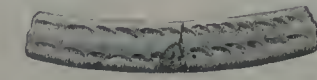
712. G. 1/2.



713. G. 1/2.



714 a, b. G. 1/2.



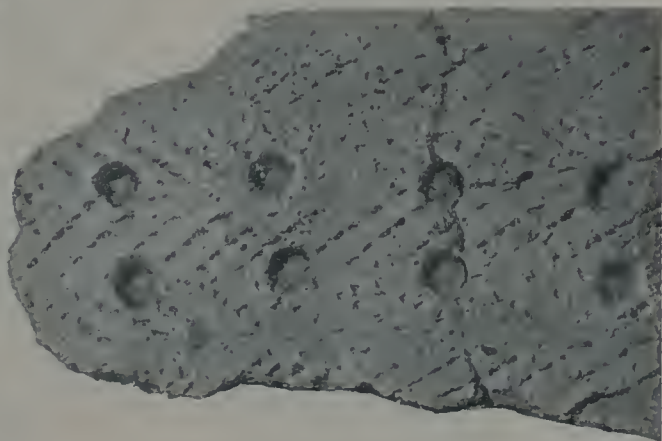
705 a-c. Hels. 2/3.



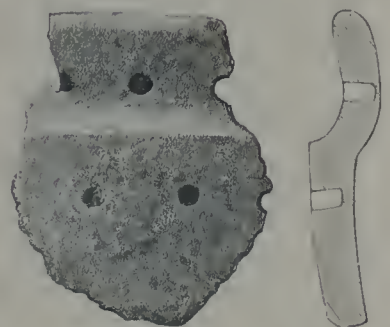
706. Hels. 2/3.



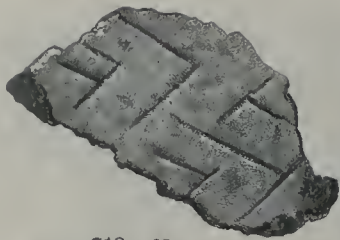
715 a-c. G. 1/2.



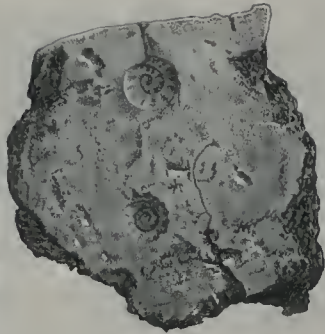
717. Ö.G. 1/2.



716 a, b. G. 1/2.



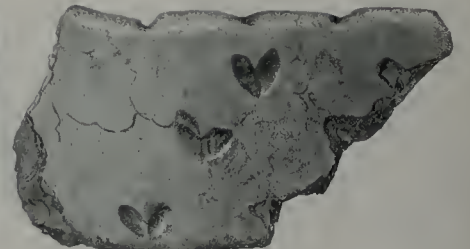
718. Ner. 1/1.



720. Sk. 1/1.



721. Sk. 1/2.



719. Ö. G. 2/3.



722. Sk. 1/3.



725. Sk. 1/3.



726. Sk. 1/2.



727. Sk. 1/3.



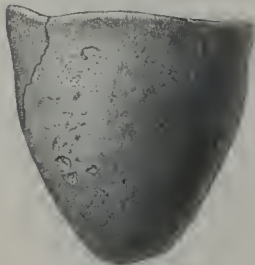
728. Sk. 1/3.



723. Sk. 1/3.



724. Sk. 1/3.



730. Sk. 1/3.



731. Bl. 1/1.



732. V. G. 1/3.



733. V. G. 1/3.



729. Sk. 1/3.



734. Sk. 1/3.



735. Sk. 1/3.



736. Sm. 1/3.



737. V. G. 1/3.



739. V. G. 1/3.



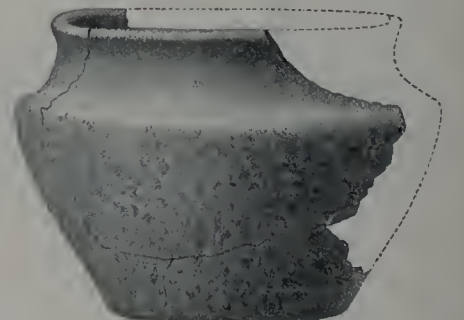
738. V. G. 1/3.



740. Bl. 2/3.



741. Sk. 1/4.



742. G. 1/3.



743. Sk. 1/2.



744. Sk. 1/2.



745. Sk. 1/2.



746. Sk. 1/2.



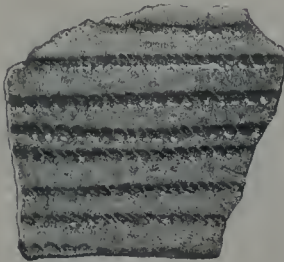
747. Sk. 1/2.



748. Sk. 1/2.



749. Sk. 1/2.



750. Sk. 2/3.



751. Sk. 1/3.



752. Sk. 1/3.



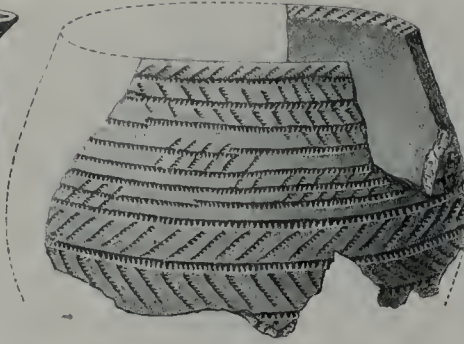
753. Sk. 1/3.



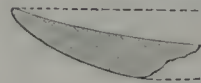
754. Sk. 1/3.



755. Sk. 1/4.



756. Sk. 1/3.



757 a, b. Sk. 1/3.



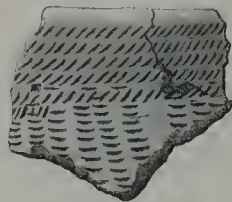
758. Sk. 1/3.



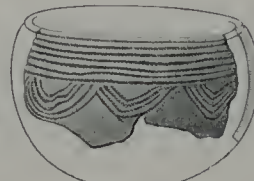
759. Sk. 1/3.



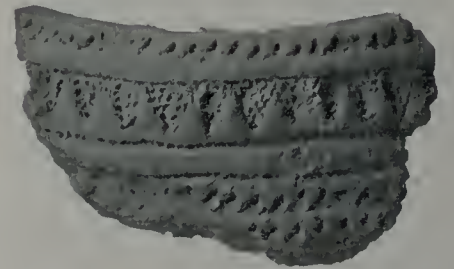
760. Boh. 2/3.



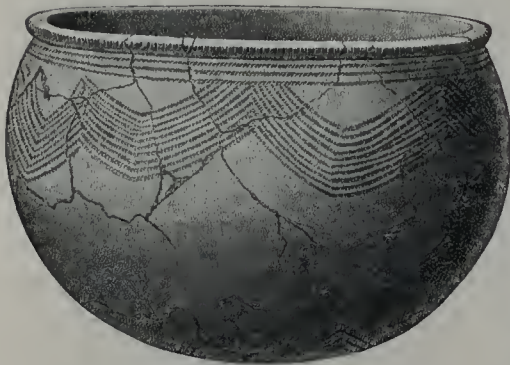
761. Boh. 1/2.



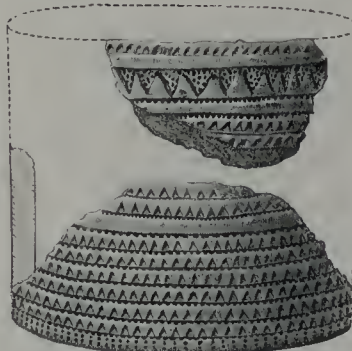
765 a. V. G. 1/4.



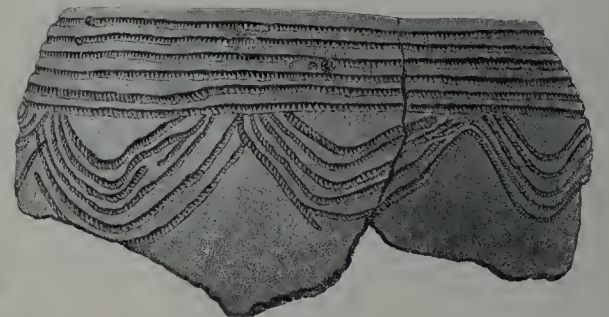
763. Sk. 2/3.



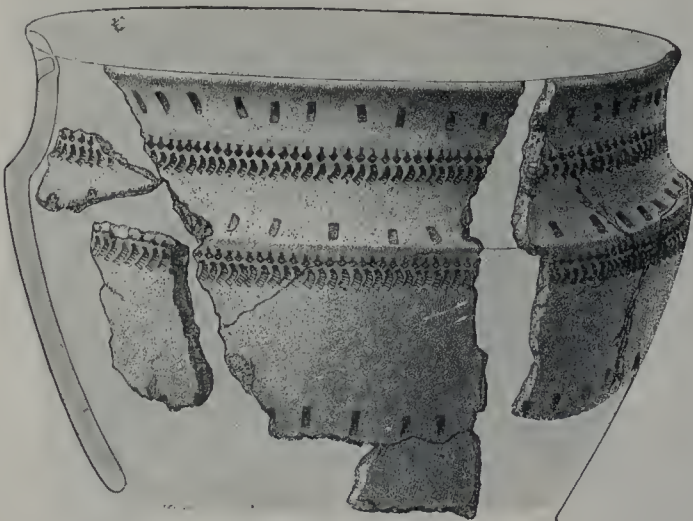
764. V. G. 1/3.



762. Sk. 1/3.



765 b. V. G. 2/3.



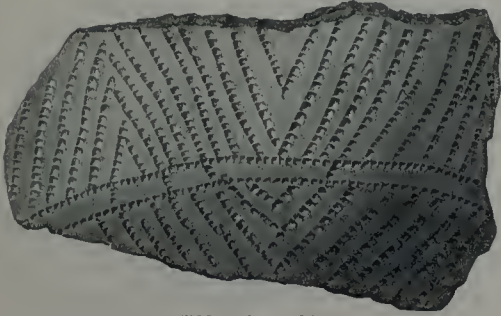
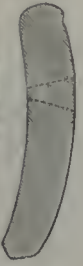
766. Bl. 1/4.



767. Sk. 1/3.



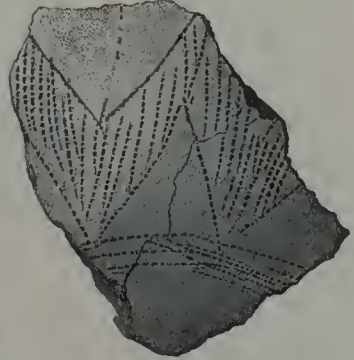
768. Bl. 1/2.



769. Sk. 2/3.



771 a, b. Sk. 1/3.



770 a, b. V. G. 2/3.



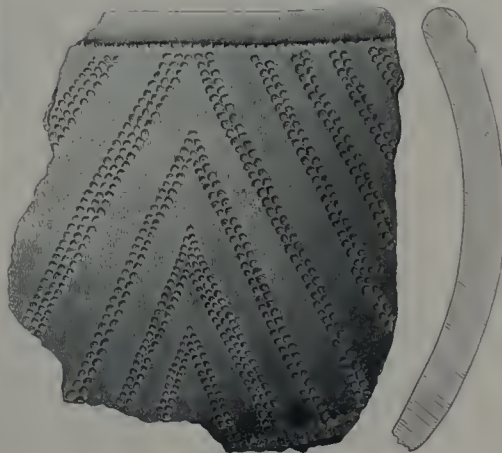
772. Sk. 1/3.



775 a. Bl. 1/3.



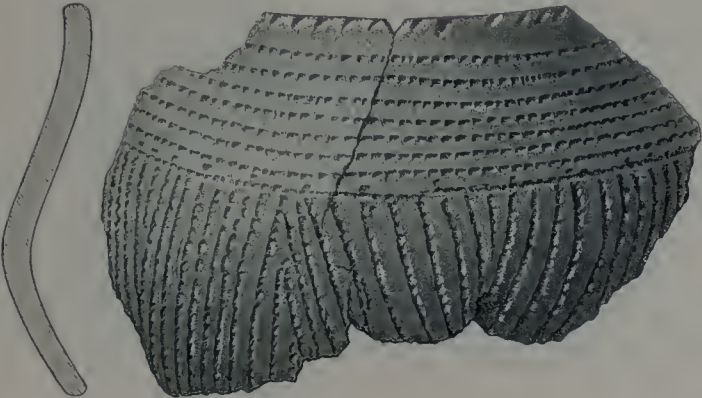
773 a-c. Sk. 1/3.



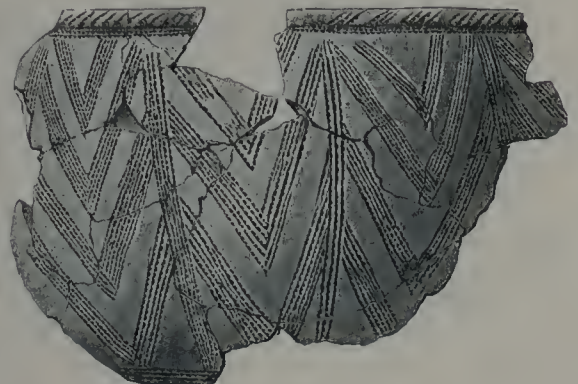
774 a, b. V. G. 2/3.



775 b. Bl. 1/3.



776 a, b. Boh. 1/3.



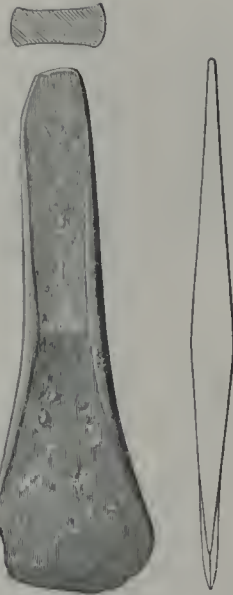
777. Sk. 1/3.



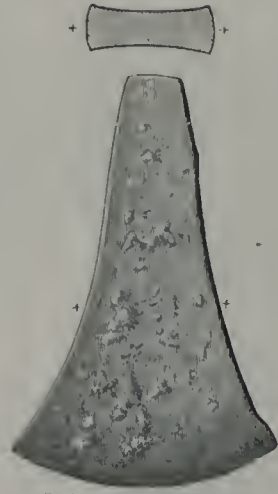
778 a, b. Söd. 1/2.



779 a-c. Sk. 1/2.



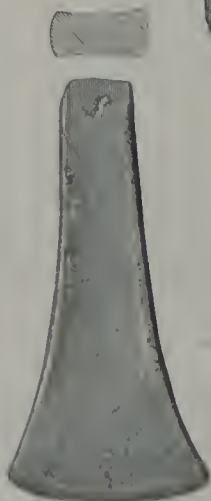
780 a-c. Boh. 1/2.



781 a, b. Sk. 1/2.



782 a, b. Sk. 1/2.



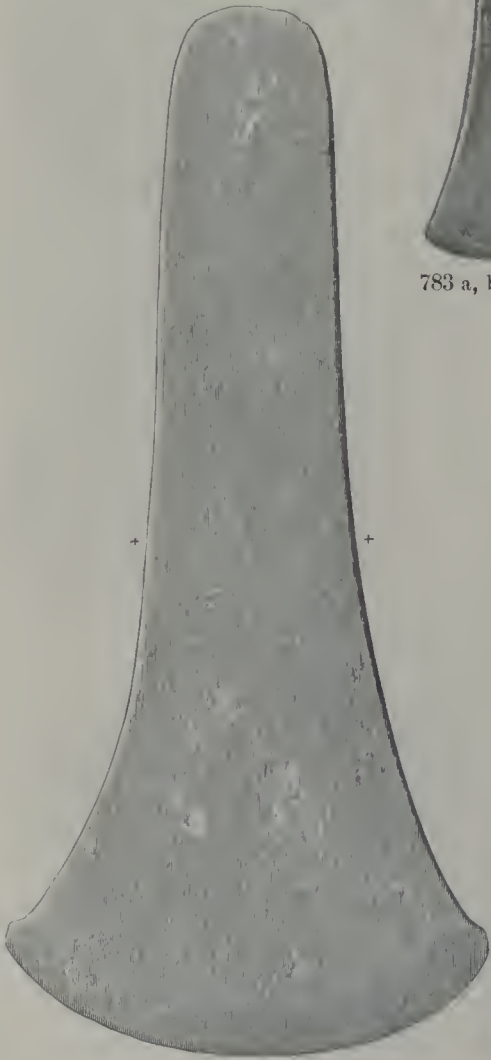
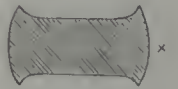
783 a, b. Vstml. 1/2.



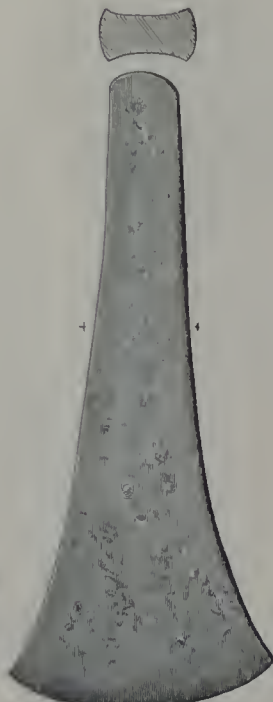
784 a, b. Bl. 1/2.



785 a, b. Upl. 1/2.



786 a, b. Sk. 1/2.



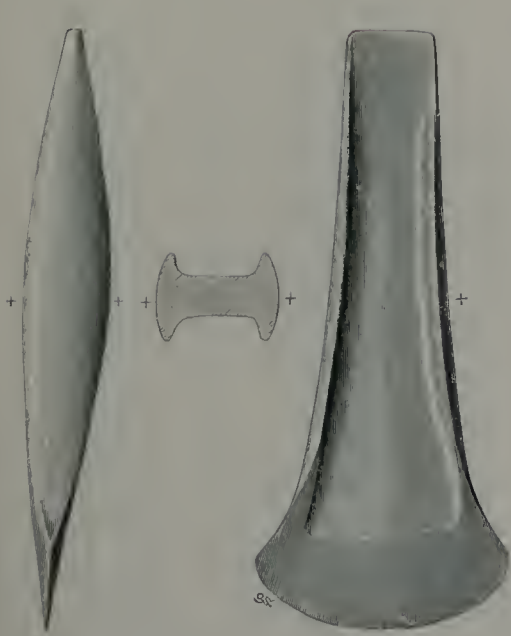
787 a, b. Sk. 1/2.



788. Dal. 1/2.



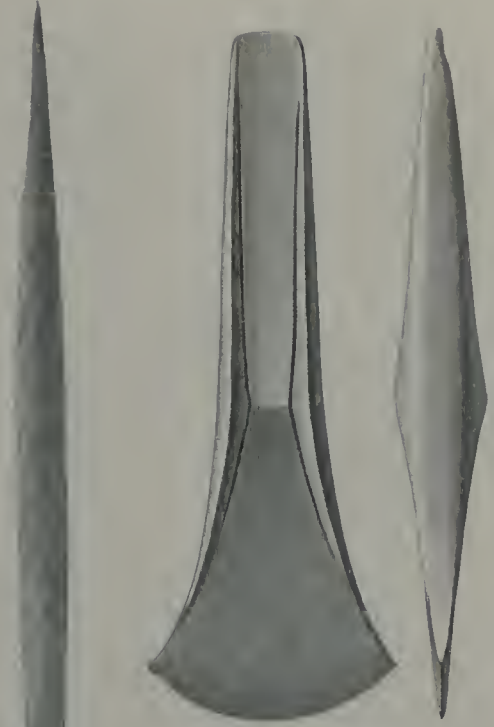
789 a, b. Sk. 1/2.



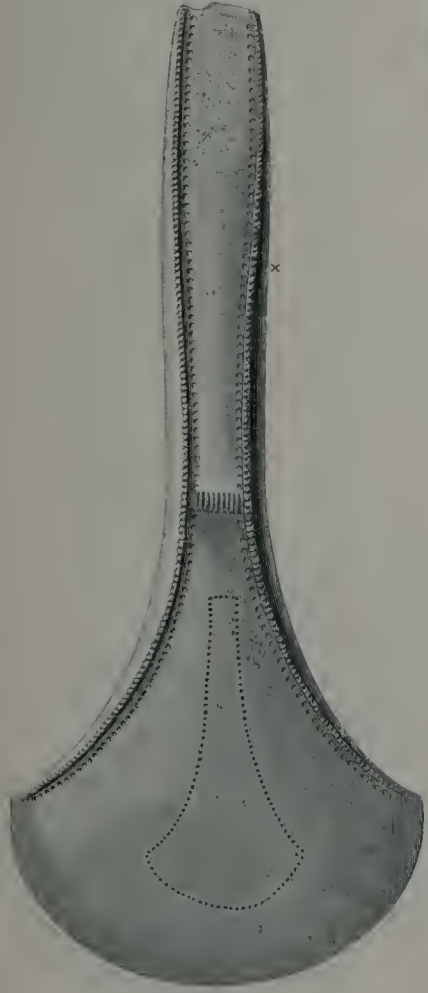
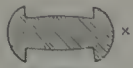
790 a-c. Upl. 1/2.



793 a, b. Sk. 1/2.

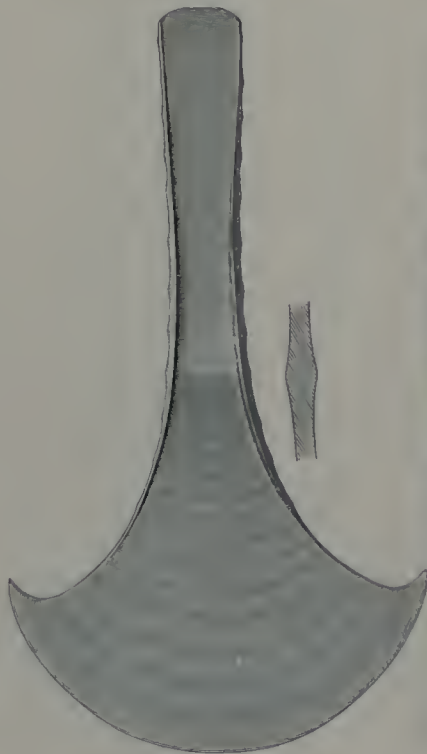


791 a, b. Sk. 1/2.

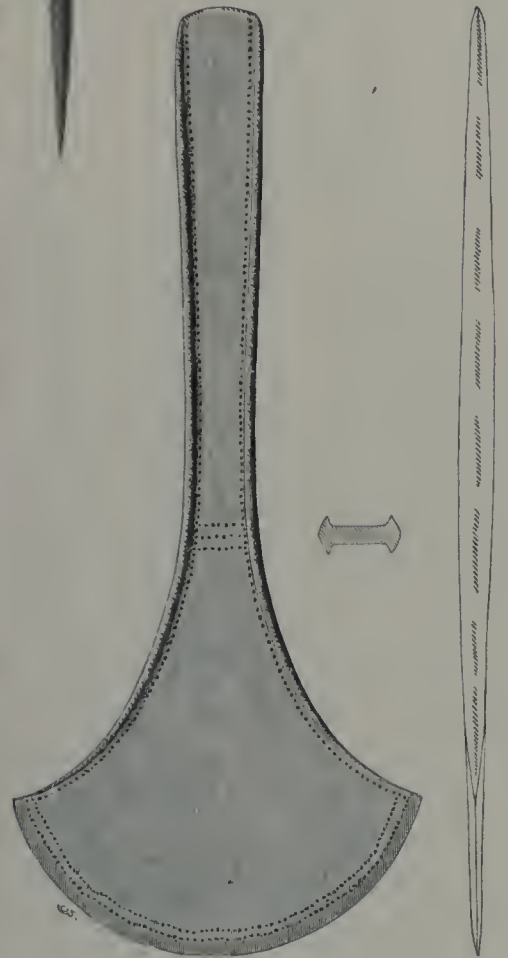


79 a, b. Sk. 1/2.

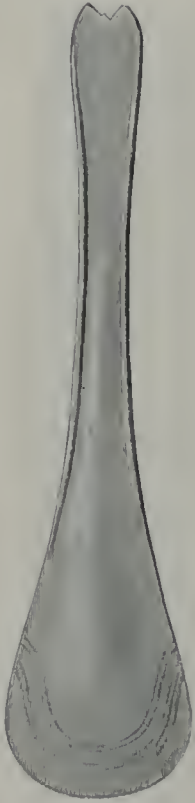
7-141407. Montelius.



794 a-c. Sk. 1/2.



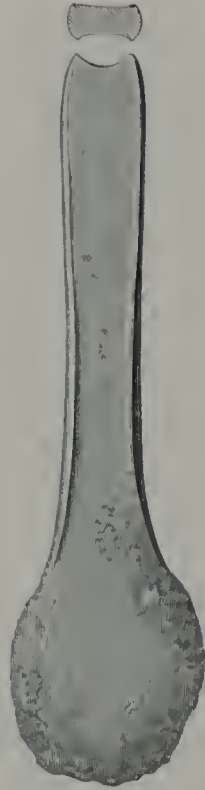
795 a-c. Ö. G. 1/2.



796. Ner. 1/2.



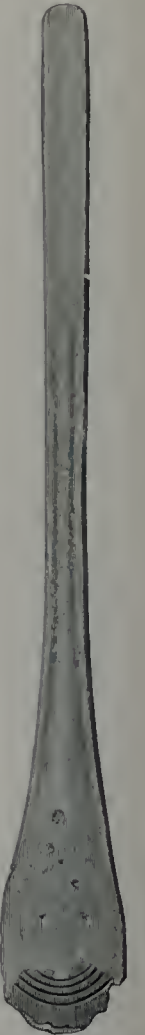
797 a-c. Sk. 1/2.



798 a. b. Sk. 1/2.



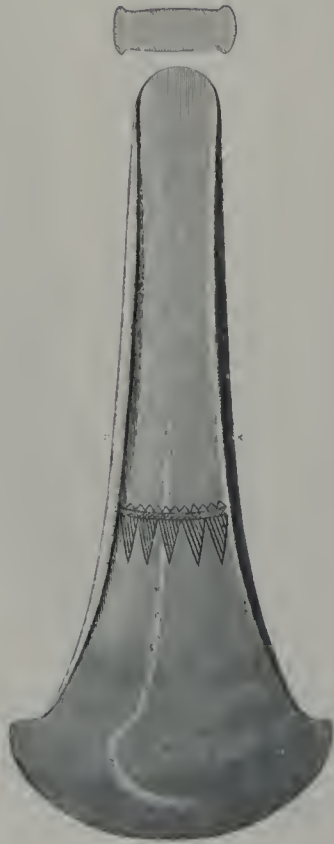
799 a-c. Sk. 1/2.



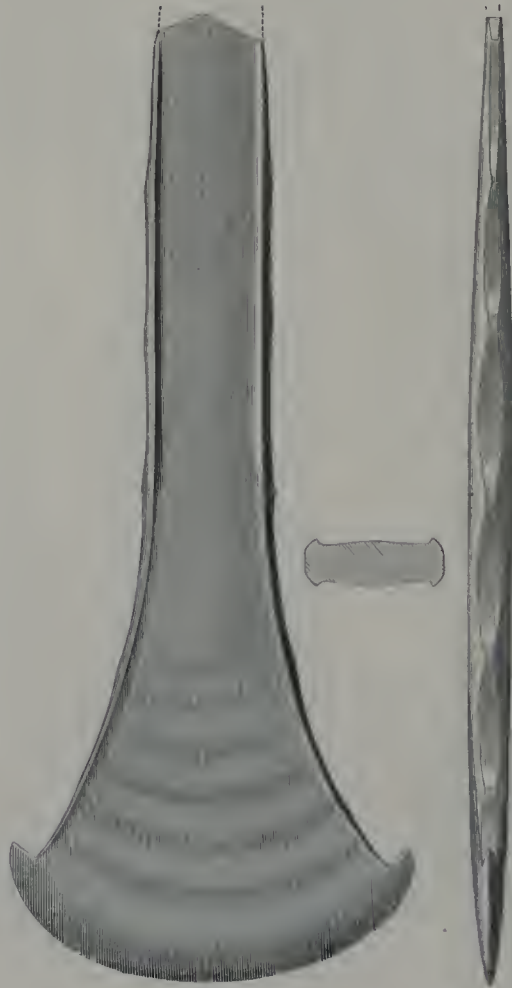
800. Sm. 1/2.



801 a, b. Sk. 1/2.



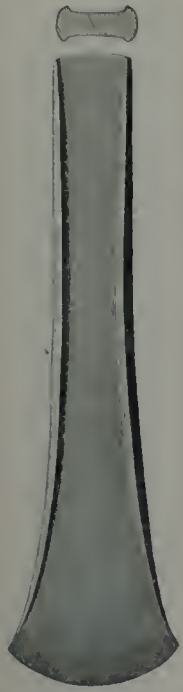
802 a, b. Sk. 1/2.



803 a-c. Sk. 1/2.



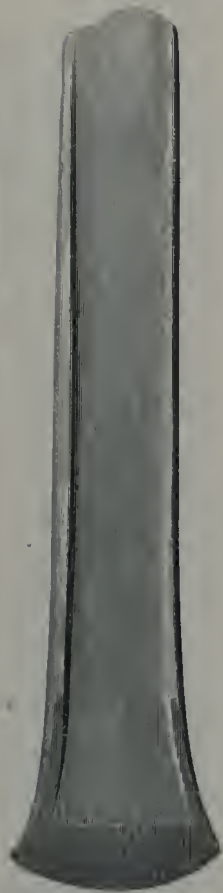
804 a, b. Sk. 1/2.



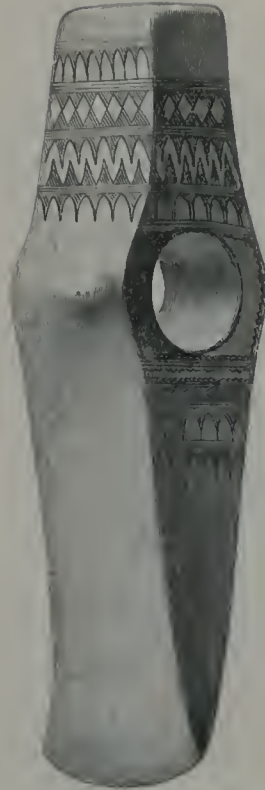
805 a, b. Sk. 1/2.



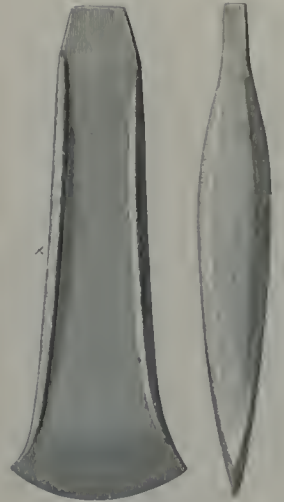
811 a, b. Vstml. 1/2.



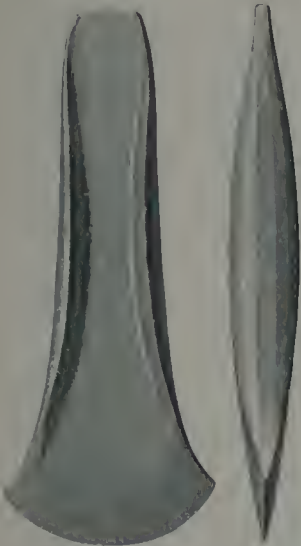
806. Upl. 2/3.



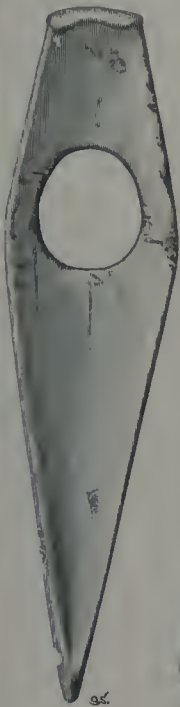
812. Ö.G. 1/2.



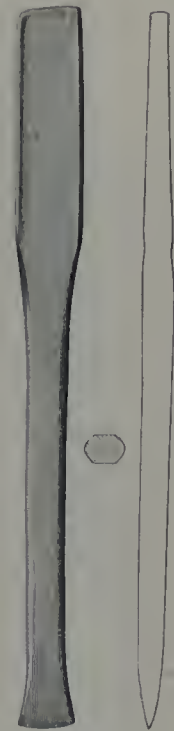
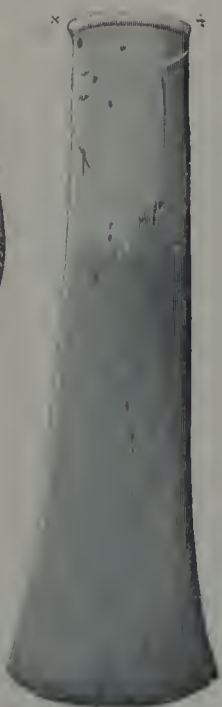
807 a-c. Upl. 1/2.



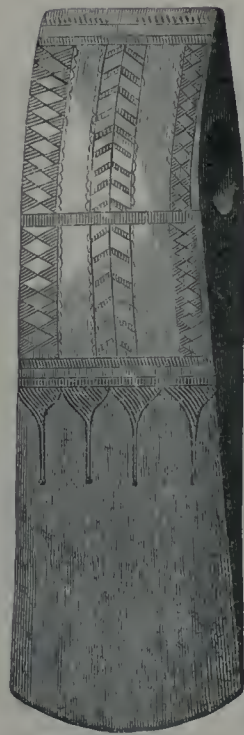
808 a, b. Vstml. 1/2.



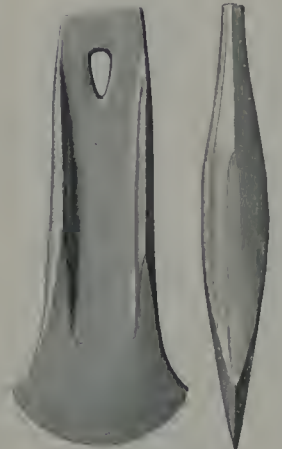
814 a-c. Upl. 1/2.



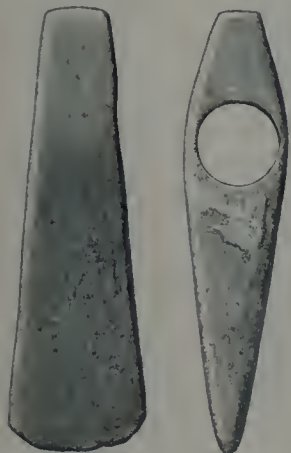
810 a-c. Sk. 1/2.



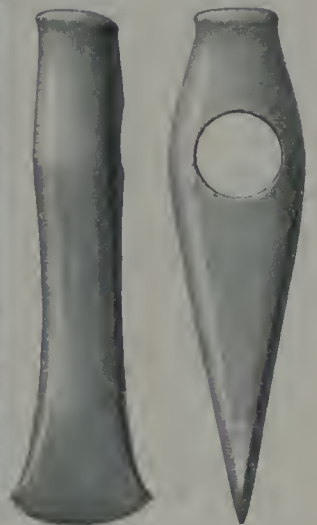
815. Boh. 1/2.



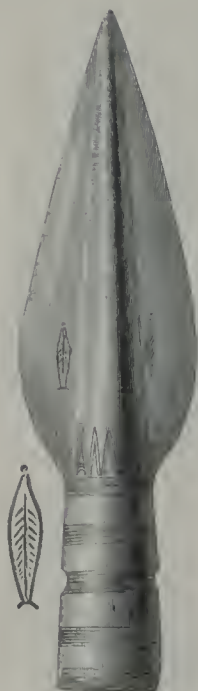
809 a-c. Ö.G. 1/2.



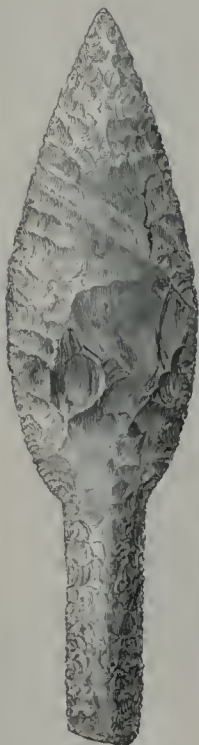
813 a, b. Ner. 1/2.



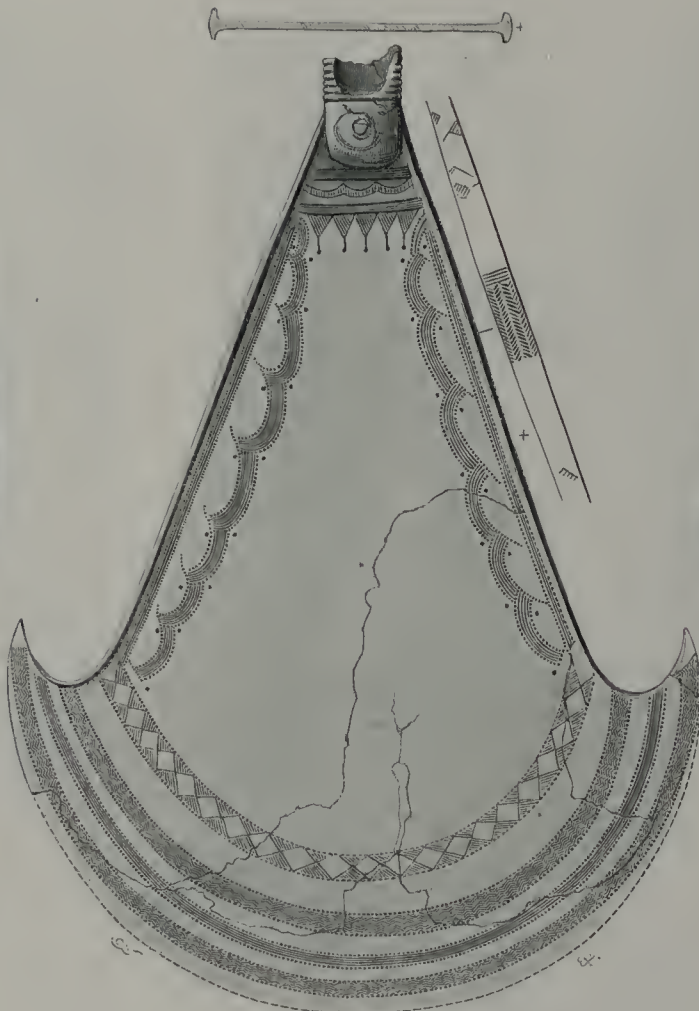
816 a, b. Sk. 1/2.



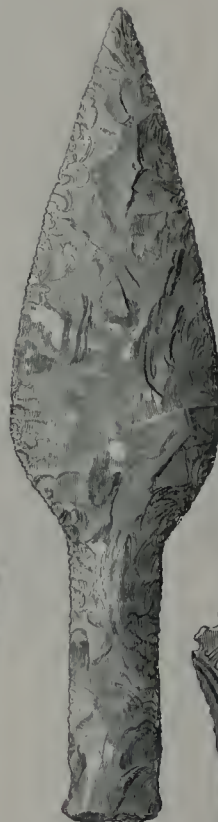
820 a, b. G.
1/2 (1/1).



818. Sk. 2/3.



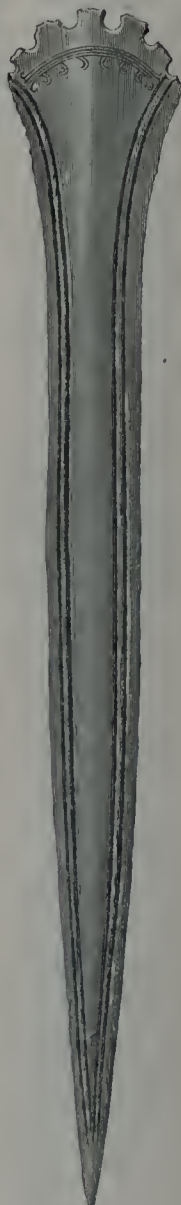
817 a-c. Sk. 1/3.



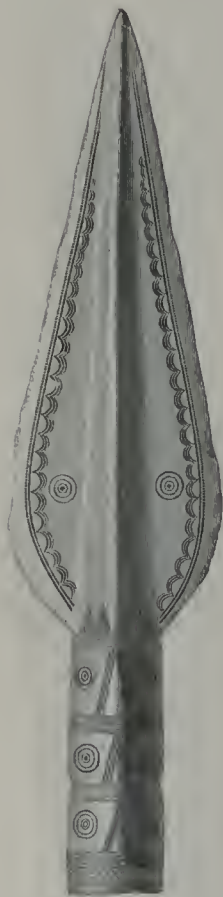
819. Bl.
1/2.



821. Ö. G. 1/2



827. Sk. 1/2.



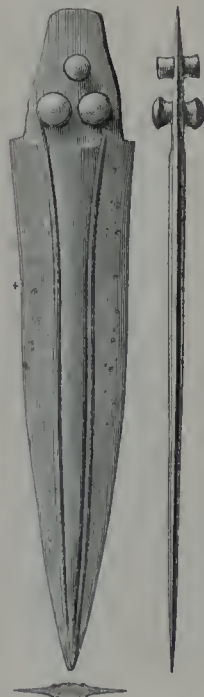
822 a, b. Upl. 1/2.



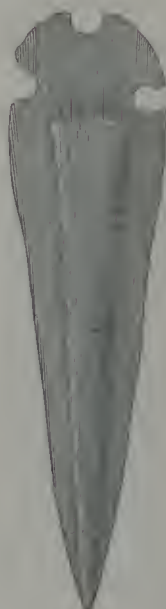
823 a, b. Sk. 1/2.



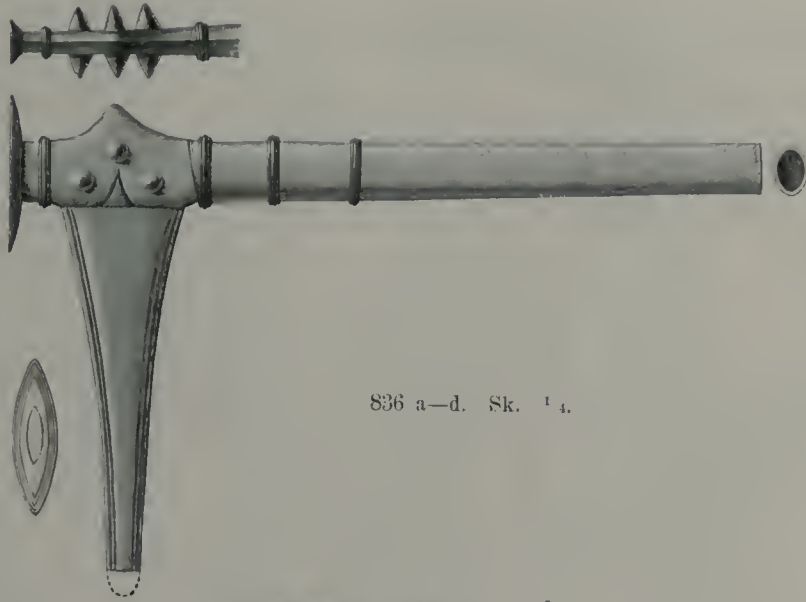
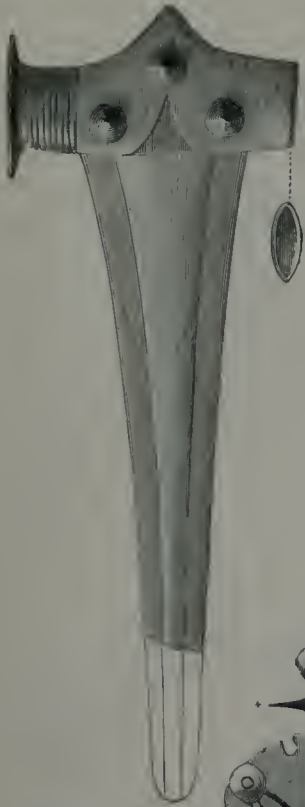
824. Sk. 1/4.



825 a-c. Sk. 1/3.

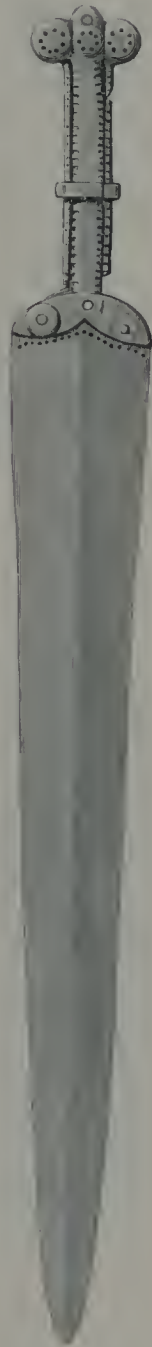
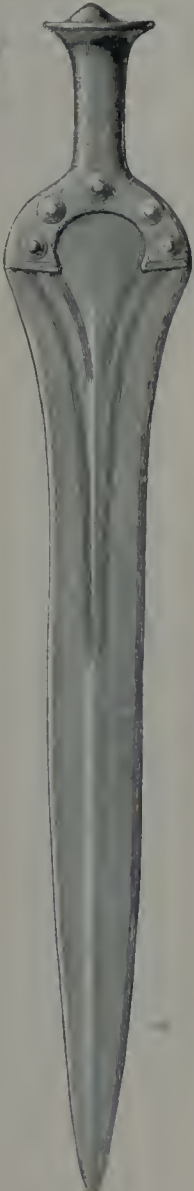
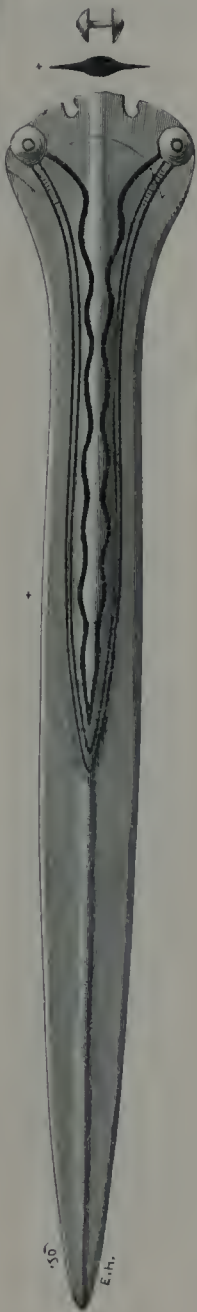
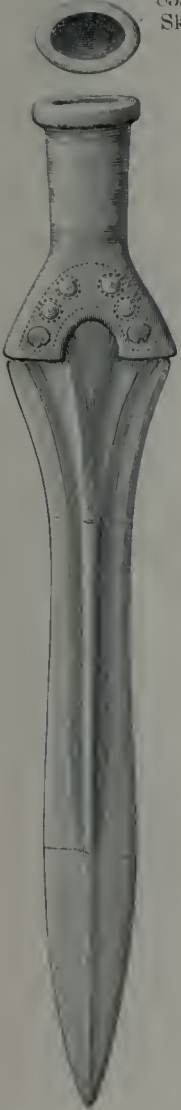


826. Sk. 1/3.

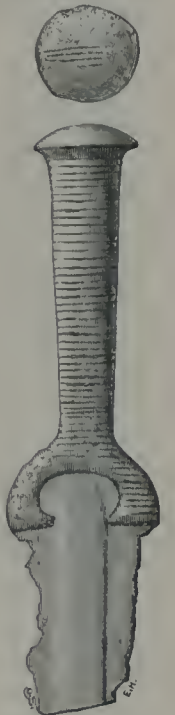


836 a-d. Sk. 1/4.

835 a, b. Sk. 1/3.



837 a-c. Ö.G. 1/4.



828 a, b. Öl. 1/3.

829 a-c. Ö.G. 1/3.

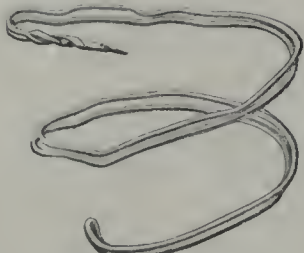
830. Upl. 1/3.

831 a, b. Sm. 1/3.

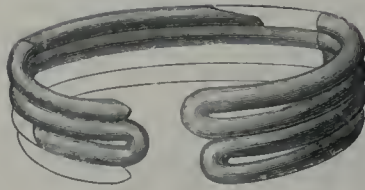
832 a, b. Sk. 1/2.

833 a, b. Ö.G. 1/3.

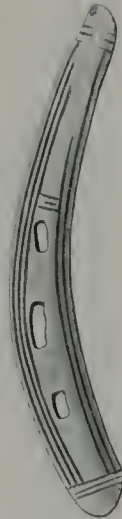
834 a, b. Dal. 1/3.



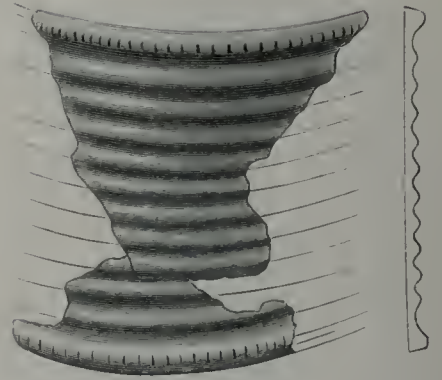
841. Sk. 1/2.



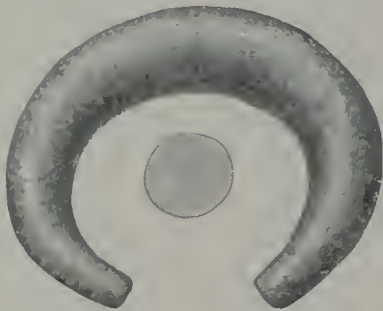
842. Sk. 2/3.



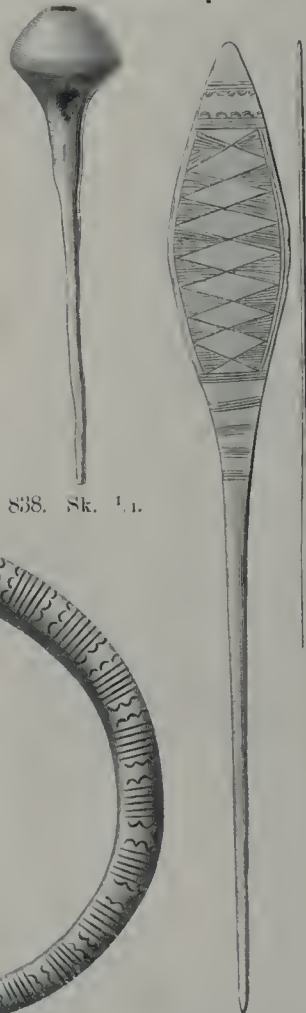
840. Sk. 1/3.



845 a, b. Sk. 2/3.

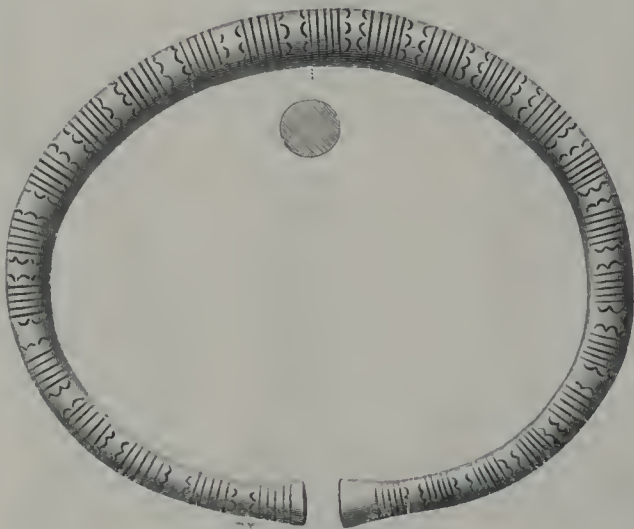


843 a, b. Sk. 1/2.



838. Sk. 1/1.

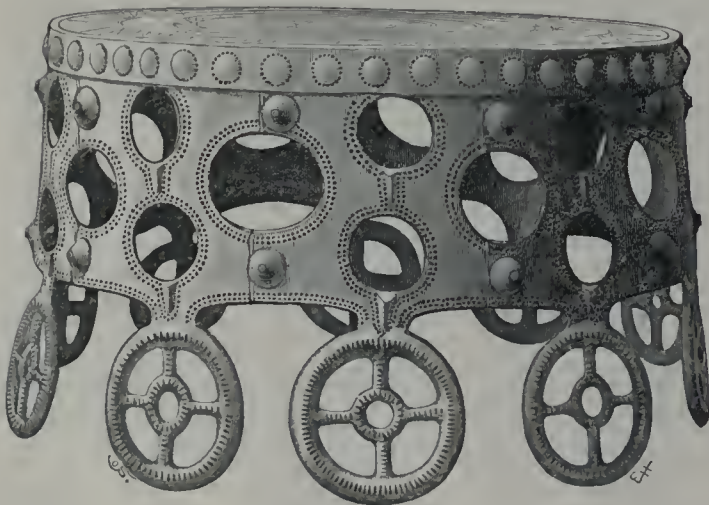
839 a, b. Sk. 1/2.



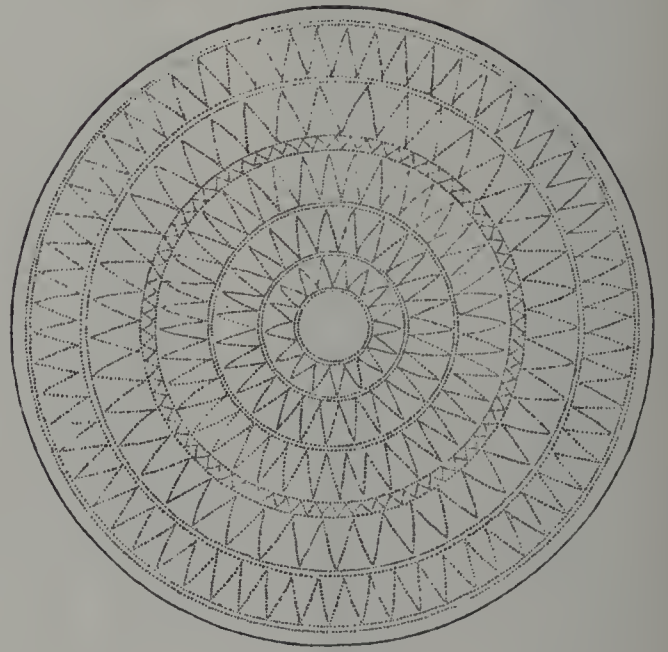
844 a, b. Sk. 1/1.



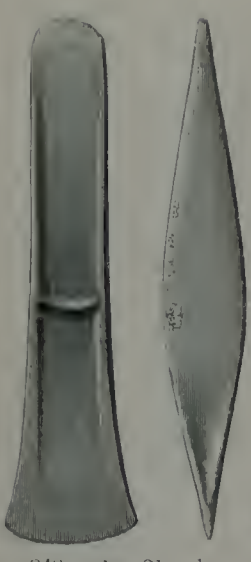
846 a, b. Sk. 2/3.



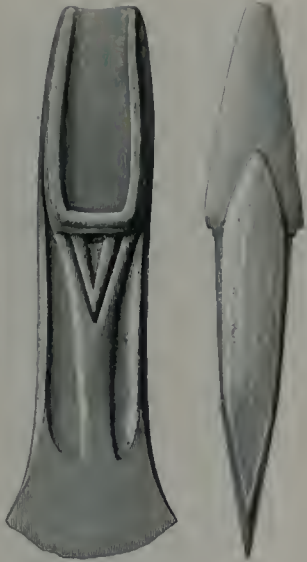
847 a. Sk. 1/5.



847 b. Sk. 1/5.



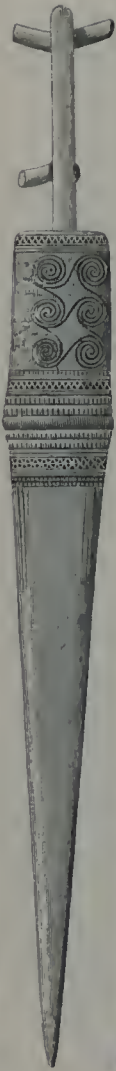
848 a, b. Sk. 1/2.



849 a, b. Sk. 1/2.



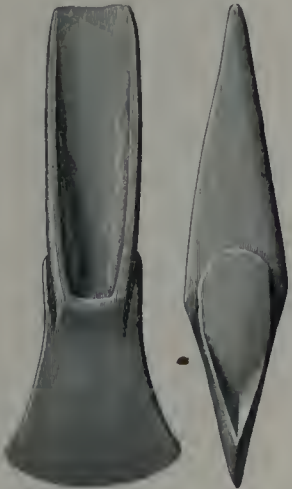
850. Söd. 1/2.



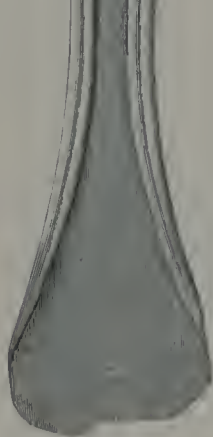
851 a, b. Nm. 1/2.



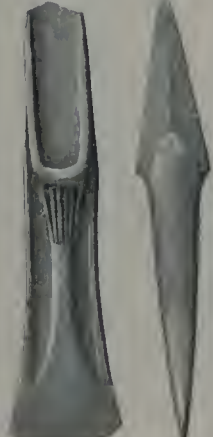
852 a, b. Sk. 1/2.



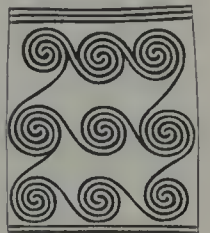
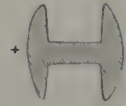
853 a, b. Ö.G. 1/2.



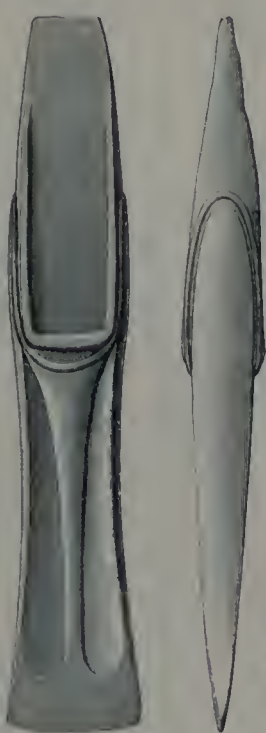
854 a, b. Bl. 1/2.



855 a, b. Upl. 1/2.



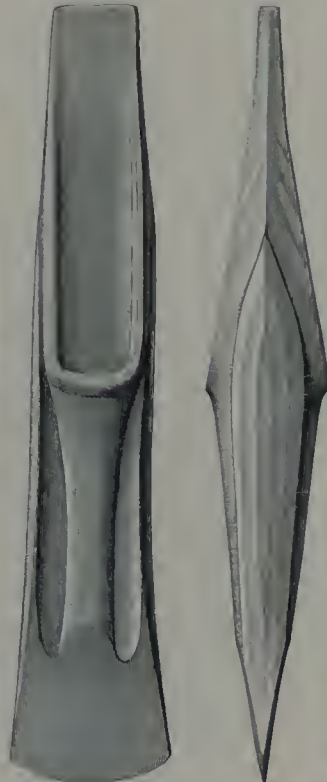
856 a, b. Öl. 1/2.



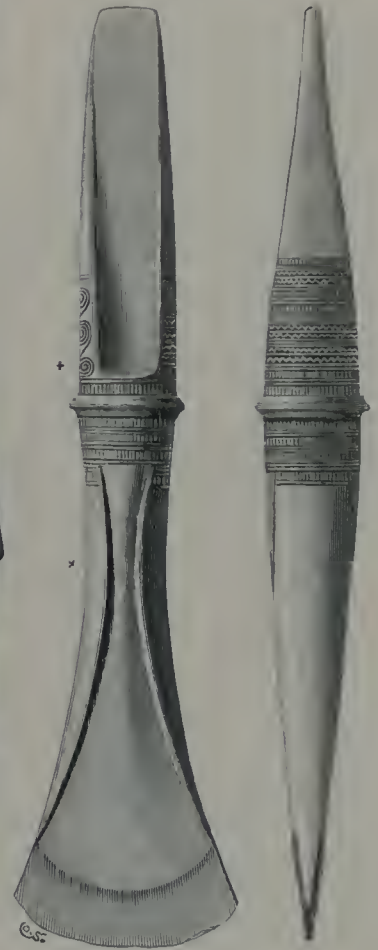
857 a, b. V.G. 1/2.



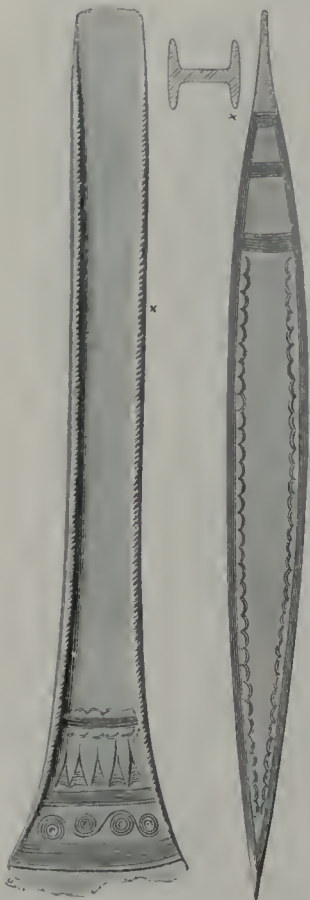
858 a, b. Sk. 1/2.



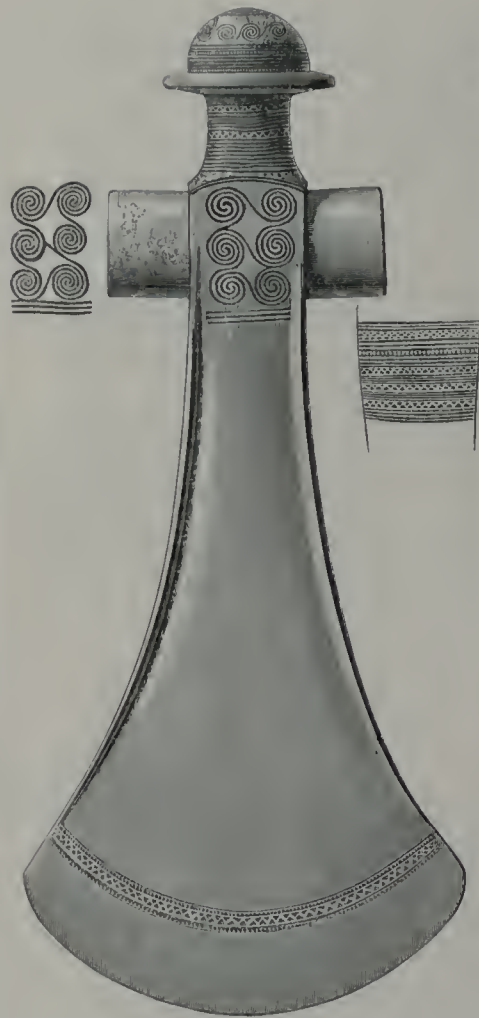
859 a, b. Sk. 1/2.



860 a-c. Sk. 1/2.



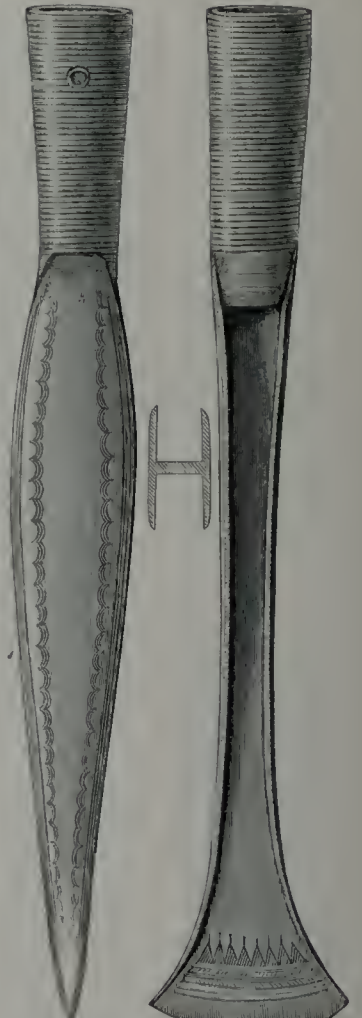
861 a-c. Sk. 1/2.



866 a-d. Sk. 1/2.



862 a, b. Sk. 1/2.



863 a-c. G. 1/2.



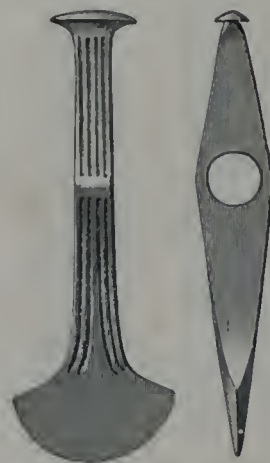
867 a, b. Bl. 1/2.



864. Sk. 1/3.



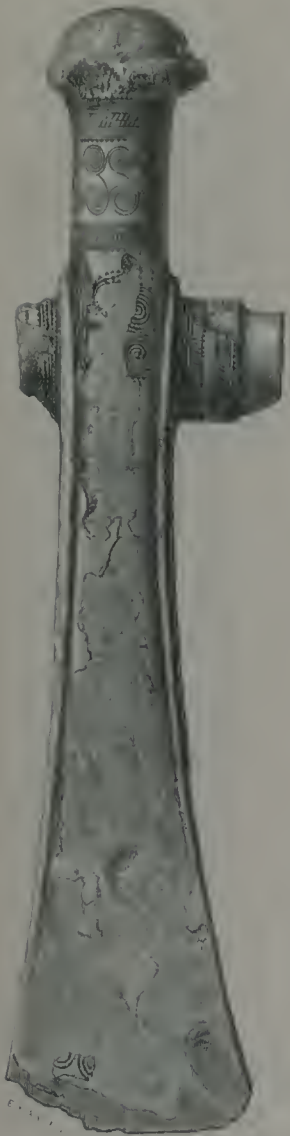
865. Ner. 1/2.



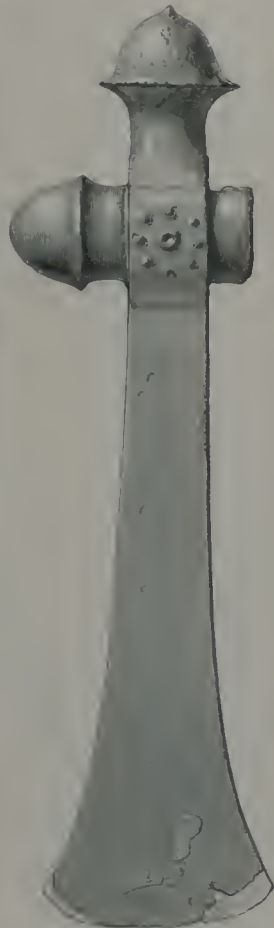
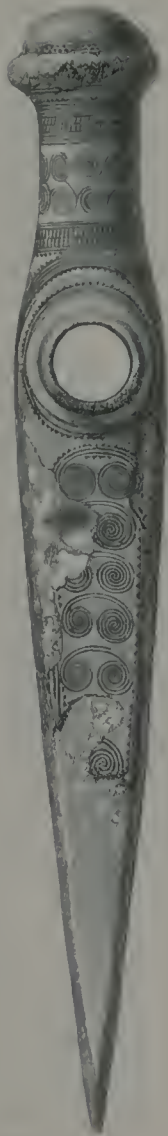
868 a, b. Sk. 1/3.



869 a, b. Sm. 1/3.



870 a, b. Hal. 1/2.



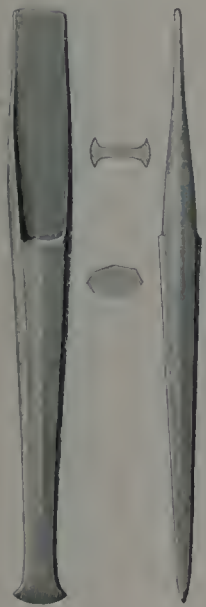
871. Hal. 1/2.



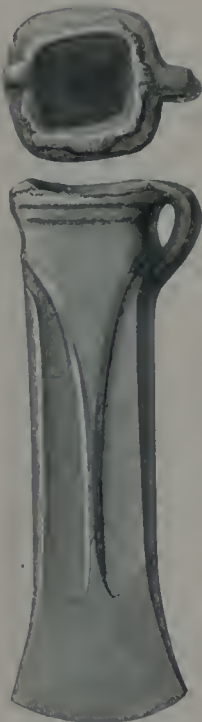
872. Sk. 1/2.



873. Hal. 1/2.



875 a-d. Hal. 1/2.



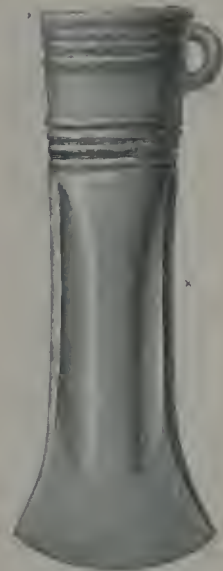
876 a, b. G. 1/2.



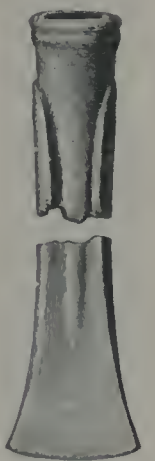
874. Sk. 1/2.



877 a, b. Sk. 1/2.



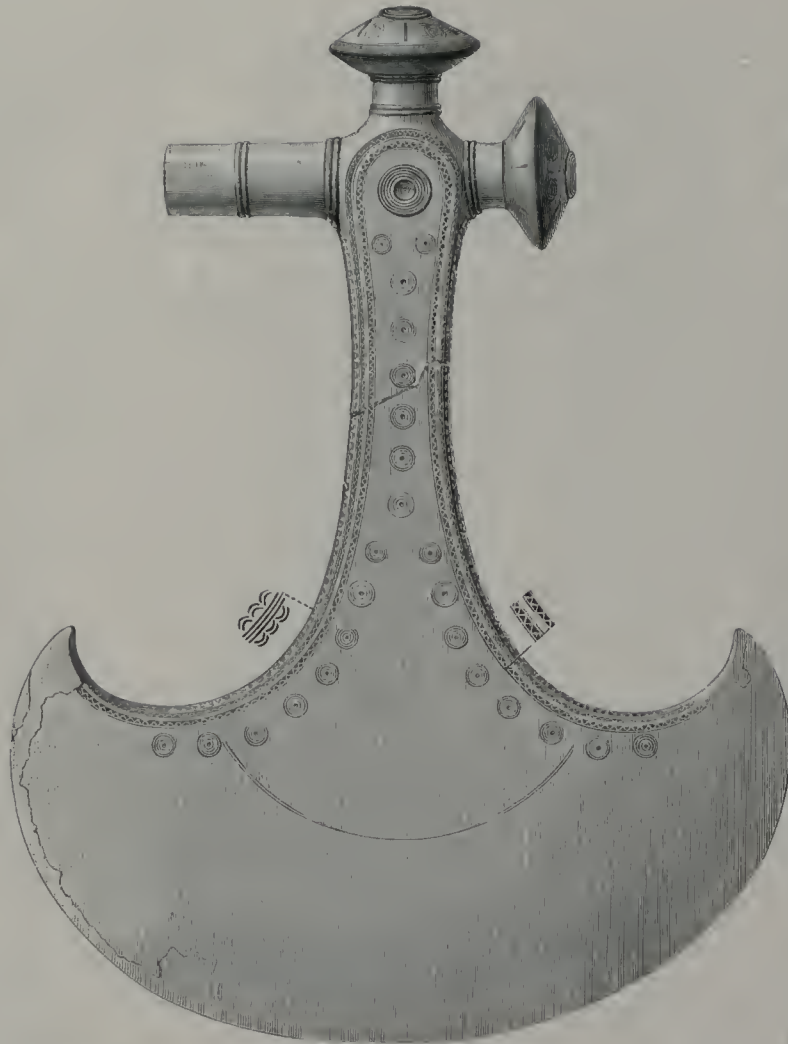
878 Söd. 1/2.



879. Ner. 1/2.



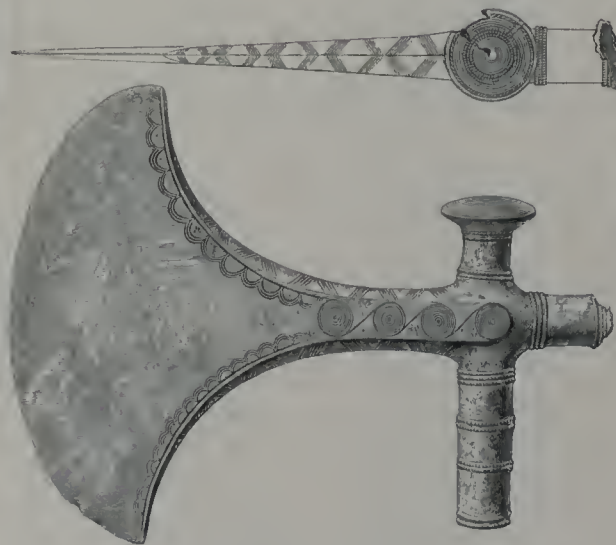
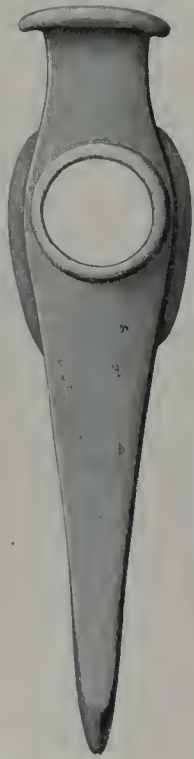
880. Sk. 1/2.



883 a. Söd. 1/3.



883 b. Söd. 1/3.

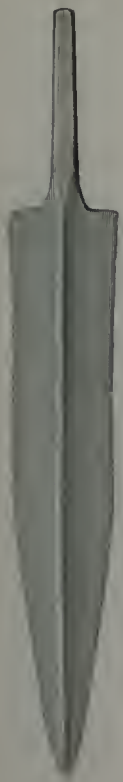


884 a, b. Sk. 1/4.

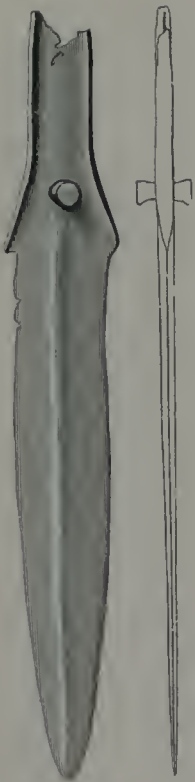


882 a, b. Sk. 1/2.

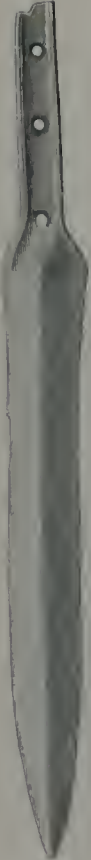
881 a, b. Sk. 1/2.



885. Sk. 1/2.



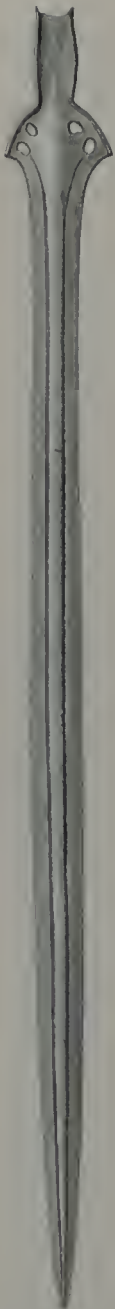
886 a, b. Sk. 1/2.



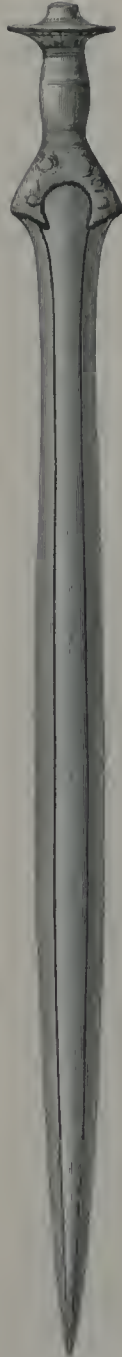
887. Sk. 1/2.



888. Sk. 1/4.



889. Sk. 1/3.



890. Sk. 1/4.



891 a, b. Söd. 1/4.



891 c. Söd. 2/3.



892. Sk. 1/1.



893 a, b. Sk. 1/2.



894 a, b. Ö.G. 1/1.



895 a, b. Ö.G. 1/1.



897 a, b. Sk. 1/2.



896. Sk. 2/3.



898. Sm. 1/3.



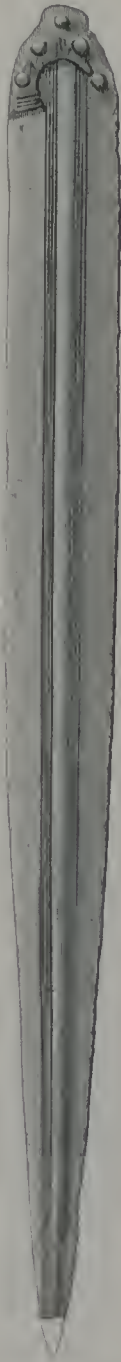
899. Öl. 1/2.



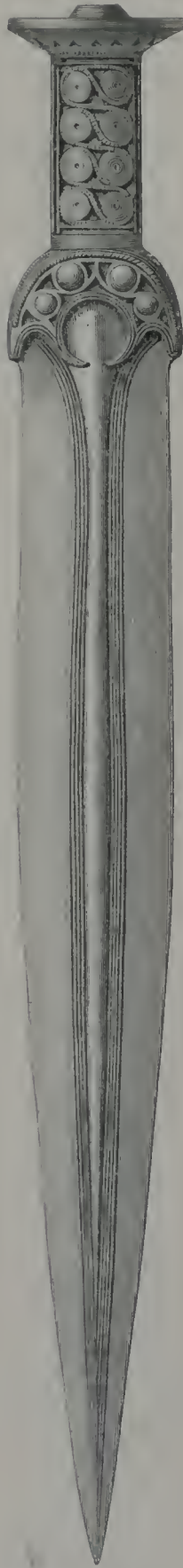
904 b. V. G. 1/2.



910 a, b. Sk. 1/1.



903 a, b. Sk. 1/3.



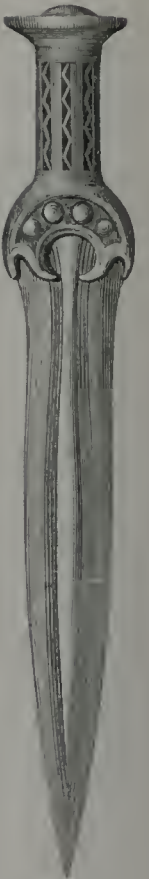
904 a. V. G. 1/2.



905 a, b. Sm. 1/2.



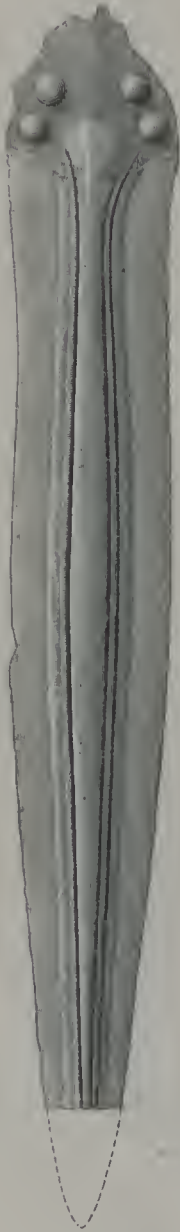
906 b. Öl. 2/3.



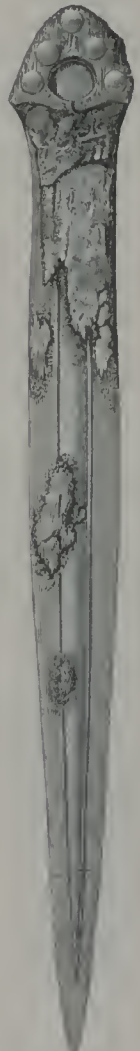
906 a. Öl. 1/3.



900 a, b. Sk. 1/3.



901. V. G. 1/3.



902 a, b. Sk. 1/3.



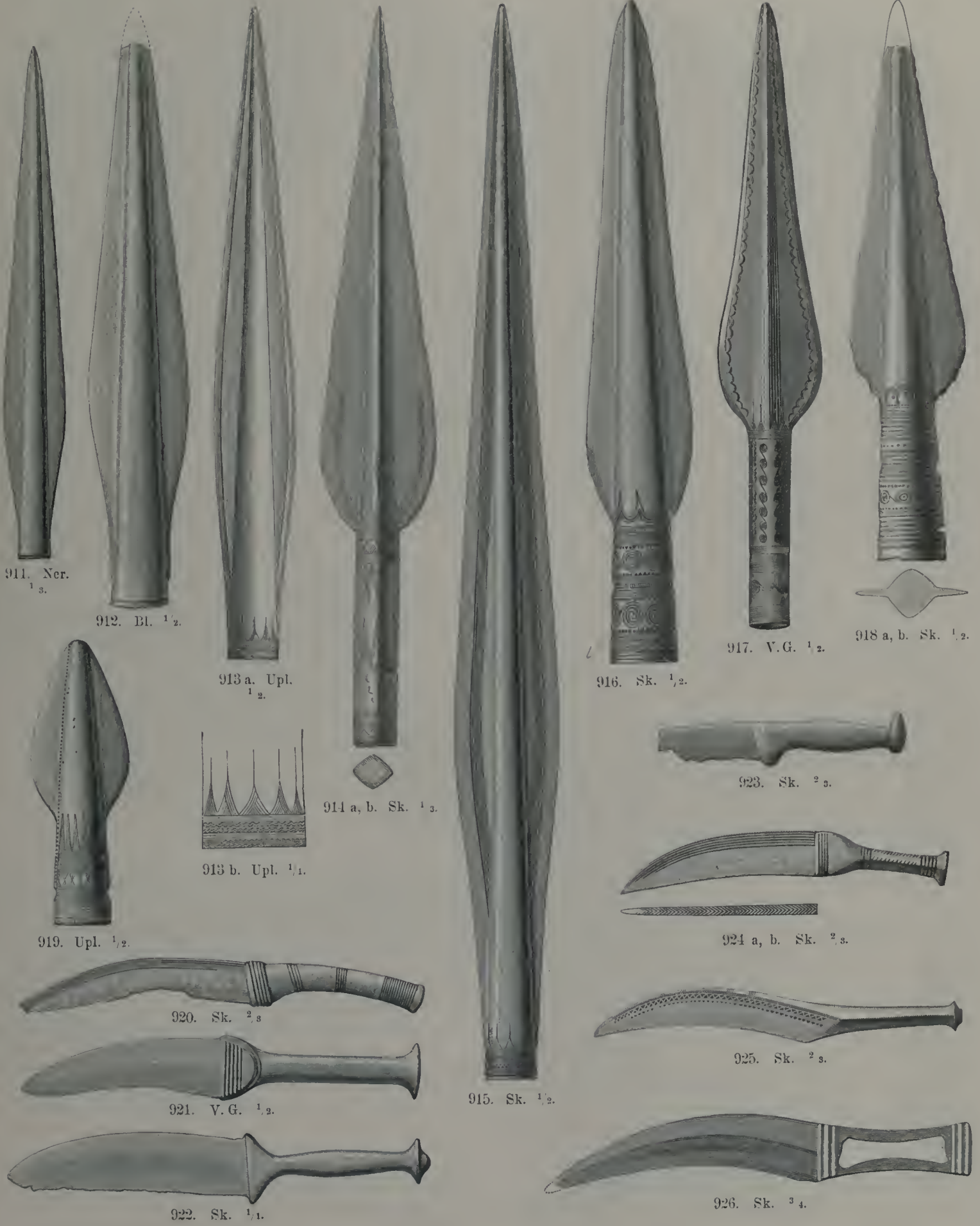
907 a, b. Sk. 1/3.



908 a, b. Sm. 1/1.

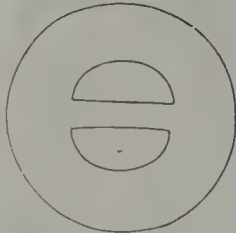


909. Upl. 1/2.





939 a-c. V. G. 1/1.



940 a, b. Sk. 2/3.

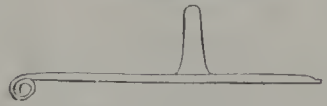
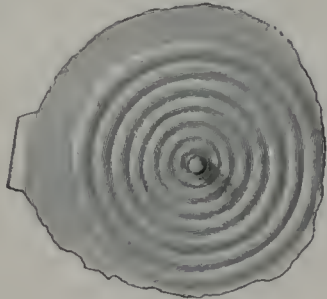


941 a, b. Sk. 2/3.

942. Sk. 2/3.



937. Sk. 1/1.



938 a, b. Upl. 2/3.



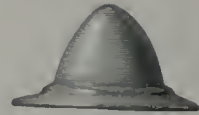
943 a. Sk. 2/3.



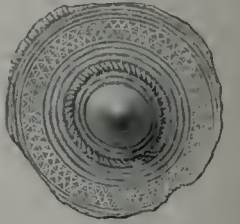
943 b. Sk. 1/1.



944 a, b. V. G. 2/3.



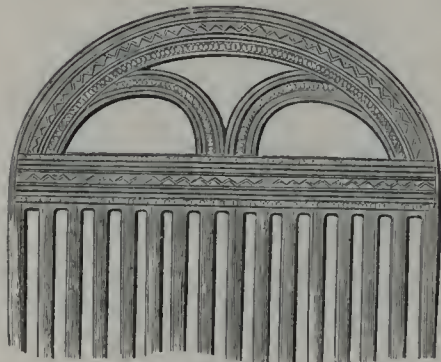
945 a, b. G. 1/1.



946 a-c. Upl. 2/3.



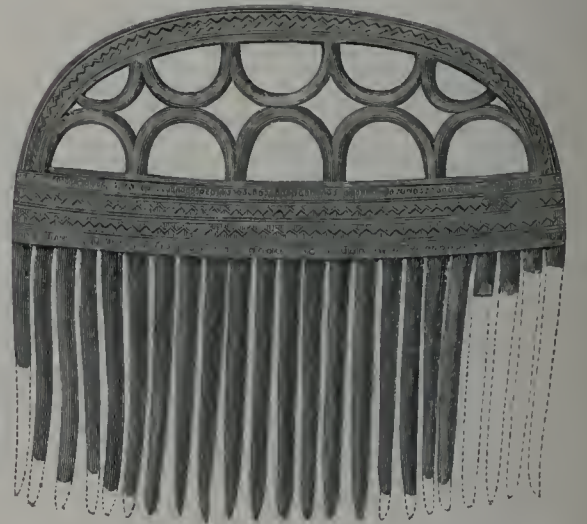
947. Sm. 1/3.



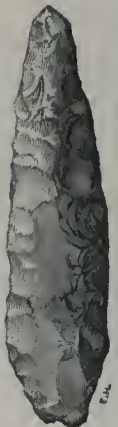
935. Sk. 1/1.



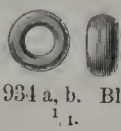
✓ 948. Sk. 1/1.



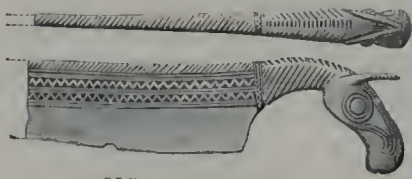
936. V. G. 1/1.



933. Sk. 2/3.



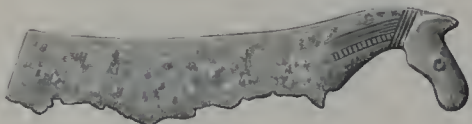
934 a, b. Bl. 1/1.



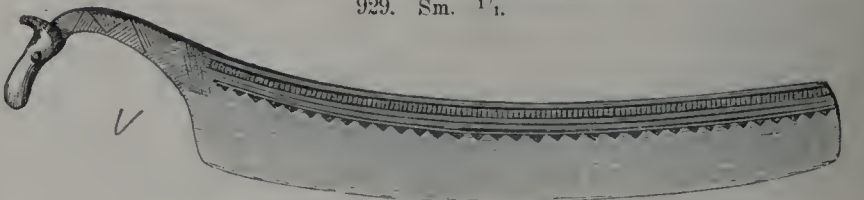
927 a, b. Ner. 1/1.



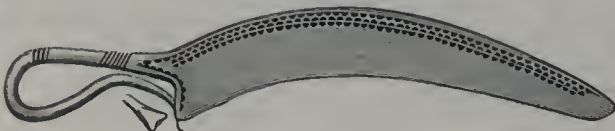
929. Sm. 1/1.



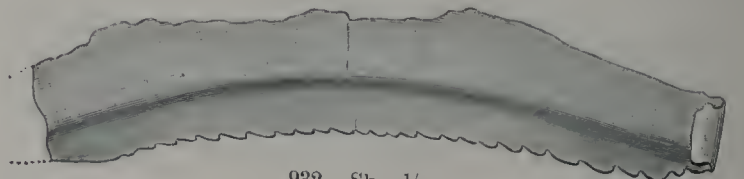
928. Sk. 2/3.



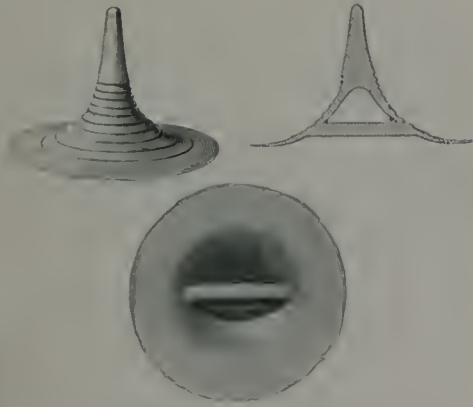
930. Öl. 1/1.



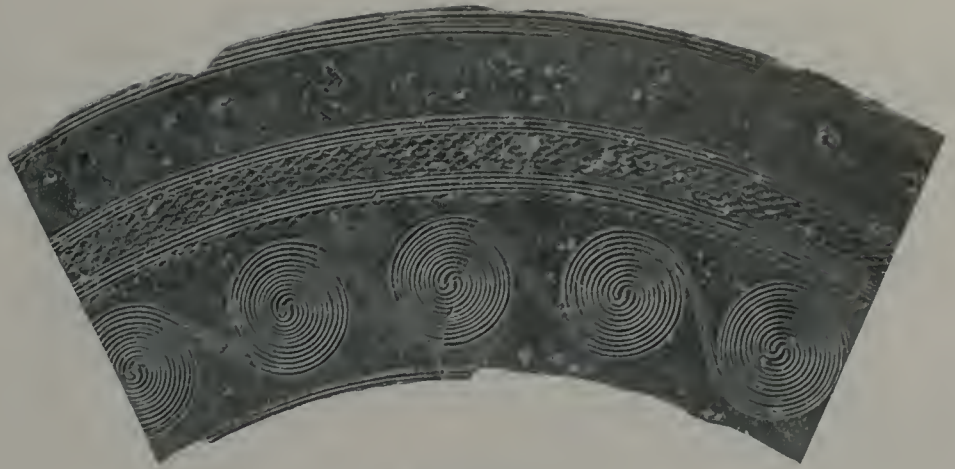
931 a, b. Bl. 2/3.



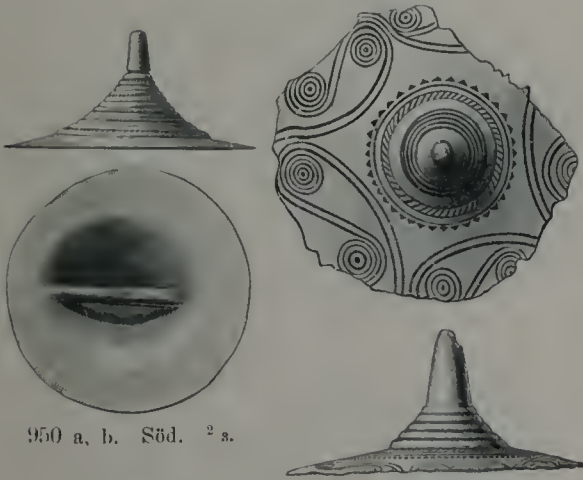
932. Sk. 1/1.



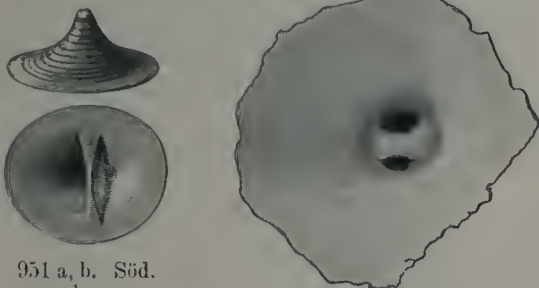
949 a-c. Sk. 1a.



953. Sk. 1a.



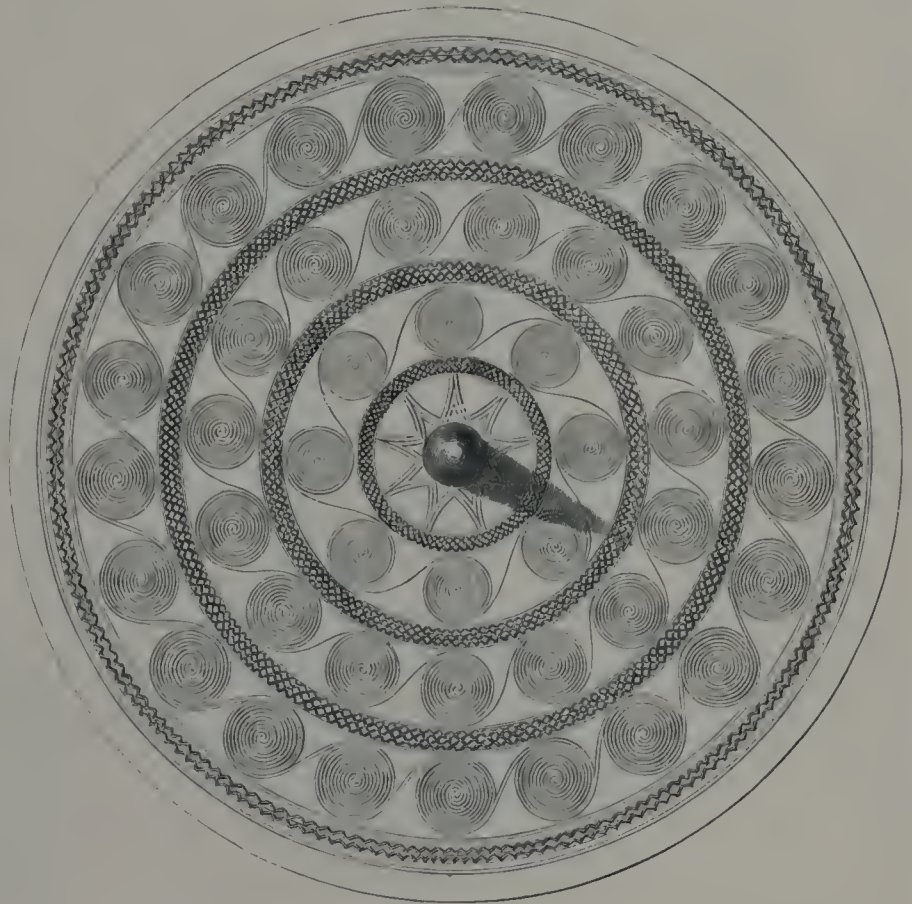
950 a, b. Söd. 2a.



951 a, b. Söd. 1a.



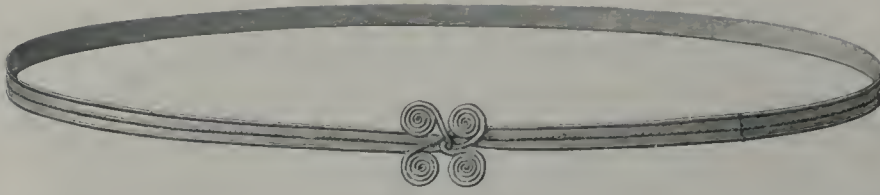
952 a-c. V. G. 1a.



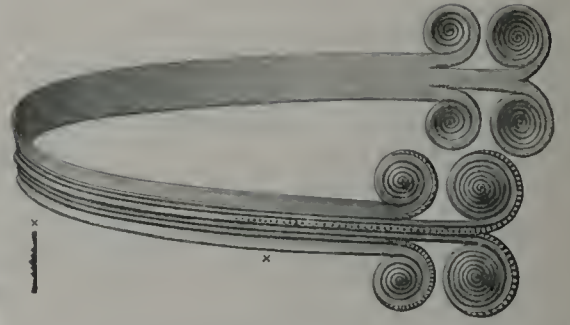
955 a-c. Hal. 2a.



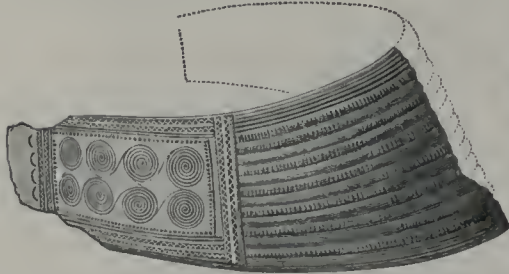
954 a, b. Sk. 1a.



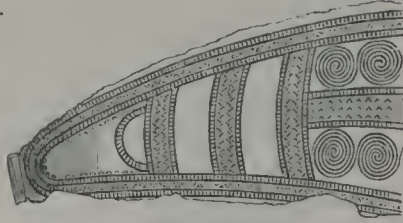
956. Ner. 1/2.



957 a, b. Sk. 2/3.



958. Upl. 1/2.



959 Sm. 1/2.



968. Sm. 1/1.



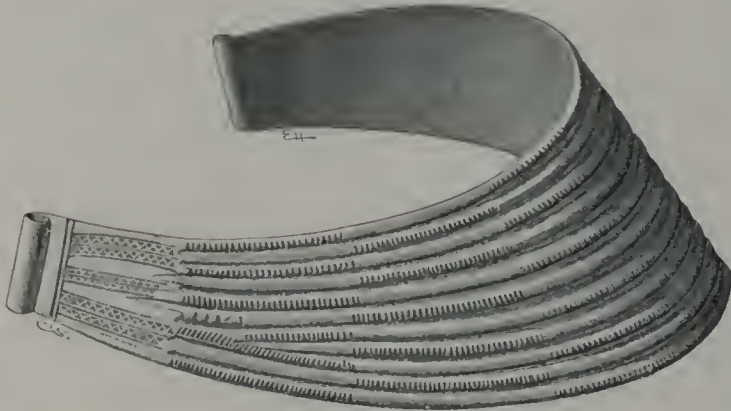
960 a, b. V.G. 1/2.



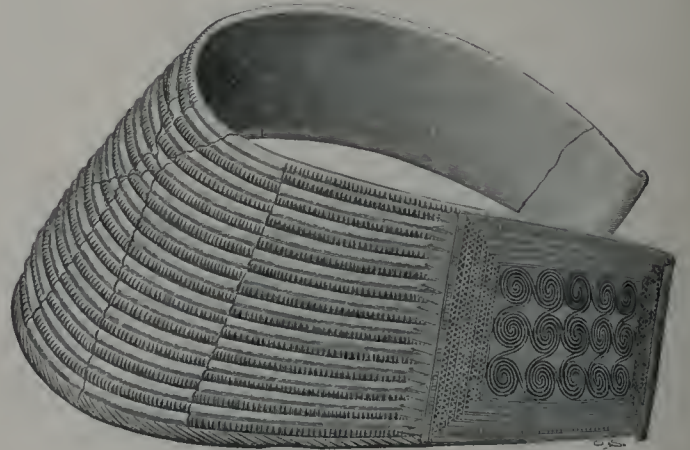
961. Sk. 1/2.



962. Sk. 1/2.



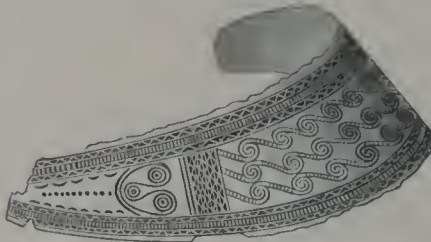
963. Sm. 2/3.



964. Sk. 1/2.



966. Hal. 2/3.



965. Sk. 1/2.



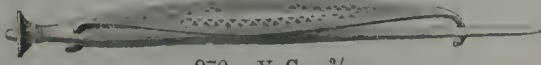
967. Sk. 2/3.



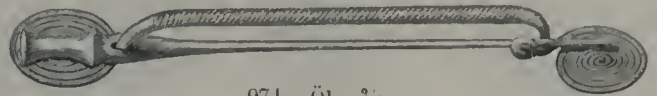
969. Sk. 2s.



971. Sk. 1/1.



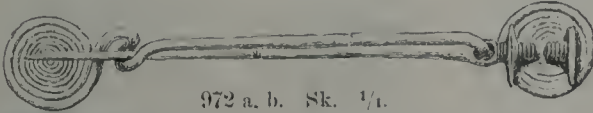
970. V.G. 2/3.



974. Öl. 2s.



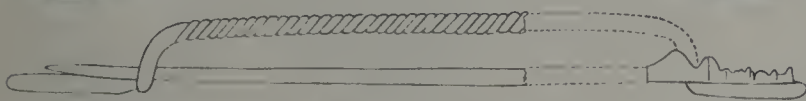
975. V.G. 2/3.



972 a. b. Sk. 1/1.



976. V.G. 2/3.



973 a. b. Sk. 1/1.



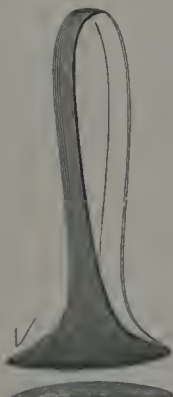
980. Sk. 1/3.



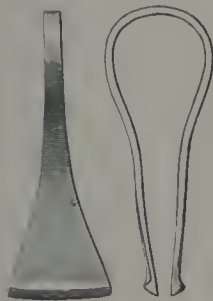
981 a. b. Sk. 1/2.



977. Sk. 3/4.



978 a. b. Öl. 1/1.



979 a. b. Ö.G. 2/3.



986 a. b. Öl. 1/1.



987. V.G. 1/1.



985. Sk. 1/1.



988 a. b. Sm. 1/1.



989 a. b. Sk. 1/1.



982.



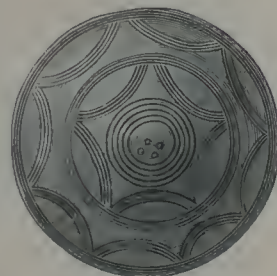
983. Sk. 1/1.



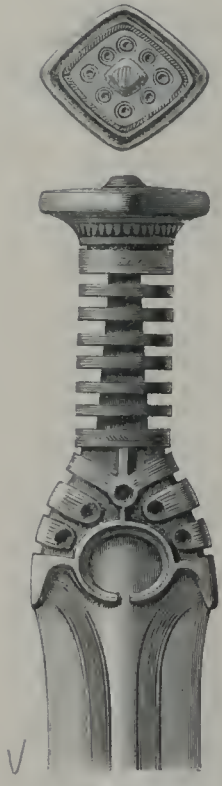
984. Sk. 2s.



990 a. b. Sm. 1/1.



991 a. b. Öl. 2s.



1000 a, b. Ö. G. 1/2.



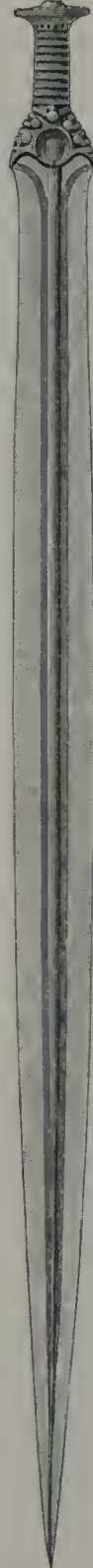
1001 c-d. Sk. 1/2.



1001 a, b. Sk. 1/4.



1002 a, b. G. 1/2.



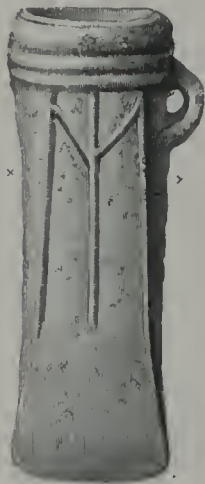
1003 a. Boh. 1/5.



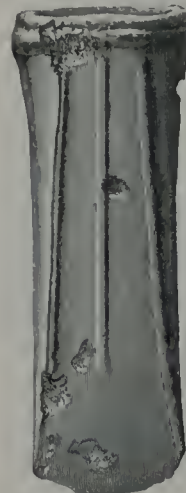
1003 b-d. Boh. 1/2.



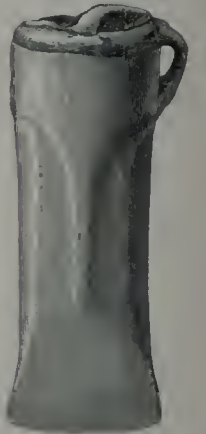
1004. Sm. 1/2.



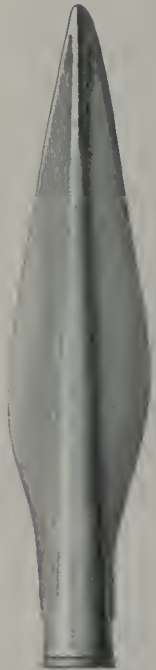
992. Söd. 1/2.



995. Ö. G. 1/2.



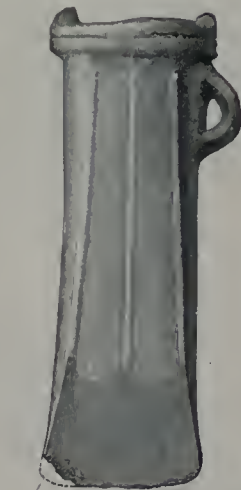
996. Ö. G. 1/2.



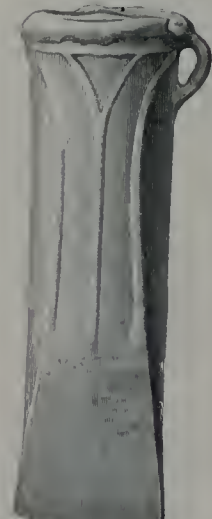
999. Söd. 1/2.



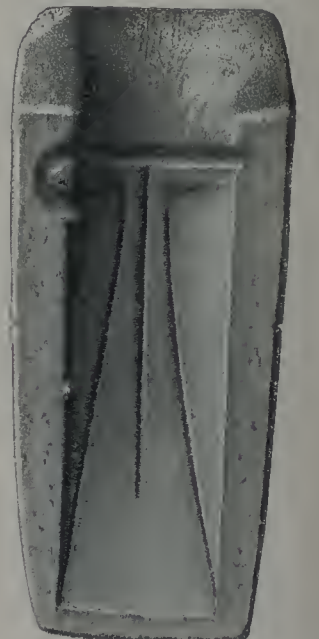
993. Vstml. 1/2.



994. Söd. 1/2.



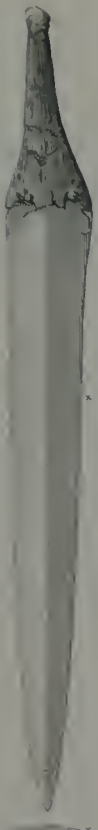
997. Ner. 1/2.



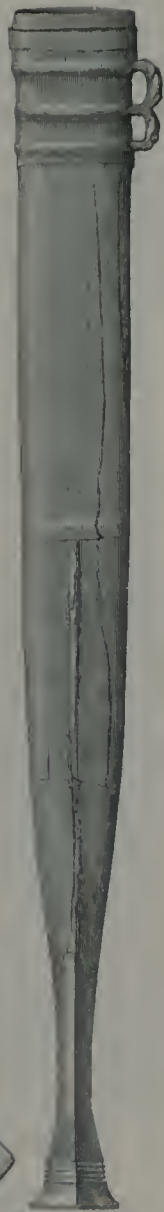
998. V. G. 1/2.



1005. Upl. 1 s.



1006 a, b. Hal. 1 s.



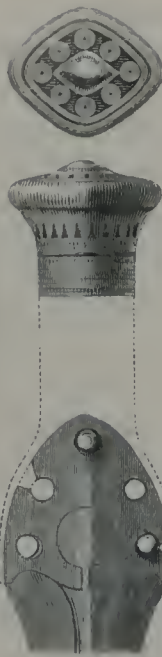
1007 a, b. Hal. 1 s.



1008 a, b. Ö. G. 1 s.



1009 a, b. Sk. 1 s.



1010 a, b. Ö. G. 1 s.



1011 a, b. Sk. 1 s.



1012 a, b. Sm. 1 s.



1013. Ö. G. 1 s.



1014. Sk. 2 s.



1015. Hal. 2 s.



1016. Hal. 2 s.



1017. Sk. 1 s.



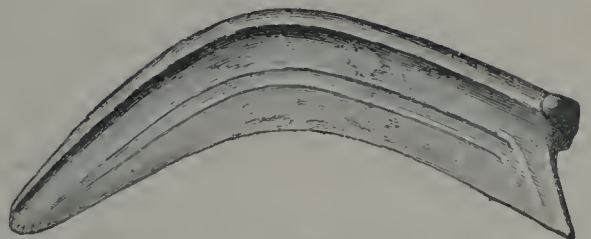
1018. V. G. 1 s.



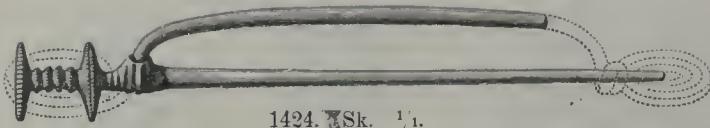
1019. Hal. 2 s.



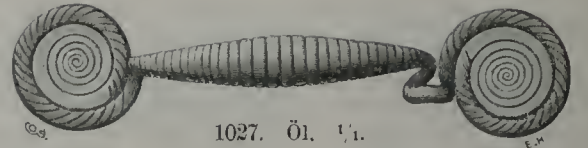
1020. Söd. 1 s.



1021. Söd. 1 s.



1424. Sk. 1/1.



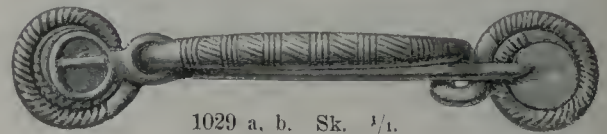
1027. Öl. 1/1.



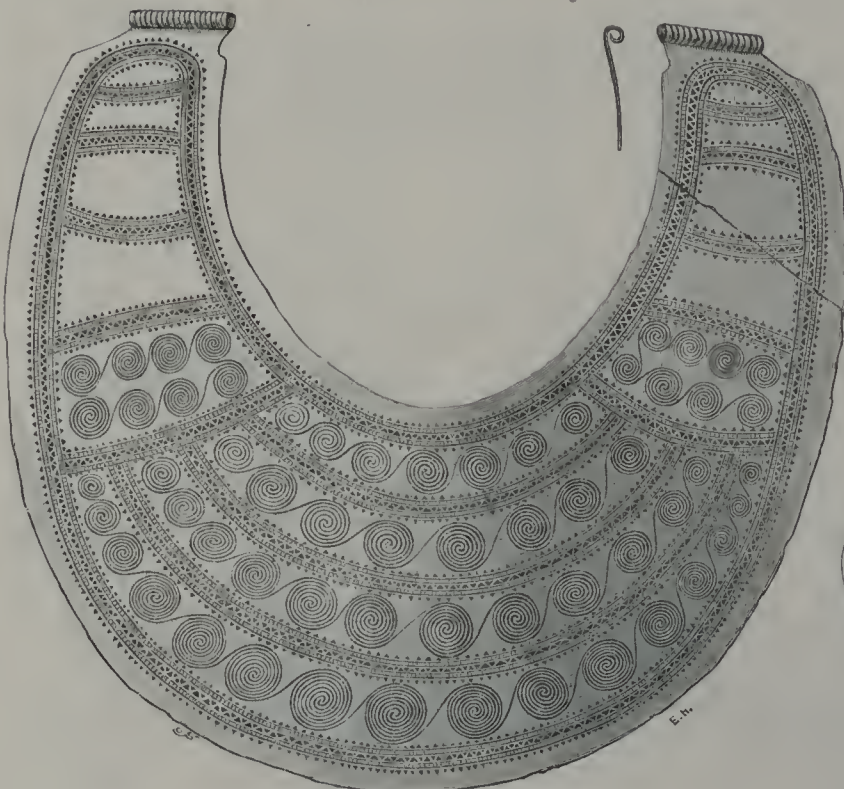
1022. Sk. 1/2.



1028. Sk. 1/1.



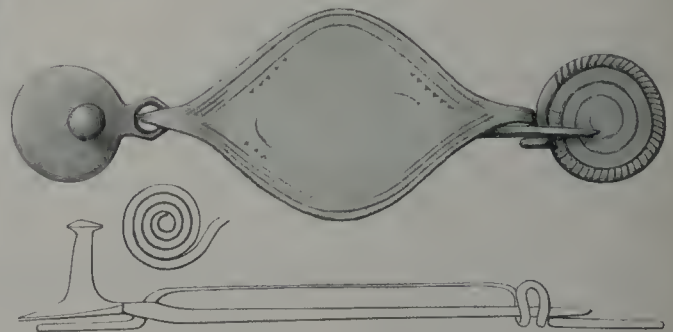
1029 a, b. Sk. 1/1.



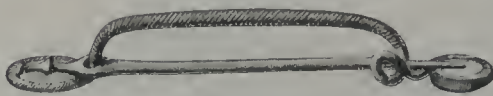
1023 a, b. G. 1/2.



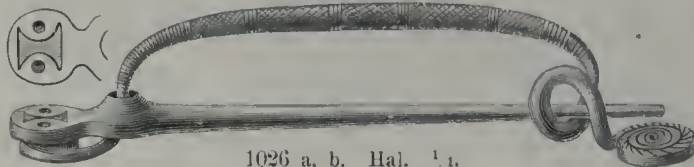
1030 a-c. Sk. 2/3.



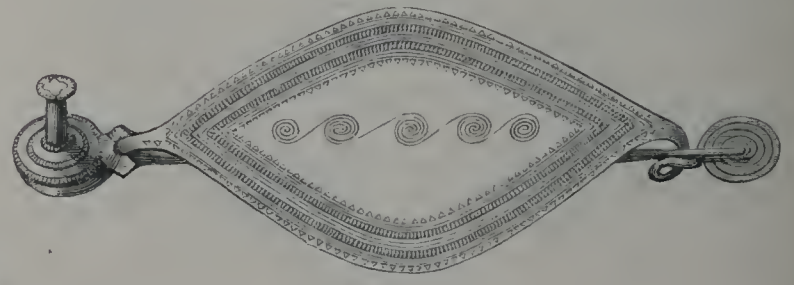
1031 a-c. Sk. 2/3.



1025. G. 1/1.



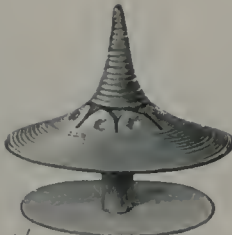
1026 a, b. Hal. 1/1.



1032. Sk. 2/3.



1034. Söd. $\frac{2}{3}$.



1037. Sm. $\frac{2}{3}$.



1042. Sk. $\frac{2}{3}$.



1036. Sk. $\frac{2}{3}$.



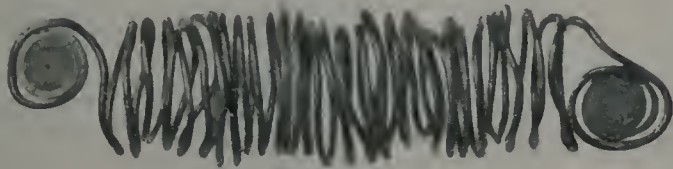
1043. Sk. $\frac{1}{1}$.



1033 a, b. Söd. $\frac{2}{3}$.



1044. Sk. $\frac{2}{3}$.



1045. Sk. $\frac{1}{1}$.



1046. Sk. $\frac{1}{1}$.



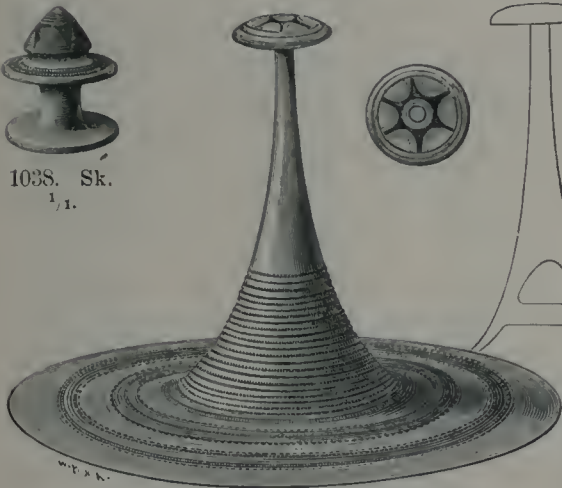
1040 a, b. Sk. $\frac{1}{1}$.



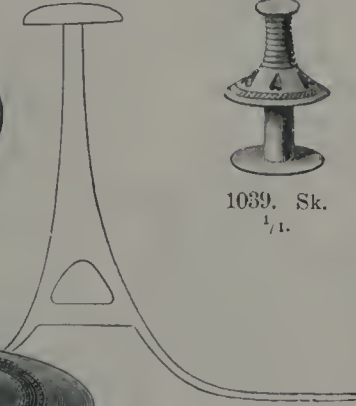
1041. Öl. $\frac{1}{1}$.



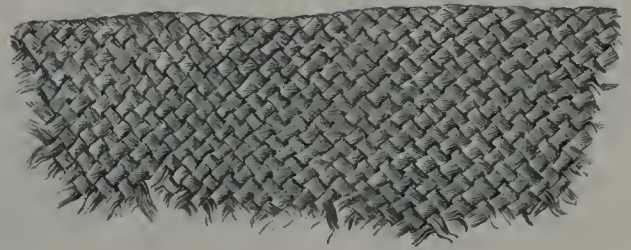
1038. Sk. $\frac{1}{1}$.



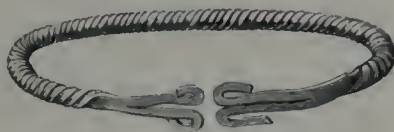
1035 a-c. Hal. $\frac{1}{2}$.



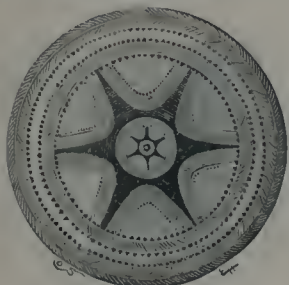
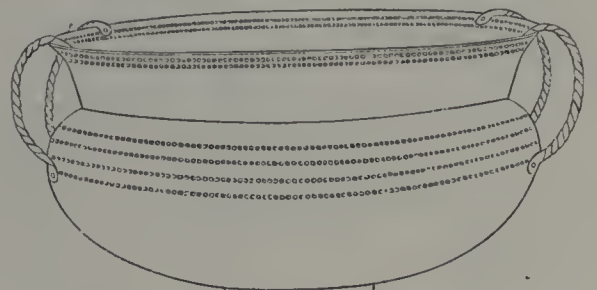
1039. Sk. $\frac{1}{1}$.



1048. Hal. $\frac{1}{1}$.



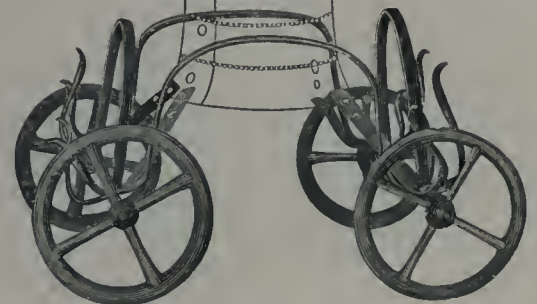
1047. Hal. $\frac{2}{3}$.



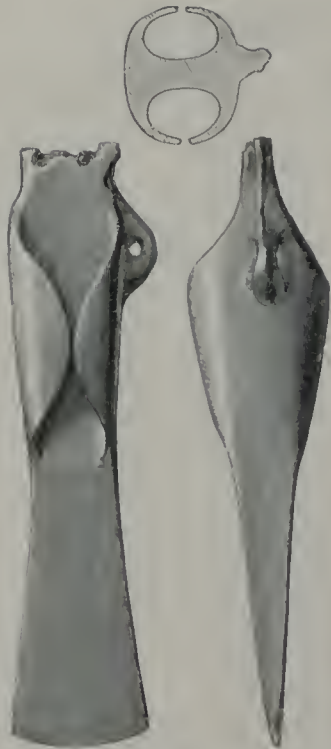
1049 a, b. Sk. $\frac{1}{2}$.



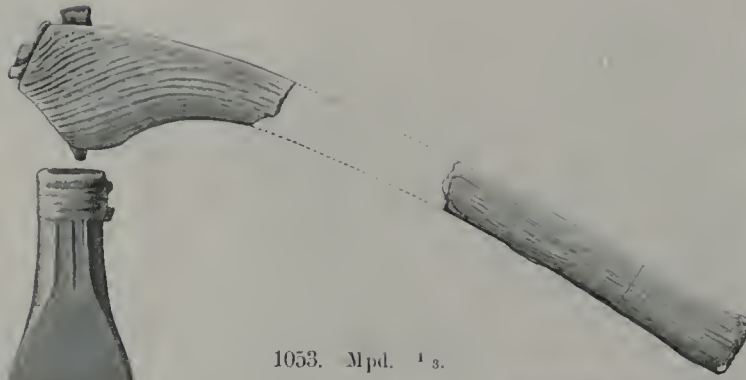
1050. Sk. $\frac{1}{1}$.



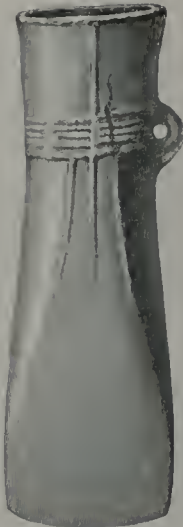
1051. Sk. $\frac{1}{5}$.



1052 a-e. Sk. 1/3.



1053. Mpd. 1/3.



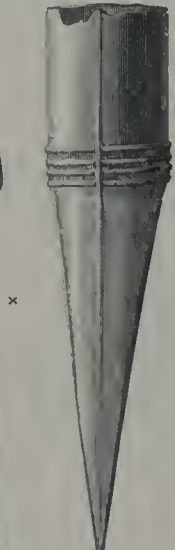
1055. Ö. G. 1/2.



1056 a, b. Sk. 1/3.



1057. Upl. 1/3.



1054 a, b. Upl. 1/3.



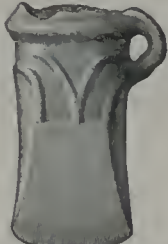
1059. Ner. 1/2.



1060. Dal. 1/3.



1067. V. G. 1/2.



1058. Sm. 1/3.



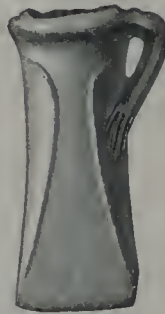
1061. Sk. 1/2.



1062. Gestr. 1/2.



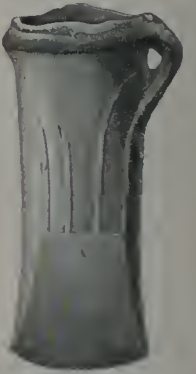
1063. Ner. 1/2.



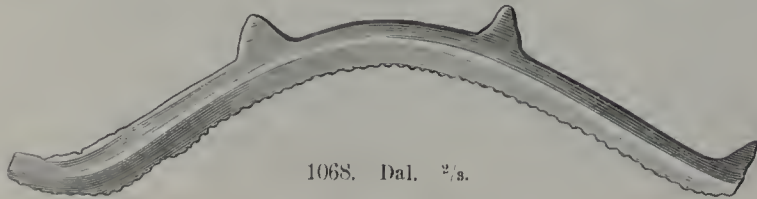
1064. G. 1/3.



1065. Upl. 1/2.



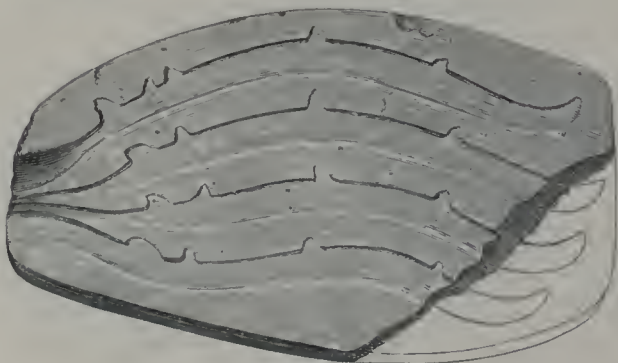
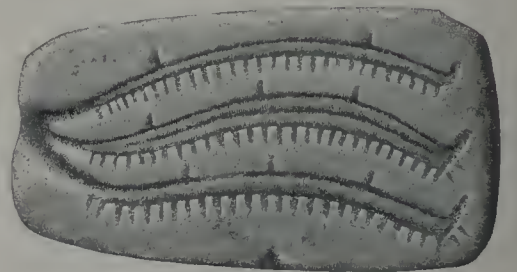
1066. Sk. 1/2.



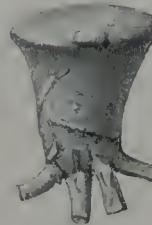
1068. Dal. 2/3.



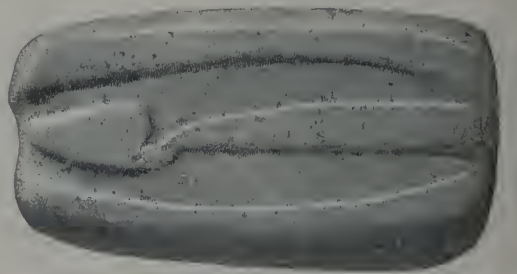
1071. Dal. 2/3.



1069 a, b. Boh. 1/3.



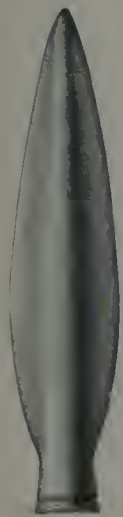
1072. Dal. 2/3.



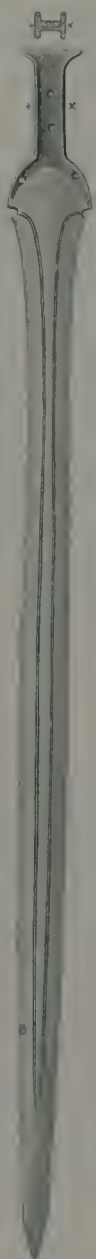
1070 a, b. Bl. 1/2.



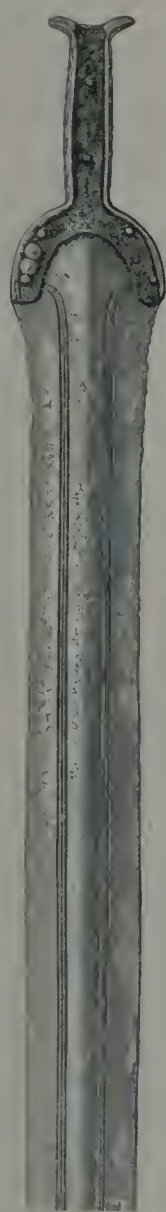
1084. V.G. 1/2.



1085. Upl. 1/3.



1073 a, b. Sk. 1/5.



1074 a. Upl. 1/3.



1074 b. Upl. 1/3.



1075 a-c. Upl. 1/1.



1076 a, b. Upl. 1/1.



1081. G. 1/3.



1080 a, b. Upl. 1/2.



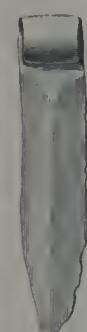
1080 a, b. Upl. 1/2.



1082. Sk. 1/2.



1087. Sk. 1/1.



1095 a, b. Upl. 1/1.



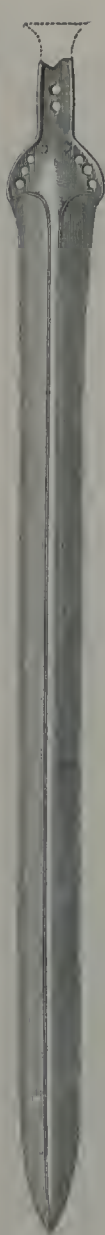
1088 a, b. Sk. 2/3.



1090. Sk. 2/3.



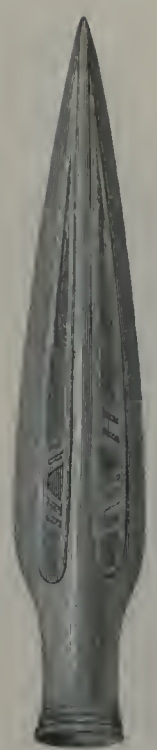
1091. Sk. 1/1.



1077 a, b. Upl. 1/5.



1078. Boh. 1/5.



1086. Sk. 1/2.



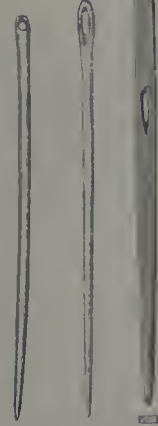
1096. Upl. 1/1.



1078. Boh. 1/5.



1097-1100. Upl. 1/2.



1092-1094. Sk. 1/1.



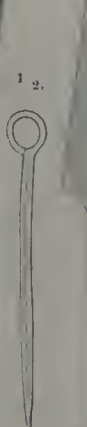
1089. Sk. 2/3.



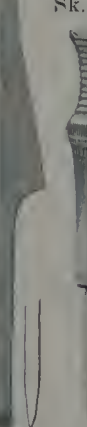
1087. Sk. 1/1.



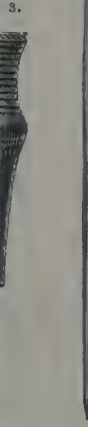
1095 a, b. Upl. 1/1.



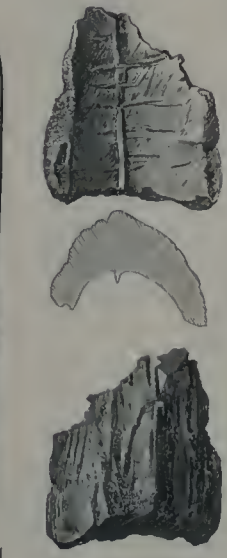
1088 a, b. Sk. 2/3.



1090. Sk. 2/3.



1091. Sk. 1/1.



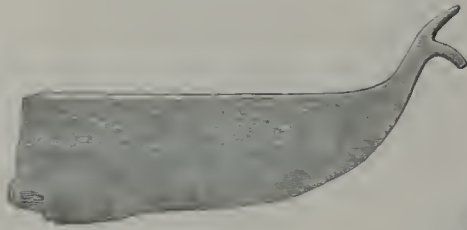
1101 a-c. Upl. 1/1.



1083 a-d. Sk. 1/3.



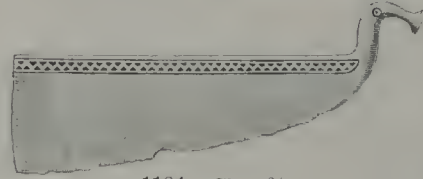
1105. G. 2 s.



1102. Sk. 2/3 s.



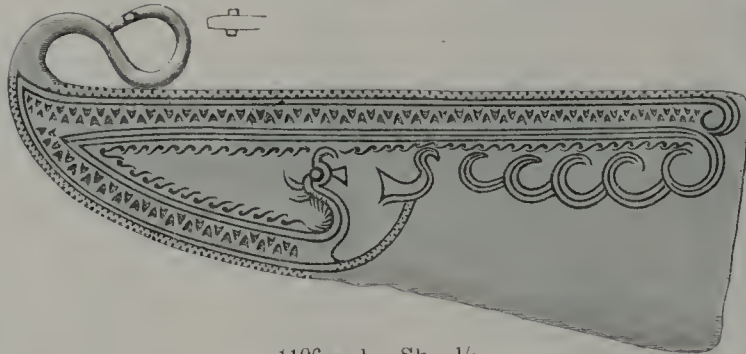
1103. Sk. 1/1.



1104. Sk. 2/3 s.



1107 a-c. Sk. 1/1.



1106 a, b. Sk. 1/1.



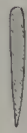
1116 a, b. Upl. 1/1.



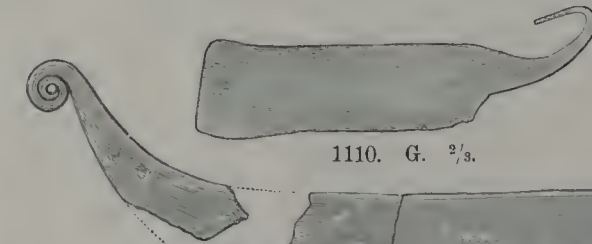
1117 a, b. Upl. 1/1.



1108 a, b. Sk. 2 s.



1120. Sk. 2/3 s.

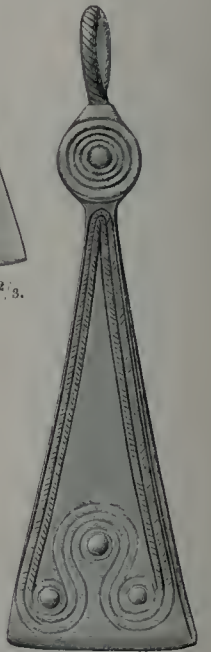


1109. Upl. 1/1.

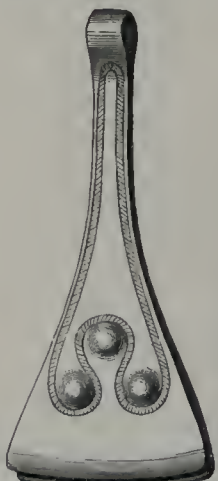
1110. G. 2/3 s.



1121. Hal. 1/1.



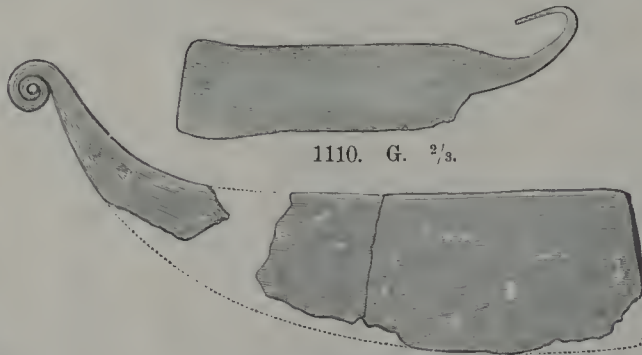
1122. Sk. 1/1.



1118. Hal. 1/1.



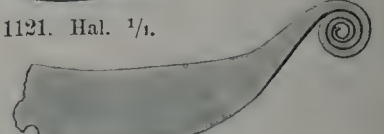
1119. Sk. 2/3 s.



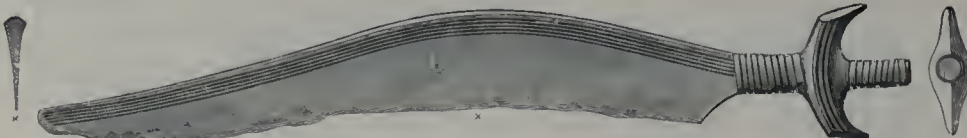
1111. Upl. 1/1.



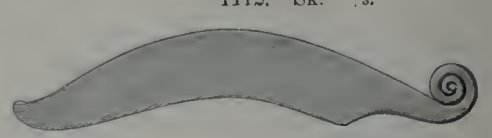
1114. Sk. 1/2



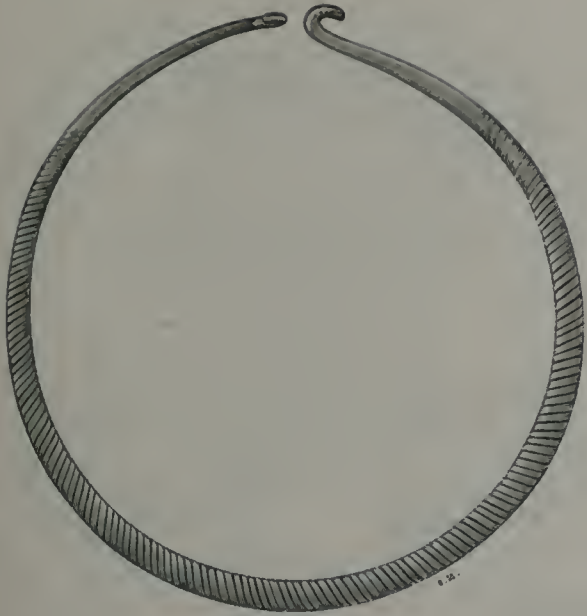
1112. Sk. 2/3 s.



1115 a-c. Sk. 1/1.



1113. Sk. 1/3 s.



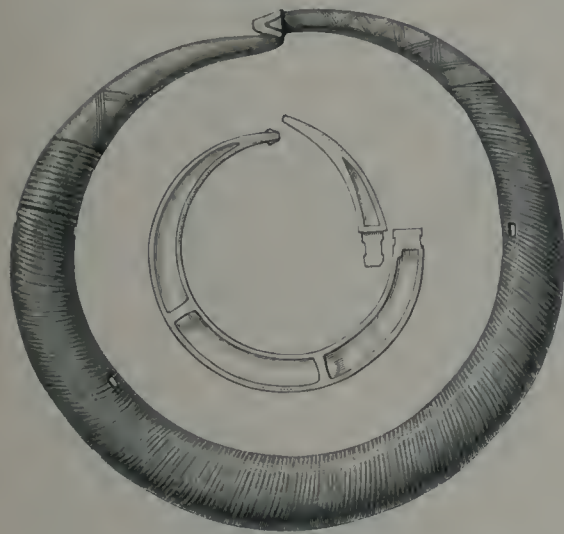
1123. Sk. $\frac{1}{3}$.



1128. Bl. $\frac{1}{1}$.



1124. Sk. $\frac{1}{3}$.



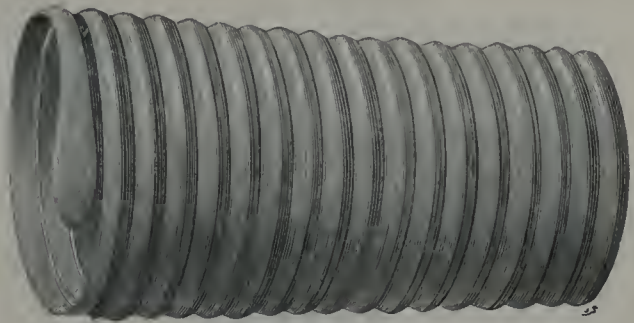
1125 a, b. Sk. $\frac{1}{3}$ ($\frac{1}{6}$).



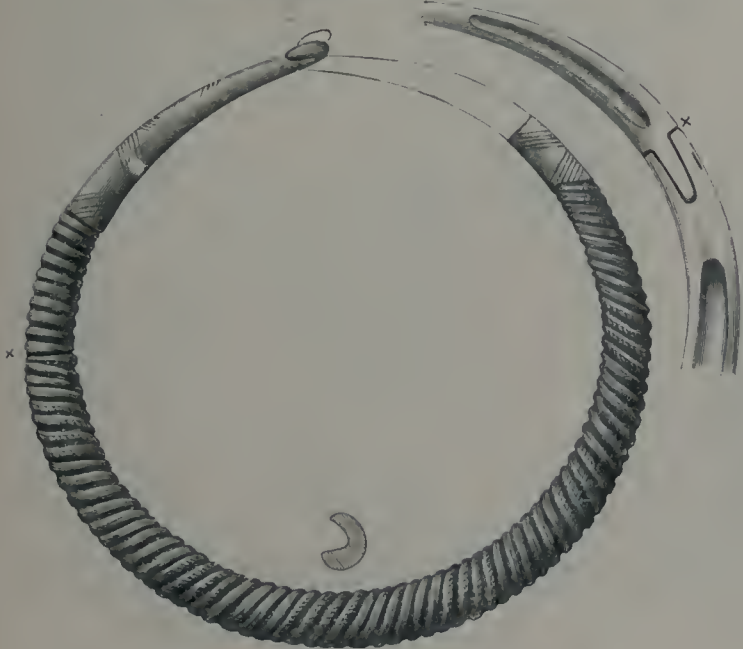
1129. Upl. $\frac{1}{1}$.



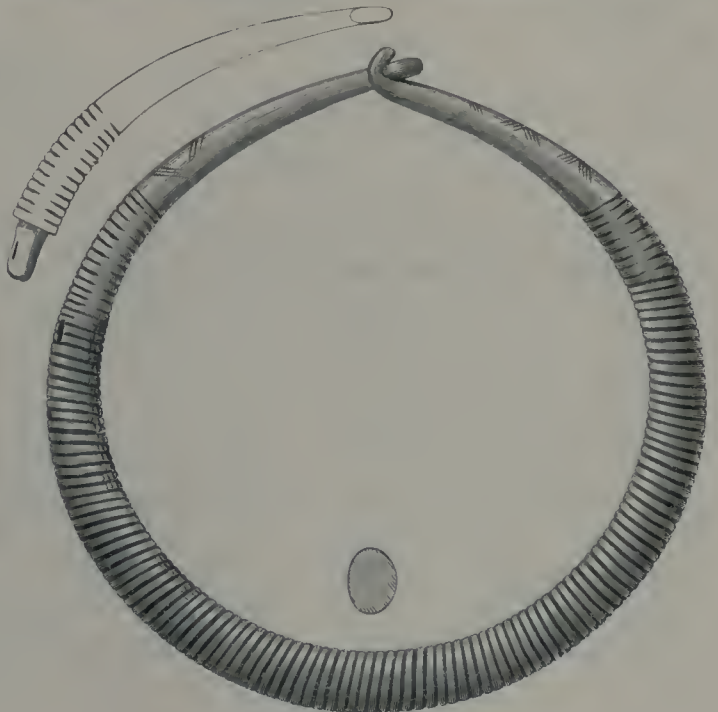
1130. Sk. $\frac{1}{1}$.



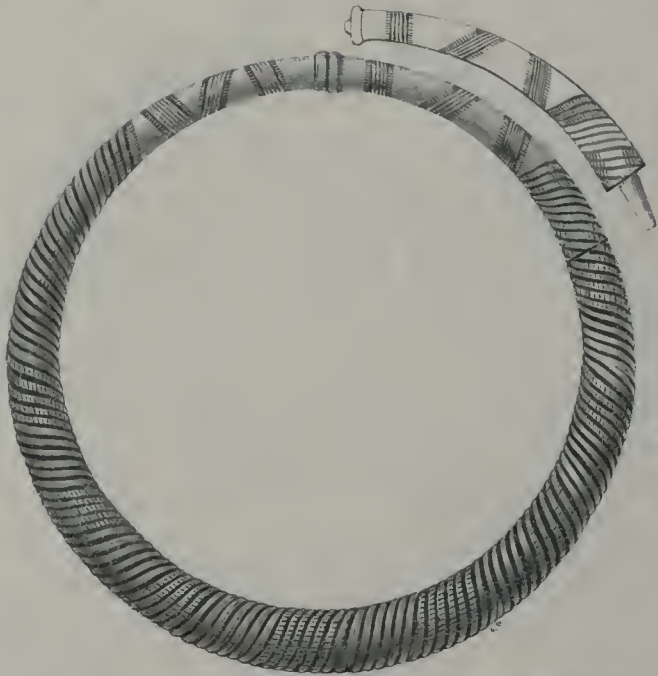
1131 a-c. Sk. $\frac{1}{3}$.



1126 a-c. Sk. $\frac{1}{2}$.



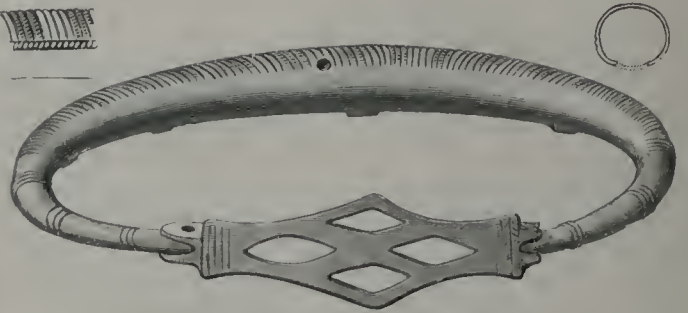
1127 a-c. Sk. $\frac{1}{2}$.



1132 a, b. Sk. 1/2.



1141. Upl. 1/1.



1133 a-c. Sk. 1/2.



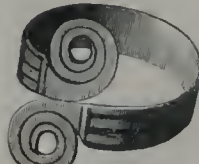
1134. Sk. 1/1.



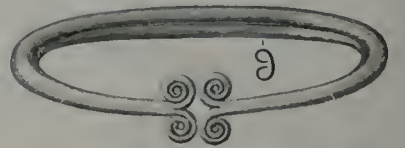
1135 a, b. Boh. 2/3.



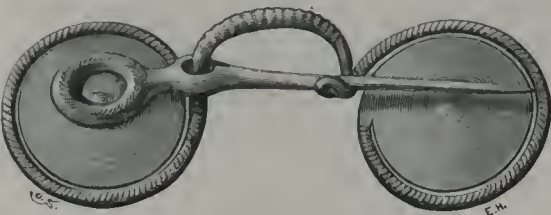
1136 a, b. G. 2/3.



1139. Ö.G. 1/1.



1137 a, b. V.G. 2/3.



1148. Sk. 1/2.



1143. Boh. 1/1.



1142. Upl. 1/1.



1138. Dal. 2/3.



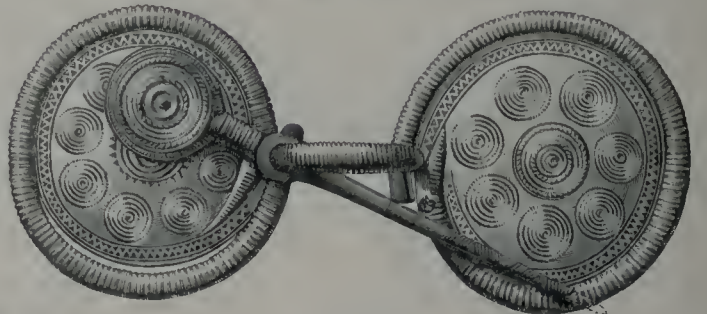
1140 a-c. Upl. 1/1.



1151 a-f. Upl. 2/3.



1144. Bl. 1/1.



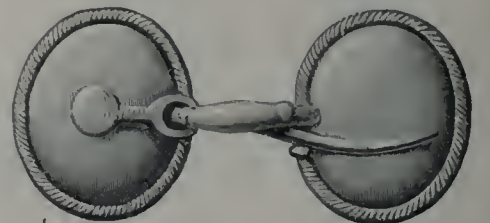
1149. Upl. 2/3.



1145. Ö.G. 1/1.



1146. V.G. 2/3.



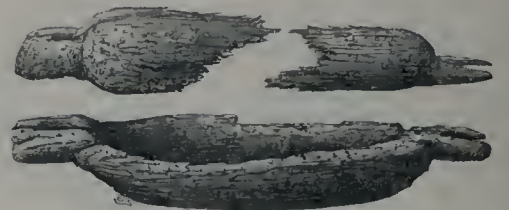
1150. V.G. 1/2.



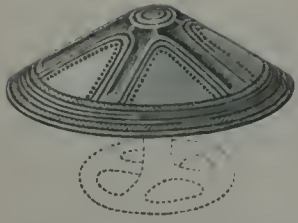
1147 a, b. Upl. 1/1.



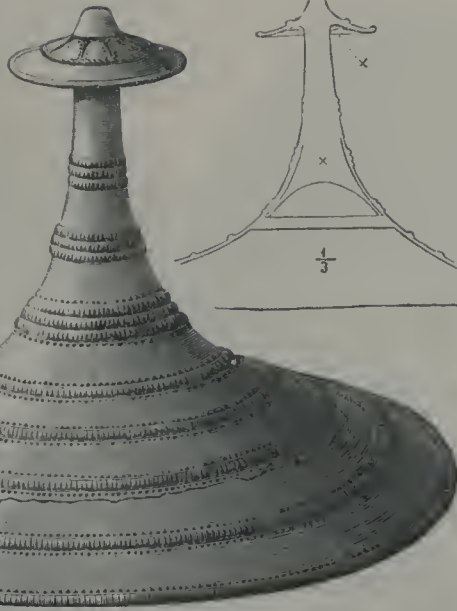
1152. Dal. 1/2.



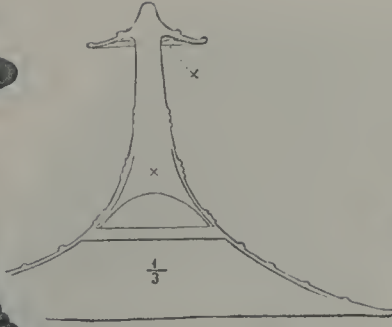
1153 a, b. Sk. 1/10.



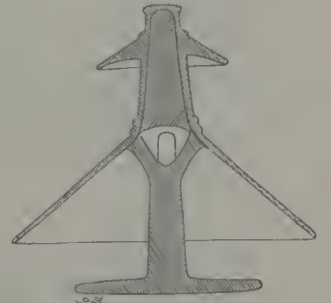
1154. Dal. 2/3.



1156 a-c. Sk. 1/2 (1/3).



1155 a, b. Sk. 1/4.



1157 a-c. Sk. 1/2.



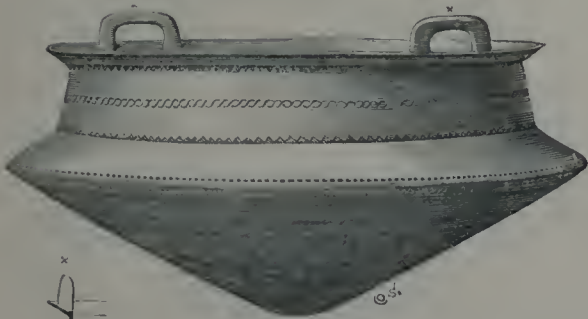
1157_d. Sk. 1/2.



1158 a. Sk. 2/3.



1159 a. Sk. 1/2.



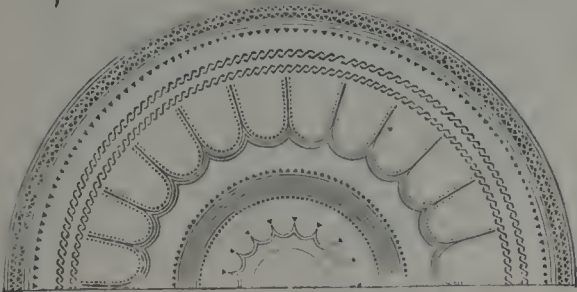
1161. Sk. 1/2.



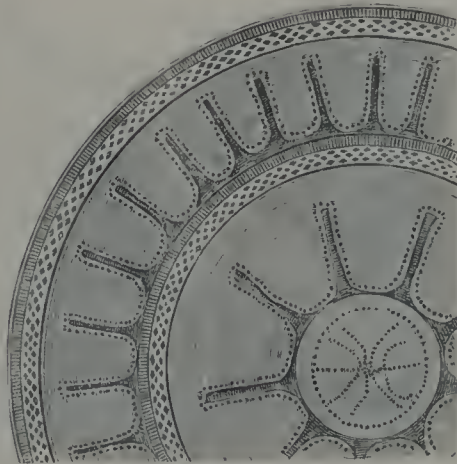
1159 b. Sk. 1/2.



1162. Sk. 1/2.



1160 a, b. G. 1/2.



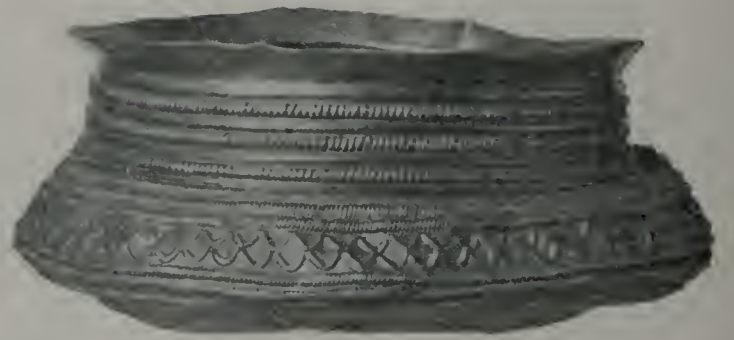
1158 b. Sk. 2/3.



1163. Sk. 2/3.



1164. Hal. 1/7.



1165 a. Hal. 2/8.



1165 b. Hal. 2/8.



1166 a. Bl. 2/8.



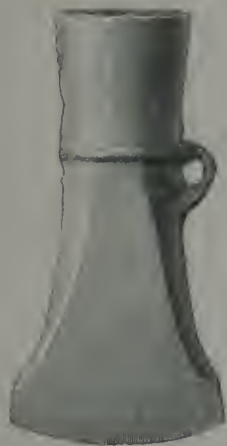
1166 b. Bl. 2/8.



1167 a-d. Sk. 1/4.



1169. Sk. 1/2.



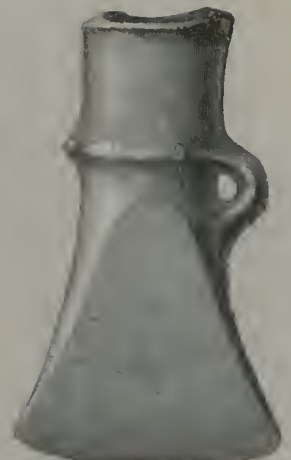
1170. Ö. G. 1/2.



1168 a-c. Öl. 1/2.



1171. Söd. 1/2.



1172. Sk. 1/2.



1173. Upl. 1/2.



1174. Sk. 1/2.



1175 a. Boh. 2/s.



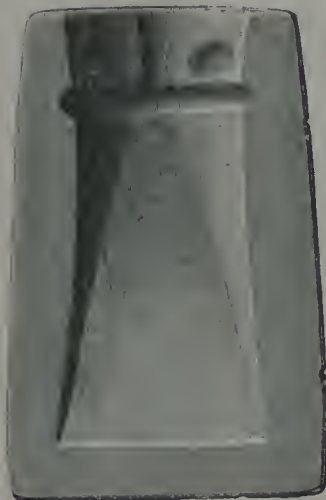
1176 b. Boh. 2/s.



1179 a, b. Lapl. 1/2.



1180 a, b. Upl. 1/2.



1181. Boh. 2/s.



1177. Upl. 1/2.



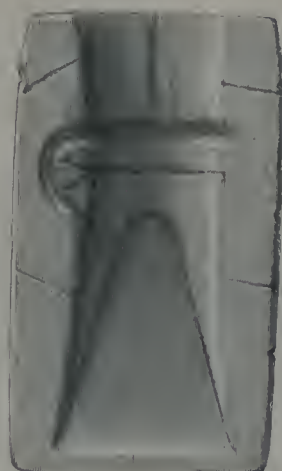
1178. Ö. G. 2/s.



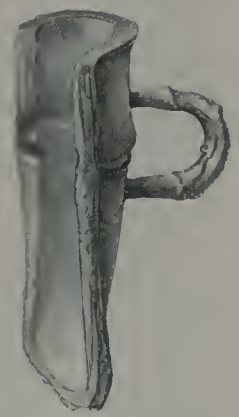
1182. Hal. 1/2.



1183 a, b. Sk. 2/s.



1184. Hal. 2/s.



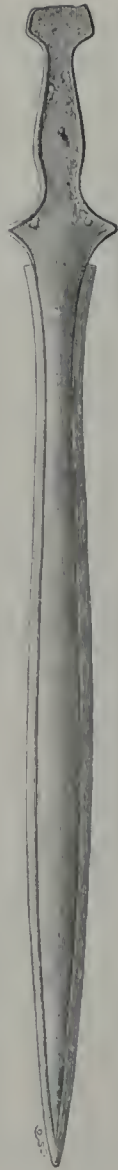
1185. G. 1/2.



1196. Söd. 1/5.



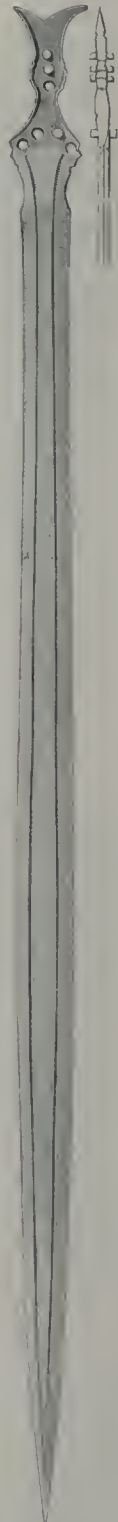
1197. Upl. 1/5.



1198. Sk. 1/4.



1199. a-c. Upl. 1/5.



1200 a. b. Sk. 1/5.



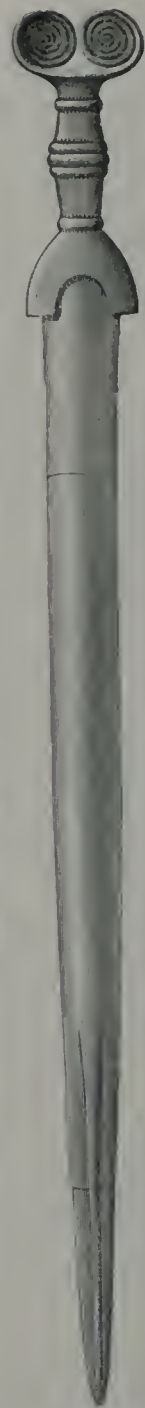
1201 a, b. Mpd. 1/4.



1202 a. Upl. 1/5.



1202 b. Upl. 1/5.



1203 a, b. Bl. 1/5.



1204. Sk. 2/5.



1205. G. 1/1.



1206. Hal. 1/2.



1186. Sk. 1/2.



1187. Bl. 1/2.



1188. Sk. 1/2.



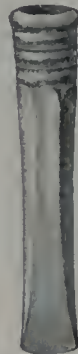
1189. Öl. 2/5.



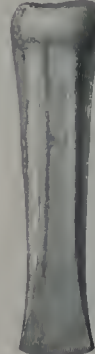
1190. Sk. 1/2.



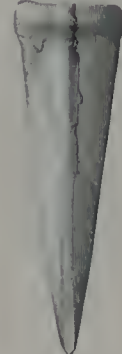
1191. Sk. 1/2.



1192. Öl. 1/2.



1193 a, b.



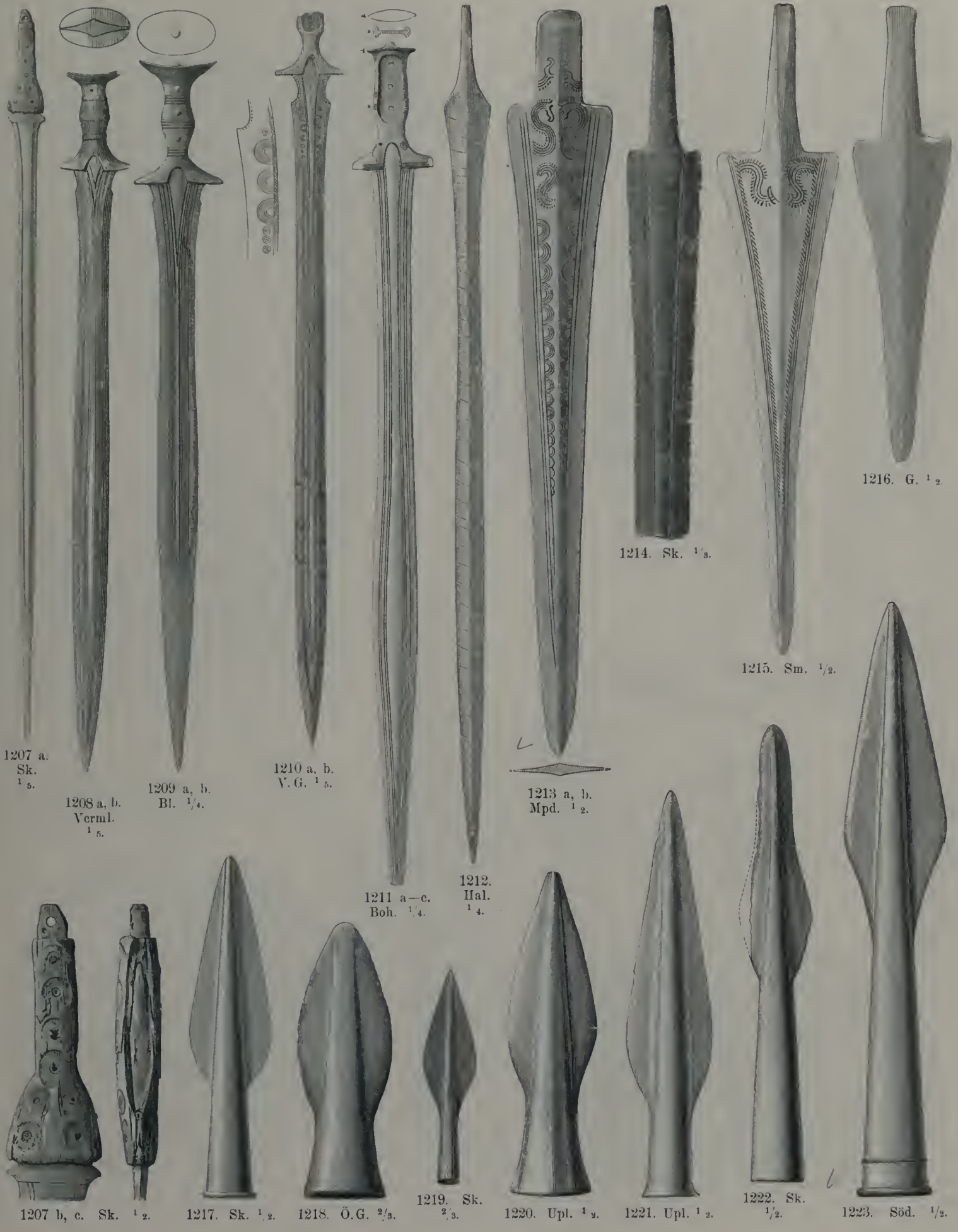
Söd. 2/5.



1194. Hal. 1/2.



1195. Sk. 1/2.

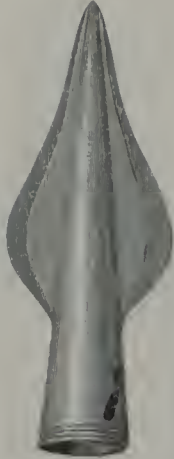




1228 a. Öl. 1/3.



1229. Sk. 1/2.



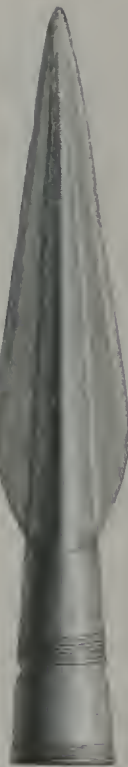
1224. Öl. 1/2.



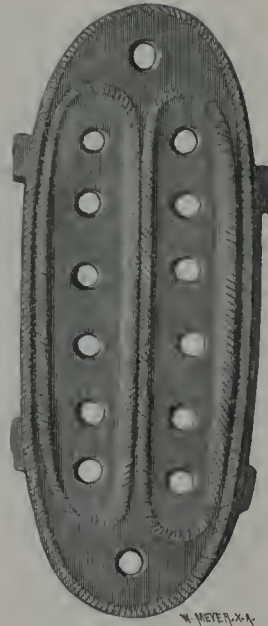
1230. Sk. 1/2.



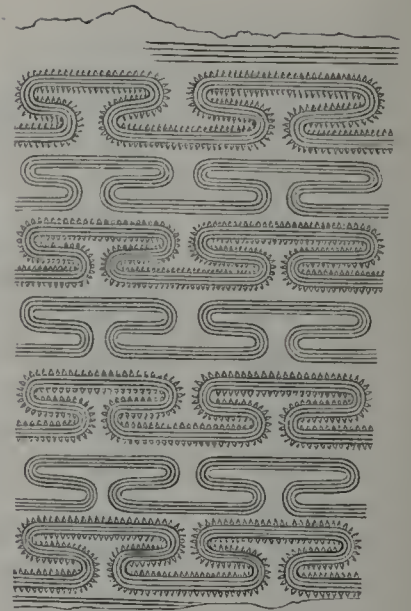
1225. Söd. 1/2.



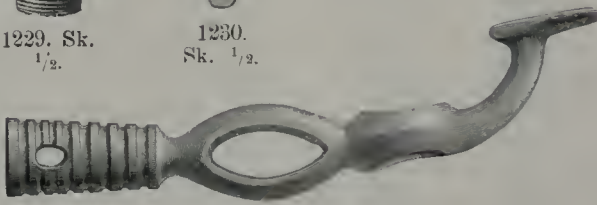
1226. Ö.G. 1/2.



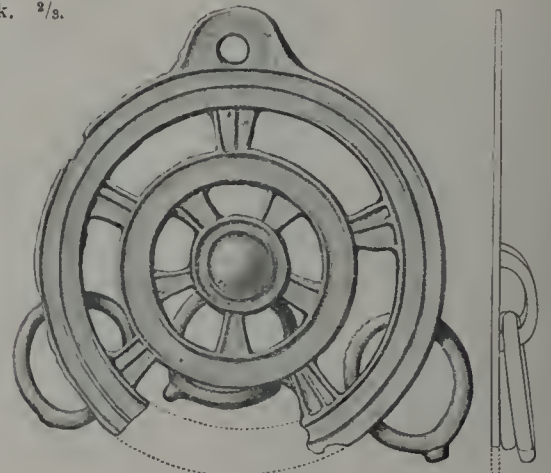
1232. Sk. 2/3.



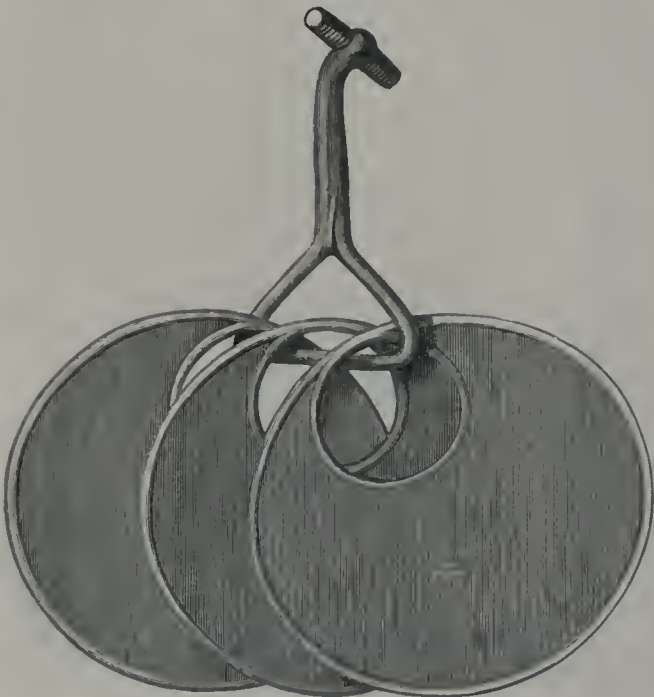
1228 b. Öl. 1/1.



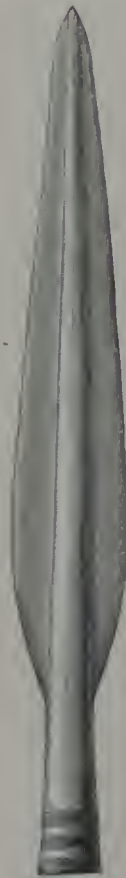
1231. Sk. 2/3.



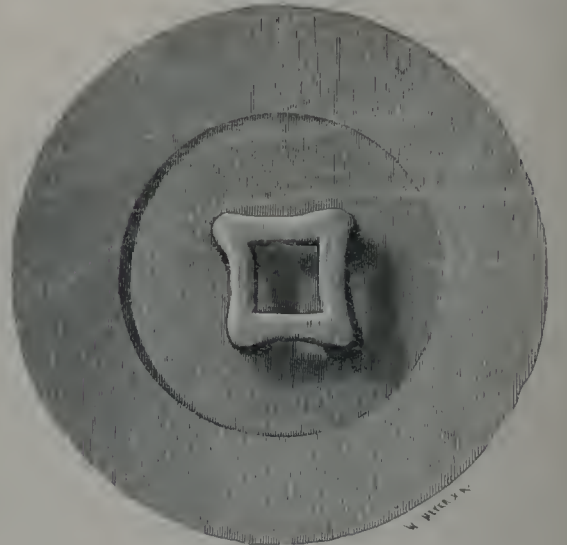
1235 a, b. Upl. 2/3.



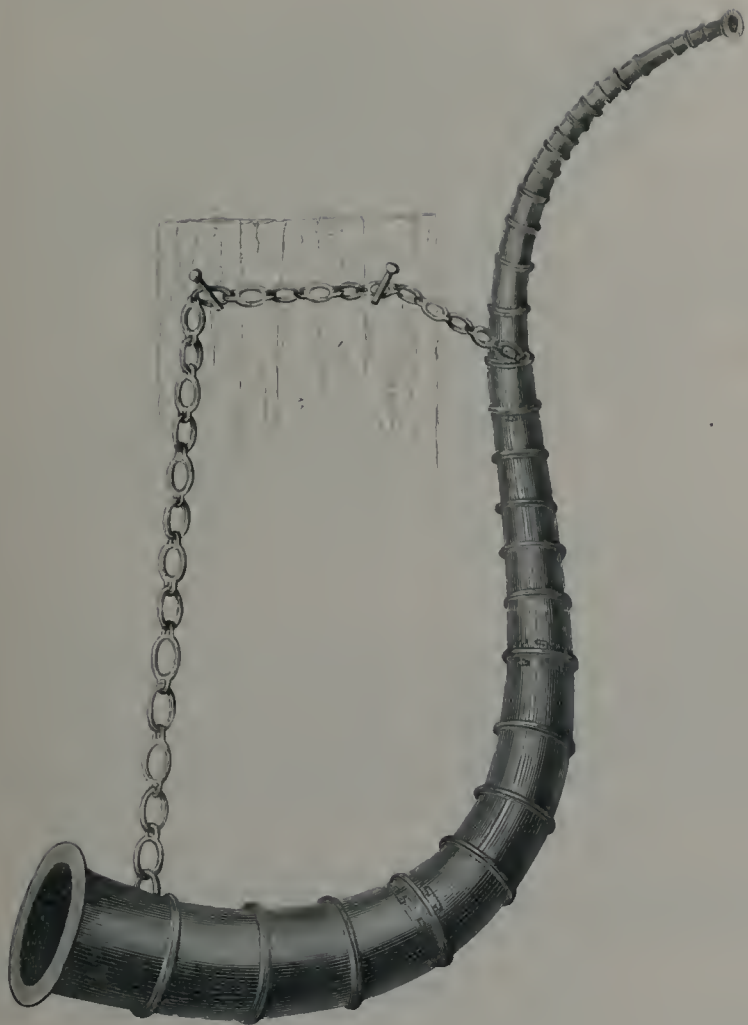
1234. G. 2/3.



1227. G. 1/3.



1233 a, b. Sk. 2/3.



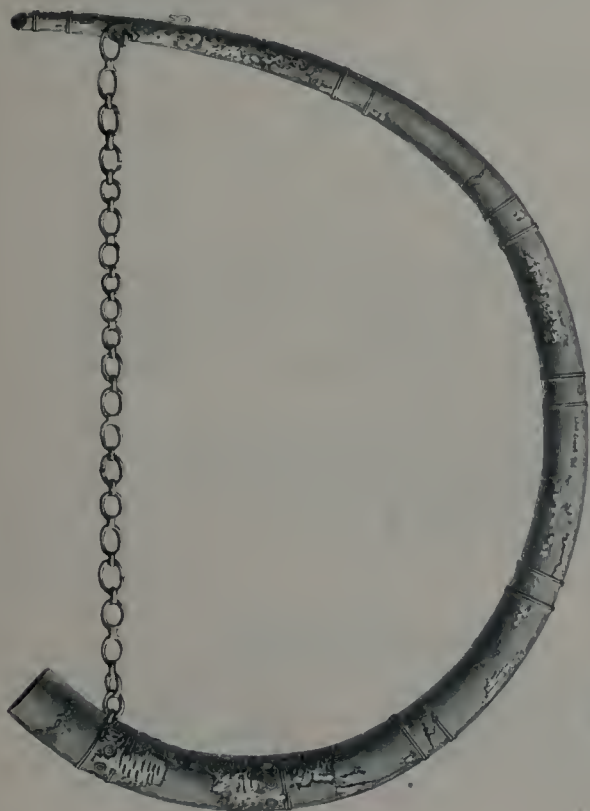
1236. Sk. 1/5.



1238 a. Öl. 1/12.



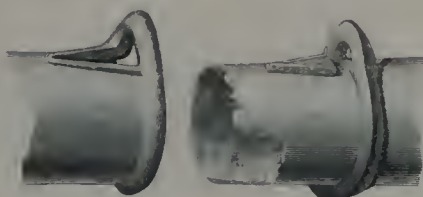
1238 b. Öl. 1/2.



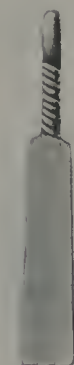
1237. Sk. 1/8.



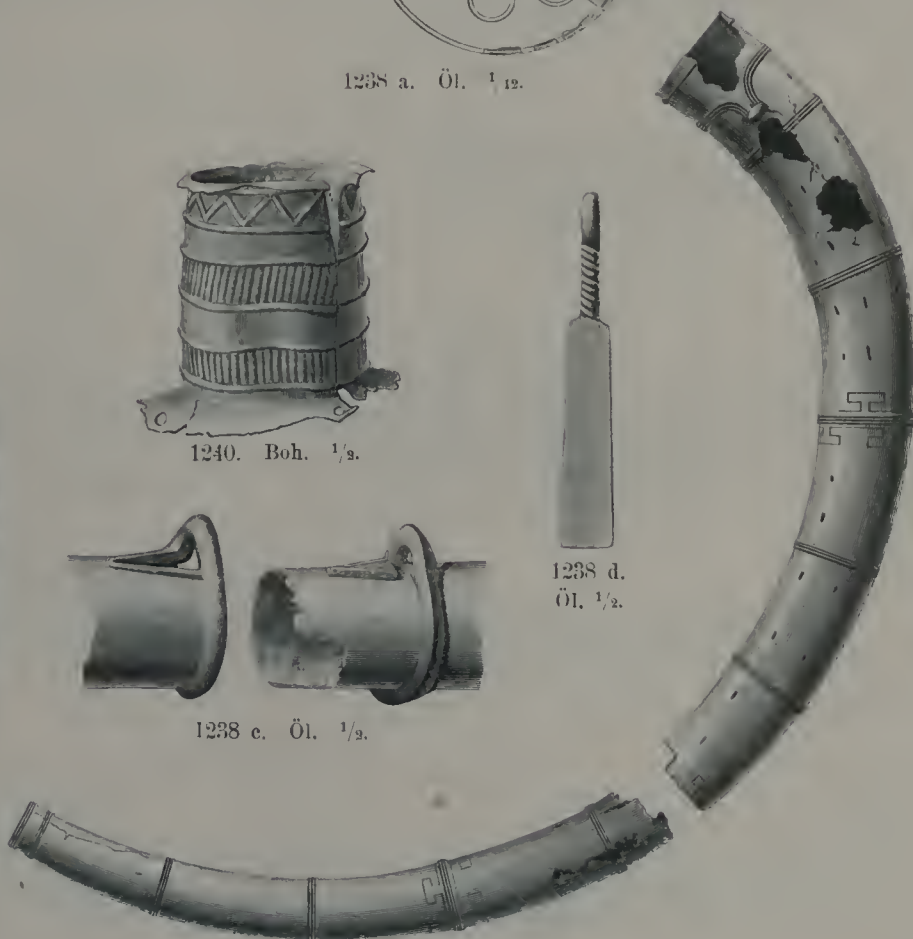
1240. Boh. 1/8.



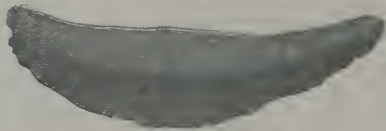
1238 c. Öl. 1/9.



1238 d. Öl. 1/2.



1239. Öl. 1/3.



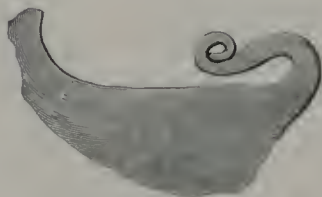
1241. Ö. G. 2/3.



1243. Hal. 1/3.



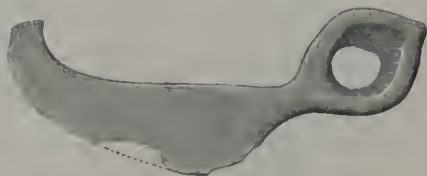
1245. Sk. 2/3.



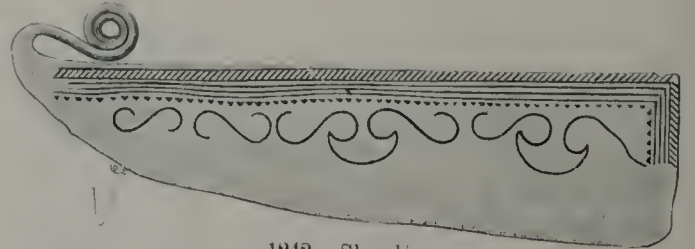
1247. Bl. 1/1.



1249. Hal. 1/1.



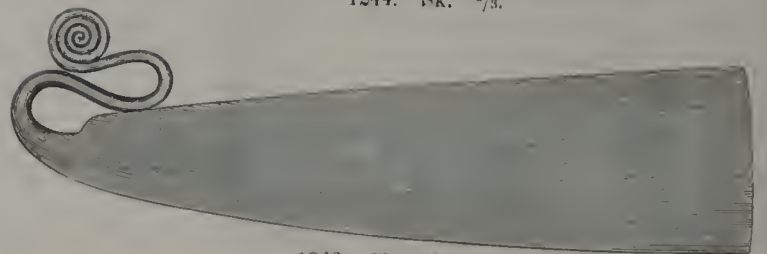
1250. Sk. 1/1.



1242. Sk. 1/1.



1244. Sk. 2/3.



1246. Sk. 1/1.



1248. Öl. 1/3.



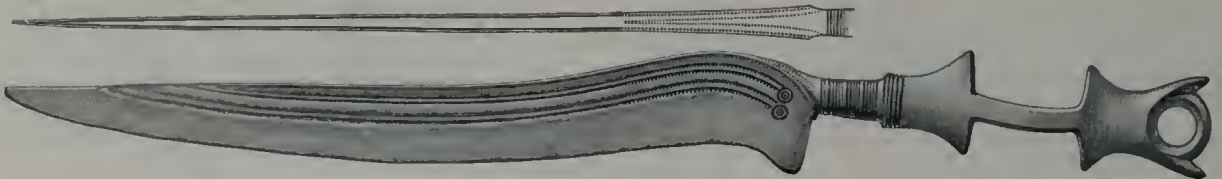
1251 a, b. Sk. 1/3.



1252 a, b. Sk. 1/3.



1253. Ö. G. 1/3.



1254 a, b. G. 1/3.



1255. Sk. 2/3.



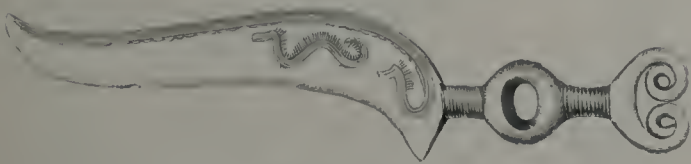
1257. Sk. 2/3.



1256. Hal. 2/3.



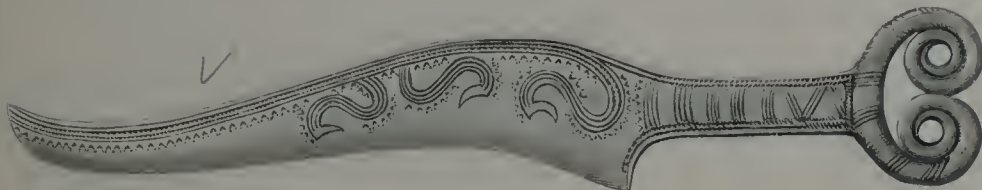
1258. V. G. 2/3.



1259. Hal. 2/3.



1260. Hal. 2/3.



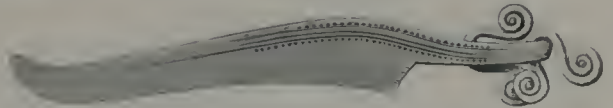
1261. Sk. 1/1.



1262. Sk. 2/3.



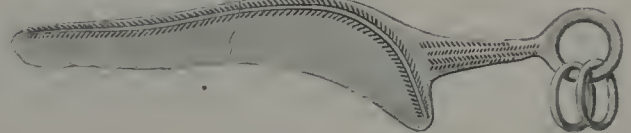
1263. Sk. 1/1.



1264. Sk. 2/3.



1265. V. G. 2/3.



1266. Sk. 2/3.



1268 a, b. Mpd. 1/2.



1267. Hal. 2/3.



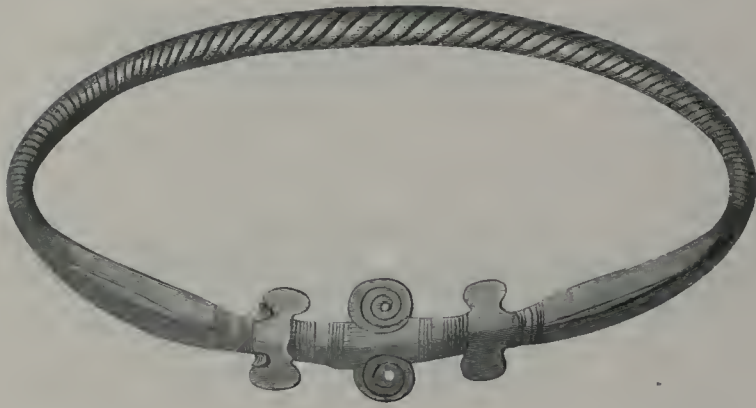
1270. Upl. 1/2.



1269. Boh. 2/3.



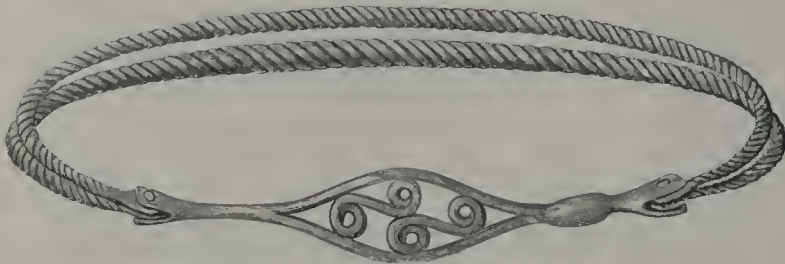
1271 a, b. Öl. 2/3.



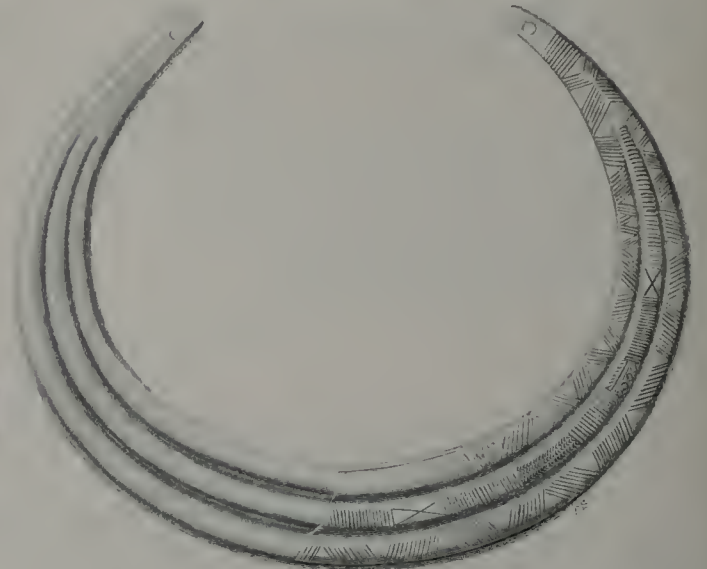
1272 a. Boh. 1/2.



1272 b. Boh. 1/2.



1273. Boh. 2/3.



1274. Sm. 1/3.



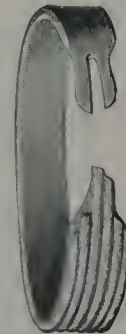
1276. Boh. 2/3.



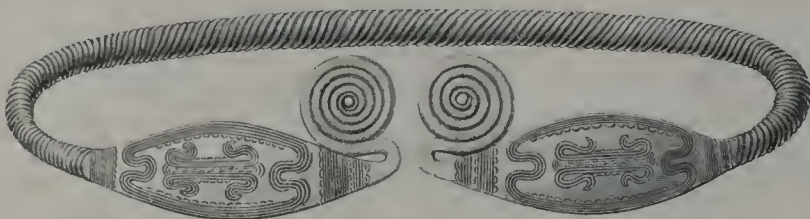
1275. Sk. 1/3.



1277. Vrml. 1/3.



1280. Öl.
1/1.



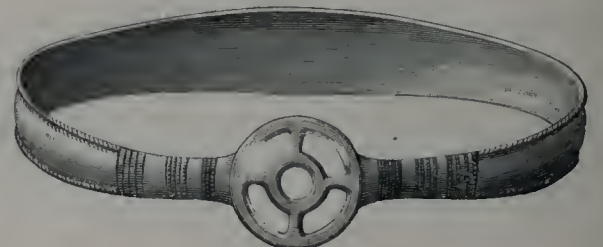
1278. 1/2.



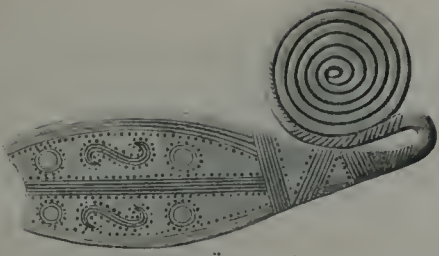
1281 a, b. Sk. 1/1.



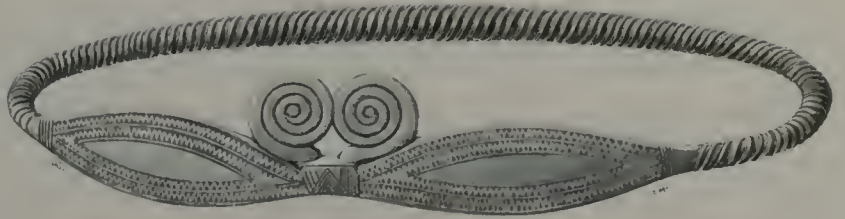
1279. Vrml. 1/3.



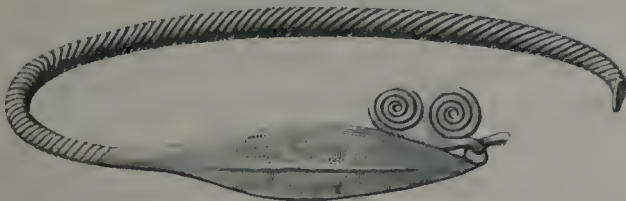
1282. V. G. 2/3.



1288. Ö. G. 1/2.



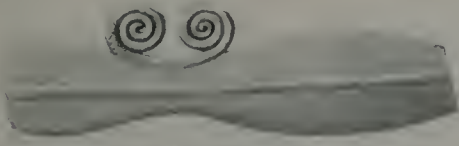
1291. V. G. 1/2.



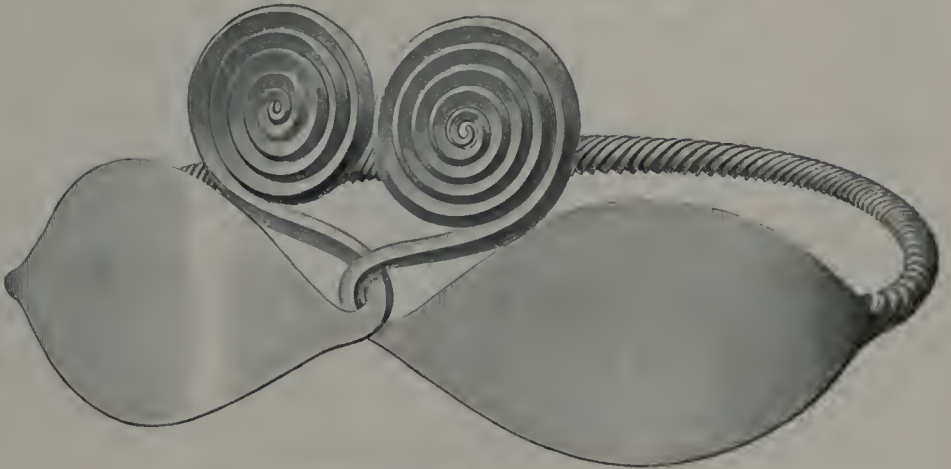
1289. Öl. 1/3.



1292. Vstml. 1/2.



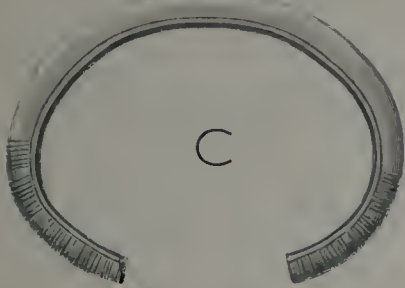
1290. Sk. 1/2.



1293. Sm. 1/2.



1283. V. G. 1/4.



1284 a, b. Hal. 1/2.



1294. Boh. 1/2.



1285. Upl. 2/3.



1286. Sk. 2/3.



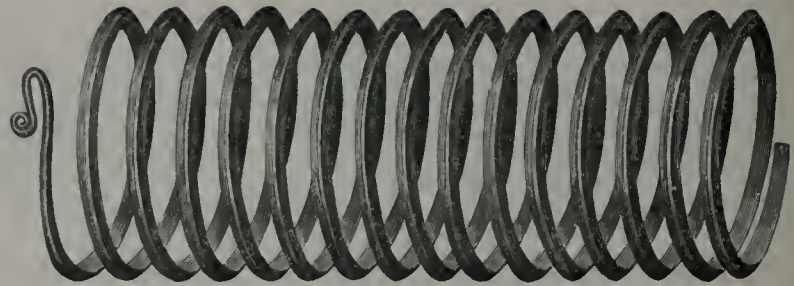
1287. Öl. 2/3.



1295. Boh. 1/2.



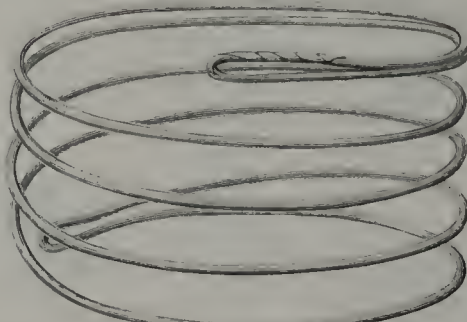
1296. Ö. G. 1/2.



1301. Vrml. 1/2.



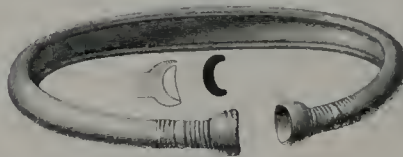
1297. G. 1/2.



1302. Boh. 2/3.



1303. Söd. 1/2.



1304 a-c. Sk. 2/3.



1305. V. G. 2/3.



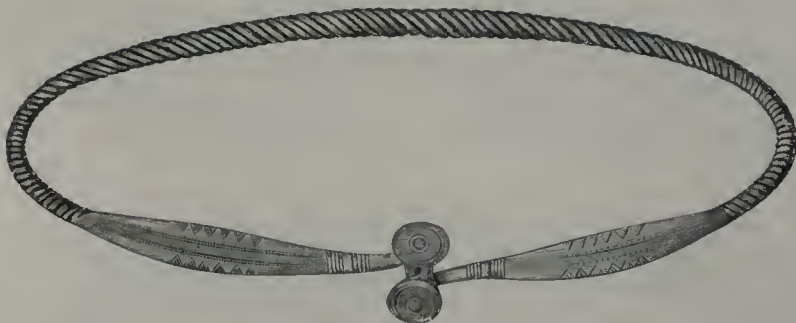
1298. Sk. 1/3.



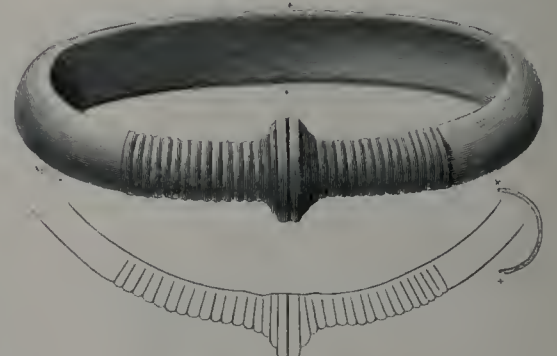
1306 a-d. Sk. 2/3.



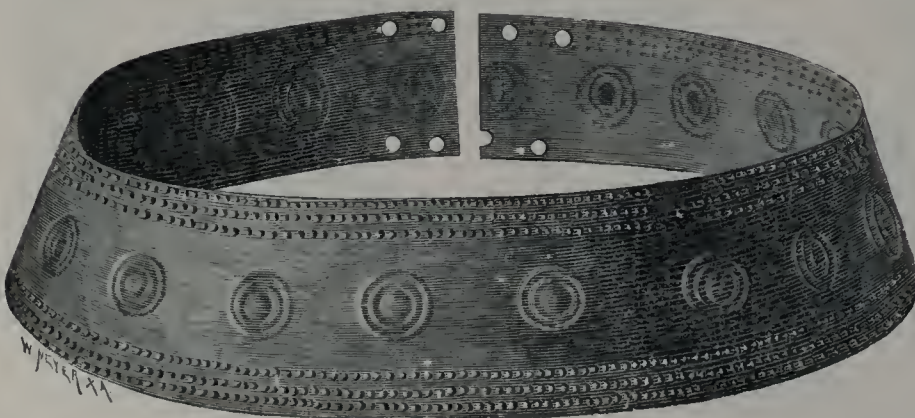
1307. Sk. 2/3.



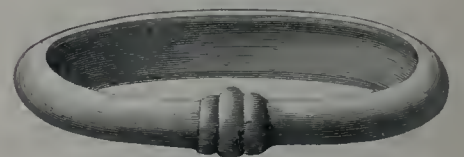
1299. Hal. 1/3.



1308 a-c. Sk. 3/4.



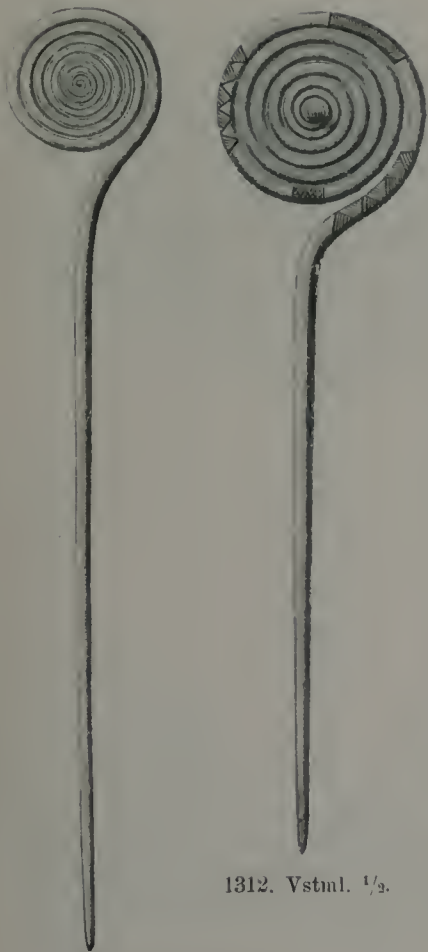
1300. Söd. 3/4.



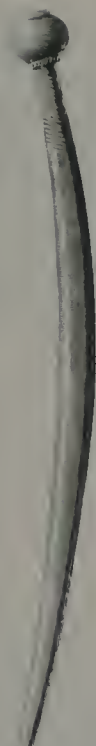
1309. Sk. 3/4.



1310. Sk. 1/4.



1312. Vstul. 1/3.



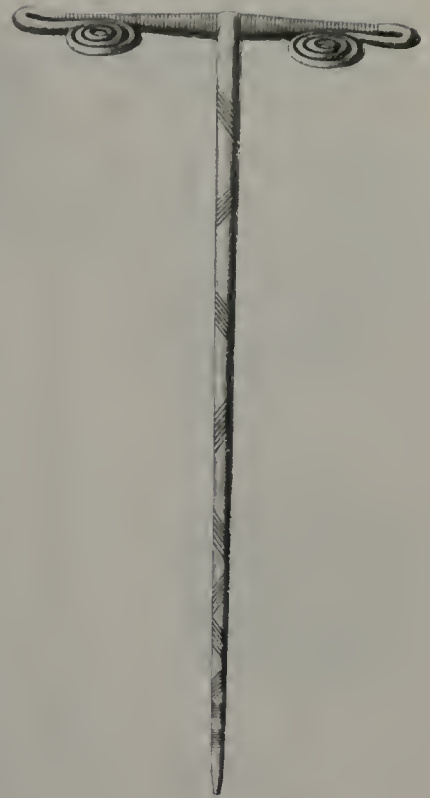
1313. Sk. 1/1.



1317. G. 1/4.



1319. Öl. 2/3.

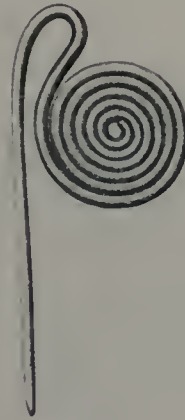


1323. Upl. 2/3.

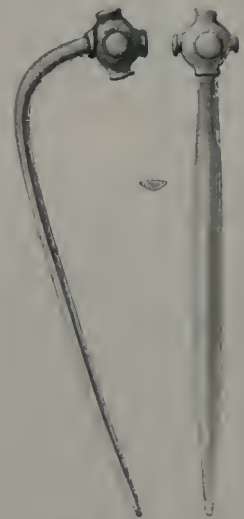
1311. Söd. 1/2.



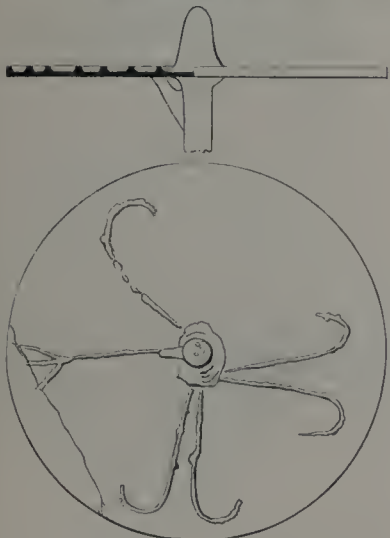
1315. G. 1/4.



1320. Upl. 2 s.



1322 a-c. Boh. 2/3.



1314 a-c. Boh. 1/2.



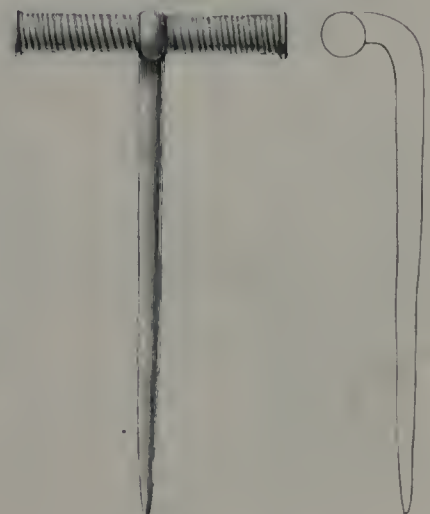
1316. G. 1/4.



1318. G. 2/3.



1321. Upl. 2/3.



1324 a, b. Sk. 1/1.



1325. Ö. G. 1/3.

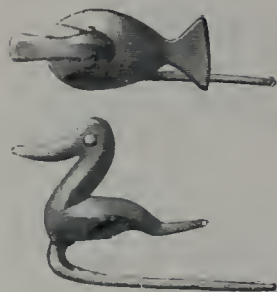
1326. Ö. G. 2/3.



1329. Upl. 2/3.



1331 c. Söd. 1/2.



1336 a, b. G. 2/3.



1327. V. G. 1/4.



1330. Upl. 2/3.



1334. Sk. 2/3.



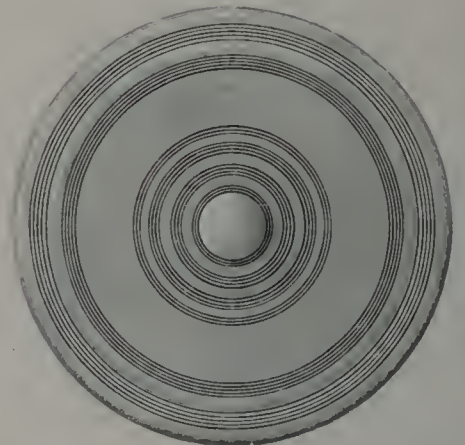
1333. ÖI 2/3.



1328 a, b. Sk. 1/1 o. 1/2.



1331 a, b. Söd. 1/2.



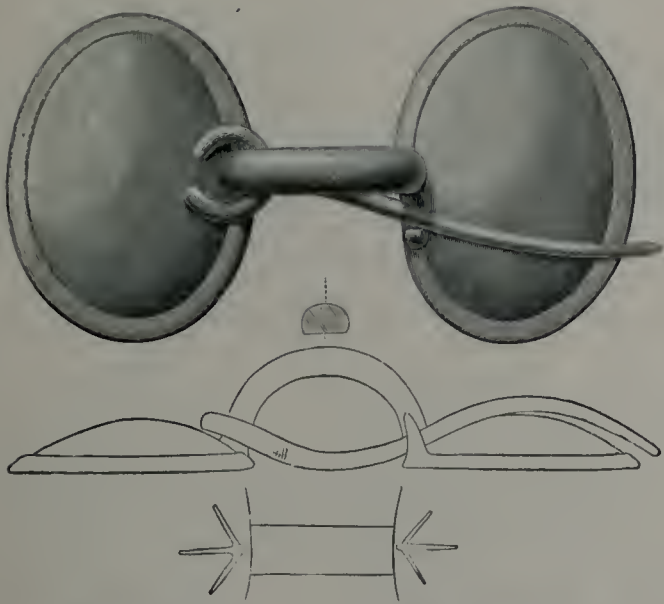
1332 a, b. Vstml. 2/3.



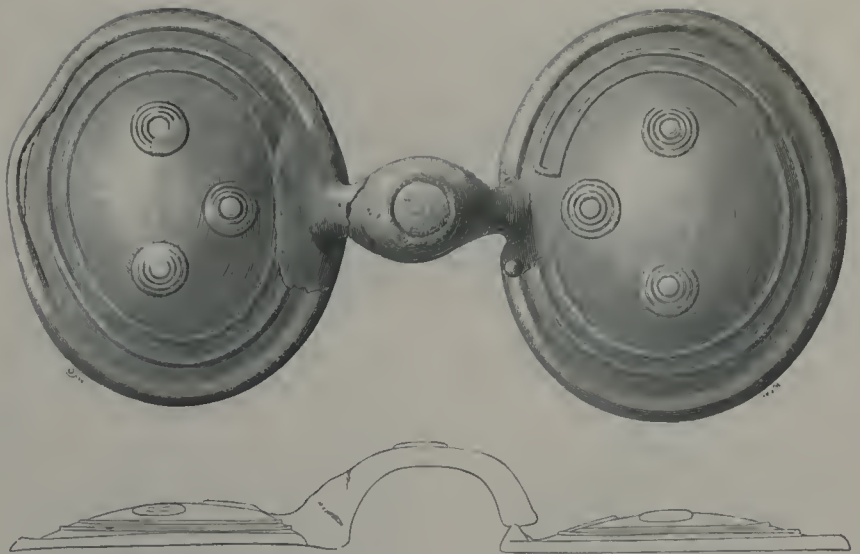
1335. G. 2/3.



1337. G. 1/1.



1338 a-d. Öl. 2/3.



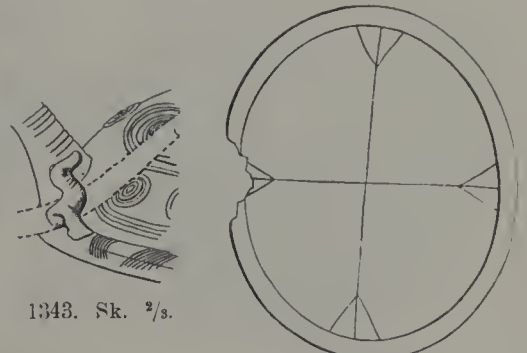
1339 a, b. Ö. G. 2/3.



1340. Boh. 2/3.



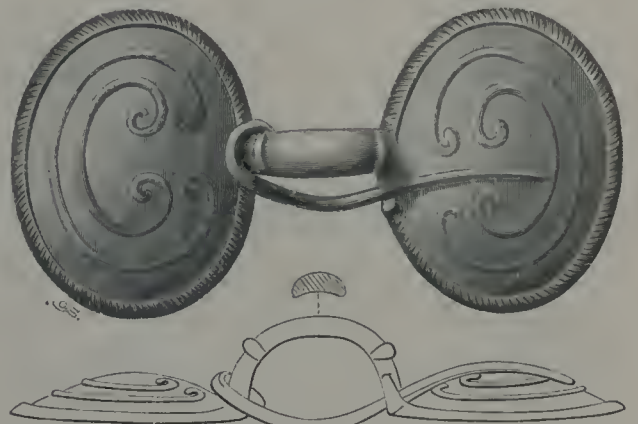
1342 a. Boh. 2/3.



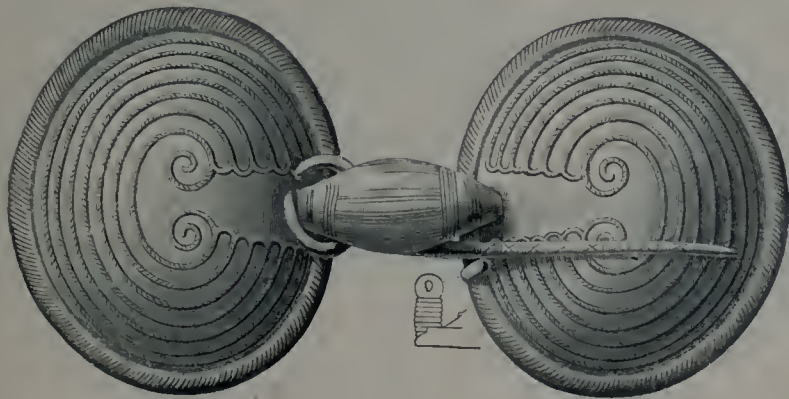
1342 b. Boh. 2/3.



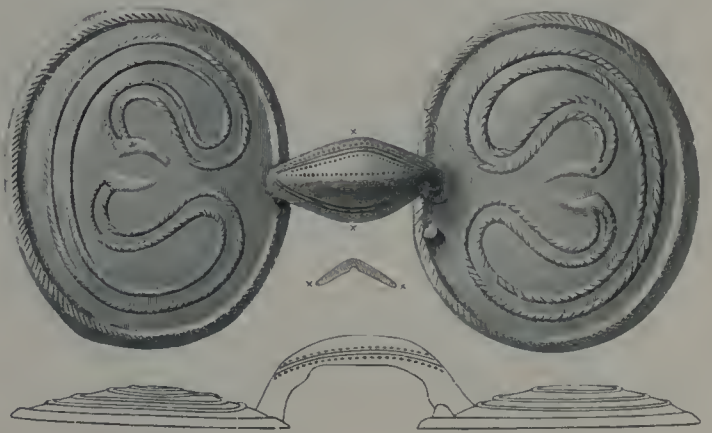
1341. Öl. 1/2.



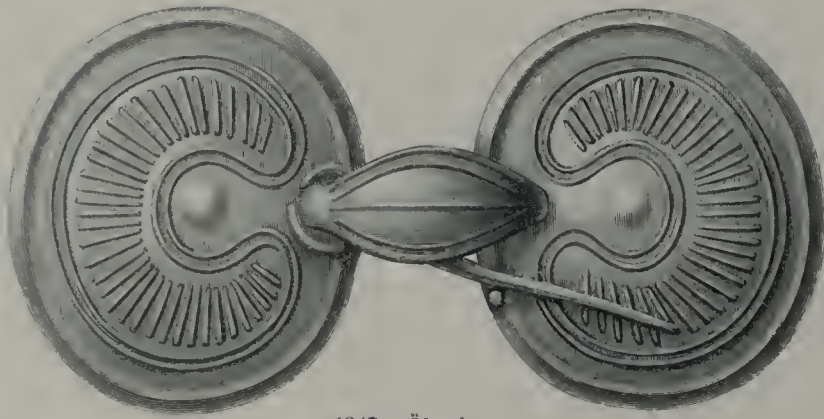
1344 a-c. Öl. 2/3.



1345 a, b. Sk. 1/2.



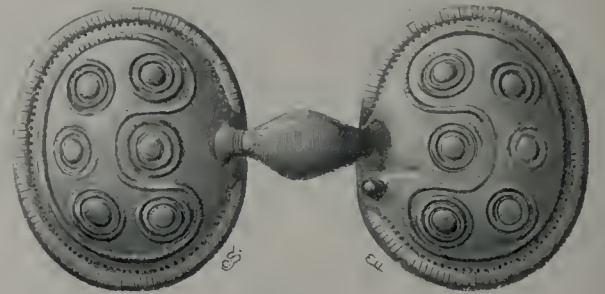
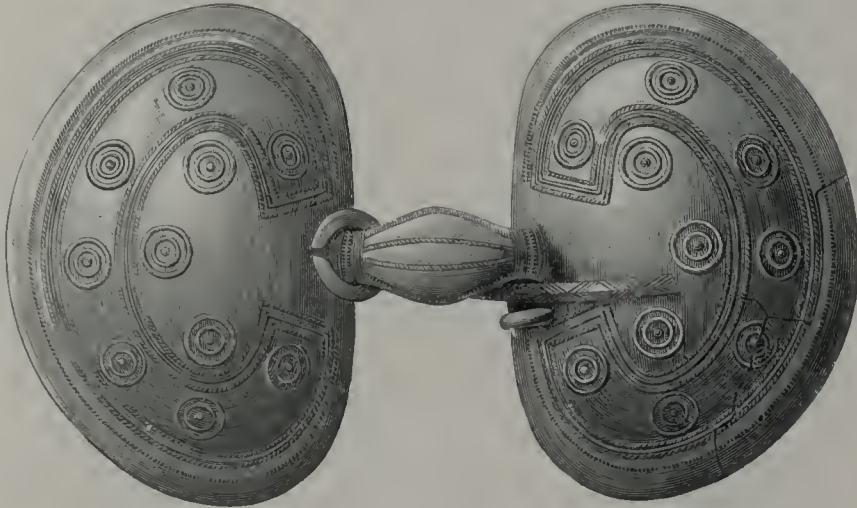
1346 a-c. Öl. 1/2.



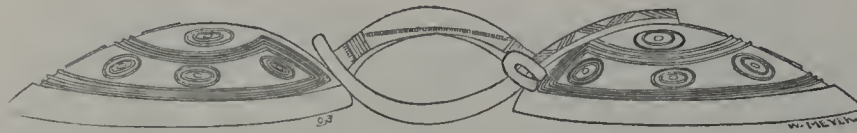
1347. Öl. 1/2.



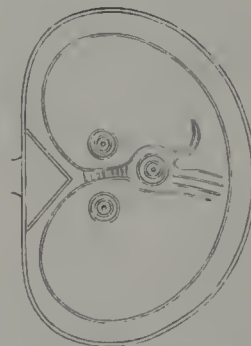
1348. Sk. 1/2.



1349. Sk. 1/2.



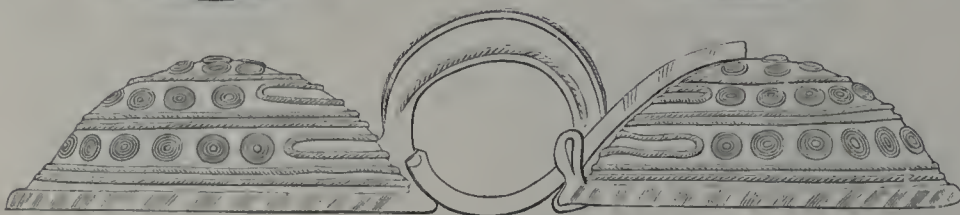
1350 a, b. G. 1/2.



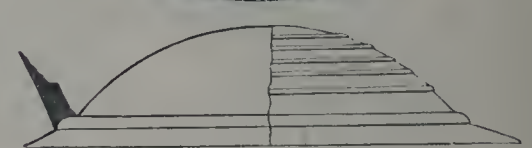
1350 c. G. 1/2.



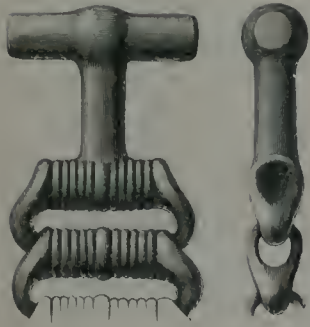
1351. Öl. 2/3.



1352 a, b. Sk. 2/3.



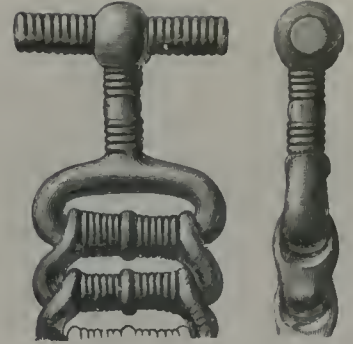
1353 a, b. G. 1/2.



1355 a, b. Öl. 1/1.



1354. Sk. 1/1.



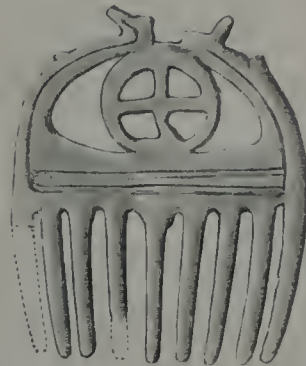
1356 a, b. Öl. 1/1.



1357. Sk. 1/1.



1361. Upl. 2/3.



1366. Hal. 1/1.



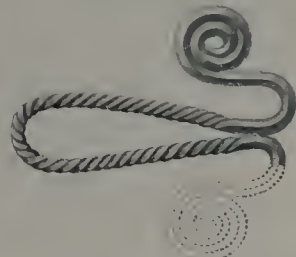
1360. G. 2/3.



1358. G. 2/3.



1359 a, b. Bl. 1/1.



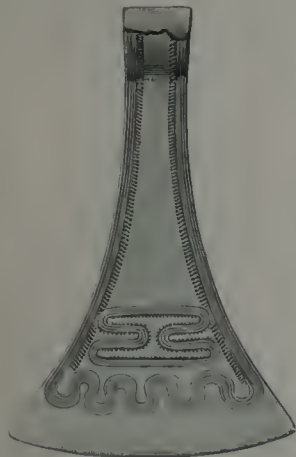
1367. Sk. 1/1.



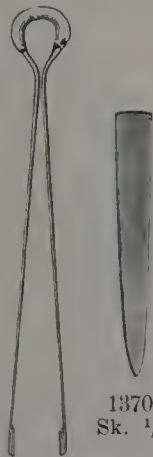
1369. G. 1/1.



1362. Sk. 1/1.



1363 a, b. Sk. 2/3.



1370. Sk. 1/1.

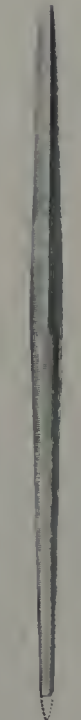


1368. Söd. 1/1.

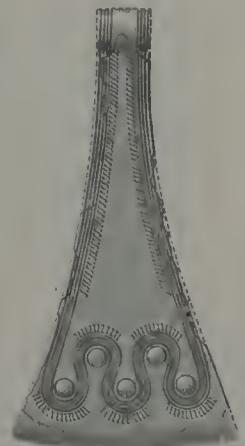


1371. Sk. 1/1.

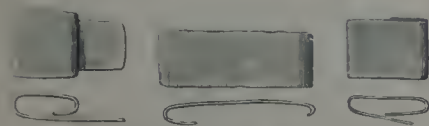
1365. G. 2/3.



1372. Sk. 1/1.



1364. V.G. 1/1.



1373-1375. Sk. 1/1.



1376-1378. Upl. 2/3.



1379. Sk. 2/3.



1380. Sk. 1/1.



1381. Sk. 1/1.



1382. Sk. 2/3.



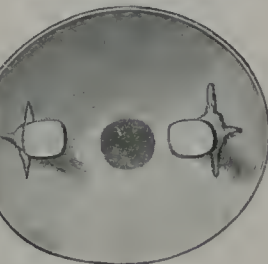
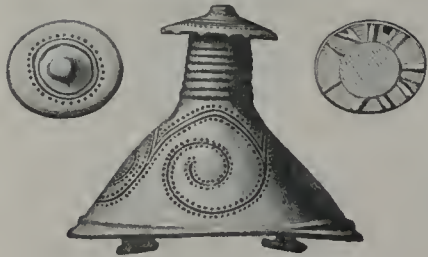
1383. Vstml. 1/3.



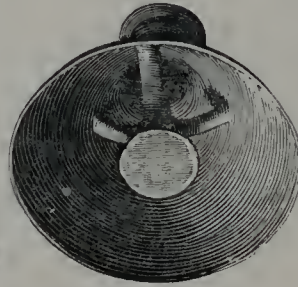
1384. Sm. 2/3.



1385. Sk. 1/2.



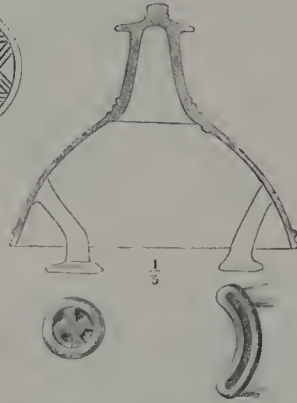
1386 a-d. Upl. 1/2.



1387 a, b. Boh. 1/2.



1388. Upl. 1/2.



1/2

1389 a-c. Sk. 1 1/2 o. 1/3.



1390. Sk. 1/2.



1391. Boh. 2/3.



1393. G. 1/4.



1394. Öl. 1/2.



1392. Boh. 2/3.



1395. Boh. 1/2.



1396 a. Öl. 1/3.



1396 b. Öl. 1/2.



1397. V. G. 1/2.



1399. Sk. 1/2.



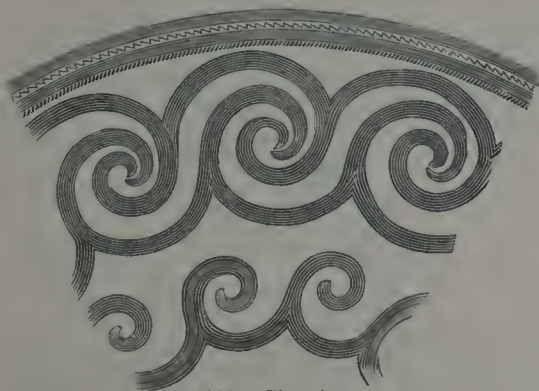
1400. Hal. 2/3.



1401. Sk. 1/2.



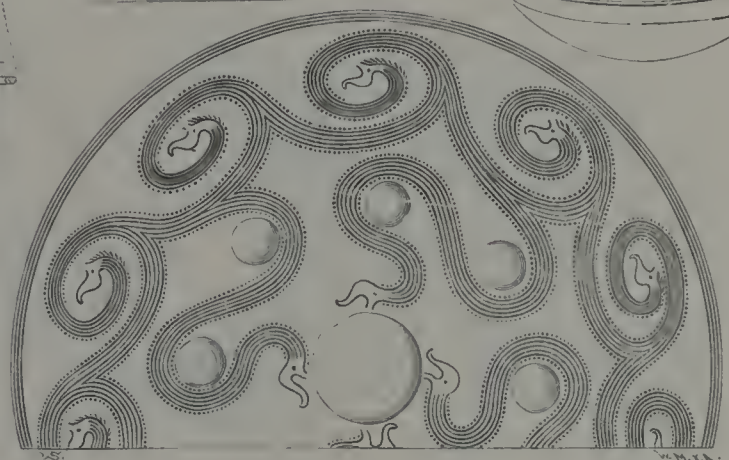
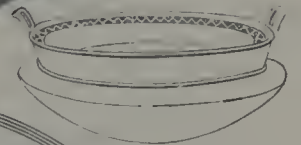
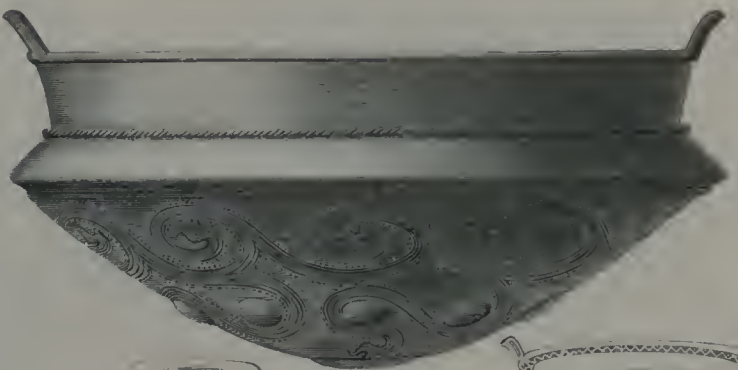
1402. V. G. 2/3.



1403. Sk. 1/2.



1404. V. G. 1/2.



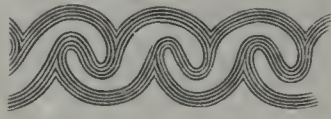
1398 a-f. Sk. 1/2.



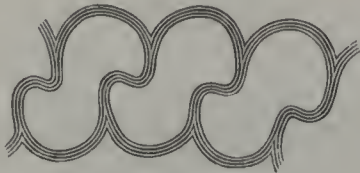
1405. Sk. 1/2.



1406. V.G. 1/2.



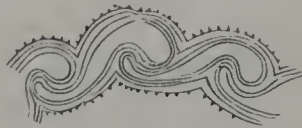
1407. V.G. 1/2.



1408. V.G. 1/2.



1409. Sm. 1/2.



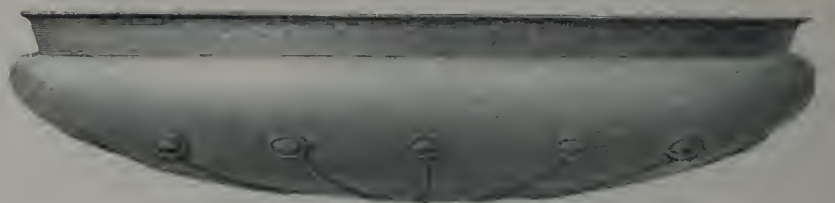
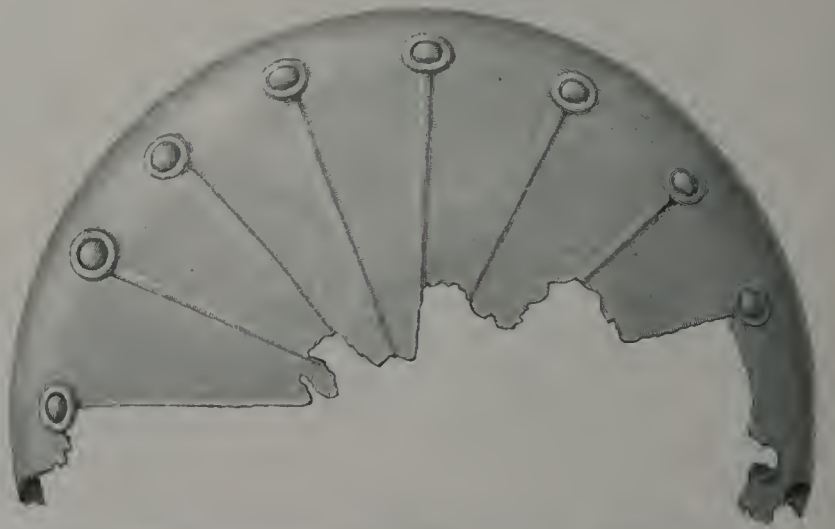
1410. Sm. 3/5.



1413 a, b. Vstml. 2/5.



1411. V.G. 1/3.



1414. a, b. Vstml. 2/5.



1412 a, b. Sk. 1/4.



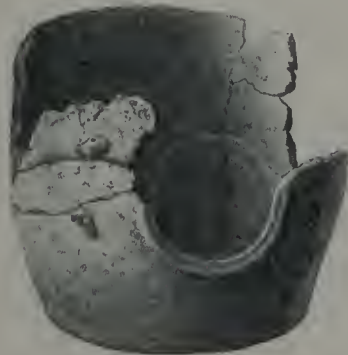
1415 a-c. Sk. 1/5.



1417. G. 1/5.



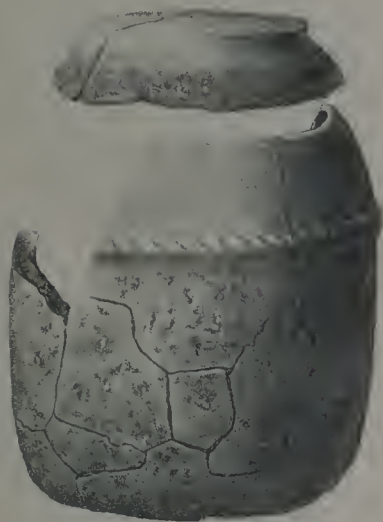
1416 a. b. Sm. 1/6.



1418. G. 1/5.



1419. Sk. 1/4.



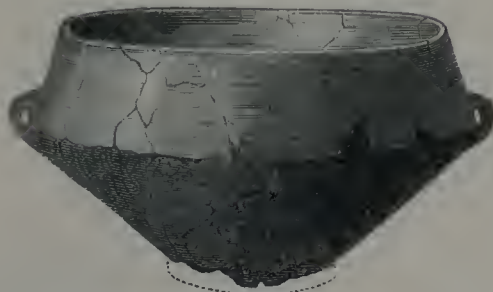
1422 a. b. Sk. 1/5.



1420. G. 1/5.



1423 a. b. Hal. 1/4.



1421. Hal. 1/5.



1424 a. b. G. 1/5.



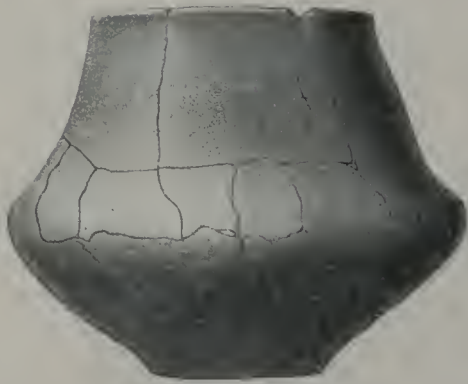
1425 a. b. Hal. 1/6.



1426 a. b. Sk. 1/6.



1427 a. b. Sk. 1/6.



1428. Sk. 1/6.



1429. Sk. 1/2.



1430. Hal. 1/5.



1431. Sk. 1/4.



1434. Sk. 1/5.



1432. Hal. 1/5.



1433. Bl. 1/4.



1438. Sk. 1/4.



1439. Hal. 1/6.



1435. Bl. 1/4.



1440. Hal. 1/4.



1436 a, b. Bl. 1/4.



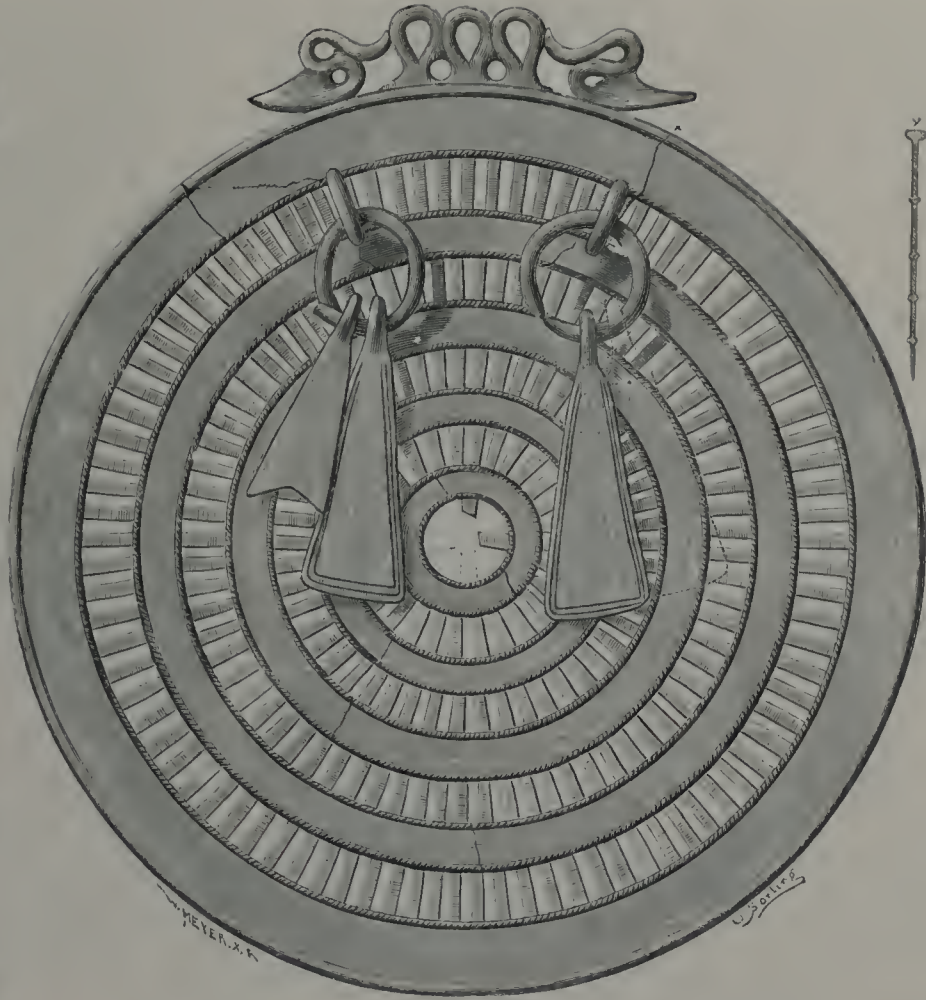
1437. Sk. 1/6.



1441. Ö.G. 1/6.



1452. G. 2/3.



1451 a - c. G. 1/2.



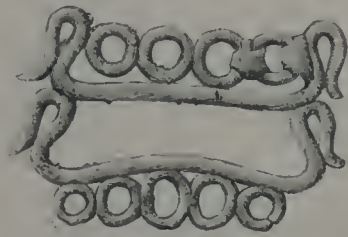
1450 b, c. G. 1/2.



1450 a. G. 1/4.



1444. Sk. 1/2.



1453. G. 1/3.



1454. G. 1/2.



1445. Hal. 1/2.



1446. Sk. 1/2.



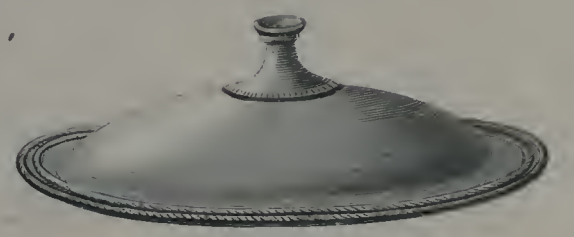
1455. G. 1/2.



1443. Öl. 1/2.



1447. Sk. 1/2.



1456 a, b. G. 1/2.



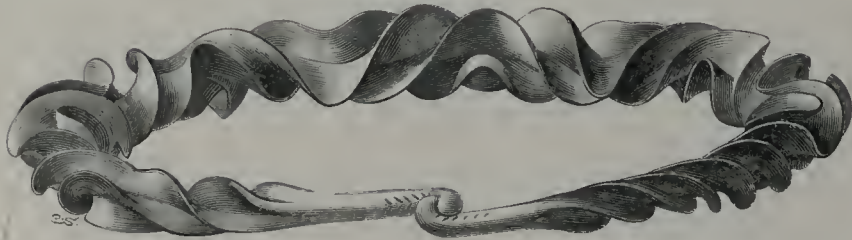
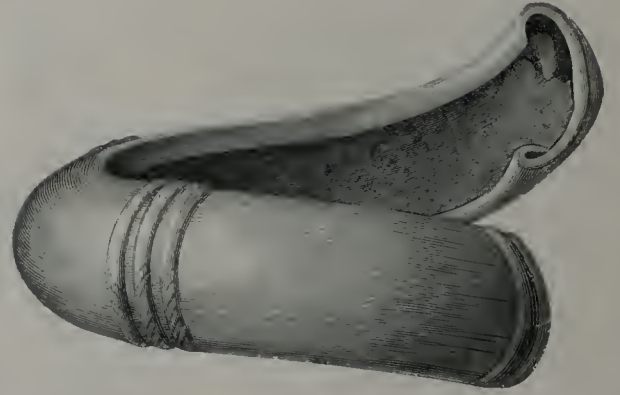
1449. Sk. 1/2.



1448. Sk. 1/2.



1457. Ö.G. 1/2.



1458. Vstml. 1/3.



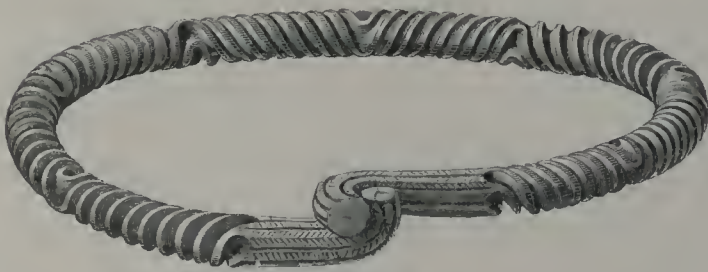
1459. Boh. 1/2.



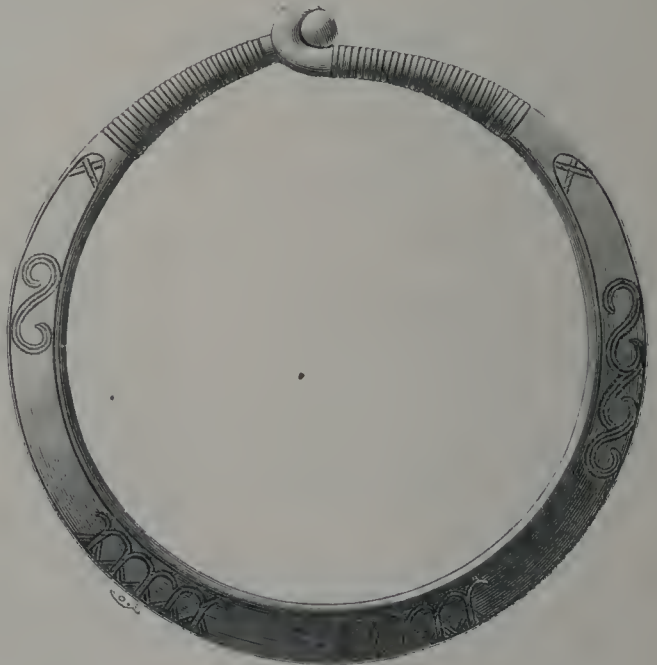
1464 a, b. G. 2 s.



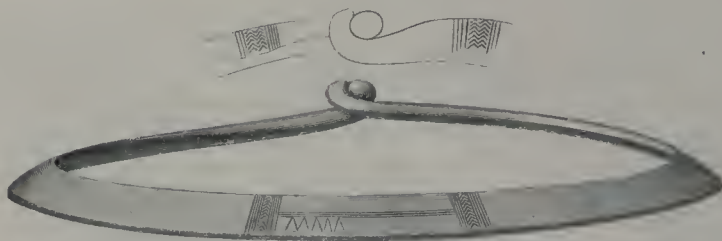
1460. Söd. 1/2.



1461. Sk. 1/2.



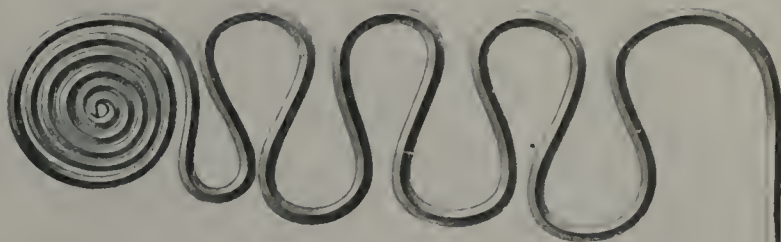
1463. Sk. 1/2.



1462 a, b. Sk. 1/2.



1465. Upl. 1/2.



1469. Sk. 1/2.



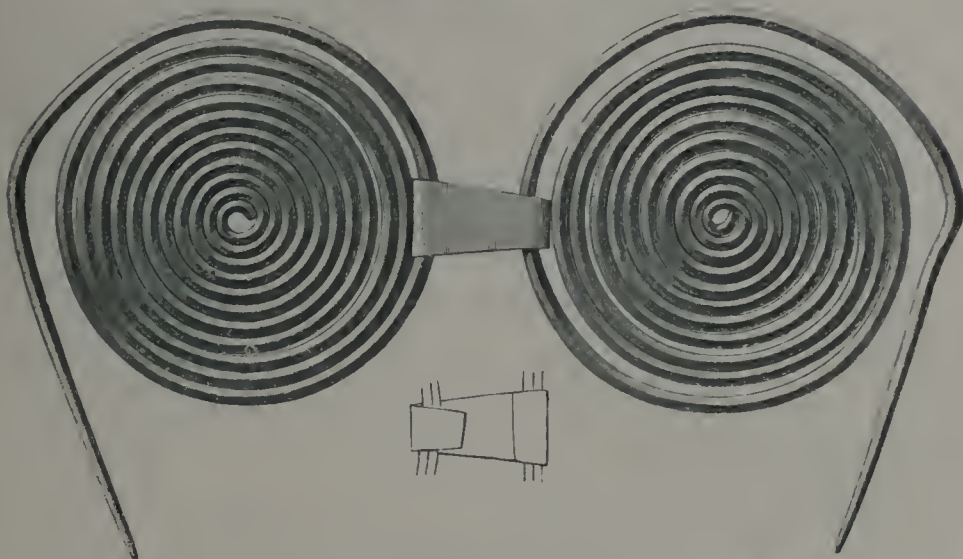
1467. Söd. 1/2.



1466 a-d. Sk. 2 s.



1468. Vstml. 1/2.



1470 a, b. Sk. 1/2.



1473 a, b. Sk. 2 s.



1474. Sk. 2 s.

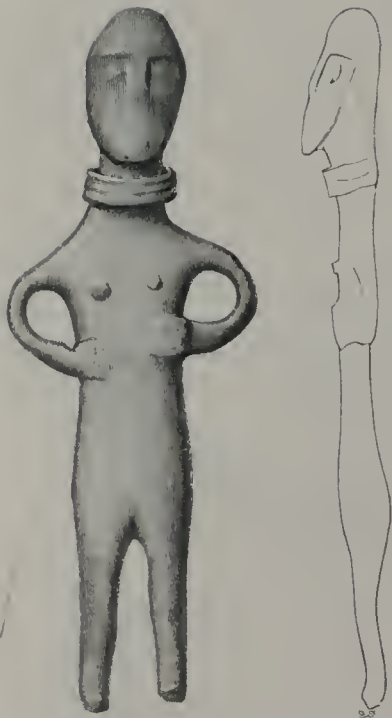


1475. Sk. 1/2.



1471. Hal. 1/2.

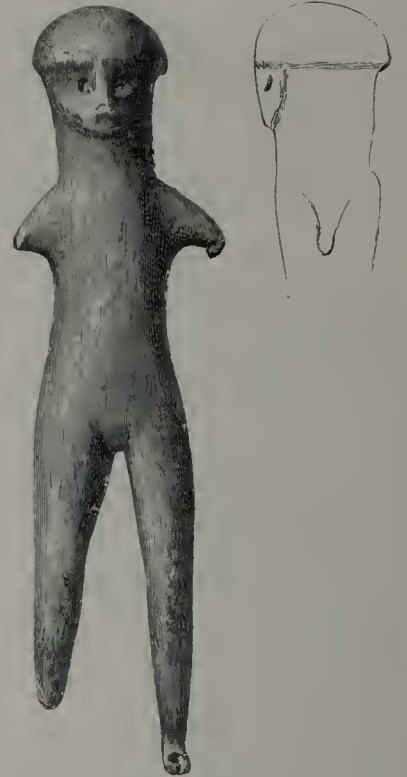
1472. G. 1/2.



1477 a, b. Sk. 2/3.



1476 a, b. Hal. 2/3.



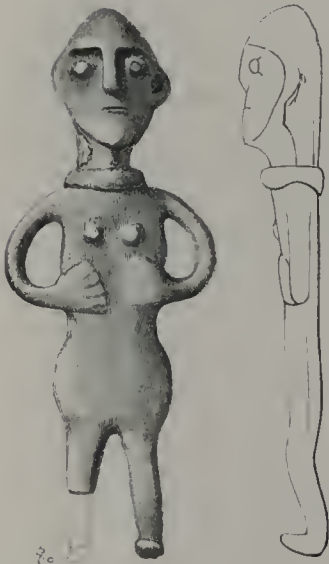
1481 a, b. Sk. 1/1.



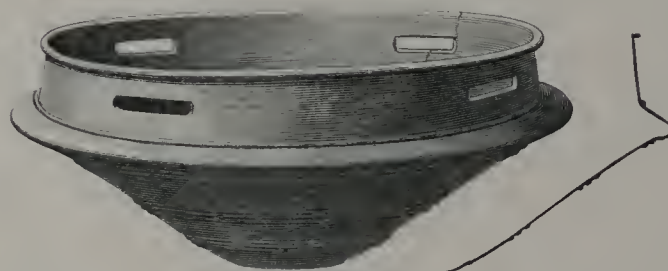
1479 a, b. V. G. 1/2.



1480 a, b. Sk. 2/3.



1478 a, b. Sk. 2/3.



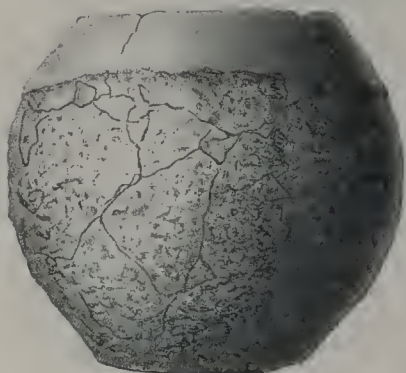
1482 a, b. G. 1/3.



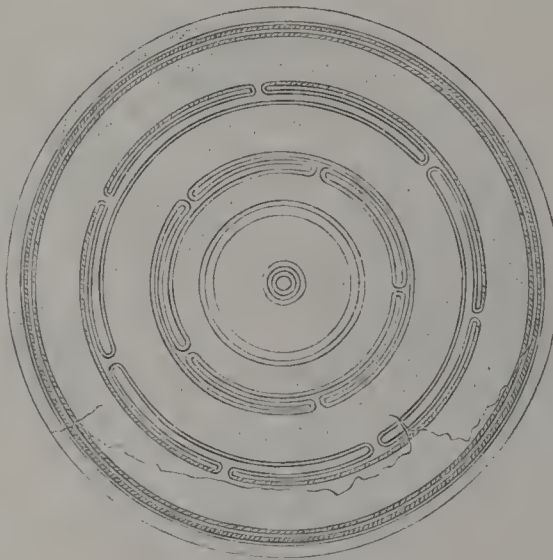
1483 a, b. G. 1/2.



1484 a, b. G. 1/2.



1485. Sk. 1/6.



1482 c. G. 1/3.



1486. Sk. 1/4.

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that this is crucial for ensuring the integrity of the financial data and for facilitating audits.

2. The second part of the document outlines the various methods used to collect and analyze data. It includes a detailed description of the sampling techniques employed and the statistical models used to interpret the results.

3. The third part of the document presents the findings of the study. It shows that there is a significant correlation between the variables being studied, which supports the hypothesis that was tested.

4. The final part of the document discusses the implications of the findings and offers suggestions for further research. It notes that while the current study provides valuable insights, there are still several areas that need to be explored in more detail.

5. In conclusion, the document highlights the importance of rigorous data collection and analysis in financial research. It stresses that only through careful attention to detail and the use of appropriate statistical methods can we hope to gain a true understanding of the complex relationships between financial variables.

