

SIX IRON SWORDS FROM THE NETHERLANDS

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There are six iron La Tène swords in Dutch museums and private collections which possess the striking feature of being equipped with several bronze discs slid around the tangs. These swords, which are discussed in the present article, are fairly unique since there are only a few comparable items outside the Netherlands.

The National Museum of Antiquities of Leiden came into the possession, in 1969, of an iron sword with a strikingly shaped grip, consisting of 13 bronze discs slid around the tang. The museum's curator, Dr. L. P. Louwe Kooijmans, asked us to publish this sword. He also drew our attention to a parallel found in a rather unexpected place: the 'Generaal Hoefer' Netherlands Army and Weapons Museum of Leiden. The sword in the Army Museum too, had a few bronze discs.

Shortly afterwards a similar sword was brought to our notice by Mr. S. L. Wynia of Amsterdam who had found it in the G. M. Kam National Museum of Nijmegen: another sword with bronze discs.

A fourth parallel was known to the co-author of the present article. It had been made available to him by an antique dealer for study during a short time in 1967, after which the sword disappeared again into the antique trade. But not for long: it was offered for sale to the Leiden National Museum of Antiquities in 1973! Apart from the characteristic bronze discs, this sword still possessed part of the sheath.

Finally (?) the group was expanded by two swords which came into the possession of Mr. H. J. van Beuningen of Langbroek (Prov. Utrecht). These swords too, had bronze discs.

So there appeared to be in the Netherlands six swords very much identical in shape, but of which only vague parallels are found outside the Dutch borders. Unfortunately, the find circumstances of all six swords are completely



Fig. 1. Find-spot (museum) of the six La Tène Swords.

or partially unknown. The main purpose of the present publication is to furnish more details about these objects. Their dating will be discussed only briefly.

Lith

Iron sword (fig. 2) dredged from the banks of the River Meuse near Lith (Prov. North-Brabant) in 1969. Purchased by the Leiden National Museum of Antiquities. Inventory No. k1969/5.1. Total length: 93 cm. Weight: 628 g.

The Blade: The blade is badly corroded. Its length (measured along the axis) is 80 cm.

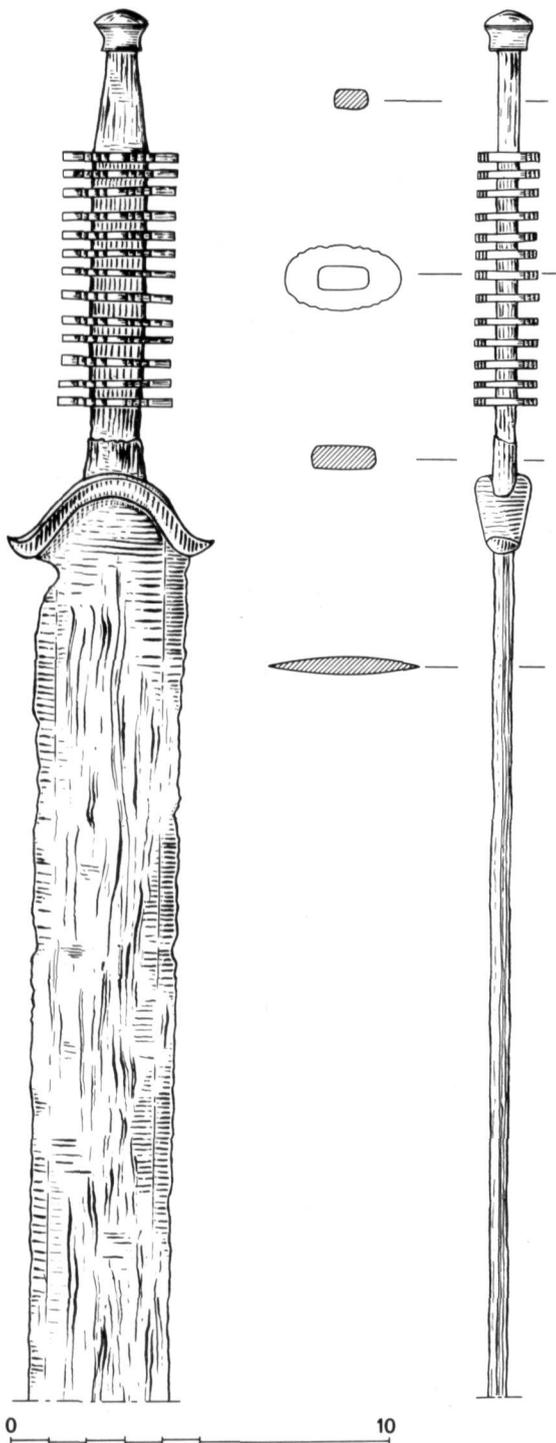


Fig. 2. Sword from Lith. 1: 2.

The breadth immediately under the hilt-end is 4 cm; the breadth at the commencement of the point is 3 cm. The maximum thickness is 0.5 cm. There are faint grooves along the two edges.

The hilt: An arched iron hilt-end has been slid round the 13-cm-long tang. Its maximum width is 5.3 cm, and the maximum thickness 1.4 cm.

In addition 13 bronze discs have been slid round the tang, together forming a 6.6-cm-tall column. The discs are from 2.9 to 3.1 cm long, 1.6 to 1.7 cm broad and vary in thickness from 0.2 to 0.3 cm. In the centres of the discs are rectangular holes measuring c. 1.4×0.6 cm. All discs show completely identical ornamented contours.

As is shown in figure 2, the discs in the middle are slightly narrower than those at the top and the bottom of the column. A close examination of the discs makes it clear that this is due to wear. The discs are separated by interspaces varying from 0.2 to 0.4 cm. It is likely that these spaces were originally filled with organic material. This may also be true for the spaces between the bottom disc and the hilt-end and between the top disc and the button. This button is of iron. Its height is 1.1 cm.

Leiden

Iron sword (fig. 3, to the right) from the 'Generaal Hofer' Netherlands Army and Weapons Museum of Leiden. This sword was purchased from antique dealer Esser of Nijmegen in 1954. Its origin is unknown. Inventory No. 920/Ea-2. Its total remaining length is 96 cm.

The Blade: The length of the blade, measured along the axis, is 82 cm. Its breadth is 3.2 cm and its maximum thickness 0.5 cm. The original surface has been completely eaten away by corrosion.

The Hilt: Only a fragment is left. The

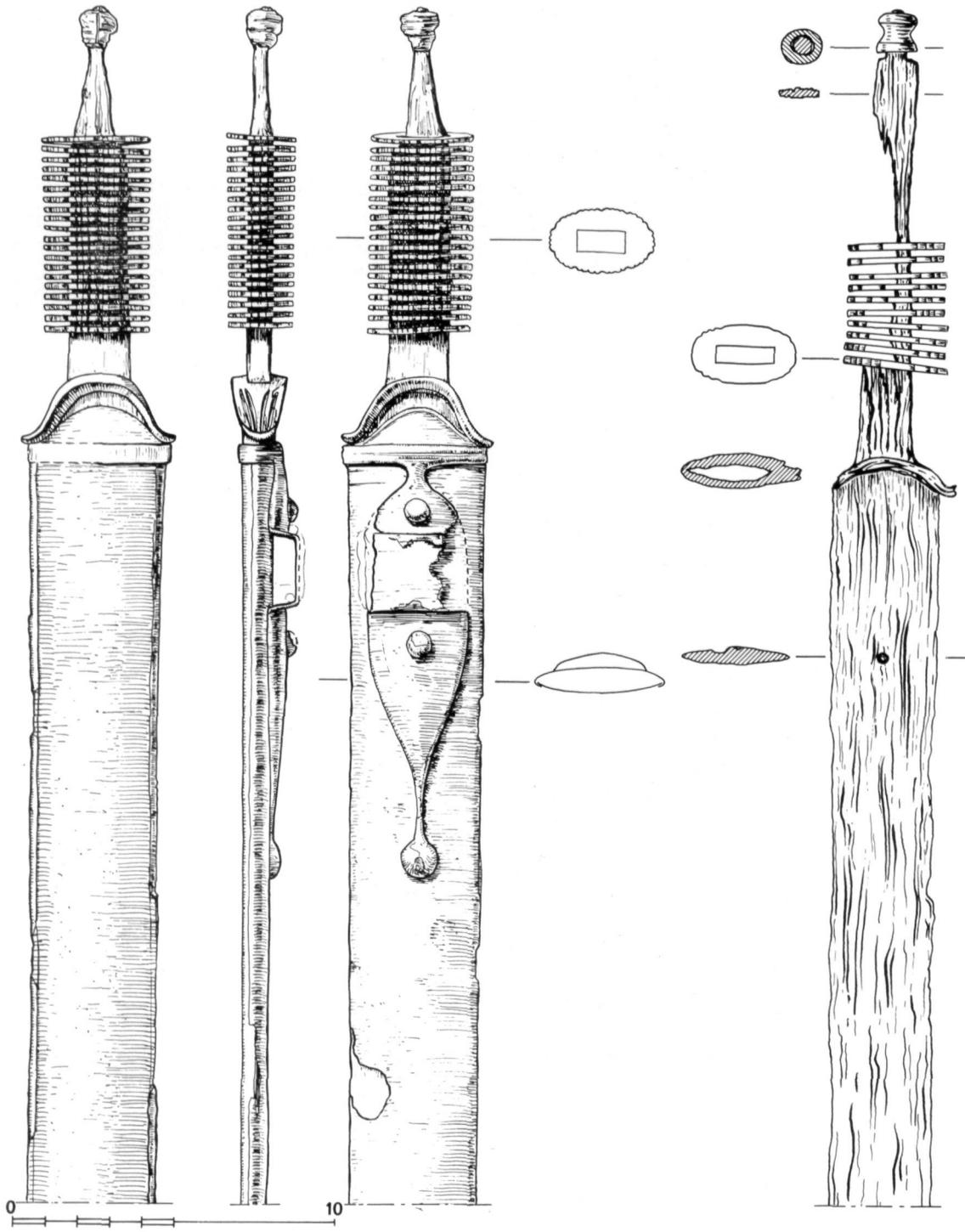


Fig. 3. Left: Sword from the river Meuse near Roermond; right: Sword from Leiden. 1:2.

tang, which is now 14 cm long, has been broken and mended, so that the present length need not necessarily be the original length. Only a fragment is left of the arched hilt-end which has been slid round the tang. Of the actual grip 10 bronze discs are still present. They have been slid round the tang at random, so that the profiles of the discs are not in line. The average size of the discs is 3.2×1.8 cm; the thickness is c. 0.2 cm. The tang ends at the top in a bronze button.

Nijmegen

Iron sword (fig. 4) from the G.M. Kam National Museum of Nijmegen. Inventory No. XXX c 15. It belonged to the original Kam collection. Data about the find location and acquisition are lacking. The total remaining length is 50.85 cm. The remaining weight is c. 325 g (exclusive of sheath fragments, etc.).

The Blade: The blade is very badly corroded and incomplete. Tiny parts of the original surface are only found in a few spots. The arched hilt-end is lacking. A slight indentation marks the place where it has been. The cross section of the blade can be established fairly accurately in view of incrustations which show a negative impression of the surface. Over the front and back of the blade runs a semicircular central ridge, flanked on either side by two parallel grooves.

The length of the blade, measured along the axial line and from the indentation of the hilt-end arch, is still c. 38.5 cm. At c. 12 cm from this arch the breadth of the blade is 3.6 cm, the maximum thickness of the ridge c. 0.8 cm and the thickness beside the ridge c. 0.6 cm.

The Hilt: The length of the tang is about 12 cm up to the indentation of the arched hilt-end. The grip consists of 20 bronze discs of more or less oval shape, varying in thickness from 0.15 to 0.26 cm. The interspaces, once

filled by identically shaped discs of organic material, vary.

The first disc from the top measures 3.13×1.785 cm and has a thickness of 0.17–0.22 cm; the 10th disc from the top measures 3.09×1.97 cm and has a thickness of 0.18–0.21 cm; the 20th (bottom) disc measures 3.2×1.9 cm and has a thickness of 0.15–0.2 cm. At the place of the discs the thickness of the tang is c. 1.45×0.8 cm.

The hilt ends at the top in a bronze button – height c. 1 cm; max. dm.: 1.1×0.85 cm – which has been worn to an oval shape. The hardly worn lower rim measures 0.95×0.92 cm.

The bronze discs too, show clear traces of wear through use. The topmost one is the least worn. It is assumed that there has been a thicker section between this disc and the button, which has protected the top disc against wear. The degree of wear increases clearly towards the middle of the grip, and decreases again towards the bottom. Some grooves have been worn away in spots. The grooves, or rather the contours of the grip, must have been made after the discs had been placed on the tang.

The Sheath: The remainder of the sheath and the incrustation with sand and gravel show old traces of glue, whereas the whole sheath had been dressed off somewhat with sand and glue. In addition to the handsome negative of the blade profile, the crust contained a remainder of the sheath. This made it possible to release a few further details in the laboratory.

The back of the sheath was of iron with a remainder of the suspension loop attached. Through the loop a leather belt was passed. It is probable that a still existent bronze ring with an attaching mass of rust belonged to the sword belt. The condition of the object made it impossible, however, to wrest any further

details from it.

On the front is a remainder of a bronze sheath plate, ending below in a straight edge. It probably continued with a wholly iron sheath plate, but no vestiges of such a plate were left in the rust and incrustation mass.

The bronze plate, kept in place at the sides by the rims of the iron sheath plate of the back, which curve round the edges, is secured moreover by bronze reinforces of which there were probably three originally. One is still completely there; of the second two fragments have been produced, while an indentation in the rust presumably marks the place of the third. The reinforces flatten and widen out on the back.

The bronze sheath plate shows remainders of a frame in relief, within which there are three rows of seven raised dots. Further vestiges of bronze indicate that there must have been a contiguous other rectangular frame. The bronze leaf is c. 0.02 cm thick.

The incrustation with a high gravel content made it impossible to determine further details of the sheath. The position of the sheath vestiges with regard to the blade can be determined with fairly great certainty. The iron suspension loop of the sheath has obviously been displaced, having been originally in the axial line of the sheath.

Roermond

Iron sword (fig. 3, to the left), presumably dredged from the River Meuse near Roermond (Prov. Limburg). Purchased by the Leiden National Museum of Antiquities through the mediation of the heirs of antique dealer Wiegiersma of Utrecht. Inventory No. k1973/4.1. The sheath of this sword has also survived. Sword and sheath are caked together by rust so that they are inseparable. Total length is 56.3 cm. Weight (including sheath) is 770 g.

The Blade: As the blade is largely hidden within the sheath, only a small part between hilt-end and mouth of the scabbard is visible. Its length can be ascertained, because the sheath is not entirely closed at the lower end. The length is 44.4 cm. It is remarkable that, unlike other swords from this period, the sheath of the Roermond sword has a square end instead of a tapering one (See also under Blade).

A radiograph shows the breadth near the hilt-end to be c. 3.6 cm and the breadth at c. 25 cm distance from the hilt-end to be c. 3.1 cm. A less transparent strip in the axis of the blade leads to the presumption that it has a central ridge. Its width at c. 20 to 25 cm from the hilt-end is c. 0.5 cm.

The Hilt: An arched hilt-end slid round the tang constitutes the lower limit of the hilt. The width of the hilt-end is 4.7 cm, and its maximum thickness 1.4 cm. The sides of the hilt-end have been adorned by grooves. At some distance from the hilt-end come 20 bronze discs which have also been slid round the tang. These discs are c. 3.4 cm long, 2.0 cm wide and 0.10 to 0.15 cm thick. All have a rectangular hole of c. 1.8 × 0.6 cm in the centre. The rim contours of all the discs are completely identical. There are interspaces between all the discs, which have probably been filled originally by discs of perishable material. The top of the 11.4-cm-long tang ends in an iron button.

The Sheath: The sheath consists of two plates, the front one being of bronze and the one on the back of iron. They have been secured together by bending the rims of the iron plate forwards around the sides of the bronze plate. The bronze plate is unadorned. On the back of the iron plate is a suspension loop which is also of iron. The loop has been attached to the sheath by means of two rivets. In addition the oval loop continues at its

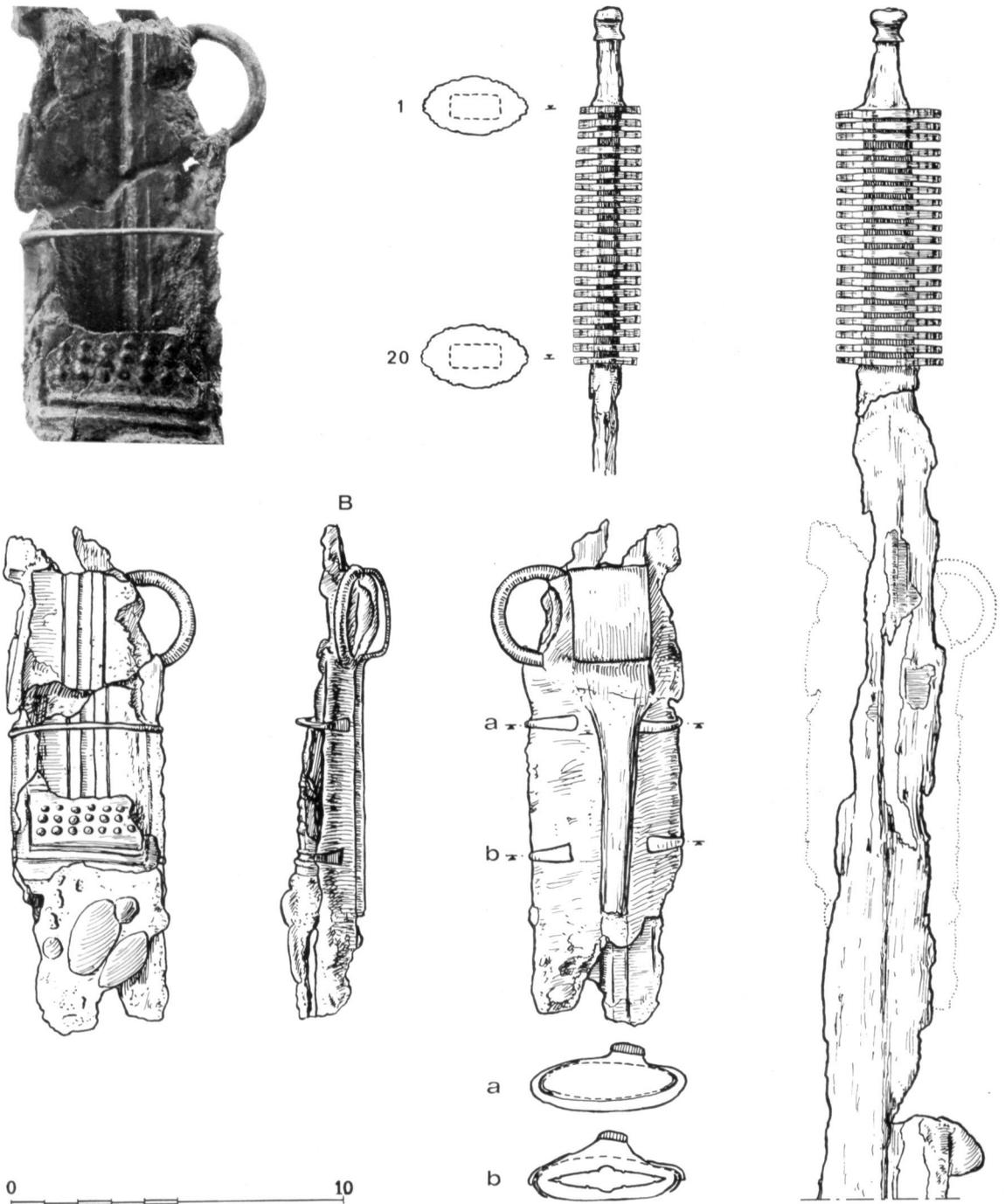


Fig. 4. Sword from Nijmegen. 1:2.

upper end into a narrow horizontal strip which completely surrounds the sheath (T-type reinforce, according to De Navarro 1972, p. 25). At the lower end the loop plate is extended in a 'drop'-shaped manner. It has already been mentioned that both the blade and the sheath have square ends. The most obvious assumption is that the blade has broken and that the sheath has been adjusted to the new length by shortening and folding the lower end. Laboratory research has shown that the repair probably took place in ancient times, since no traces of any recent change of shape have been found.

Kessel I

Iron sword (fig. 5, to the left) dredged near Kessel (Prov. North-Brabant) together with Kessel II and III in 1971. Purchased by Mr. H.J. van Beuningen of Langbroek from antique dealer A.J. Sprik of Zaltbommel. Presented together with III to J. Ypey of Amersfoort in April 1973. Remaining overall length is c. 50.5 cm. Remaining weight is over 260 g.

The lower end of the blade and the top of the tang are lacking, as are also an unknown number of the bronze discs of the hilt.

The Blade: Length of blade (measured along the axis) is c. 42.2 cm; maximum breadth is c. 3.2 cm; maximum thickness is 0.62 cm. The maximum thickness at 2 cm from the fracture is 0.42 cm.

The blade is badly corroded. It is still visible in several places that the centre is slightly depressed in relation to the cutting edges.

The Hilt: The hilt comprises a strongly arched hilt-end, slid round the tang and resting on the top of the blade. The clear tang length is still c. 9.1 cm. The maximum width of the hilt-end is c. 4.2 cm; on the axis the height is c. 1.6 cm and the width c. 1.25 cm.

Two oval bronze discs are left and indenta-

tions mark the places of four others. The lower disc is still in its place: the other is loose. It does not fit on the second place, but it does on the third, although this place is not quite certain. The contour fits, however, so that the loose disc may be assumed to belong to this hilt. The wear of the rims to one side is also identical in both discs.

The lower disc has a diameter of c. 3.4×1.85 cm, and a thickness of c. 0.15/0.25 cm. The diameter of the other disc is c. 3.1×2.0 cm, and its thickness c. 0.2/0.25 cm.

The rims of the discs show a certain measure of bevelling, especially at the extremities. This is more pronounced in the lower disc. Both discs show impressions of hammer peen strokes on upper and undersurfaces, especially in the direction of the longitudinal axis and transversely. They occur mainly close to the approximately rectangular holes. It is probable that one has reduced the holes in this way to make for a better fit. Both discs are fairly extensively worn on one long side.

In the corrosion layer against the flat sides of the discs, structural traces are visible, going in the direction of the longitudinal axis. On top of the hilt-end and following its shape, is the vestige of a slice of organic material, c. 0.2 cm thick, the structure of which also follows the curve. The curved shape makes it likely that the material is horn, since horn can be shaped after softening in boiling water. There is also organic material round the tang, the structural lines of which run parallel to the tang. Just over the lower disc a vestige is still visible with the structural direction parallel to the longitudinal axis of the bronze disc. It is obviously a remainder of an intermediate disc made of organic material.

The organic material against the tang may be a left-over from thin slices of horn (?) to fill the space between the grip coating ('horn' and bronze elements) and the tang. Where organic

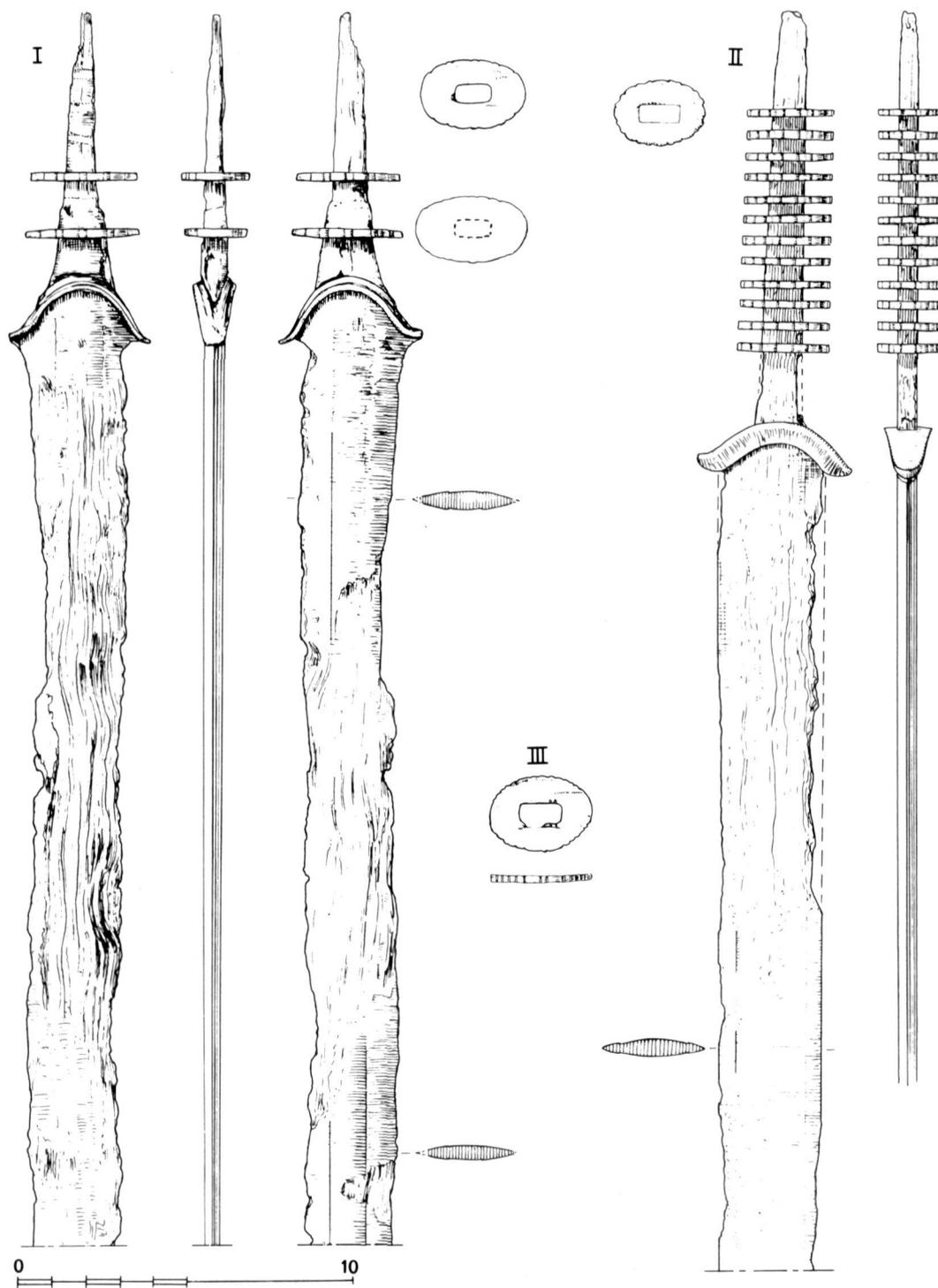


Fig. 5. Swords and bronze disc from Kessel. 1:2.

material is mentioned in the present article, it is probably corrosion products which have retained the original structure.

Kessel II

Iron sword (fig. 5, to the right) dredged together with Kessel I and III in the vicinity of Kessel (Prov. North-Brabant) in 1971. Purchased by Mr. H.J. van Beuningen of Langbroek from antique dealer A.J. Sprik of Zaltbommel. Now in the H.J. van Beuningen Collection in Langbroek. Present total length 85.9 cm. Weight 520 g. The top of the hilt is missing.

The Blade: Length of blade (measured along the axis) is c. 73.0 cm; the maximum breadth at the hilt-end is c. 3.2 cm, and the maximum thickness 0.65 cm. At 14 cm from the hilt-end the breadth is 3.05 cm and the thickness 0.5 cm. At 42 cm from the hilt-end the maximum thickness is 0.42 cm. The blade is corroded, so that no further measurements are possible.

In the centre the blade section is slightly depressed in relation to the cutting edges.

The Hilt: The hilt ends in an arched iron hilt-end, slid round the tang and resting on the top of the blade. The clear tang length is still 12.2 cm. The maximum width of the hilt-end is c. 4.5 cm, its height on the axis is c. 0.6 cm, while the maximum thickness is 1.4 cm. Twelve oval bronze discs have been slid round the tang, forming a 7.2-cm-tall column which starts 2.1 cm above the hilt-end.

The diameters of the discs vary from c. 2.6×1.9 to c. 2.75×1.9 cm. The thickness varies from 0.2 to 0.25 cm and the interspaces between the discs vary from c. 0.3 to c. 0.5 cm. It is likely that these interspaces were originally filled with organic material and that this was also the case for the spaces between the bottom disc and the hilt-end and between the topmost disc and the button on top of the hilt.

In the sword under discussion the button is missing.

The completely identical profiling of the bronze discs and the fact that none of them is out of line with the others show that at least the finishing touches have been applied after the discs had been mounted on the tang. The contours too, must have been made at this stage. It must be assumed that the intermediate discs – presumably made of horn – have been tooled at the same time.

It was only possible to measure the rectangular hole of c. 1.2×0.5 cm in the topmost disc.

Kessel III

Oval bronze disc as found on the Kessel I and II swords, but not belonging to either. The rim contour does not correspond with either and shows 5-2-5 and 5-2-5 tiny grooves subsequently. Origin as of I and II. Given to J. Ypey.

Diameter: c. 3.0×2.2 cm; **thickness:** c. 0.2 cm. **Hole:** c. $1.3 \times c. 0.6/0.8$ cm.

The edges of the hole show traces of cold chiselling, with widths of cut of c. 0.8 and 1.25 cm respectively. Impressions of hammer peen strokes are also visible, all running parallel to the longitudinal axis of the disc. In the oxide layer on both planes of the disc impressions of a material with a longitudinal structure are visible in the longitudinal axis of the disc.

Analyses

Three of the swords discussed have been analysed by emission spectrometry at the Central Laboratory of the TNO, Central Organisation for Applied Scientific Research of Delft through the mediation of Dr. J. A. Mosk of 'Analytische Afdeling van het Centraal Laboratorium voor Onderzoek van Voorwerpen van Kunst en Wetenschap' of Amsterdam. Samples were taken of two discs

of each of the Lith, Leiden and Nijmegen swords. The results are stated in table 1.

Table 1. Metal-analyses of discs.

	Pb	Sn	Zn	Fe	Ag	Sb	Cu
Lith	5	6	0.1	0.05	0.05	0.3	88
(k 1969/5.1)	5	5	0.1	0.05	0.05	0.3	89
Leiden	0.1	12	0.1	0.04	0.05	0.1	87
(920/Ea-2)	0.1	12	0.1	0.05	0.03	0.1	87
Nijmegen	5	12	0.1	1	0.05	0.1	81
(XXX c 15)	5	12	0.1	1	0.05	0.1	81

Although small variations were measured, notably in the lead, tin and iron contents, the analysed metals are very much identical in composition. It is clear that the discs have been made of bronze with an admixture of 5 to 12 per cent tin. The Dutch swords differ in this respect from the Rogätz sword, to be discussed later, which has brass discs.

Conclusions

Apart from the presence of bronze discs on their grips, the swords discussed in the above are a homogeneous group also because of their other characteristics. The shape of the blade is invariably the same: long and narrow with parallel edges, starting to converge close to the end to form a sharp point. The average blade length is 78.3 cm and the average breadth 3.4 cm.

The blades (and originally also the mouths of the scabbards) are limited by hilt-ends at the

top. In five of the six swords the hilt-ends are still present. They are arched, but the arches are fairly feeble and not pointed. All five hilt-ends are about 0.5 cm thick and bevelled towards the inside. In one case the two wings are decorated.

The hilts further consist of tangs of rectangular section. The average length, measured up to the top of the hilt-end, is 12.1 cm. The tang ends at the top in a button. Of the four buttons which are still present, two are of iron and two of bronze.

The fairly general characteristics which we have mentioned date the six swords in the La Tène period. In view of the average length of the Netherlands swords, a late date would seem indicated.¹

The most striking characteristic of the six swords is the fact that a number of bronze discs have been slid round the tangs. The discs of the various swords are much alike in shape and size. The contours too, are invariably of the same character. Moreover, the analyses show that the composition of the bronze is virtually the same, at least in the samples analysed. Especially on the grounds of the hilts it is probable that the six swords have been made in one workshop. In view of the fact, however, that La Tène swords are rare in this country, one would be inclined to look for this workshop elsewhere. Then the surprising situation occurs that, although the number of La Tène swords from central and western

Table 2. Review of measures of iron swords.

	Lith	Leiden	Nijmegen	Roermond	Kessel I	Kessel II	average
Total length	93	96	(50.8)	(56.3)	(50.5)	85.9	91.6
Blade, length	80	82	(38.5)	(44.4)	(42.2)	73	78.3
max. breadth	4	3.2	3.6	—	3.2	3.2	3.4
thickness	0.5	0.5	0.8	—	0.6	0.6	0.6
Hilt, length	13	(14)	12	11.4	(9.1)	12.2	12.1

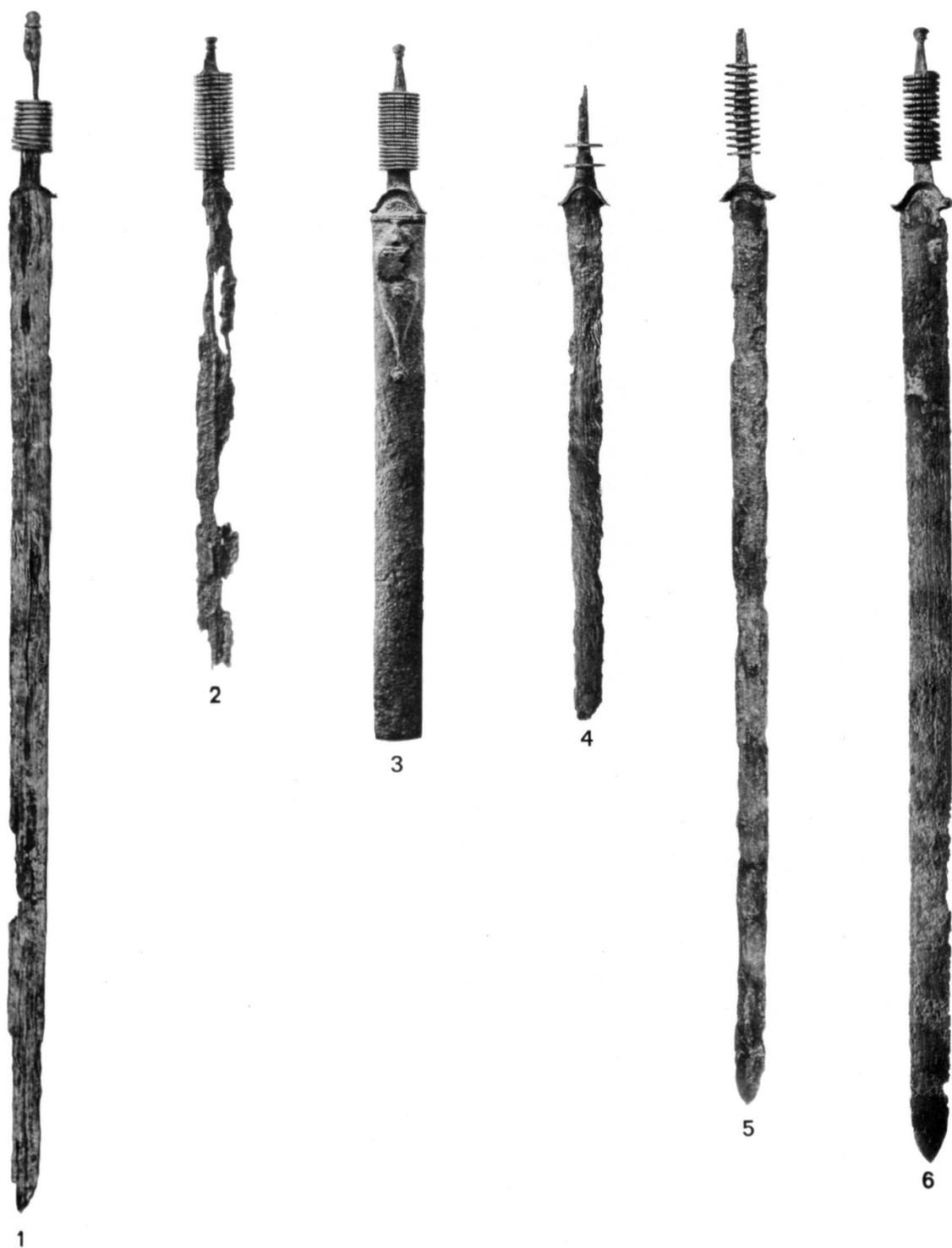


Fig. 6. Dutch La Tène Swords. $\pm 1:5$. 1: Leiden; 2: Nijmegen; 3: Roermond; 4: Kessel I; 5: Kessel II; 6: Lith.

Europe is counted in hundreds, there are hardly any proper parallels to these Netherlands finds.

As stated in the descriptions of the swords, the regular interspaces between the discs of the grips appear to indicate that the grips have originally consisted of alternate discs made of bronze and of a perishable material (horn?). Such grip constructions were already known in the Bronze Age. Examples have been found in Denmark, northern Germany and elsewhere.² The Hallstatt cemetery has furnished examples from the Early Iron Age. Several daggers from this cemetery have grips consisting of bronze or iron discs (see e.g. Kromer 1959, Tables 27, 106, 140 and 146).

We also know of some sword grips dating from the La Tène period, which consist of metal discs. There is the sword of Lindholmgård (Denmark), having on the tang two bronze discs with tooled rims. The lower disc curves over the hilt end (Brøndsted 1963, p. 68).

Moreover, the large cemetery of Grossromstedt (Bez. Erfurt, GDR) has yielded a sword which, in addition to an arched hilt-end, has two discs on the tang. This sword was already mentioned by M. Jahn (1916, p. 104). As Dr. K. Peschel³ has written us, it is now in the Vorgeschichtliches Museum of the Friedrich-Schiller-Universität of Jena. It was found together with an urn and other accessories as a closed find before 1907. It has been dated 'frühaugusteisch'. The two discs are of iron with simply ornamented rims.

With a sword from Grave 46 at Bäsch (Kr. Bernkastel, FRG) there are still 20 discs. This sword was excavated in 1935 and has been depicted by G. Mahr (1967, T. 16). The discs are of bronze and unadorned. It is dated 'jüngere La Tène kultur'.

The sword from Rogätz (Bez. Magdeburg, GDR), which was mentioned already by

M. Jahn (1916, p. 104 and fig. 109), is one of the few proper parallels to the Netherlands swords discussed in this article. Thanks to exhaustive information which we have received from Dr. Th. Voigt of Halle, we are able to mention the following data about this sword.⁴

The sword is in the Landesmuseum für Vorgeschichte of Halle, under number HK 755. It was mentioned as early as 1875. Further indications as to find location and find circumstances are lacking. 30.5 cm of the sword is left, the blade is broken, and the tang is still only 10 cm long. On the tang are eight thick and 19 thin discs (fig. 7). The thicknesses are 1.8–2.2 and 0.7–0.9 mm respectively. All discs have been profiled completely identically by vertical grooves. The contours correspond in character with those of the Netherlands discs. As shown in a photograph of 1875, which we have received, the sword still had an arched hilt-end at the time, while the tang extended beyond the topmost disc. It is interesting that, according to chemical analy-



Fig. 7. Sword from Rogätz (GDR). $\pm 1: 2$. Photograph Landesmuseum für Vorgeschichte, Halle.

ses made by Dr. E. Schwarze of Halle, the metal of the discs consists of copper and zinc; nickel, tin and manganese are lacking. This means that the discs are of brass and not of bronze as is the case with the Netherlands swords. Dr. Voigt dates the Rogätz sword as 'augusteisch'.

The cemetery of Wederath-Belgium (Kr. Bernkastel-Wittlich, FRG) yielded two swords which deserve to be mentioned in this connection. The sword from Wederath Grave 809 has 25 bronze discs of the known type which are connected along four strips (Haffner 1974, Abb. 4, 65). The nature of the connection, which has evidently been made later, has not so far been investigated. Dr. A. Haffner of Trier has been so kind to send us photographs for comparison, and informed us that the

sword should be dated in the latter half of the last century B.C., and preferably between 40 and 10 B.C. A radiograph of the other Wederath sword (Grave 776) showed 20 iron discs.

Considering the above, it remains a remarkable fact that the six very much identical Netherlands swords have only two proper parallels outside this country. This makes it impossible to answer the question where these swords have been made. The foreign finds, however, do give a further indication for the dating. The Late La Tène date which we had already presumed, appears to be capable of further narrowing down to the Augustan period.⁵

NOTES

¹ The average length of the swords found at the La Tène location is according to De Navarro (1972) 72.7 cm (5 swords) in the Early La Tène period, and 85.9 cm (23 swords) in the Middle La Tène period. Sprockhoff (in Ebert, *Reallexikon*, Bnd. 11, pp. 432–433) says that the blades grow longer in the Late La Tène period.

² See e.g. Sprockhoff (in Ebert, *Reallexikon*, Bnd. 11, p. 417): 'Der Griff wird... aus Scheiben zusammengesetzt'. See also Brøndsted 1962, pp. 93 and 94.

³ We thank Dr. K. Peschel, Kustos of the Friedrich-Schiller-Universität of Jena, who gave us exhaustive information about this find and sent us drawings.

⁴ We are very grateful to Dr. Th. Voigt, Landes-

museum für Vorgeschichte of Halle, for his exhaustive information about the Rogätz sword and for his permission to publish these data and a photograph of the sword.

⁵ The authors thank Messrs. H. J. van Beuningen (of Langbroek), Drs. A. V. M. Hubrecht (of Nijmegen), Dr. L. P. Louwe Kooijmans (of Leiden) and Drs. R. B. F. van der Sloot (of Leiden) for permission to publish the Netherlands swords. In compiling this article we have gratefully used data collected by E. J. Boerstra and J. J. Assendorp (IPL). The drawings have been made by G. R. Tak (IPL) and J. Ypey. The photographs are by W. H. J. Meuzelaar (IPL).

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