ABSTRACT: First part of a catalogue and evaluation of the Bronze Age and Early Iron Age bronze socketed axes in the Netherlands. Herewith a number of types characteristic of the southern part of the country: the socketed axes of Niedermains, Plainseau, Helmeroth, and Geistingen types. Armoricam socketed axes are listed, but dismissed as modern import or dubiously documented.

KEYWORDS: Netherlands, Bronze Age (Late), Iron Age (Early), socketed axes, types, imports, regional production, distributions.

1. INTRODUCTION

1.1. Numbers and distributions

Previous articles in the series 'Bronze Age metal and amber in the Netherlands' have appeared in Palaeohistoria 32, 37/38, 39/40, and 41/42. This Part III:2A is a catalogue of the socketed axes in the Netherlands; beginning with types current especially in the southern part of the country.

Socketed axes are the largest category of Bronze Age axes found in the country, with 382 specimens (including, however, 57 specimens in Netherlands museums and other collections without or with only vague recorded provenance), representing c. 42% of the total number of about 910 Bronze Age axes known in the Netherlands (fig. 1; table 1); this is rather more than the 286 palstaves, and more than ten times the number of winged axes in the country. There is a marked contrast with the situation in the neighbouring region of middle West Germany, where, according to the statistics of Kibbert (1984), out of a total of just over 1000 axes, there are 556 winged axes against 376 socketed axes. These are crude numbers, uncorrected for unknown and uncertain provenances and other factors, but the immense discrepancy in relative importance of winged axes and socketed axes in the two areas is evident. Further, Kibbert's distribution maps (his Taf. 78 and 79) show that winged axes are rather scarce in the German upper Rhine area and socketed axes comparatively plentiful in the area bordering on the Netherlands.

For the purposes of this section we consider the north of the Netherlands to comprise the modern provinces of Flevoland, Groningen, Friesland, Drente and Overijssel; the middle of the country, the provinces of Gelderland and Utrecht; the west, Noord-Holland, Zuid-Holland and Zeeland; and the south the provinces of Noord-Brabant and Limburg (map 1).
As a glance at the distribution of all types of socketed axes will show (map 2; fig. 2), their spread within the Netherlands is by no means uniform. Roughly a third of the country, especially the western part (anciently mostly low-lying and boggy), with the modern provinces of Zeeland, Zuid-Holland, Noord-Holland, Utrecht and Flevoland, and the northern marine-clay coastal strip (most of the modern provinces of Friesland and Groningen, in the Late Bronze Age not yet ready for occupation) is practically free of socketed axes, with the exception of the small number of finds in the dune area lining the west coast. Though parts of this western area were habitable, the Late Bronze Age settlements, such as those excavated at Hoogkarspel in Noord-Holland in recent years, have not given evidence for the availability of bronzes; possibly they were too isolated and dependent on a subsistence economy. The more axe-rich part of the country includes the somewhat higher and drier landscapes, including the Maas–Rhine gravel terraces, the Campine, the Veluwe, Twente (eastern Overijssel), the Drenthe plateau. Throughout this eastern part of the country, however, the distribution pattern is fairly evenly spread; the extra density seen in middle Limburg and in the Nijmegen area is probably due to intensive modern dredging and gravel winning in that part of the Maas–Rhine trajectories.

In detail the socketed axes in the Netherlands are exceedingly diverse: there are many more or less distinct types, and often rather few examples of each type. It seems likely that there were a goodly number of small producers working for local offset areas, and if there were many imports there was no massive import. Only in the case of the socketed axes of Plainseau type is an exception possibly to be considered.
1.2. Notes to the catalogue

Besides the catalogue number heading the entry for each object, we cite in brackets a DB number, which identifies the object in our computer database. This will prove to be a convenience for cross-referencing.

The following ABC will explain the code as it is here employed. In Part II:1; II:2 and III:1 we have already used AXF for flat axe, AXI for low-flanged axe, AXR for high-flanged axe, AXS for stopridge axe, AXP for palstave, AXW for winged axe and L for looped, BM for bronze mould. AXT signifies a socketed axe with loop, AXTU a socketed axe without loop.

Further descriptive features or subdivisions are indicated by letters or punctuation characters added on the right: A = arch on faces; C = crinoline blade tips; Fac = faceted; J = expanded blade tips; M = midrib; Nr = Neckrib(s); P = plain (unornamented); Pel = pellet(s); Rb = rib(bed); S = ogival body; Wi = 'wings'.

Geographical expressions here abbreviated with lower-case letters with reference to socketed axe types are as follows: arm = armorican; niema = Niedermaas; pls = Type Plainseau; helm = Form Helmeroth; hol = Form Hollen; geis = Type Geistingen.

Abbreviations for museums and organisations: RMO = Rijksmuseum van Oudheden; ROB = Rijksdienst voor het Oudheidkundig Bodemonderzoek.

References to literature frequently include the term Verslag or Jaarverslag. This refers to the Annual Report of the museum concerned. Other literature citations are located in Section 11 below.


1.3. Socketed axes of the south of the Netherlands: a glossary of typology and terminology (fig. 3)

In the descriptions of the socketed axes here presented, the terminology is in part that which is in general use for the type, but in part non-standard. Here we explain briefly the terms we use that may require clarification. We explain herewith also a series of non-standard abbreviations which we have occasionally employed in the text and catalogue below in an effort to reduce the burden on writers and readers of lengthy descriptions. The method is simply to replace, where possible, descriptive adjectives with graphic symbols available on the standard keyboard.

Fig. 3. Glossary for socketed axes in the Netherlands.
**Collar:** the thickened moulding surrounding the mouth opening. It can vary from minimal to (___) bulging as fig. 3, left; or \_\_\_/ conical; / \_\_ inversed-conical as fig. 3, right; < < > biconical as fig. 30a; [___] flattened as Cat.No. 494; or trumpet-shaped.

**Socket mouth formula:** follows the formula a-x-b-b; c-c\_d-d; where a-a gives the width and b-b the breadth of the collar, and c-c the width and d-d the breadth of the mouth opening.

**Neck ribs:** one or more thin horizontal ribs just below the collar. While there are no neck ribs present on some types, as here Types *Niedermaas*, Helmeroth, and Geistingen, one or two neck ribs are almost always present on Plainseau axes.

**Loop:** usually D-shaped and of more or less round cross-section (‘string loops’); very small on Types Geistingen and Wesseling; somewhat larger and usually of flattened cross-section (‘ribbon loops’) on Type Plainseau; larger and often of flattened-D shape on Helmeroth axes. ‘Elbow-shaped’ angular loops (as fig. 25a) are common on ‘Huize-Ems’ axes, but rare in the south of the Netherlands.

**Loop placement:** on *Niedermaas* axes, the loop generally springs from the collar or the base of the collar. On Plainseau axes (as on many British and West European types) the loop springs from a neckrib rather than from the collar (fig. 3, left).

**Body outline:** most often \_\_\_/ biconcave; some *Niedermaas* axes are || parallel-sided; \_\_\_/ expanding sides, conical; \_\_\_/ inverted conical; S ogival.

**Face ornament:** imitation wings, of varied length (from short as Cat.No. 487 to very long) are often present on socketed axes of the types here discussed. The wings are usually rendered as raised surfaces (Kibbert’s *Flächenlappen*, Lappenzier Gruppe A), here simply referred to as ‘wings’; but are sometimes rendered in ribs depicting the outline of wings (Kibbert’s *Rippenlappen*, Lappenzier Gruppe C), here indicated as ‘rib wings’. Variants include multiple-rib wings (Cat.No. 531), indented ‘wings’ (Cat.No. 490), ‘swinging door wings’ (Cat.Nos 537, 545, the Busland hoard, fig 30b), ‘drapery wings’ (Cat.No. 548); semi-‘wings’ where the ‘wings’ are only partial (Cat.Nos 501, 524, 548). A further distinction can be made between specimens on which the ‘wing’ pattern extends from the faces onto the sides of axe; these are here referred to as ‘wrap-around wings’ (e.g. Cat.Nos 485, 491–493, 544).

Also represented as face ornament are one or more pellets (Cat.Nos 495, 496 on *Niedermaas* axes, 512, 512–516, 520, 522–524, 528, 531, 534 on Plainseau axes, 543, 547, 548, 549 on Helmeroth axes). Occasional other rib-style motifs are mostly self-explanatory in the text.

**Arch facets on face:** various types of socketed axes in Southeast Europe, but also in North Germany and Scandinavia have on each face a more or less flat facet of parabolic outline, the meeting of these facets forming the cutting edge of the axe. In Kibbert’s middle West Germany such facets occur with varying frequency on socketed axes of his types Frouard, Løvskal-Bargeroosterveld, Helmeroth, and Lappenzier. In the northern part of the Netherlands arch facets are common and characteristic, while in the southern part of the country they are only occasional, occurring on Plainseau axes Cat.Nos 528 and 529 and on Helmeroth axes Cat.Nos 544, 545 and 547.

**Furrowing:** enlivening of the surface of an axe by impressing parallel furrows (a technique not unknown earlier in the Middle Bronze Age) occurs in the south of the Netherlands on a few Plainseau axes (Cat.Nos 518, 531) and a number of Helmeroth axes (Cat.Nos 538–544, 546–548). Characteristically the furrow rows are vertical on the faces and/or sides of the axe. A few specimens (Cat.Nos 547–548) have horizontal parallel furrows on the collar. Furrow decoration is, however, also common in the north of the country (e.g. fig. 25a). Similar decoration executed as flat facets instead of furrows occurs occasionally on Plainseau axes (Cat.Nos 517, 518).

**Blade tips:** socketed axes of the types here concerned do not have as a rule widely expanded blade tips. For the exceptional pieces that do have substantial blade tip expansion, e.g. Cat.Nos 498–500, 515, 538, we have employed the expression ‘J tips’; for examples on which the tips are expanded ogivaly (recurved; as Cat.Nos 490, 534), the designation ‘S tips’ is employable.

**Pouches** refer to hollows at the base of the sides, formed by hammering out the cutting edge in a sharpening or resharpeming operation (e.g. Cat.No. 516). Their occurrence is rather more frequent than is shown in our drawings, indications thereof having sometimes been lost through the omission of shadow rendering of the side view.

**Cutting edge:** we have distinguished between an *unsharpened* cutting edge, a *sharpened* cutting edge (where evidence of having been sharpened has not been removed by modern re-working), and a *sharp* cutting edge, i.e. anciently sharpened and still sharp.

2. THE NORTH–SOUTH DICHOTOMY

When we consider the socketed axes of the Netherlands in detail, it becomes apparent that there are major typological differences between the bulk of the socketed axes in the northern part of the country and those in the south. Only one major type, the Type Wesseling of Kibbert (1984), appears to be equally common in the northeastern, the east-central, and southeastern areas. Most of the other major types are well represented either in the northeast (their distribution area generally extending to the Emsland of western Germany, forming the most conspicuous
element of what we in the past have termed the Hunze-Em\ls{} industry or in the southeast (sharing, usually, an area of distribution including parts of Belgium and the German Lower Rhine-Westphalian area). The socketed axe material in the area around Arnhem and Nijmegen has, however, a rather mixed character, with influences from north, east and south, and some seemingly local features. We have accordingly divided our presentation into a Part III:2A, types common in the south, and Part III:2B, types common in the north. A supplementary Part III:2C will display the types, whether imported or local/regional products, represented by numbers too small in the Netherlands to have a distinctive distribution of their own.

The principal types of socketed axes especially characteristic of the southern part of the Netherlands and its adjacent areas of Germany and Belgium are the Types Niedermaas, Plainseau, Helmeroth and Geistingen. As a supplement we list the socketed axes of Armorican type in the Netherlands, though it is likely that all or nearly all are modern import.

3. GENERAL REMARKS CONCERNING SOCKETED AXES IN THE NETHERLANDS

In general the socketed axes in the Netherlands must be interpreted as tools for woodworking. Experiments in several centres in the Netherlands with the construction of Bronze Age-type houses using reproductions of bronze axes have demonstrated their utility for woodworking. Most have a suitable size and weight, and many show signs of heavy usage. Some however are richly decorated, suggesting that these axes may also have had a prestige function; but we do not have any that appear to have been expressly designed as weapons (though the use of work-axes as weapons is not necessarily excluded). A comparatively small number are obviously unsuited for any sort of practical employment — the absurdly thin-walled Geistingen axes being the most conspicuous examples — and these must have had some sort of symbolic value.

Although the socketed axes in the Netherlands are not overly numerous in comparison to the numbers known in adjacent regions, they must be divided into a considerable number of types and varieties; with the result that many types are known in only a small number of specimens.

Within the eastern part of the country that is fairly well provided with socketed axes, however, there is quantitatively not much difference in density between finds in the north, centre and south. Some of the more frequent types have a regionally limited distribution within the Netherlands, as we shall show in detail below.

A weak side of the record is that comparatively few of our socketed axes have known associations. There are no socketed axes in graves (with the possible exception of Cat.No. 515 below); there are only few hoards, and these are invariably small. Fortunately, however, we can draw upon the presence of our types in hoards in Belgium, Germany, North France, southern England, and even in a few cases in Denmark and Poland.

In searching for features of the socketed axes which might have especial value for distinguishing regional variation, it became apparent that there was a major difference in distribution within of the country of socketed axes with an arch-shaped (bell-shaped, parabolic) facet on the lower part of each face, and those without such arches. Those with arch facets — the keilförmige Tüllenbeile of Sprockhoff, the Tüllenbeile mit glockenförmig abgesetzten Breitseiten of Tackenberg — occur almost exclusively (apart from certain exceptions to be noted below) in the northeastern part of the country, and are part of the 'Hunze-Em\ls{}' axe repertoire. In contrast, the socketed axe types characteristic of the Maas–Rhine area for the most part do without such arch facets.

Other sorts of differences were also evident. It was curious to observe, for example, the differences between North and South in the type of loop employed. In both areas loops came into use that were larger than the normal loops of winged axes and socketed axes of Plainseau type. In the southern part of the country, enlarged D-shaped loops appeared (notably on socketed axes of Niedermaas type), or enlarged flattened loops (especially on Helmeroth axes) while in the northern region a characteristic elbow-shaped loop was often employed.

4. SOCKETED AXES OF NIEDERMAAS TYPE (AXT:nien) (24 ex.; figs 4–10; map 3)

4.1. Definitions and dating

The Niedermaas socketed axes are not a strictly homogeneous type, but consist rather of a series of small but related groups that we join together under that name. They have a family resemblance, so that it is not difficult to distinguish them from other types in the area, and from the products of neighbouring areas. Each small group is present in numbers too small to establish it as an independent type, but in addition to typological relationships there is a common distribution area.

The Niedermaas socketed axes in the Netherlands are, basically, more or less rectangular-sectioned socketed axes (though some have an upper part that is oval in section, and only the lower part rectangular, i.e. Cat.No. 488, Berg-en-Terbljigt, and others on which only the 'wing' part is of oval section and the rest of rectangular section. Typical are more or less
straight, parallel sides (though some have a slightly biconcave body outline). The collar is generally simple and modest; we exclude from this type all socketed axes with a markedly bulging or strongly biconical collar, since these have quite a different distribution pattern. A few specimens with a flat collar (Cat.Nos 494, 498–500) appear, however, to be somewhat extravagant Niedermaas derivatives, and are here appended to the list, but with the qualifications cited below. None of the axes that we reckon to the Niedermaas type have neckribs (thus contrasting with the Plaineau type, where one or two neckribs are almost always present). Facial arch facets are absent (thus differing from the characteristic North Netherlands types). Most examples have plastic ‘wings’, two have a pellet in addition, but none (apart from one Belgian example in the Lutlommel hoard) have rib ‘wings’. Other ornamental features are lacking; five examples (Cat.Nos 477–481) have no ornament at all. This poverty of ornament contrasts strongly with the ornamental diversity found on some other of the socketed axe types in the same area, such as the Plaineau type with its varied rib patterns, and the Helmeroth type with its frequent vertical furrow ornament.

Niedermaas axes are generally provided with a fairly large D loop (often 3 to 4 cm long; thus longer than the typical Plaineau loop of c. 2.5 cm), and more or less circular in section (contrasting with the typical Plaineau loop which is strap-like in section). The Niedermaas loop is not of flattened-D shape like those of axes of Helmeroth type. On most examples the loop springs directly from the collar (on Plaineau axes the loop springs from a neckrib below the collar). The Niedermaas loop is never angular (contrasting with the ‘elbow loop’ so common in the north of the Netherlands). In outline the loops on Niedermaas axes are often of } or ( form. The cutting edge of Niedermaas socketed axes may be unexpanded or slightly expanded; only a few examples have J or S tips, becoming rather extravagant in the small ‘extravagant derivative’ group (Cat.Nos 498–500; fig. 10). Some examples exhibit rather crude and clumsy workmanship. This is particularly noticeable in the irregular character of the collar on some specimens. Some display rather ragged or eccentric casting seams. The above description is based especially on the examples found in the Netherlands. As the drawings make it clear, not every example displays all the Niedermaas characteristic features.

The Niedermaas type was identified by one of us (Butler, 1973: pp. 330–339, Abb. 9–14), and proclaimed as characteristic for the Netherlands–Belgian Lower Maas area. We retain the German-language type-name (rather than Nedermaas or Lower Meuse) because it has also been so cited by several Belgian authors.

In the 1973 paper (originally a lecture by JJB for
We here list 24 socketed axes in the Netherlands which we would now assign to the Niedermaas type. Two of these (Cat.Nos 493 and 499) are of unknown provenance; two others have a dealer's provenance (Cat.Nos 486 and 532, both purchased from Sprik, both with alleged find-spots in Gelderland). One (Cat.No. 500) is probably a modern casting. Two-thirds of the list are from the southern provinces of Neth. Limburg and Noord-Brabant; indeed half are from Limburg. Four (including the two with dealer's provenance) are attributed to Gelderland; only one (Cat.No. 485) is from Drenthe.

A third of our examples are without facial ornamentation; two-thirds have plastic 'wings'. A few of the latter have other ornamental features in addition to the 'wings': two have 'wings' with pellet, four have 'wings' and a plastic offset collar; one has 'wings' and a slight midridge; two (plus a third possibly a modern casting) have 'wings', midridge, and flat offset collar. We have included here one Niedermaas-like axe with slightly indented 'wings' (see below, Cat.No. 490, with comments). There is only one other indented-waist axe in the Netherlands (DB 731, *gem. Boxmeer*) but its form is quite unlike that of Cat.No. 490. An indented waist is traditionally considered to be a type-defining feature; thus Kibbert groups axes with this feature as "Gruppe B (mit einziehenden Flächenlappen)" within category *Tüllenbelle mit Lappenzier*. Actually, our Cat.No. 490 has much more in common with our Niedermaas axes than it has with the British indented-waist axes of the Wilburton horizon or the various socketed axes with this feature in France (O'Connor, 1980: I: pp. 134-136; II: p. 504, list 99, map 39; Schmidt & Burgess, 1981: pp. 178-179 ("Type Ulleskelf"); Blanchet, 1984: pp. 249-250).

Evident are small but distinct concentrations in the area around Nijmegen, and in middle Limburg and the corresponding Belgian side of the Maas (including the Rotem hoard). The one lone example known in the north of the Netherlands (Cat.No. 485, from Ees, *gem. Borger*), can accordingly be presumed to be an import from the south of the country. The known number of find-spots of Niedermaas axes in the Netherlands and Belgium is rather less than the find-spots of Plainseau axes, and hoards of Niedermaas axes of the size of hoards such as Amiens-le Plainseau and Heppeneert are unknown. The production of Niedermaas axes seems therefore to have been on a rather smaller scale than the production of Plainseau axes, and the area of their dispersion is also considerably less (cf. maps 3 and 4).

In the Netherlands there are three hoards with Niedermaas axes. The most important is Berg-en-Terblijt, found in an otherwise bronze-poor area, the southern part of Neth. Limburg: a mixed hoard, unfortunately for a large part dispersed with inadequate recording. The preserved objects include weapons, tools and ornaments, and a single Niedermaas axe (Cat.No. 488). A second (probable) hoard (identical find information and patina) hoard is Susteren-‘Het Eilandje’, Neth. Limburg, consisting of one Niedermaas axe with 'wings' (here Cat.No. 484) and two socketed axes of Type Wesseling (DB 1135 and DB 1136). Lastly there is Montfort, Neth. Limburg (Cat. No. 481 and Cat.No. 487), a two-axe hoard (both Niedermaas axes, but one with 'wings' and one without).

The Berg-en-Terblijt socketed axe is exceptional in that its 'wings' are placed relatively low on the body, as if imitating a midwinged rather than a high-winged axe. The hoard is dated by Kibbert (1984: pp. 65 ff., 148-149), chiefly on the basis of his assessment of its winged axe, to his *Stufe Obernbeck*, equivalent to a middle phase of the south German jüngere Urnenfelderzeit (Müller-Karpe's HaB2), which Kibbert equates with an early part of Montelius V. The Rotem hoard has been similarly dated (Van Impe & Creemers, 1993: p. 41). Heppeneert and Hoogstraten would, however, in Kibbert's terms be of the späte Urnenfelderzeit/Stufe Wallstadl/HaB3/ later Montelius V. Warmenbol (1987b: p. 91) has justifiably cited one of the axes in the Nieuwrode hoard (his No. 3) as a close parallel for our Berg-en-Terblijt specimen (Cat.No. 488), and his No. 4, with slightly waisted 'wings', as resembling ours from Nijmegen (Cat.No. 490).

A possible though unverified association would be the Niedermaas socketed axe Cat.No. 491, found in a field adjacent to the air base Volkel in Noord-Brabant. From the same field, with similar patina, is the small looped palstave with ridged blade (Butler & Steegstra, 2000: p. 248: Cat. No. 379).

Van Impe & Creemers' list and map show 15 find-spots of Niedermaas axes in Belgium. These include five occurrences in hoards: Rotem, *gem. Dilsen*, and Heppeneert, *gem. Maaseik* in the Lower Maas area; Hoogstraten and Pulle in prov. Antwerp; and Nieuwrode in Belgian Brabant. The remaining Belgian examples in their list are stray finds; several have been illustrated by Warmenbol (1987b), some by Wielockx (1986).

Some of these Belgian examples are directly comparable with specimens in the Netherlands; but others have features which are rare in the Netherlands repertory, and raise questions about the possibility of their representing a local variant. Here we have in mind the examples with truncated-cone collar and rather narrow (\textbackslash body outline and <_>_ or (\_\_\_) body cross-section. The Netherlands specimens from Ohé-Roosteren (Cat.No. 545) and Stevensweert (Cat.No. 537) are certainly closely related to these. Strayed examples occur in a hoard in Denmark (Basland, here fig. 30b) and in the Vietkowa hoard in western Poland (Sprockhoff, 1956(II): Taf. 7:10). Without here going into detail, we think that generally these speci-
ments known in south and middle Belgium (several examples are known from the neighbourhood of Namur; so we refer to them tentatively as the variant Namur-Basland of the Form Helmeroth) are closely related to, but not identical with, those of the Niedermaas area.

The Rotem, Lutlommel, Heppeneert, Nieuwrode hoards contain, however, examples which would be difficult to separate from our Niedermaas group. The find-spots of the Rotem, Lutlommel, Heppeneert, and Hoogstraten hoards are close to the modern border between Belgium and the Netherlands; the circumstances they reflect must have been equally present on both sides of the modern frontier. The Nieuwrode hoard, from Belgian Brabant (Warmenbol, 1987b) has the largest number of Niedermaas axes found together, namely five examples. Three of them are with 'wings' (one of them with slightly indented 'wings'), thus broadly similar to the axe from Nijmegen (Cat.No. 490), one with ordinary D-shaped wings, one with shield-shaped 'wings'; two are wingless. No two are quite alike; some are more or less like specimens in the Netherlands, some have features not at present known in the Netherlands. The Rotem hoard (Van Impe & Creemers, 1993) has the next largest number of Niedermaas axes found together, namely four examples. They are far from identical: one (No. 2) is without facial ornament, one (No. 3) has plastic 'wings' (and is actually, uniquely in the Low Countries, an adze, having its loop on the face); one (No. 1) has rib 'wings', and one (No. 4) has outline 'wings' which are indicated by crescentic grooves that appear to have been hammered into the face. A button sickle was also recovered. These finds tend to support the view that the plain and 'wing'-decorated examples belong really to a single type, albeit with variants according to the presence or absence of 'wings' (cf. the Montfort hoard, below, Cat.Nos 481 and 487) which also contains a unwinged and an winged example. These finds also suggest that in each case it was not the intention of the workshop to produce a series of identical axes, but rather to endow each example with a degree of individuality.

The Lutlommel hoard contains two Niedermaas axes: No. 16 (with rib 'wings') and No. 40 (plain, with atypical features: cf. Van Impe, 1995/1996: pp. 22–23). They are accompanied by a large number of Plainseau axes; omega and other types of bracelets; simple rings; and biconical and ribbed-tubular beads. It is thus a hoard of axes and ornaments. It is noteworthy that among the Lutlommel C-sectioned omega bracelets is one with three ribs adjacent to each terminal (Van Impe, 1995/1996: p. 24, fig. 8, No. 6). As Van Impe points out, this bracelet is in all respects remarkably like an example in the Dreuil-les-Amiens hoard in Picardy, and also like examples in Drenthe: from the Drouwen 'princess' hoard of 1939 (Butler, 1965: fig. 1; 1986: p. 154 lower) and the Hijken hoard (Butler, 1965: p. 176, fig. 9 upper left). It seems likely that the Dreuil, Lutlommel, Drouwen and Hijken examples stem from the same workshop. These omega bracelets, as well as the versions with larger palette terminals, have been attributed to the Plainseau industry (Warmenbol, 1987a; 1987b; Van Impe, 1995/1996: pp. 23–24), and can be presumed to be imports from that region.

The large Heppeneert hoard — the largest Late Bronze Age hoard in the Low Countries and their neighbouring areas — has nearly 50 socketed axes and a single plain spearhead. The socketed axes are nearly all of Plainseau type, with a wide variety of decoration. Some of the motifs are common also on other Plainseau axes in Belgium, France and the Netherlands, some are uniquely known in the Heppeneert hoard itself. But also present are one Niedermaas socketed axe, with rib 'wings' (Van Impe, 1994: No. 12), and one 'faceted' socketed axe (Van Impe’s No. 2) of the Type Meldreth of Schneider & Burgess (1981: pp. 204–211, with detailed discussion; cf. O’Connor, 1980(1): pp. 166–167). Surface analyses of all the objects in the hoard by EDXRF (energy-dispersive X-ray fluorescence analysis) have been published by Wouters (1995). All show very substantial percentages of lead; which must have been well represented, if with lower concentration than shown in the surface analyses, in the original metal. This hoard is evidently not a scrap metal hoard, nor a random accumulation of bronzes from the Maas–Rhine area, nor a likely votive deposit. It must somehow have been intended to play a part in a distribution process for its axes, however we may imagine this concretely. We cannot at present determine whether the axes in this hoard were cast in the Picardy-North French region, or locally in the Lower Maas area, but there is no doubt that the hoard documents a northward thrust of the Plainseau industry.

The Hoogstraten hoard, in the Schelde area, is composed chiefly of Plainseau axes, but contains one example (Warmenbol, 1987a: No. 16 and fig. 19) with features recalling the Niedermaas axes, although there are also differences (hexagonal body cross-section, truncated-conical collar). We would tentatively consider this axe, along with its stray Belgian counterparts such as Mohiville-Scoville and Thon-Samson (Warmenbol, 1987b: figs 6 and 9) and their West German counterparts in the Duisburg-Wedau hoard (K.692–693, his Taf. 10 OC, by Kibbert asigned to the early Hallstatt phase), as belonging to a distinguishable variant, which we might for the moment call the Namur-Basland variant of the Helmeroth group. The Pulle assemblage (not regarded as a closed find by Van Impe 1973, but see Warmenbol, 1987b: p. 93, with note 14) contains sword-blade fragments, a series of plain spearheads, and a socketed axe with 'wings' which, like some
of the Nieuwrode axes, is surely assignable to the *Niedermaas* group. Among the bronzes (four socketed axes and a winged axe) from Pietersheim, *gem.* Lanaken (also just across the Maas from Neth. Limburg, opposite Borgharen) is one socketed axe which is probably a *Niedermaas* axe with ‘wings’, but the postage-stamp sized old drawing does not permit an exact determination, nor is the association of the objects undisputed.

Kibbert’s work has shown that surprisingly few *Niedermaas* socketed axes are known in the German Rhineland. Good examples are K.683 from Ginge-

rich, Kr. Moers, with ‘wings’; K.685, with wrap-

around ‘wings’, though atypically with ) body outline and elbow loop; K.695 from Hamminkelen, Kr. Rees, with semi-’wings’; and K.1000 from Wesel, Kr. Rees, with wrap-around ‘wings’. Along the Moselle there is a single example from Besch, Kr. Merzig-Wadern, K.682, with ‘wings’. Rather far to the east, along the Weser, is an example, with ‘wings’, from the hoard of Afferde, Kr. Hameln (Sprockhoff, 1941: p. 95, Abb. 77; Jacob-Friesen, 1967: p. 275, Kat.Nr. 900, Taf. 172:1–7), found with a spearhead and varied bracelets; the hoard is as-

cigned to Montelius V.

A few examples with truncated-cone collar and (…) body cross-section, i. e. K.692, with ‘wings’, and K.693, with semi-’wings’ and a pellet, in the Monte-

lius VI hoard of Duisburg-Wedau (cf. his Taf. 100C; with spiral bracelets), are perhaps related to what we

above have tentatively termed the Namur-Basland variant of the *Form Helmeroth*, i.e. the axes like Mohiville-Scoville (Warmenbol, 1987b: No. 19). One further German specimen, K.673, from Haltern-Lavesum, Kr. Reck-

linghausen, NRW, with ‘wings’, but atypically with vertical fluting as best known from the Helmeroth axes, seems also to be related to this series. It would, therefore, seem most unlikely that *Niedermaas* axes, in the sense here suggested, were made in the Ger-

man Lower Rhine area. Their production centre or centres are to be localized broadly in the Belgian-
southeast Netherlands Maas area (cf. map 3).

**Dating:** The socketed axes of *Niedermaas* type must be broadly contemporary with the socketed axes of Plainseau type (below, Section 5.1). The two types have been found together in the Belgian hoards of Lutlommel, Heppeneert and Hoogstraten. There is little convincing evidence for an earlier origin or a later survival.

In the list following, the Netherlands *Niedermaas* socketed axes are divided into subgroups according to the variations in ornament, and in the type of collar present. Each of our subgroups is evidently too small to represent a distinct type, but collectively they can be considered a single basic type with variants.

4.2. Catalogue of *Niedermaas* socketed axes

4.2.1. *Niedermaas* socketed axes, plain (AXT: niema.P) (fig. 4; 5 ex., including two examples known only from old drawings)

**CAT.NO. 477. MONTFORT, GEMEENTE AMBT MONTFORT, LIMBURG.**

L. 12.8; w. (3.8) cm. Subrectangular socket. Mouth formula: 4.2×3.8; 3.2×2.8 cm. Flat collar, from the base of which springs large, unusually projecting D loop (3.1×0.65 cm) with ) profile. Body section almost rectangular, with slightly convex vases and sides. Sides nearly parallel, having only faintly expanded blade end. Prominent casting seams: on loop-side slightly off-centre, on the opposite side very much off-centre; removed toward blade ends. Cutting edge was sharp, anciently battered and partly broken off (the breaks are patinated). Edge damaged. Patina: glossy dark green. Some light-coloured loamy encrustation. Mostly very well preserved. Museum Maastricht, Inv.No. 240; ex coll. Guillon (No. 178). Old numbers on face of axe: in white ink, Montfort (O) 1014; in black ink: 240. (DB 220)

*Map reference:* Sheet 60B, c. 194/348.

**References:** Butler, 1973: p. 333, tbl. 11:1; Wielockx, 1986: Cat.No. H.103 (but with wrong Inv.No.).

**CAT.NO. 478. ECHTERBROEK, GEMEENTE ECHT, LIMBURG.**

L. 11.3; w. 3.5 cm. Weight 278 gr. Subrectangular socket. Mouth formula: 3.9×3.6; 2.9×2.8 cm. Slight socket-mouth with somewhat irregular rim; 4 jets? Parallel sides, subrectangular section, with faces convex, sides more strongly convex. D loop (2.2×0.6 cm). Rather asymmetrically situated, prominent casting seams. Patina: dull green, surface slightly corroded, with small pits; light brown loamy encrustation. Cutting edge sharp, slightly asymmetrically sharpened. Negative for loop was hollowed in one of the half-moulds only. Found 1968 by H. Kessels. Museum: Echt, Inv.No. 3850, old No. B11. (DB 2352)

*Map reference:* Sheet 60B, c. 194/346.

**CAT.NO. 479. DONK, GEMEENTE BEEK EN DONK, NOORD-
BRABANT.**

L. 13.95; w. 5.0 cm. Oval mouth (formula: 4.9×4.15; 3.45×3.1 cm). Fairly narrow, irregular bulging mouth moulding, from base of which springs large D loop (3.4×0.6/1.6 cm), with ) outline. Body outline slightly concave, with slightly expanded blade tips; cross-sec-

tion with slightly convex faces and sides. Only small section of casting seams visible. Straight ground; cutting edge sharpened but battered. Patina: corroded, but traces of dark green patina remain. Found 1982 by Th. Otten, while digging a pond. Museum: Heemkamer BEEK en Donk, without Inv.No. (DB 2108)

*Documentation:* e-mail Toine Huijbers to authors, 20-08-2001.

*Map reference:* Sheet 51F, 171.63/394.77.

**CAT.NO. 480. BETWEEN GREVENBICHT/BERG, GEMEENTE BRONN, LIMBURG.**

L. 9.5; w. 4.3 cm. According to old drawing, squarish mouth open-

ing: slightly bulging collar; nearly parallel or slightly ) body outline with J blade tips; small low-set loop. ‘Apostrofici parum colora-

teur’. Museum: Asselt, Inv.No. 86, but lost. (DB 49)

*Documentation:* Inventaire Philips, No. 85 with drawing.

*Map reference:* Sheet 60C, c. 183/337.

CAT. NO. 481. BETWEEN MONTFORT/ODILIÉNBERG, GEMEENTE MONTFORT, LIMBURG. Part of hoard. L. 14.5 cm. Known solely from old drawing, showing round mouth opening, slight collar, slightly everted blade tips. Hoard with Cat.No. 487. Similar to Cat.No. 487, but without plastic 'wings'. Museum: Asselt, Inv.No. 241, ex coll. Philips. Found in the fen, during the burning of the peat ("entre Montfort et Odiliénberg dans le venne lors de l'incendie d'un tourbière"). Museum: Asselt, Inv.No. 241 (with drawing), but missing. (DB 62)

Documentation: Inventaire Philips, No. 241, with drawing.

Associations: Cat.No. 487.

NOTE: the two plain examples known only from old drawings are grouped here with reserve. The one example from a two-axe hoard (Cat.No. 481) is
coupled with an example (Cat.No. 487) with 'wings'.

*Parallels:* Plain *Niedermaas* socketed axes occur in the Belgian hoards of Nieuwrode and Rotem.

4.2.2. *Niedermaas* socketed axes with 'wings' (16 ex.)

Divisible into with 'wings' alone (8 ex.); with 'wings' slightly indented (1 ex.); with 'wings' and flattish offset collar (3 ex.); with 'wings' and pellet (2 ex.); with 'wings', flat offset collar, and slight midridge (2 ex.) plus one probable modern casting.

a) *Niedermaas* socketed axes with 'wings' alone (AXT: niema.Wi) (8 ex.; figs 5a,b)

**CAT.NO. 482. HEEZE, GEMEENTE HEEZE, NOORD-BRABANT.**
L. 10.5; w. 4.1 cm. Subrectangular socket; slightly bulging collar (formula: 3.9×3.85; 2.85×2.75 cm), below which originates a D loop (2.1×0.45 cm) with 6 outline. Body outline nearly parallel, but slightly 6. On neck plastic 'wings', nearly meeting in centre. Prominent casting seams, partly removed. Surface unpolished except base of blade; recently re-sharpened. Cutting edge sharp. Top of socket mouth has been hammered flat. Patina: dark bronze to black. Perfectly preserved. Museum: 's-Hertogenbosch, Inv.No. 612. (DB 257)


**CAT.NO. 483. ESCHAREN, GEMEENTE GRAVE, NOORD-BRABANT.**
L. 10.1; w. 4.4 cm. Subrectangular socket. Slightly bulging collar (formula: 3.9×3.85; 2.85×2.75 cm), from which springs small D loop (2.1×0.45 cm) with 6 profile (2.0×1.0/0.4 cm). On neck immediately below collar faint plastic 'wings', nearly meeting in centre. Parallel sides, with somewhat expanded blade tips (one damaged). Prominent casting seams. Patina: brown, with small lighter brown pits. Museum: 's-Hertogenbosch, Inv.No. 6284, on loan in museum Veldhoven. (DB 258)

*Map reference:* Sheet 45F, c. 179/417.

**CAT.NO. 484. SUSTEREN HEIDE, GEMEENTE SUSTEREN, LIMBURG. 'Het Eilandje'. From a probable hoard of three socketed axes.**
L. 11.7; w. 4.3 cm. Subrectangular socket opening (formula: 4.1×3.85; 3.15×2.85 cm). Minimal collar, defective in the casting; body outline slightly 6, with subrectangular section (faces and sides slightly convex). Large D loop, 3.5×0.65 cm. Faint D-shaped 'wings', the upper edges of which extend onto the sides, just below the collar, but their lower edges are not present on the sides. Cutting edge sharp, with use marks. Patina: dark bronze colour with light green in the low places. Surface rough. Found in a field, south of boundary marker 112 (probably, according to recent information, actually marker 312) along the border with Germany, on the Susteren Heath, at a place called 'Het Eilandje'. Museum: Sittard, Inv.No. 308; part of hoard, with DB 1135 and DB 1136. (DB 1134)

*Associations:* DB 1135, DB 1136 (two socketed axes of Type Weselinge). Presumably a hoard on the basis of identical find information and compatible patina.

*Map reference:* Sheet 60B, c. 192/342.

*Documentation:* Mausbode Sept. 1, 1937 (clipping in old archive

**CAT.NO. 485. EES, GEMEENTE BORGER, DRENTHE.**
L. 9.5; w. 4.0 cm. Weight 244 gr. Subrectangular mouth (formula: 4.1×3.7; 2.3×2.0 cm); single collar, asymmetrical, flattened on top. From it springs a large D loop (3.0×0.8 cm), with oval section. On oval-sectioned neck, prominent plastic 'wings', extending onto sides. Nearly parallel, slightly concave sides. Prominent sharpening facet on each face. Prominent casting seams. Cutting edge sharp. Patina mostly blackish; patches with ochreous colour and with light green corrosion. Otherwise well preserved. Found 1980, near the drawbridge in the road Ees-Borer, at the side of a field. Museum: Assen, Inv.No. 1980/X.7. (DB 665)

*Map reference:* Sheet 17F, 250.20/548.43.


**CAT.NO. 486. BATERBURG, GEMEENTE WIJCHEN, GELDERLAND. River Maas (dealer’s provenance).**
L. 11.5; w. 4.4 cm. Slightly biconical collar (formula: 4.2×3.65; 3.1×2.7 cm). Large D loop (3.3×0.7 cm), faint plastic wrap around 'wings'; rectangular section. Cutting edge sharp with 5 tips. Patina: dark bronze to black. Dredge find from river Maas. Museum: RMO Leiden, Inv.No. e. 1938/9.3. (DB 480). Purchased from A. J. Sprik of Zaltbommel, together with Cat.No. 317 and DB 479.

**CAT.NO. 487. GEMEENTE AMBT MONFORT, LIMBURG. Between Montfort and St.-Odilienberg. Part of hoard with Cat.No. 481.**
L. 14.2; w. 4.4 cm. Subrectangular mouth opening (formula: 4.2×4.0; 2.8×2.6 cm). Slightly bulging collar, from which springs large D loop (4.0×1.0 cm) with irregular profile. Body outline nearly parallel-sided, with very slight cutting edge expansion; cross-section nearly rectangular, with slightly convex faces and sides; slightly hexagonal due to poor alignment of halves of mould. On neck, just under collar, small D 'wings', not quite meeting on face. Cutting edge sharp (somewhat resharpened recently). Patina blackish. Found "entre Montfort et Odilienberg dans le Venne lors de l‘incendie d‘un tournière, avec le no. suivante". Museum: Asselt, Inv.No. 240 (missing; present locus unknown); ex coll. Philips. (DB 61)

*Associations:* Cat.No. 481, similar but without plastic 'wings'.

*Documentation:* Inventuur Philips, No. 240, with drawing.


**CAT.NO. 488. VILT, GEMEENTE BERG-EN-TERBLIJT (now GEMEENTE VALKENBURG a/d GEUL), LIMBURG.** From the hoard.
L. 12.2; w. 4.3 cm. Subrectangular mouth opening (formula: 4.0×4.0; 3.1×3.1 cm). Flattish, but slightly bulging collar, from which springs large D loop with 6 outline (4.4×1.4/0.7/1.8 cm). D-shaped 'wings' begin c. 1 cm below the collar, their upper edge extending onto sides, but not their lower edge. Body with slightly 6 outline, oval cross-sectioned neck and 'wings' section, but slightly hexagonal/subrectangular below the 'wings'. Prominent casting seams. Cutting edge sharpened, but battered. Patina: glossy green; dark on one side, lighter green on other. Loamy encrustation. Museum: Maastricht, Inv.No. 216. (DB 481)

Fig. 5a. *Niedermaas* socketed axes with ‘wings’, without further ornament. 482: Heeze, N-B; 483: Escharen, N-B; 484: Susteren Heide, Li (‘Het Eilandje’, probable hoard, with Wesseling socketed axes DB 1135–1136); 485: Ees, Dr; 486: Batenburg, Ge (dealer’s provenance) (see also fig. 5b).

**Dating**: Kibbert dates this axe to his Stufe Obernebeck/earlier Montelius V.

**Parallel**: Warmenbol (1987a) suggests as a close parallel for this axe, his axe 3 from the Nieuwrode hoard.

**Cat. No. 489. BEMELEN, GEMEENTE MARGRATEN, LIMBURG.**
L. 12.4; w. 3.8 cm. Weight 360 gr. Subrectangular mouth (formula: $4.15 \times 3.95; 2.75 \times 2.5$ cm). Slightly biconical collar (the rim slightly flattened), from which springs small D loop ($2.3 \times 0.5$ cm). Long body with nearly parallel sides, very slightly J. Cross-section of upper part slightly flattened oval, with plastic D-shaped ‘wings’; lower part nearly rectangular, with slightly convex faces and sides. The upper part has casting seams preserved, but slightly hammer-flattened; in the lower part the casting seams have been worked away. Cutting edge presumably sharpened, but has suffered recent battering. Patina: unusual light green, somewhat glossy; much of the surface is smooth and very well preserved (showing numerous...
faint hammer-marks) but the cutting edge and one of the blade sides are battered, showing light green corrosion. Inside the socket, light brown loamy encrustation. Found Spring 1987 by present owner during archaeological mapping activity. Private possession. (DB 910)


Note that three Netherlands examples are from hoards: Berg-en-Terbljnt, Susteren, ‘Het Eilandje’, and Montfort. Also in the Belgian hoards of Rotem (No. 16) and Heppeneert (No. 12), the latter exceptionally with rib ‘wings’.

b) Niedermaas type with ‘wings’ slightly indented (1 ex.; fig. 6)

CAT.NO. 490. NIJMEGEN, GEMEENTE NIJMEGEN, GELDERLAND (dealer’s provenance?). L. 10.2; w. 4.5 cm. Oval mouth opening (formula: 3.6×3.5; 3.2×3.05 cm). Flattish collar, flattened rim, with hammer marks; plastic ‘wings’, body here (1 section; [1] blade section. From the moulding springs D loop (2.9×0.7 cm). Directly below collar, ‘wings’, saddle-shaped with vertical furrows, and nearly meeting in the centre; their lower edges elevated into a transverse ridge on the sides. Body outline slightly )}, but modified by the saddle of the ‘wings’ and a flattening of the cutting-edge tips. Casting seams prominent, but worked away just above the cutting edge. Cutting edge sharp, with ancient resharpening facet. Well preserved, partly corroded. In loop, coarse sand in blackish matrix. Patina: grey-green, black in places. Museum: Oxford (Ashmolean), Inv.No. A1927.1983. Ex coll. John Evans. Old marks: Nijmegen, Holland, 1889. (DB 651).
(1993: in their list No. 26). Actually, it is not its waist which is indented, but the 'wings'. It has indeed more in common with the axes of *Niedermaas* type than with 'indented waist' axes generally (cf. O'Conner, 1980(I): pp. 134–136; (II): p. 504, list 99 and map 39, with half a dozen examples in Northeast France and one in the Netherlands, various hoards and stray finds in North France and Britain (Kibbert, 1984: pp. 145–146, Nos 697–701), five examples in middle West Germany, under *Groppe B*, *axes mit einzeln­den Flächenlappen* as a subdivision of *Tüllenbeile mit Lappen­zier* (Schmidt & Burgess, 1981), four examples under Type Ulleskelf, and a listing of Brit­ish hoards with indented-waist socketed axes.

**Parallel:** No. 4 in the Belgian hoard of Nieuwrode is, as suggested by Warmenbol (1987a), a particularly good parallel.

c) *Niedermaas* socketed axes with 'wings' and flat­tish, offset collar (*AXT:niema.Wi._Col*) (4 ex.; fig. 7)

**CAT.NO. 491. VOLKEL/ZEELAND, GEMEENTE UDEN/ LANTERD, NOORD-BRABANT.**

L. 9.0; w. 3.1 cm. Subrectangular mouth (formula: 2.95×3.15; 2.2×2.5 cm). Single flat to conical collar; top asymmetrical; large D loop (2.7×0.7/0.3/0.7 cm); wrap-around plastic 'wings' (3.5 cm), almost meeting. Body outline slightly \( \chi \) without cutting-edge flare; section hexagonal, with slightly convex faces at \( \angle \) sides. Prominent, somewhat asymmetrical casting seams. Heavily corroded. Blowholes on faces. Edge resharpened recently. Patina: greyish green. Found along the road Venray-Zeeland, near the military air base Volkel, on a field. Private possession. (DB 732)

**Possible association:** from the same field, and with similar patina, by the same finder: a looped palstave (*Butler & Steegstra, 2000*: pp. 248–249, Cat.No. 379, fig. 85a); small, with sinuous outline, flat septum, ridged blade.

**Map reference:** Sheet 45H, c. 177/411.

**CAT.NO. 492. WIJCHEN, GEMEENTE WIJCHEN, GELDER­LAND.**

L. 10.6; w. +3.5 cm. Single flat to conical collar (damaged) (formula: 3.8×3.4; 2.85×2.45 cm), with band-shaped side-loop (3.5×0.8 cm) springing from it; cross-section oval above, rectangular with slightly convex faces below; plastic 'wings', meeting as bow on sides. Patina: leathery brown. One side and the cutting edge severely damaged; socket-mouth damaged (partly in antiquity). Found 1942 in the Woekishe Straat near the Catholic school (according to labels inside the axe). Museum: Wijchen, Inv.No. BL 2046. (DB 1149)

**Map reference:** Sheet 23F, c. 178/425.

**CAT.NO. 493. PROVENANCE UNKNOWN (VELUWE?).**

L. 11.25; w. 4.2 cm. Nearly rectangular socket-mouth (formula: 3.75×3.2; 3.1×2.7 cm). Flattish offset collar, from the base of which springs large D loop (2.7×1.0/0.5/1.0 cm) with \( \chi \) outline, bent out of alignment. Rectangular body, with plastic 'wings' on face. D-shaped 'wings' (length 3.8 cm), meeting in centre of face, faintly indented. Body outline slightly \( \chi \), with subrectangular section. Cutting edge sharpened. Patina: originally mottled green with brown patches; partly removed mechanically. Surface heavily corroded. Eccentric casting seam on the looped side. Museum: Barneveld, Inv.No. 54. (DB 1001)

**CAT.NO. 494. OTTERSUM, GEMEENTE OTTERSUM (now GEMEENTE GENNEP), LIMBURG.**

L. 12.8; w. 4.3 cm. Oval socket, becoming subrectangular lower down. Flat-faced collar (mouth formula: 4.3×4.0; 3.2×3.1), from base of which springs fairly large D loop (2.9×0.55 cm). Directly below collar, wrapped-around 'wings', nearly meeting at the cen­tre of the face; along the base of the 'wing' is a rib, also present on the sides. Body outline slightly \( \chi \), nearly parallel-sided, with subrectangular section. Cutting edge very slightly expanded; sharp. Patina: very dark bronze, nearly black, with slight traces of greenish ash at loop. In the socket, light green to light blue. On face a small area with black tarry encrustation. A small modern bore-hole is present on the lower part of the face not shown in the drawing. Found c. 1966 by A. Burgers in the cellar of the Catholic church at Ottersum. According to the finder, possibly washed with earth through a hole in the cellar wall after a heavy rain fall shortly before the find was made; but perhaps more probably brought to the cellar and left behind when it was used as shelter during the war. Museum: Maastricht (Bonnewantennemuseum), Inv.No. 2525A; acquired July 1969 via Dr. A. Tennissen. (DB 1452)

**Map reference:** Sheet 46B, 196.145/412.830.


d) *Niedermaas* socketed axes with 'wings' and pel­let (*AXT:niema.Wi.Pel*) (2 ex.; fig. 8)

**CAT.NO. 495. VENRAY, GEMEENTE VENRAY, LIMBURG.**

L. 9.1; w. 4.0 cm. Loop: 2.85×0.8 cm. Slight single collar (formula: 3.75×3.45;2.8×2.75 cm); large D-sectioned D loop (2.85×0.8 cm); plastic 'wings' with high-placed pellet; faces flat, sides rounded; blade slightly expanded. Blade sharp, J-ish tips. Prominent casting seams. Patina: dark, glossy green. Found by A. van Lierop while digging a pit for a sump in his garden, about 25 m behind his house, c. 50 cm below surface. According to owner, the axe came up in a clump of iron oxide-encrusted sand (but cf. patina!). The pit was adjacent to a rubbish-filled bomb-crater. Museum: Venray, purchased from finder. (DB 1757)

**Map reference:** Sheet 52B, 195.175/393.500.


**CAT.NO. 496. ST. JOOST, GEMEENTE AMBT MONTFORT, LIMBURG.**

L. 11.7; w. 3.8 cm. Single pronounced collar (formula: 4.3×3.8; 2.9×2.4 cm), from which springs a large D loop (3.65×0.6/0.4/1.0 cm); plastic 'wings', with prominent pellet. Cross-section rectangular, with slightly convex sides and faces; no seams except under and just below the loop. Patina: glossy green, but much of surface with recent file marks. Cutting edge heavily filed. Museum: Museon, Den Haag; no Inv.No. Purchased 1992. Ex coll. Wouters. (DB 2178)

**Documentation:** letter A. Wouters to Butler, 8 July, 1997.

**Map reference:** Sheet 60B, c. 191/347

Note: wing-and-pellet ornamentation is common on socketed axes of Plainsean type, but is exceptional on *Niedermaas* axes.
Fig. 7. Niedermaas socketed axes with 'wings' and flattish, offset collar. 491: between Volkel/Zeeland, N-B (drawing HS); 492: Wijchen, Ge; 493: provenance unknown (Veluwe?); 494: Ottersum, Li.

e) Niedermaas socketed axe with 'wings' and mid-rib (AXT:niema. Wi.M) (fig. 9)

CAT.NO. 497. BLERICK, GEMEENTE VENLO, LIMBURG.
L. 9.1; w. 3.5 cm. Subrectangular socket mouth (formula: 3.4×3.3; 2.7×2.6 cm). Very slight collar, from which springs large D loop (3.0×1.5 cm) with \( \approx \) profile. Neck with oval section, plastic D 'wings', nearly meeting at centre of face. Body with parallel sides, slightly convex faces and sides. Cutting edge sharp. Museum: RMO Leiden, Inv.No. 11938/6.56. Presented by Keus (Venlo). (DB 474)


f) Niedermaas socketed axes with 'wings', flat, offset collar, and slight midridge (AXT:niema. Wi._Col. MI) (3 ex., but one modern casting??; fig. 10)

CAT.NO. 498. ZALTBOMMEL, GEMEENTE GELDERMASEN, GELDERLAND (dealer's provenance).
L. 11.95; w. 4.7 cm. Mouth formula: 3.8×3.6; 3.0×2.9 cm. Subrectangular socket, flat collar, from the base of which springs a large D loop (2.8×0.9 cm). Parallel-sided body with slightly expanded blade tips; hexagonal cross-section (i.e. face with midridge),
Fig. 8. *Niedermaus* socketed axes with ‘wings’ and pellet. 495: Venray, Li; 496: St. Joost, Li (drawing HS).

**Fig. 9. Niedermaus** socketed axes with ‘wings’ and midrib. 497: Blerick, Li.

with long plastic D-shaped ‘wings’ extending onto sides. Prominent, irregular casting seams, an extra seam running alongside the loop; below the ‘wings’ no seams visible. Patina: dark bronze (has been mechanically cleaned); traces of black encrustation outside; with partly greenish, partly ochreous loam in crevices; greenish inside socket. Found during the building of the Nie uwe Weg at the Diepdijk. Museum: RMO Leiden, lnv.No. e. 1937/7.1; purchased from A.J. Sprik. (DB 466)

Map reference: Sheet 45E, c. 146/425.

**CAT.NO. 499. PROVENANCE UNKNOWN.**

L. 13.1; w. 6.2 cm. Mouth opening oval (formula: 4×3.45; 3.1×2.6 cm). Flat collar, from the base of which springs large D loop (3×0.7 cm). Immediately below collar, elongated D ‘wings’ (length 5.8 cm). Body parallel sided to base of ‘wings’; below it with concave outline, flaring blade part. Midridge almost full length of body. Edge sharp. Patina: black. Private possession. (DB 1810)

**CAT.NO. 500. MEGEN, GEMEENTE MEGEN, NOORD-BRABANT.** Allegedly dredged from the River Maas. L. 13.0; w. 6.0 cm. Hexagonal mouth (formula: 3.8×3.3; 2.9×2.5 cm). Flat collar, from the base of which springs D loop (2.75×0.9 cm). Long wrap-around plastic ‘wings’, nearly meeting at central ridge. Body with parallel sides, ridged on face, with expanded blade tips. Unusually heavy. Cutting edge sharp. Patina: described in accession register as of spotty yellow colour, without patina. Now dark bronze. Museum: ’s Hertogenbosch, Inv.No. 8704; purchased 1938. Find-spot information: Ch. de Mooij (DB 272)

**Note:** The unusual thickness of the walls and other features of workmanship, together with the absence of any evidence for a patina, weathering, earth traces, etc. suggest that this axe may be a recent casting.


5. SOCKETED AXES OF TYPE PLAINSEAU (AXT:PLS) (31 ex.; figs 11–22; map 4)

5.1. Definitions and dating

Numerically the most important of the types of socketed axes present in the southern part of the Netherlands (as well as the adjacent parts of Belgium and Germany), but virtually absent in the north of the Netherlands, is the Type Plainseau. The type was first distinguished, and defined for the more northerly part of France, in the 1970s, and for Belgium and the Netherlands in the 1980s. One of the present writers...
(Butler, 1963) had ascribed a number of specimens in the Low Countries, on the North European plain and in southern Scandinavia to the British Southeastern type; one can now see that the designation ‘Plainseau’ would have been more appropriate for these axes. The importance of the Plainseau type has been emphasized by its recognition as the main axe type present in the numerous hoards of the Late Bronze Age in the Paris Basin and Picardy (Gaucher & Mohen, 1974: p. 62; Briard & Verron, 1976: pp. 35–36, fiche 711, figs 1 and 2; Mohen, 1977; O’Connor, 1980(f): pp. 162–163; Gaucher, 1981: p. 72; Coffyn et al., 1981: pp. 33–35; Blanchet, 1984: pp. 279 ff., esp. 282, 2001: pp. 85–93). In this area it qualifies as a guide fossil for the period Bronze final IIIa and for the culture de la Plainseau of Gaucher (though some would prefer not to use the term ‘culture’ in this sense). The significance of the Plainseau type in Belgium has been enhanced for the Schelde area by the publication of the hoards of Hoogstraten and Antwerp-Kattendijkdok (Warmenbol, 1987a); and for the Maas area by the recent handsome publication of the Lutlommel and Maaseik-Heppeneert hoards (Van Impe, 1994, 1995, 1995/1996).

For Tackenberg (1971) and Kibbert (1984) these developments were too late to influence their work, so that in their presentations the Plainseau axes occurring in their areas are split up among variously designated types. In middle West Germany we would, to judge from the illustrations of Kibbert, classify as Plainseau axes the 14 examples he places under his Form Amelsbüren (his pp. 168–170, K.807–820), including the four nur angeschlossen and four with unknown or vague provenance, but also, shown under Form Wesseling War. Traben-Trarbach nahestehend, the five axes K.609 to 613; plus under Tüllenbeile mit Lappenzier the ten axes K.686, 688, 702, 703, 706, 713, 715, 717, 718 and 719; plus K.1002, K.1003 and K.1008 (on his Taf. 77) in his Nachtrag. Some of the Amelsbüren axes of Kibbert — it is not clear how many — are very thin-walled and lightweight, and may be a votive version. Some at least are of bronze with more than 5% lead (Tackenberg, 1971(f): pp. 49–51; Kibbert, 1984: p. 214, K.807–809 from the Amelsbüren hoard, K.813 possibly from Krefeld-Linn).

Though different authors have chosen different features as the key determinants, recognition of the axes of Plainseau type is not in the least difficult (cf. Gaucher & Mohen, 1974: ill. 41; Briard & Verron, 1976: pp. 35–36, Type 711; O’Connor, 1980(l): pp. 162–163; Gaucher, 1981: p. 72; Schmidt & Burgess, 1981: pp. 212–217: Cat.Nos 1267–1294B with several variants; Blanchet, 1984: pp. 279 ff., esp. p. 282). But still not fully resolved is the question as to whether, and if so, how, socketed axes of Type Plainseau can be distinguished from those of the British Southeastern type. In the absence of a sys-
tematic study of the (disconcertingly numerous) socketed axes in southern Britain, it is not yet possible to provide a definitive answer to this question. We can cite O’Connor (1980(I): p. 162): “[the French Plainseau axes] have a round mouth and a blade of concave profile, in contrast to the quadrangular mouth and straighter profile usual on southeastern axes. Other features are distinctive: a rib at the top of the collar (Gaucher & Mohen, 1974: ill. 41), a double rib below the collar, a more angular blade section”. O’Connor’s negative view of the presence of Plainseau axes in Belgian hoards would have been different had he been able to take account of the subsequently published Heppeneert and Lutlommel hoards.

We may mention a few other contrasts between the Continental Plainseau axes and the British Southeastern ones. Tips are generally rather rare on Plainseau axes, and very common on British Southeastern socketed axes; but consider the mixture of axes with ‘Southeastern’ and ‘Plainseau’ features in the hoard from Coye-le-Forêt (Sonne) (Blanchet, 2001: esp. figs 1-8)! Vertical ribs inside the socket seem to be exclusively British (an isolated example of a Southeastern type axe with single neckrib, rib ‘wings’ and pellet, and internal vertical ribs: K.713 from the Rhine-Lippe junction area at Wesel II). Many Southeastern axes have a distinct space between the collar and the (single) neckrib; e.g. Boreham, Essex; Reach Farm, Cambridge Inventory GB.17; Watford Cassiobridge Farm; and, in North Britain, Schmidt and Burgess’ Type Everthorpe; these are not represented in the Netherlands. ‘Wings’ in both the plastic as well as the rib style occur commonly on Plainseau axes, but on British Southeastern axes the ‘wings’ are almost invariably ribs (Schmidt & Burgess, 1981: p. 216). Since these suggestions are not based on a complete knowledge of the South British material, the true diagnostic value of all these features requires testing on the basis of a much larger sample than is at present visible.

Distribution of Plainseau axes
In terms of distribution, Plainseau axes in the Netherlands occur predominantly in the south (18 of the 31 examples), contrasted with eight from the middle provinces, and only one in the north; four are unprovenanced. Four are from hoards: two examples from a two-axe hoard from Oirschot (Cat.Nos 513 and 523) and two from the presumed Stiphout hoard (Cat.Nos 514 and 524); both are finds from Noord-Brabant. The others listed are stray finds.

The variety of ornamental motifs appearing on Plainseau axes suggests that the ornaments may have been intended for, or at least have served the purpose of, making each axe individually recognizable to its possessors and to others. This individualization could, perhaps, be interpreted as evidence for the existence of individual property rights, or perhaps of an exclusive right of use for the object concerned. The ornaments may, of course, have had other symbolic significances that we cannot now interpret. Individualization is similarly observable on the socketed axes of Niedermaas type, where each axe in the hoards has distinctive features of form and decoration, and no two are quite alike.

The hoards with Plainseau axes in the Seine basin, Picardy and northern France have been abundantly documented, especially by Gaucher (1981) and Blanchet (1984).

Of special importance for us here are the large Belgian hoards. Remarkably, three hoards in Belgium with Plainseau and Plainseau-related axes — the hoards from Lutlommel, geni. Lommel, Belgian Limburg (Van Impe & Creemers, 1993); from Heppeneert, just south of Maaseik (Van Impe, 1994, 1995/1996); and from Hoogstraten, prov. Antwerpen (Warmenbol, 1987a) — are very close to the modern Belgian–Netherlands border. So also is the possible hoard from Pietersheim.

Heppeneert is less than 10 km from the extreme northeast corner of Belgium, and separated from the Netherlands by little more than the width of the Maas. (The find-spot is also only some 5 km from Ophoven-Geistingen, the site of another large socketed axe find, that of some 26 or 28 ‘long, thin’ socketed axes of Geistingen type (see below, section 7), also on the Belgian side of the Maas, opposite Stevensweert.) The Heppeneert hoard contained no less than 49 socketed axes (including two found be-
fore 1908 and 47 found 1990–1992), plus fragments. The only non-axe object in the hoard is a single plain spearhead. All but two of its axes are socketed axes of the Plainseau type, with lengths up to 12.3 cm, variously ornamented (none are without ornament; more than half have rib ‘wings’ or variants thereof). Six have facial arch facets. Many have a pellet, sometimes alone, sometimes combined with the rib ‘wing’ ornament. There is one ‘faceted’ socketed axe, and one of Niedermaas type with rib ‘wings’. None have J tips. A hoard with so one-sided a composition cannot be a random collection of old objects from the neighbourhood, nor an accumulation of offerings. It is most likely a trader’s stock.

The Lutlommel hoard contained at least 15 socketed axes (possibly 19 or 20, according to Van Impe’s reconstruction), plus a number of omega-shaped bracelets and some bronze beads (rounded-biconical and tubular spirally ribbed) and various rings. Illustrated are ten Plainseau axes and two of Niedermaas type (one with rib ‘wings’ and one plain).

The possible hoard from Pietersheim, gem. Lanaken (close to the Maas and Netherlands Limburg), has three Plainseau axes (Heymans, 1985: pp. 132, 135; Wielockx, 1986(III): pp. 188–189, Hu 85–Hu 86). A fourth socketed axe (Hu 88) with ‘wings’ is illustrated only in postage-stamp format. A looped winged axe (Wielockx, 1986(III): p. 88, VI.13, p. 401) is characterized by Wielockx as an ‘evolved Gezeke model’ (referring to a classification of Kibbert). The Pietersheim find is difficult to evaluate, since it is not clear whether the objects were actually found together, and the fourth socketed axe is not adequately illustrated.

In the Schelde area, two hoards with Plainseau axes have been studied by Warmenbol (1987a). The Hoogstraten hoard contains Plainseau axes in several variants (chiefly with ‘jail-window’ ornament (cf. Cat.No. 530 from ‘Noord-Brabant’), but also plain, pellet, rib-‘wing’ and pellet, and rib-‘wing’ ornament), but also a ‘Belgian’ Niedermaas variant (Warmenbol’s No. 16, fig. 12); while the Antwerpen-Kattendijkdok hoard has several variants of Plainseau axes.

Finds of socketed axes strictly meeting O’Connor’s definition of the Plainseau type seem to be extremely rare in southern England, at least in published hoards; indeed, O’Connor himself declares: “I have been able to identify confidently only a single example [of the Plainseau type] in a British hoard”. (He cites in this connection his Pl. 60, No. 22; but his drawings show that neither this specimen, nor his No. 24 on the same plate which he identifies as of French origin, have two neckribs.) Socketed axes resembling the Southeastern form, with straighter sides and J tips, are somewhat easier to find in France; even the Plainseau hoard itself has a few examples. Taking one thing with another, especially with reference to the numerous examples in the recently published Heppeneert and Lutlommel hoards, we do not see any distinct dividing line between the Plainseau axes of Picardy, North France, Belgium and the Netherlands. There are variants present in small numbers in Belgium, which suggest the possibility of regional or local manufacture. As for the axes presented here we believe, at least until proven otherwise, that they are products of a regional industry that had its offset area spread over the Paris basin, Picardy, northern France, eastern Belgium and the southeast of the Netherlands.

In the Netherlands we assign 31 axes to the Plainseau type; this is double the number previously illustrated and mapped (Butler, 1987: pp. 26–28, figs 16–18, p. 33, note 9). The mouth openings vary from circular to subrectangular. The loop, D-shaped and normally ribbon-like, is moderate in size (length of the order of two cm: smaller and broader than on Niedermaas axes, larger and broader than on axes of Wesseling type, not elongated as with most axes of Helmeroth type, never angular as in the north of the Netherlands). Characteristically it springs from the position of the neckrib(s), never from the collar. The collar is broad and generally bulging. Two examples without neckribs, thus atypical, are included because they are typically Plainseau in other respects. Single and double neckribs are equally common. Nine examples have one neckrib and no further ornamentation. Twelve have a pellet on the face (sometimes combined with ‘wing’ ornament); one has two pellets. Eleven have ‘wing’ ornament. Two have an arch facet on each face. Two have outspoken J blade tips. One has a V rib depending from a single neckrib. One has angle facets on the face. One has vertical furrow decoration (in the manner found usually on Helmeroth axes: see below section 6). We list here also the one axe attributed to the Netherlands with jail-window ribbing on the face (Cat.No. 530), as this motif occurs on a number of the axes of the Hoogstraten hoard.

**Dating and origin of Plainseau axes**

Plainseau axes are a characteristic type of the climactic hoard horizon and cultural phase of the Paris basin and Picardy of the same name (Bronze final IIb in the terminology of Blanchet, 1984: pp. 368–373, with chronological table). It is coupled by innumerable links to the South German HaB2/3; to the British Ewart Park and Carps-Tongue complexes and their corresponding complexes in North Britain and Ireland; and by more occasional links to the North European Montelius V.

Perhaps the earliest dated Plainseau axes are, however, the two examples (one plain, one with a short vertical rib depending from the neckrib; both with the lower part of the blade broken off) in the Danish hoard of Løvskal, Viborg Amt, Jutland (Bro-
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1.1. BUTLER & H. STEEGSTRA

holm, 1946(III): p. 202, hoard M.84; Butler, 1963: pp. 85–86, Pl. 13b (photo); Jacob–Friesen, 1967: p. 274, Kat.Nr. 582, Taf. 171:1–7). The objects in the hoard (found together, according to Broholm) include a manchette bracelet with > section (the narrow version, which occurs in hoards only in Montelius IV, contrasted with the broad, mostly decorated version of Period V discussed by Ørsnes, 1959), two broken winged axes, one of them a looped, slightly shouldered winged axe, presumably of Central European origin, not exactly placed typologically, but apparently earlier than the classical HaB3 winged axe types, a socketed axe of what Kibbert has termed (from this hoard) the Typ Løvskal, a type very predominantly of Montelius IV, but occasionally appearing in the hoards of Kibbert’s Stufe Obernbeck (Kibbert, 1984: Taf. 90 C and D) and in the Drouwennerveld hoard in the Netherlands (Butler, 1986), an unclassifiable plain socketed spearhead; and the two Plainseau socketed axes. Broholm’s assignment of this hoard to Period IV, which we followed in Butler (1963) has since been endorsed by more recent writers such as Jacob–Friesen (1967) and Thrane (1975; also Inventaria D.6). Unfortunately Kibbert (1984: p. 136) does not discuss the dating of the half-preserved looped winged axe. It would appear to be more at home among the types of his phases Lindenstruth and Obernbeck than among those of the phase Wallstadt. The broken condition of the Plainseau socketed axes and the winged axes suggests that

Løvskal is a Brucher-type founders’ hoard. The bracelet is said to be worn. Is the Løvskal hoard not a collection of objects of varying age? If so, which objects date the deposit of the hoard? The Plainseau axe, or the Northern Period IV objects? Noteworthy in this connection is the occurrence of a Plainseau axe in a large Period V hoard (at least forty bronzes and some gold, comprising both complete and broken objects, plus pottery) found 1984–1987 at Lindø in North Fyn, near the Odense fjord (Thrane, 1987: pp. 200–207: photo of the socketed axe on fig. 440:18; cf. also Thrane, 2001: fig. 6).

In the following we list the 31 Plainseau axes in the Netherlands according to (first) the number of neckribs present, and (secondly) according to the ornamental motifs present on the faces and sides. We include herewith a lone example of Kibbert’s ‘Form Hollen’ (Cat.No. 531), a somewhat more elaborately decorated version.

5.2. Catalogue of socketed axes of type Plainseau

5.2.1. Plainseau axes without neckribs, with rib ‘wings’ (AXT:pls.RiWi) (2 ex.; fig. 11)

CAT.NO. 501. GEMEENTE BERGEN, LIMBURG.
L. 12.25; w. 4.7 cm. Nearly circular socket. Mouth formula: 3.0×4.0;2.85×3.0 cm. (__) collar, from the base of which springs a D loop with | profile (2.0×1.0/0.5 cm), not pierced. Body with | outline, (__) section. On neckribbed semi-‘wings’. Cutting edge

Fig. 11. Plainseau socketed axes without neckribs, with rib ‘wings’. 501: gem. Bergen, Li; 502: Tollewaard, (gem. Lienden), Ge.


Parallels: Kibbert, 1984: No. 711 (Merfeld, Kr. Coesfeld, but full ‘wings’), No. 714 (Bonn) and 719 (Dörnheim, Main-Kinzig-Kreis, but no neckribs), No. 702 (Bad Homburg, Hochtarnauskreis, but with neckribs).

CAT NO. 502. GEMEENTE LIJENDEN, GELDERLAND. Tollewaard.
L. 10.9; w. 3.9 cm. Weight 281 gr. Subrectangular socket. (__) collar (mouth formula: 4.1x4.3; 2.8x3.1 cm); four stumps of casting jets. No neckrib; band loop (2.0x0.8 cm) springs from where the missing thin rib normally occurs on Plainsean axes! Body outline slightly J. Cross-section subrectangular. On neckribbed ‘wings’. Cutting edge slightly expanded and sharp. Casting seams prominent, but have been removed on lower part of sides. Patina: brown, somewhat glossy. In places peeled off, showing dull green. Some heavy recent scratches on sides. Some light brown loamy encrustation. Museum: Nijmegen, Inv.No. GAS G.89.19.


Parallels: Plainsean axes without neckrib are unusual but not entirely unknown: there are at least a half-dozen examples in the Plainsean hoard itself (Blanchet, 1984: fig. 155). Also two examples in the hoard of Antwerpen-Kattendokdijk (Warmebol, 1987a: Nos 2 and 4); possibly Maaseik-Heppeneert (Van Impe, 1994: No. 120, though the collar part has been poorly cast). All these examples are, however, without ‘wings’, though ‘winged’ Plainsean axes do occur in the same hoards.

5.2.2. Plainsean axes with single neckrib

a) Unornamented (AXT:pls.Nr1) (9 ex.; figs 12a,b)

CAT NO. 503. PROVENANCE UNKNOWN.
L. (10.7); w. (3.9) cm. Subrectangular mouth. (__) collar (half broken away by recent damage) + one thin rib, from which springs band D loop (1.8x0.7 cm); body with sub-rectangular cross-section, J outline. Casting seams present, but removed on lower part of blade. Cutting edge recently damaged. Patina: dark glossy brown. Patches peeled off, showing dark grey-green. Lower part has surface damage. Apart from damaged parts, well preserved. Museum: Elburg, no number. (DB 9)

CAT NO. 504. PROVENANCE UNKNOWN.
L. 10.4; w. 3.8 cm. Oval mouth (formula: 4.3x3.7; 3.05x2.8 cm). (__) collar, from the base of which springs small D loop (2.3x0.6 cm); body with parallel sides, with slightly everted blade tips; subrectangular cross-section, with fluting parallel to the edges. Patina: mostly bright bronze (cleaned); patches of bright green. Museum: Delft, Nederlands Leegemuseum Inv.No. Caa-19, purchased 1952 from Van Stockum’s Antiek, Den Haag. (DB 1112)

CAT NO. 505. PROVENANCE UNKNOWN (from the Veluwe?). L. 10.8; w. 4.1 cm. Oval mouth (formula: 4.2x4.0; 3.0x2.8 cm). (__) collar + single rib, from which springs a ribbon D loop (2.3x1.1 cm); body with sub-casting seams. Cutting edge sharp. Inside, thin ribs behind each face. Casting-jet attachments front and back. Subject socket. Patina: blackish, part with loamy encrustation. Private possession, purchased from dealer. (DB 2251)

CAT NO. 506. NEAR NUMIJEN, GELDERLAND. L. 12.0; w. 4.8 cm. Round to subrectangular mouth opening (formula: 3.9x4.25; 3.05x3.05 cm). Slightly biconical collar + rib; low loop (1.9x0.6 cm) not open; subrectangular cross-section. Edge sharp. Patina: blackish glossy. Gravel and yellowish loam under loop; ochreous coloured, loam inside socket. Museum: Museum Het Valkhof, Inv.No. GAS 1958-9-31, ex coll. G.J. Olt of Ressen (on loan in museum Ede). (DB 45)


CAT NO. 507. DIXPERLO, GEMEENTE DIXPERLO, GELDERLAND. L. 11.8; w. 5.0 cm. Subrectangular mouth that has been somewhat squared (formula: 4.5x3.7; 3.5x2.2 cm). (__) collar, thereunder a thin rib, from which springs small D loop (2.0x1.0 cm); body outline slightly J, with subrectangular section; slightly expanded blade tips (one tip partly broken away). Cutting edge sharp. Patina: bronze colour. Museum: Enschede, Inv.No. 312; presented 1950 by D. Jorda (Haaksbergen). (DB 1024)

Map reference: Sheet 41D, c. 231.431.


CAT NO. 508. POSTERHOLT, GEMEENTE AMBT MONTFORT, LIMBURG. L. 12.1; w. 3.8 cm. Oval socket (mouth formula: 3.7x3.6; 2.7x2.6 cm). (__) collar; single neckrib, from which springs D band loop (1.7x0.85 cm). Body with slightly J outline, subrectangular section. Slight casting seams, removed on lower part. Cutting edge anciently slightly blunted. Patina: glossy dark green, nearly black. Very well preserved, except for a few eroded patches on face. Museum: Maastricht, Inv.No. 243. (DB 223)

Map reference: Sheet 60E, c. 200/348.


CAT NO. 509. THE HENGSTBERG, GEMEENTE NUMIJEN, GELDERLAND. Part of two-axe hoard. L. 10.8; w. 3.75 cm. Subrectangular mouth opening (formula: 3.7x3.6; 2.85x2.7 cm). (__) collar, one thin neckrib; loop 2.2x0.7 cm. Cutting edge asymmetrically sharpened (now slightly abraded). Patina: glossy greenish-black. Found at or near the oil mill on the Hengstberg. Museum: Nijmegen, Inv.No. E.III.No.6, ex coll. Gliou. (DB 1555)

Associations: socketed axe DB 1482.

Map reference: Sheet 40D, c. 190.5427.3.


CAT NO. 510. BOXMEER, GEMEENTE BOXMEER, NOORD- BRABANT. L. 10.0; w. 4.5 cm. Subrectangular mouth opening (formula: 4.0x3.8; 2.6x2.1 cm). Bulging, faceted collar + one narrow rib, from which springs a small D loop (1.8x0.6 cm). Body with subrectangular section, J outline, slightly expanded, ogival blade tips; prominent straight-ground sharpening facet. Cutting edge sharpened, but slightly battered. Patina: dark brown, partly glossy; reddish loamy encrustation in places, and inside socket. Private possession. (DB 733)


Fig. 12a. Plainseau socketed axes with single neckrib, without ornament. 503–505: provenance unknown (505: drawing HS); 506: nr. Nijmegen, Ge; 507: Dinxperlo, Ge; 508: Posterholt, Li (see also fig. 12b).

CAT.NO. 511. POSTERHOLT, GEMEENTE AMBT MONTFORT, LIMBURG.
L. 12.5; w. 4.85 cm. Subrectangular mouth opening (formula: 4.1×4.3; 3.1×3.25 cm). ( ...) collar; below it a single rather faint narrow horizontal rib, from which springs a small band D loop (2.2×0.85 cm); plain faces. Body outline slightly ); cross-section of upper part somewhat hexagonal, lower part rectangular below. Patina: leathery brown. Museum: RMO Leiden, Inv.No. G.L. 62 (old No. 1,570); acquired May 1890 (ex coll. Guillon, Roermond). (DB 286)

b) Plainseau axes with single neckrib and pellet(s) (AXT:pls.Nr.Pel) (fig. 13)

CAT.NO. 512. ELSEN, GEMEENTE MARKELO, OVERIJSSEL.
L. 10.25; w. 4.35 cm. Oval mouth opening (formula: 3.3×3.3;
Fig. 12b. 509: Hengstberg, Ge; 510, Boxmeer, N-B (drawing HS); gem. Ambt Montfort, Li (see also fig. 12a).

Fig. 13. Plainsean socketed axes with single neckrib and pellet(s). 512: Elsen, Ov; 513: Oirschot, N-B (part of hoard).

2.8x2.65 cm). (___) collar with one neckrib; loop 2.1x0.75 cm; subrectangular cross-section; cutting edge with J tips; faint pellet on each face. Museum: Zwolle, Inv.No. 121. (DB 1608)


Cat.No. 513. OIRSCHOT, GEMEENTE OIRSCHOT, NOORD- BRABANT. Part of hoard.

L. 11.9; w. (3.9) cm. Weight 158 gr. Oval mouth (formula: 4.2x4.0; 3.0x2.8 cm), socket subrectangular. (___) collar, with two stumps for casting jets; below the collar single thin rib, from which springs small band D loop (2.0x0.9 cm). On neck two pellets. Body with (____) collar...
Fig. 14. Plainseau socketed axes with single neckrib, rib ‘wings’, pellet. 514: Stiphout, N-B (part of presumed hoard); 515: Cuyk, N-B (drawing HS); 516: provenance unknown.

Outline, subrectangular section. Cutting edge sharp. One blade tip broken away and missing. Casting seams prominent, but have been removed on lower part of sides. Patina: black, somewhat less glossy than DB 2101; inside socket, green with black patches. Surface mostly very well preserved, but the axe is evidently very fragile, and several broken-off pieces have been restored. Found close to, and as with Cat.No.523. Present location: Gellentheil (Tolven Hall) Oirschot. (DB 2102)

Association: Cat.No. 523.


c) Plainseau axes with single neckrib, rib ‘wings’, pellet(s) (AXT:pls.Nr1.RbWi.Pel) (3 ex.; fig. 14)

CAT.NO. 514. STIPHOUT, GEMEENTE HELMOND, NOORD-BRABANT. Part of presumed hoard.
L. 11; w. 4.3 cm. Round mouth opening (formula: 4.05×4; 3.1×3.1 cm). (____) collar with low loop (2.3×0.8 cm); rectangular body section; rib ‘wings’ with two pellets on each face; cutting-edge expanded and sharp. Patina: dark brown. Found 1840 in turf-cutting in a boggy meadow along the back road from Kasteel Croy to Helmond. Museum: RMO, Leiden: Inv.No. B.C.1 (old No. 1.574); presented 5 March 1846 by Lt. Col. Jonkh. Van der Bruggen van Croy. (DB 281)

Association: Cat.No. 524, socketed axe, Museum ’s-Hertogenbosch, Inv.No. 18 (on loan to Museum Oss).
Documentation: letter Lt. Col. Van der Bruggen van Croy, 4 March 1846 to RMO.

Note in Verslag RMO Leiden 1846: “een dergelijke als No. 1 [i.e., RMO B.C.1] werd door den Heer van der Bruggen van Croy gegeven aan het Noord-Brabantsch Genootschap, benevens een ander voorwerp, insgelijks van brons, ter lengte van ongeveer een vinger, van voren gelijkende op een hollen draaibeitel, van achter den hoofd een steel in te steken” (an object similar to No. 1 [i.e. RMO B.C.1], was presented to the North Brabant Society, along with another object [=DB 1401, the socketed gouge], also of bronze, with the length of approximately a finger, in form like a hollow chisel, with behind a hollow for a handle). Hermans refers to three axes and a chisel from the same find-spot, but Van der Bruggen van Croy in his correspondence with the Leiden Museum refers to two axes, and does not explicitly state that all these objects were found together (information from L. Verhart, conservator RMO Leiden, 21 November 2001, who kindly re-checked the correspondence for us).


CAT.NO. 515. CUYK, GEMEENTE CUYK, NOORD-BRABANT. L. 11.5; w. 3.9 cm. Oval mouth opening (formula: 3.6×3.75, 2.5×2.7 cm). (____) collar with 1 neckrib. Plastic ‘wings’ and pellet. Loop: 2.2×0.7 cm. Patina: glossy dark green (lower part light green, sandy). Grave find: found with urn + bowl, cremation + bronze bead. Ac-
Fig. 15. Plainseau socketed axes with one neckrib, facets on body. 517: 'near Rotterdam?'; 518: Mierlo, Li (drawings HS).

corresponding to the finder-owner, an enthusiastic amateur find-seeker found "at the edge of an urnfield in a pit, at a depth of 60 to 125 cm below the surface". Private possession of finder. (DB 864)

Association according to finder: bronze bead, urn + bowl, cremation, unpublished.


CAT.NO. 516. PROVENANCE UNKNOWN.
L. 12.2; w. 4.75 cm. Subrectangular mouth opening (formula: 4x4.3; 2.9x3.05 cm). (___) collar with one thin neckrib, from which springs small D band loop (2.5x0.9 cm). On neck, long D-shaped rib 'wings' joined at their base by a horizontal rib. Between the 'wings', high up, a wart. Body with nearly parallel sides, but widely expanding blade tips; pouched. Inside the socket, a vertical rib behind each face. Casting seams present, but on lower part of the sides have been removed. Patina: light green; modern scratches. Museum: Nijmegen, Inv.No. xxx.d. 14 , ex coll. Kam. (DB 2340)

Parallels: Heppeneert one example (No. 13)

d) Plainseau axe with single neckrib, faceted (AXT: pls.Nr1.Fac) (2 ex.; fig. 15)

CAT.NO. 517. NEAR ROTTERDAM? (EXACT PROVENANCE UNKNOWN).
L. 11.4; w. 4.1 cm. Subrectangular socket. Mouth formula 3.5x3.75; 2.5x2.5 cm. Slightly biconical collar, with stumps of jets front and back; below it one thin rib, from which springs ribbon D loop (2.1x0.6 cm). Body with ___ outline, slightly convex faces and sides; faint ribs flank the faces. Casting seams present (slightly eccentric; have been removed toward blade). Cutting edge sharpened, but has slight recent blunting. Patina: mottled green/black (one side predominantly green, other side predominantly black). Museum: Stein, Inv.No. IIB8. (DB 1331)


Parallel: Kibbert, 1984: K. 819 (Gegend von Wiesbaden), by him assigned to Form Ainetbören.

Parallels: pendant V ribs occur on examples in the Vénat hoard (Coffyn et al., 1981: Pl. 18:16, 17).
5.2.3. Plainseau axes with two neckribs

a) Plainseau axe with ‘wings’ and pellet (AXT:pls. Nr2.Wi) (1 ex.; fig. 17)

CAT.NO. 520. BREDA, GEMEENTE BREDA, NOORD-BRABANT (dealer’s provenance).
L. 11.7; w. 4.3 cm. (___) collar + 2 neckribs; low loop (2.15x0.7 cm); wrap-around ‘wings’ with pellet between. Elongated body with J outline, rectangular cross-section; round mouth. Prominent casting seams and stumps of jets. Edge sharpened recently. Finely preserved. Patina: dark bronze colour; traces of black. Found 1936/37 in building a bridge over the Aa. Museum: Breda, Inv.No. 432; gift of dealer Groneman (Nijmegen).

Map reference: Sheet 50B, 111.398. (DB 158)

b) Plainseau axe with two neckribs; rib ‘wings’ (AXT:pls.Nr2.RbWi) (1 ex.; fig. 18)

CAT.NO. 521. BARGEROOSTERVERD, GEMEENTE EMMEN, DRENTHE.
L. 11.25; w. 3.8 cm. Oval to subrectangular mouth opening (formula: 3.8x3.45; 3.1x2.65 cm). (___) collar, 2 small neckribs, where-under ribbed imitation ‘wings’ and a horizontal bar under the ‘wings’. Loop (2 cm) broken in antiquity. Museum: Assen, Inv.No. 1897/X.10. (DB 93)

Parallels: a common type in Picardy-North France.

c) Plainseau axes with two neckribs, rib ‘wings’, pellet (AXT:pls.Nr2.RbWi.Pel) (6 ex.; fig. 19)

CAT.NO. 522. WESSEM, GEMEENTE WESSEM (now GEMEENTE HEEL), LIMBURG. River Maas.
L. 10.7; w. 4.1 cm. Round mouth opening (formula: 3.6x3.5; 2.7x2.6 cm). (___) collar, with 2 narrow neckribs; ribbed ‘wings’, between them a pellet; loop: 1.9x0.85 cm. Patina: dark bronze to blackish; edge sharp but battered, slight casting seams; upper edge hammered slightly. Very well preserved. Light loamy encrustation in protected places. Smooth inside (no ribs). Museum: Venlo, Inv.No. 11382, on loan from coll. Mulder. (DB 1780)

Map reference: Sheet 58D, c. 189/351.

CAT.NO. 523. OIRSCHOT, GEMEENTE OIRSCHOT, NOORD- BRABANT. Part of hoard.
L. 11.4; w. 3.7 cm. Weight 152 gr. Nearly circular mouth (formula: 3.9x3.7; 2.7x2.7 cm); subrectangular socket. (___) collar, anciently slightly flattened on the rim; below it two thin horizontal ribs, from which springs small ribbon D loop (2.0x0.7 cm). On neck, pellet and wrap-around ‘wings’ (ribs on faces, but plastic on sides). Body with J outline, subrectangular section. Prominent casting seams, removed toward base. Cutting edge sharpened, but mostly has suffered modern battering. Patina: mostly glossy black. One face mostly well preserved (but crack through collar and ribs), other face has had severe abrasion. Found December 1992 with metal detector in the dump from an archaeological test excavation of the ROB, in a field on a cover-sand ridge; it lay 30 cm from Cat.No. 513, with which it is generally similar in patina and condition. Present location: Gemeentelais (Town Hall) Oirschot. (DB 2101)

Association: Cat.No. 513.

CAT. NO. 524. STIPHOUT, GEMEENTE HELMOND, NOORD-BRABANT. Part of presumed hoard.
L. 10.7; w. 4.2 cm. Flattened-oval mouth opening (formula: 3.55×3.55; 2.6×2.55 cm). (__) collar; one thin horizontal neckrib (doubled on one face), directly below it rib D-shaped `wings' (connected at their base by a thin horizontal rib on the sides) and one pellet. From base of neckrib springs a small D-shaped band loop (1.8×0.8 cm). Casting seams present, but have been removed on lower part of the sides. Body outline slightly X, with moderately expanded blade tips; body cross-section: subrectangular. Patina: part dark brown, with dull gloss; part dark bronze; brown and green inside. Found by turf cutting in boggy ground. Museum 's-Hertogenbosch, Inv.No. 18, on loan in museum Oss. (DB 1398)
Associations: Cat.No. 514, socketed axe (Museum: RMO Leiden, Inv.No. B.C.1); socketed gouge (DB 1401).

Fig. 19. Plainseau socketed axes with 2 neckribs, rib wings and pellet. 522: Wessem, Li; 523: Oirschot, N-B (part of hoard); 524: Stiphout, N-B (part of presumed hoard); 525: Borgharen, Li; 526: nr. Nijmegen, Ge; 527: Kesseleik, Li.
Fig. 20. Plainseu socketed axes with 2 neckribs and arch facet on face. 528: Swalmen, Li; 529: Bladel, N-B.

**Documentation:** letter Lt. Col. Jonkh. Van der Brugghen van Croy to C.R. Hermans (Noord-Brabants Museum), 4 December 18?? (dossier KHS A2 in Bibliothek Katholieke Universiteit Brabant, unit 'Kostbare handschriften'). In the first paragraph, the writer suggests an appointment with Hermans to discuss two bronze objects of uncertain use (presumably two axes, or one axe and the one gouge) which he intends to present to the Society for Arts and Sciences in Den Bosch ('voornemens zijnde twee bronzen sijndende instrumenten gebruik mij echter onbekend is, en welke deze zomer in mijnje buurt in het noor gevonden zijn aan het Genootschap van Kunsten en Wetenschappen aan te bieden. nene ik de vrijheid Uwe ...... te dienende belet te vragen tegen 9 uren in de morgen'). Presumably he then presented the second axe to the Leiden museum.


**CAT.NO. 525. BORGHAREN, GEMEENTE MAASTRICHT, LIMBURG.**
L. 11.45; w. 4.6 cm. Oval mouth (formula: 3.85×4.05; 2.75×3.05 cm). (__) collar + 2 neckribs, from which springs D-shaped ribbon loop (2.35×0.9 cm). Ribbed semi-'wings' depend from the lower horizontal thin rib. Outline ogival. Slight arch-shaped moulding on non-loop side. Patina: dark bronze; patches of black. Museum: Maastricht, Inv.No. 222. (DB 213)


**CAT.NO. 526. NEAR NUMEGEN, GELDERLAND.**
L. 12.2; w. 4.0 cm. Round to subrectangular mouth opening (formula: 3.7×4; 3×2.85 cm). (__) collar + 2 neckribs; low loop (2.3×1.3/055/0.8 cm, irregular hourglass outline); ribbed 'wings' + pellet; under 'wings' a horizontal bar. Body with × outline, rectangular cross-section. Prominent casting seam, which passed eccentrically through the loop. Patina: dark brown (peeled off in places). Museum: Museum Het Valkhof, Inv.No. GAS 1958-9-30, ex coll. G.J. Olst of Ressen (on loan in museum Harderwijk). (DB 39)

*Map reference:* Sheet 40C, c. 186/427.


**CAT.NO. 527. KESSELEIK, GEMEENTE KESSEL, LIMBURG.**
L. (9) cm; w. (3.3) cm. Round mouth opening (formula: 3.7×3.8; 2.9×2.8 cm). (__) collar, 2 small neckribs; whereunder ribbed 'wings' and a pellet between the 'wings'; under the 'wings' a horizontal bar; Body concave, rounded sides; low loop (2.3×0.9 cm). Patina: glossy dark green, where damaged powdery light green. On non-loop side craquelé under the collar. Private possession. (DB 1819)

*Map reference:* Sheet 58B, c. 199/365.

5.2.4. **Plainseau axes with arch facets on faces** (AXT:plA) (2 ex.; fig. 20)

**CAT.NO. 528. SWALMEN, GEMEENTE SWALMEN, LIMBURG.**
L. 11.9; w. 4.6 cm. Round to subrectangular mouth opening (formula: 3.7×3.8; 2.9×2.7 cm). ‘Western’ collar; D loop (2.3×0.8 cm); subrectangular section at neck; slight plastic arch-facet forming face; pellet below collar; place of 2 runners plain (front-back). Thin casting seams. Patina: mottled (black, brownish, reddish, bronze; has been scrubbed). Blackish inside. Museum: Asselt, Inv.No. 201. (DB 1163)


**CAT.NO. 529. BLADEL, GEMEENTE BLADEL, NOORD-BRABANT. De ‘Pals’.**
L. 12.4; w. 4.2; th. 3.85 cm. (__) collar (formula: 3.5×3.8; 2.6×2.45 cm) and 2 ribs; low loop (2.2×0.7 cm); arch facets on face; horizontal ribs on sides (two on loop-side, 3 on other side, on one of the halves; absent on the other half); blade sharpened, but somewhat
blunted; socket rectangular (inside and outside); section rectangular below, oval above. Traces of four runners. Patina: black (partly removed by mechanical 'cleaning'). Found 1951/1952 while cleaning the Grote Beerze (a small stream). Private possession. (DB 1702)

**Map reference:** Sheet 57A, 143.875/370.965.

**Documentation:** Letter G. Beex to ROB, 15 April 1965.

**References:** Beex, 1965: pp. 61, 69, abf. 3.

**Parallel:** Belgium: 1 ex. from the Lutlommel hoard, with pellet above the facial arch (Van Impe, 1995/1996: p. 14, No. 39). Present locus unknown. Two arch-faceted examples are present in the Amiens-le Plainseau hoard (AM 135, AM 137; the latter with plastic 'wings'). Three arch-faceted Plainseau axes, with single neckrib, are present in the Maaseik-Heppenecert hoard, on the Belgian side of the Maas; a fourth axe attributed by Van Impe to the hoard (his fig. 19b), but found earlier, is similar. Related examples include one in the Basland hoard, Jutland, Denmark (below, fig. 30b), one in the Jardin des Plantes hoards, Nantes, Loire-Atlantique, France (Inventaria Arch. F.157; Huth, 1997: Taf. 57-68, esp. Taf. 65:1), one in the Vénat hoard (Coffyn, Gomez & Mohen, 1981: Pl. 20:8 with three neckribs and three horizontal ribs on each side).

A socketed axe in the Trieu des Cannes hoard, Jemeppe-sur-Sambre, Namur, with single neckrib and 'Jail window' ornament, has a pointed-arch, rather 'Gothic' facet on each face.

### 5.2.5. Plainseau axes: regional variants

#### a) Plainseau variant with single neckrib, 'jail window' rib pattern

**CAT.NO. 530. 'NOORD-BRABANT'** (no further provenance).

L. 12.35; w. 4.25 cm. Round mouth opening (formula: 3.1×3.1; 2.6×2.6 cm). (____) collar and rib; low loop (2.2×0.75 cm); body of rectangular cross-section; upper part face ornamented with vertical ribs, closed with a single horizontal rib; over the central rib is a pellet. Straight grinding line. Prominent casting seams. Upper part damaged. Edge battered (recent damage). Patina: dark glossy green; surface here and there damaged. Museum: Tilburg, Inv. No. 322, ex coll. J. Lainwerts of Esbeek. (DB 2048)

In view of the indefinite provenance, it is conceivable that this axe is really a stray from the Hoogstraten or Antwerpen-Kattendijkdok hoards, but this cannot be proven.

**Parallels:** Plainseau socketed axes decorated with the 'jail window' pattern are best known from the Belgian hoards from Hoogstraten, prov. Antwerpen (very close to the Netherlands border), with nine examples (Warmenbol, 1991), and Antwerpen-Kattendijkdok with two examples; the latter found with a half-dozen other Plainseau axes (Warmenbol, 1987a). A single example is present in the Amiens-le Plainseau hoard (Blanchet, 1984: p. 283, fig. 156:40; O'Connor, 1980: fig. 56: 14). No further examples with the 'jail window' pattern seem to be known; we seem to have...
to do with a local variant, perhaps produced in the Schelde area.

b) Plainseau derivative (‘Form Hollen’ (Kibbert, 1984: pp. 149–150)) (AXT:hol) (1 ex.; fig. 22)

This extravagant variant of the Plainseau type is characterized by a somewhat elaborated version of the Rippenlappen motif: a pattern composed of two or three concentric ribs which, viewed from the face shows as doubled rib ‘wings’, and seen from the side as concentric U’s.

The only example in the Netherlands is the long, handsome, richly decorated axe from Belfeld, Limburg. With a length of 14.7 cm it is among the longest of our socketed axes. It seems to combine elements of the Plainseau type (of which it is an extravagant version), together with features of the Form Helmero­th (especially the horizontal furrows on the collar and the vertical furrows on the faces) as well as with the rib-‘wing’ tradition.

CAT.NO. 531. BELFELD, GEMEENTE BELFELD (now GEMEENTE VENLO), LIMBURG.
L. 14.5; w. 5.1 cm. Oval socket; mouth formula: 4.0×3.8; 2.7×2.7 cm. Slightly biconical collar, ornamented with vertical hammer-faceting, from the base of which springs D loop with oval section (2.4×0.9 cm); single thin neckrib; long body with outline; subrectangular section, with slightly convex faces and sides. On neck wrap-around ‘wings’ consisting of three concentric ribs, joining so as to form concentric rings on sides; pellet between ‘wings’. Vertical fluting on faces and sides. Cutting edge with ancient (patinated) battering. Patina: dark glossy green; part of patina peeled off, there light dusty green. Museum: Maastricht, Inv.No. 2434 LI (since 1961 on loan from private owner). (DB 229)


Parallels and distribution: Related are two axes (K. 720, 721), listed by Kibbert under ‘Form Hollen’: K.721 is from the river Rhine at Mainz Laubenheim Grund, K.720 is of unknown provenance. The ‘Form’ is named by Kibbert after a find from Hollen, Kr. Amerfeld (Tackenberg, 1971: pp. 51–52 with note 185; p. 264, Liste 31:3, Taf. 20:3, as from Hollen, Kr. Amerland). Also illustrated by Tackenberg is an example from Schwindebeck, Kr. Harburg (Tackenberg, 1971: Taf. 20:4). Further examples are known from Jemeppe-sur-Sambre, prov. Namur, Belgium (hoard ‘Trieu des Cannes’; Mariën, 1953: B.2:3); Merksplas, prov. Antwerp, Belgium (Museum Antwerp; cited in Mariën, 1953: B.2); Han-sur-Lesse, prov. Namur, Belgium, dredge find from cave exit (Mariën & Vanhaeke, 1965: Taf. 2; colour photo: Glandsdorff, 1989: p. 99, upper, left). Thus, despite the small number of examples, probably all from the same workshop, the distribution is rather wide, extending from the Belgian Schelde area to the Elbe mouth region.

6. SOCKETED AXES OF ‘FORM HELMEROTH’ (18 ex.; figs 23–32; map 5)

6.1. Definitions and dating

The ‘Form Helmeroth’ was first distinguished and defined by Kibbert (1984: pp. 139–141). He lists 17 examples in middle West Germany (his Nos 655–671). He subdivides them into a Variante Bottrop, with ten examples (K.655–664) and a Variante Kirchkoven, with five examples (K.665–669), plus two nahestehende (K.670–671) which he also designates as an Untervariante Eschwege. His distribution map (his Taf. 88D) shows a wide scatter across his middle West Germany area. In body form the Helmeroth axes are slender, and usually with slightly \(\chi\) outline. The mouth opening is circular. On almost all specimens the collar is truncated-cone-shaped; from it, or from its base (not from an underlying neckrib, as with the Plainseau axes), springs a large, usually flattened-D loop, usually of ribbon cross-section, sometimes of \(\Gamma\) or \(\chi\) outline. The loop may be 3 to 4 cm in length (thus larger than the loop characteristic for Plainseau axes), but is not angular (as are often the loops of comparably exaggerated size of the Hunze-Ems group in the North).

Besides similarity in body form, Kibbert considers the presence of vertical furrow ornament as a prime characteristic of the type in all three of its variants. Actually, parallel furrow ornament is present on some Early and Middle Bronze Age axes (including some British-Irish Early Bronze Age axes), on decorated flanged stopridge axes of Type Plaisir, including two examples in the Netherlands (Butler, 1987: p. 12, fig. 3; Nos 1 and 4, = Butler, 1997: pp. 228–230, Cat.Nos 156–157), even on some winged axes (examples illustrated by Kibbert: K.85, 144, 145, 177, 360, 377, 399, 417, 477, 506), and on a considerable number of socketed axes of various types in the Hunze-Ems area. Five of the axes of Kibbert’s Var. Bottrop, four of Kibbert’s Var. Kirchkoven, and both of its Untervar. Eschwege, without arch-shaped face facets, have surface decoration consisting of parallel furrows, usually horizontal on the collar and vertical on the faces and/or sides. Five Bottrop axes have a single vertical furrow on the face. Only a few examples have some ribbed ornament; a few have pellets.

A special characteristic of Var. Bottrop is with what Kibbert terms a blade mit abgesetztem Schneide teil, i.e. the lower part of the blade has an arch-shaped facial facet (rarely it is more or less rectangular), and is sometimes somewhat pressed down (clearly seen in the side view). The majority of Kibbert’s Helmeroth axes have this feature, yet paradoxically it is not present (except for the single Netherlands specimen Cat.No. 544/DB 54, with a deviant body form) on Helmeroth axes in the Netherlands.
A noteworthy negative feature of the Helmeroth axes, both in West Germany and in the Netherlands, is the absence of neckribs. Neckribs are also absent from the southern Types Niedermaas and Geistingen; yet they do also occur on axes in the north of the Netherlands that may have various other features in common with the Helmeroth axes.

In the Netherlands only two socketed axes are present that can be assigned to Kibbert’s Helmeroth-Var. Bottrop; both are atypical specimens. Cat.No. 544, from Diergaarde, Neth. Limburg, has an idiosyncratic body shape. Cat.No. 547, with various exceptional features, is without recorded provenance; its true find-spot could have been on either side of the modern Netherlands–German border. Most of the Helmeroth axes in the Netherlands may however be assigned to Kibbert’s Form Helmeroth-Var. Kirchhoven. Two examples, Cat.Nos 538 and 539, are from a probable hoard, considering that they are from the same find-spot (Peij, Limburg) and have identical patina. Similar examples are Cat.No. 543 (with pellet) from Maasbracht, Limburg, and Cat.No. 540 from Meerlo, Limburg. Very similar in form, but without furrow or other ornament, are Cat.No. 532, from the river Waal at Winselinge, gem. Nijmegen, and Cat.No. 533, from the probable hoard already mentioned from Peij, Limburg.

Kibbert lists no Helmeroth axes without ornamentation. Actually he illustrates one (K.654, from the hoard of Ockstadt, Wetteraukreis, Hessen) that can be considered a good example of an undecorated Helmeroth-Kirchhoven axe, but he oddly places it angeschlossen by his (in any case minimal and heterogeneous) Form Lovskal-Bargeroosterveld, where it seem rather mismatched. In the Netherlands we can recognize two examples (Cat.No. 532, from Winselinge, gem. Nijmegen, Gelderland, and Cat.No. 533, from the presumed hoard from Peij, Limburg, probably found with two Helmeroth axes of similar form with vertical furrow ornament) that can surely be accepted as unornamented Helmeroth-Kirchhoven axes.

A few specimens in the Netherlands combine predominantly Helmeroth features with elements not typical for the Helmeroth canon:

The probable Helmeroth axe (broken; the top is missing) Cat.No. 535, with the approximate location ‘Meierij van ’s-Hertogenbosch’, has a pellet.

Cat.No. 534, from Wijk bij Duurstede, Gelderland, has a pellet with a sort of garland around it; similar to if somewhat simpler than the unprovenanced K.720.

Cat.No. 543, from Maasbracht, Limburg, has a pellet as well as vertical furrow ornament.

Cat.No. 546, with unknown provenance, has semi-‘wings’.

The bronze half of a casting mould, Cat.No. 549, from Roermond would produce a Helmeroth socketed axe with faint rather elongated semi-‘wings’, and a pellet between them; its flattened-D loop is 3.5 cm long.

Cat.No. 547, with unknown provenance, has a pellet ‘wings’ connected by a bar like this: )-; also arch facets, and a slight midridge on the blade, a half-pellet under the horizontal-furrowed collar.

Cat.No. 545, from the Old Maas, Limburg, has J-shaped ‘wings’ and vague arch facets (cf. the Basland hoard).

Cat.No. 544, from Diergaarde, Limburg, has a trapeze-shaped lower part of the blade. It is not difficult to identify the source of most of the deviant features on these Helmeroth-related specimens: they are apparently borrowings from the ornament repertoire of the Plainseau axes. The trapeze blade of Cat.No. 544 may have been influenced by the axes of Type Sompting, such as have occasionally been found in the area; K.661, with rib-and-pellet ornament on one face, may also reflect Sompting influence.

An extraordinary specimen is Cat.No. 548, from Vlodrop, Limburg. Its horizontally furrowed collar relates it to K.667 in the Ockstadt hoard. The pair of pellets below the collar relates it to some axes of the Plainseau family. Its vertical furrowing covers the sides, and on its face forms a drapery pattern. Cf. also K.678 from ‘Köln’ (placed by Kibbert in his Lappen­zier Gruppe A), which is clearly closely related to our Cat.No. 548.

Unusual also is Cat.No. 544, from Diergaarde, gemeente Echt, Limburg. Its upper part is typically Helmeroth, with vertical fluting on the collar and face, and a large ribbon loop with ) outline. The lower part of the blade is, however, trapeze-shaped in outline: a feature not otherwise found in the Helmeroth family, but which recalls the trapeze-shaped blade of the axes of the Sompting family.

The Helmeroth-Kirkhoven axe from the Elzen­veen hoard (Cat.No. 536) has, however, J-tips, like the two Helmeroth-Eschwege axes K.670–671.

Cat.No. 546, with unknown provenance, is a typical Helmeroth-Kirchhoven axe, but has on the face semi-‘wings’ in relief, which relates it to the Plainseau axe without neckribs but with ‘wings’ Cat.No. 501 (q.v.), and to some other Plainseau axes. The small group of Netherlands socketed axes: Cat.Nos 538 and 539 (Peij) (facial furrows, hoard?), Cat.No. 543 (‘Maasbrachtbroek’) (facial furrows, pellet on face), Cat.No.540 (Swolgen) (facial and side furrows) are closely related to Kibbert’s K.660–669. Another specimen, Cat.No. 544 from Contine near Diergaarde, gem. Echt (with facial furrows, furrows on collar), is evidently closely related to these, but differs in having an unusual trapeze-shaped blade part of the body. But the form of the upper part, the facial archfacet and fluted surface ornament clearly show its relationship to Kibbert’s Helmeroth-Bottrop series.
Evidently closely related to the Helmeroth axes in West Germany and the Netherlands, but especially close to the Netherlands examples Cat.No. 545, from Ohé en Laak, Limburg, and Cat.No. 537, from Stevensweert, Limburg, are three of the four socketed axes in a Danish hoard, found at Basland, Randers Amt in Jutland (fig. 30b: Nos 2-4; Broholm, 1946 (III): p. 202, M.89; Jacob-Friesen, 1967: No. 522, Taf. 169; Thrane, 1967 (= Inventaria Arch., DK. 5); Kibbert, 1984: pp. 71, 141). Body form, mouth mouldings and loop are quite similar to what is found on some of the Helmeroth axes. The vertical furrows below the collar are also very similar, though in the case of the Basland specimens the furrows separate what look like 'wings' with a \[ \] shape (in one case semi-'wings' of this shape), rather like Kibbert's unprovenanced specimen No. 661.

Kibbert assigns these three Basland axes to his Form Helmeroth—Var. Bottrop, with some reservation (due to the none too accurate character of the previously published drawings; those on our fig. 30b, drawn from the originals in 2000, are of guaranteed better quality). But closest to the Basland specimens, despite some variations in detail, are our Cat.No. 545, from the Old Maas at Ohé en Laak and Cat.No. 537 from Stevensweert, both in Neth. Limburg, and a few specimens in Belgium. These include Thon-Samson (Warmenbol, 1987b: fig. 9), Namur-Salzinnes (Warmenbol, 1987b: fig. 8) and Mohiville-Scoville (Warmenbol, 1987b: fig. 6) in the province Namur, and Schoonaarde and Nineve in Oost-Vlaanderen. Several of the socketed axes from the cave of Han-sur-Lesse are at least closely related.

Also to be grouped with Helmeroth axes of this variety is the bronze half-mould for a socketed axe attributed to Roermond, Neth. Limburg (Cat.No. 549), already mentioned above. Its 'Belgian Helmeroth' characteristics are present, even slightly exaggerated; it has also a pellet and long faint semi-'wings'. A reasonable parallel (but minus the pellet) is in the German hoard of Kattenbühl, in the Weser area (Prüssing, 1982: Taf. 29:16).

Distribution: Almost all the Netherlands Helmeroth axes are from the Maas valley in Netherlands Limburg. Together with two of Kibbert's specimens on the German side of the modern border they form a small Maas—Roer find-group. Similar minor groups are discernible in the Rhine—Lippe area, the Rhine—Main area, and even along the Weser in Hessen.

The exception is Cat.No. 536, and is from the hoard of Elsenerveen, Overijssel; it has J-blade tips, which are matched on the two specimens of Kibbert's Untervar. Eschwege (K.670—671.) Two of Kibbert's specimens are from Westphalia (his Nos 668 (Merkfeld) and 669 (Hünxe)), and thus form a reasonably good geographical grouping, though the few other specimens are rather farther afield (cf. Kibbert's distribution map, his Taf. 88D).

Hoard and dating: Socketed axes of the Form Helmeroth occur in a number of hoards and possible hoards:

In the Netherlands, the bog hoard of Elsenerveen, Overijssel, contains the Helmeroth axe Cat.No. 536. Associated with it were two other socketed axes: a 'Hunze-EMS' socketed axe with facial arches, 'wings' with furrow ornament on the faces and sides, two neckribs, a pellet, and large angular loop (DB 495); and a looped socketed axe with four neckribs and a drum-shaped swelling belonging to the Typ Sédin­Var. Karbow type (DB 498; Kibbert, 1984: K.727, pp. 151—153, with further references) and a Central European Urnfield socketed axe of typical HaB3 form (cf. Prüssing, 1982: pp. 142—148). Another hoard from the same vicinity, though not a bog find (Butler, 1965: pp. 175, 179, fig. 12; Verlinde, 1980: p. 24, Depot V), consisting of omega bracelets and twisted and untwisted wire ornaments, contained also a fragment of a socketed axe with vertical furrow ornament on the sides; thus possibly a Helmeroth axe, though perhaps a Hunze—EMS axe as suggested in 1965. For western Germany, Kibbert cites a variety of hoards containing Helmeroth axes, including: Frankfurt-Grindbrunnen (K.664); Frankfurt-Stadt­wald (K.659); Kattenbühl, Kr. Hann. Münden (Prüssing, 1982: Taf. 29); Ockstadt, Kr. Stadt Friedberg, Wetteraukreis, Hessen (K.654); Konz, Kr. Saarburg­Trier, Rheinland-Pfalz (K.Taf. 93D). All these hoards

Map 5. Socketed axes of Form Helmeroth in the Netherlands.
are assigned to the South German Stufe Wallstadt (späte Urnenfelderzeit IIa B2-B3/South Scandinavian–North German Period V).

In Denmark, there is the hoard of Basland ("Örum-Basland" in Kibbert, 1984: pp. 71–73, 141), Randers Amt, Jutland, Denmark (Danish National Museum, B. 9791–9800), cited above. It contains three examples (Inventaria B.9792–9794) already regarded by Kibbert as possibly Helmeroth axes; we have above suggested describing them provisionally as belonging to a Helmeroth Variant Namur-Basland. Also in the hoard are a fourth socketed axe (fig. 30b:1), a winged axe assigned by Kibbert to his 'Form Hillesheim, Var. Linz/Örum'), three spearheads, a sickle, a fragment of a sword blade. The fourth socketed axe in the Basland hoard (fig. 30b:1) is of a different type: unusually large; facial arch facet of exaggerated size; enlarged D loop; narrow biconical collar with two neckribs. It is more or less comparable with Kibbert’s No. 653 from Haltern-Lavesum (which he places in his small but heterogeneous frühe Var. Løvskald nahestehend group). The dating of this hoard is unclear: Northern Period IV according to Broholm (1946(III): p. 202, M 89); Period V according to Sprockhoff (1956(I): p. 94) and Tackenberg (1971: p. 77), whereas Thrane (1967) and Jacob-Friesen (1967) leave the question open. Actually there are no typical Nordic objects in the hoard. Kibbert, on the basis of the winged axe, inclines to place it in his Lindenstruth phase (HaBl=a late phase of Period IV).

A single Netherlands specimen (Cat.No. 537) attributed to Stevensweert, Limburg (but a dealer’s provenance) is similar in form to Kibbert’s Helmeroth axes; its faint facial arch-facets relate it to Kibbert’s Var. Bottrop, but the vertical furrow on the face is a feature also occurring on some of Kibbert’s Var. Bottrop and one of Var. Kirchhoven, and (particularly close) the three specimens in the Danish Basland hoard.

6.2. Catalogue of socketed axes of Form Helmeroth

a) Form Helmeroth, plain (AXT:helm.P) (2 ex.; fig. 23)

CAT.NO. 532. WINSSELING, GEMEENTE NIJMEGEN, GELDERLAND. River Waal. L. 11.7; w. 4.25 cm. Subrectangular mouth opening (formula: 3.65×3.75; 2.8×2.6 cm). <_> collar, just below of the base of which is a fairly large D band loop (2.9×0.9 cm). Body with ∥ outline, subrectangular cross-section. Casting seams prominent; jet stumps top & bottom. Patina: dark brown. Vertical split through moulding and part of one face. Split in side. Found 1893 while dredging. Museum: Nijmegen, Inv.No. AC 17 (old No. E III No. lO a). (DB 1486)

Map reference: Sheet 40C, 186.75/429.25.

CAT.NO. 533. PEIJ, GEMEENTE ECHT, LIMBURG. Pepinusbrug. L. 12.0; w. 3.1 cm. Oval mouth opening (formula: 3.7×4; 2.7×3.05 cm). Slightly biconical collar, from which springs small loop (2.6×2 cm; hour-glass; abraded). Body of subrectangular cross-section (no fluting). Prominent casting seams. Edge damaged. Patina: dark.
c) Form Helmeroth, with single vertical furrow (AXT:helm.l) (2 ex.; fig. 25a,b)

CATNO. 536. ELSEN, GEMEENTE MARKELO, OVERIJSSEL.

CATNO. 537. STEVENSEWERT, GEMEENTE STEVENSEWERT, LIMBURG (dealer's provenance).


References: Herman, 1865: p. 138, Pl. XX:3.
Fig. 25a. Bog hoard from the Elsenerveen, Ov, with Helmeroth axe (Cat.No. 536), Seddin-Karbow axe, Hunze-Ems axe with 'wings' and face arches, and Urnfield socketed knife.

Note: Paper inside socket states ‘Zalbommel’.

Parallels: Kibbert, 1984: Nos 662 (Hirschberg, Kr. Arnsberg) and 663 (Alpen-Bönninghardt, Kr. Moers), both from Nordrhein-Westfalen, but with facial arch; No. 664 from Frankfurt-Grindbrunnen, Hessen.

d) Form Helmeroth, with vertical parallel furrows (AXT:helm.II) (4 ex.; fig. 26)

CAT.NO. 538. PEIJ, GEMEENTE ECHT. LIMBURG. Pepinusbroek.
L. 12.3; w. 3.8 cm. Round socket-mouth (formula: 3.8x3.8; 2.6x2.6 cm). Loop: 3.6x1.2/0.7/1.0 cm (hourglass). Slightly biconical collar; body of subrectangular cross-section; sides and upper part of faces hammer-fluted vertically. Edge blunted (recently). Patina: glossy brownish, partly mottled green; where surface corroded, light dusty green or red-brown. Museum Asselt, Inv.No. 237, ex coll. Philips. Paper inside: environ Pepinusbroeken les Pey (sp?). (DB 58)

Map reference: Sheet 60B, 193/345.

Documentation: Inventaire Philips, No. 237, with drawing.


Fig. 25b. Socketed axe of Form Helmeroth, with single vertical furrow. 537: Stevensweert, Li.
Fig. 26. Socketed axes of Form Helmeroth, with vertical parallel furrows. 538: Pepinusbroek, Li; 539: Pepinusbroek, Li; 540: Swlgen, Li; 541: Susteren, Li (drawing HS).

CAT.NO. 539. PEIJ, GEMEENTE ECHT, LIMBURG. Pepinusbrug. L. 12.5; w. 3.2 cm. Subrectangular mouth (formula: 3.5×4; 2.3×2.7 cm); slightly biconical collar, from which depends a loop (3.3×1.3/ 0.9/1.1 cm); subrectangular cross-section; vertical hammer-fluting. Edge damaged. Patina: glossy brownish-greenish; dusty light green where surface gone. Museum: Asselt, Inv.No. 239, ex coll. Philips. (DB 60)

Documentation: Inventaire Philips, No. 239, with drawing.
CAT. NO. 540. SWOLGEN, GEMEENTE MEERLO, LIMBURG.
L. 13.2; w. 3.9 cm. Weight 362.4 g. Nearly circular mouth, subrectangular socket (formula: 4.2×4.1; 2.9×2.9 cm). ( ) collar, from base of which springs large band D loop with D section (3.3×1.4/0.8 cm); outline. Long body with slightly ( ) outline, convex faces and sides. Vertical fluting survives vaguely on the faces and sides, despite the rather heavy-handed mechanical 'cleaning' to which the axe has been subjected. Cutting edge sharpened (recently somewhat blunted). Patina: mostly dark glossy green; small surviving patches of black; dark bronze in places. Found, according to Beckers & Beckers, during reclamation of a heath parcel. Museum: Stein, Inv.No. IIB10. (DB 1333)

CAT. NO. 541. SUSTEREN, GEMEENTE SUSTEREN, LIMBURG. 'De Meir'.
L. 12.2; w. 4 cm. Truncated-cone collar with horizontal facet (formula: 3.8×3.9; 2.65×2.75 cm). Vertical furrows on upper half of faces and sides; slender body with ( ) outline, almost square cross-section. Wood inside (poplar or willow: identification BIAX, Amsterdam). Casting seams visible. Patina: glossy grey-green. One face is heavily corroded and battered. Found October 2001 by C. Blaak during field survey, in the side of a road cutting, c. 45 cm below surface, at the transition plough soil - sandy clay. Museum: Echt, Inv.No. 332; presented by finder. (DB 2543)
Map reference: Sheet 60B, 187,999/341.06.

CAT. NO. 542. WESSEM, GEMEENTE WESSEM (now GEMEENTE HEEL), LIMBURG.
L. 11.1; w. 4.8 cm. Round socket-mouth (formula: 4.3; 2.9×2.7 cm). ( ) collar, from which depends D loop (2.9×0.9/0.5/0.65 cm). Surface vertically hammer-fluted on sides and upper part of faces. Patina: bronze colour (river patina). Found in autumn 1972. Private possession. Drawing: ROB, Amersfoort. (DB 838)
Map reference: Sheet 58C, c. 190/352.
References: Bloemers, 1977: afb. 4.2; Wielockx, 1986: Cat.No. Hu.133.

CAT. NO. 543. MAASBRACHT, GEMEENTE MAASBRACHT, LIMBURG.
L. 11.35; w. 3.4 cm. Round socket-mouth (formula: 3.8×3.8; 2.7×3.1 cm); slightly biconical collar; fairly large D loop (3.8×0.8/1.5 cm); cross-section subrectangular; pellet below collar; surface vertically hammer-fluted on sides and upper part of faces. Prominent casting seams. Patina: glossy brownish; partly mottled greenish; where surface corroded, light dusty green. Loop of band firm, slightly expanded top and base; “Détournée dans le broek de Maasbracht” (unearthed in the morass of Maasbracht). Museum: Asselt, Inv.No. 235, ex coll. Philips. (DB 56)
Documentation: Inventaire Philips, No. 235, with drawing.
Parallel: Kibbert, 1984: No. 660 (Broichweide, Kr. Aachen).
g) *Form Helmeroth*, Var. *Bottrop* (AXT:helm.bott) (1 ex.; fig. 29)

**CATNO. 544. DIERGAARDE, GEMEENTE ECHT. LIMBURG.**

Contine.

L. 10.2; w. 4.4 cm. Round socket-mouth (formula: 3.3 x 3.3; 2.4 x 2.4 cm); slightly biconical collar. Body oval section, with vertical hammer-fluting. Prominent arch-facet on lower part of body, which is trapeze-shaped. Large loop: 3.4/0.6/0.9 cm (hour glass). Prominent casting seams. Socket mouth asymmetrical in side view. Patina: dark brown one face, nearly black reverse; partly peeled off (dull green). Museum Asselt, Inv.No. 233, ex coll. Philips (acquired by Philips Jan. 1929 with coll. Orta (Inv.Nos 233-243). (DB 54)

**Associations:** Cat.Nos 538, 539 and 543 have very similar patina, suggesting the possibility of association.

**Map reference:** Sheet 60B, 195/343.

**Documentation:** Inventaire Philips, No. 233, with drawing.


**Parallel:** Kibbert, 1984: No. 655 (Bottrop).

h) *Form Helmeroth*, with plastic 'wings' (AXT:helm.Wi) (1 ex.; fig. 30a, b)

**CATNO. 545. 'OEUDE MAAS', GEMEENTE OHÉ EN LAAK, LIMBURG.**

L. 12.7; w. 4.5 cm. Subrectangular socket (formula: 4.3 x 4.5; 3.1 x 2.8 cm), <—> collar, from which springs band D loop (3.6 x 1.0 cm). Body with ¡/ outline, with oval section above, (¡) below. Plastic 'wings' of unusual elongated form. Arch facets on faces. Patina: dark brown, with some ochreous encrustation; with gravel and loam. Casting seams prominent, but removed toward base. Cutting edge sharp. Found March 1929, during re-bedding of the Old Maas. According to maps of 1936 and 1955 the findplace is situated on the former boundary of the gemeenten Ohé en Laak and Echt. Museum: Maastricht, Inv.No. 245 (find spot wrongly given as Roosteren). Acquired through mediation of the State. Fragment letter W. Goossens to Holwerda (RMO): "Gisteren moest ik op het bureau van het Juliannaakaan naar gevoonden voorwerpen gaan kijken. Ze hadden absoluut geen ondieftkundige beteekenis, op een stuk na, n.l. een bronzen bijl, een z.g. "Tullenaxt" met vierkant geslepen steeg, die gevonden was in het grint te Roosteren bij het omleggen der omrigging v.d. Oude Maats bij k.m. 5,100, 22+ NAP en 4,25m onder het maaiveld. Het zou mij genoegen doen wanneer het stuk hier in het museum kon gedeponeerd worden.....". (DB 224)

**Map reference:** Sheet 60A, 187.25/346.40.

**Documentation:** correspondence W. Goossens to Holwerda 1928–1930 (in depot Algemeen Rijksarchief invnr. 157); section Roosteren-Ohé en Laak in unpublished scriptie van Leon van Hoof (2000); e-mail Leon van Hoof to authors 26-11-2001 with the text fragment of the letter mentioned above.


i) *Form Helmeroth*, exceptional pieces (AXT:helm. X) (3 ex.; fig. 31)

**CATNO. 546. PROVENANCE UNKNOWN**

L. 13.1; w. 4.5 cm. Circular mouth opening (formula: 4.7 x 4.7; 2.9 x 3 cm), <—> collar, from which springs large D loop (3.5 x 0.8 cm). Body outline slightly ¡); cross-section subrectangular, with slightly convex faces and sides. Plastic half-'wings', meeting at centre of face. On collar and sides faint vertical fluted ornament. Acquired by museum in 1943; the records concerned were destroyed in the Second World War. Museum: Arnhem (Openluchtmuseum), Inv.No. 3079. (DB 1161)

**CATNO. 547. PROVENANCE?**

L. 13.0; w. 4.2; loop 3.5 cm. Weight: 380 gr. Circular socket. Collar
Fig. 30b. Socketed axes in the Basland hoard, Jutland, Denmark (drawings HS).

Of / ___ \ form, with three horizontal facets, from the base of which springs a large D loop (3.5×... cm). Sides almost parallel. Faint D 'wings' on neck of oval cross-section. On face arch facet, with faint midridge. The sides and the 'wings' are ornamented with vertical hammer-facets. Cutting edge blunt. Patina: glossy mottled green (brownish; old surface partly corroded away, there pale dusty green). Museum: Aalton (Oudheidkamer), Inv. No. 386. (DB 729)
Fig. 31. Socketed axes of Form Helmeroth, exceptional. 546–547: provenance unknown; 548: Vlodrop, Li.

CAT.NO. 548. VLODROP, GEMEENTE VLODROP, LIMBURG. Field ‘Kroddel’.
L. 13.2; w. 5.0 cm. Nearly circular mouth opening (formula: 4.6×4.4; 3.4×3.2 cm). Large \_
\_/ collar with 3 horizontal furrows; from its base springs a large D-sectioned D-shaped loop (3.7×1.8/0.8/1.8 cm). On the face, just below the collar, a pair of bulging circular pellets. Body with \_/ \_/ outline; its neck is of oval cross-section, subrectangular with slightly convex faces and sides. On the faces, long ‘drapery wings’. The faces of the ‘wings’ are ornamented with fine facets, which echo the form of the ‘wings’ and extend down the whole length of the sides. The cutting edge is blunt. Patina: blackish; very well preserved. Found 1950–1955 by owner in the field ‘Kroddel’. Private possession. (DB 2052)


7. LONG, THIN, NARROW SOCKETED AXES OF TYPE GEISTINGER (AXT:geis) (13 ex.; fig. 33A–C; map 6)

7.1. Definitions and dating


This series of extraordinary socketed axes is named after a hoard allegedly of 26 (or 28) examples, as far as known all of the same type, found in 1935 by Mr Geerkens at the Letterveld, Geestingen, along the Belgian side of the Maas in *gem.* Ophem. The axes were said to have been tied together with a cord, which crumbled and was not preserved. The find-spot is just across the Maas from Ohé en Laak and Stevensweert in Netherlands middle Limburg. The axes were dispersed among family and friends of the finder; some have found their way, sometimes via an-
tique dealers, into museum collections. In the museums it is not always known whether their specimens are strays from the Geistingen hoard or independent finds.

The Geistingen axes and their counterparts from other finds in Belgium, Germany and the Netherlands are characterized by a mostly oval socket mouth; long (lengths up to 15.7 cm in the Netherlands, 16.2 cm in west Germany), narrow body outline, slightly expanding gradually from a high truncated-cone-shaped collar without neckribs to a rather straight, sharp cutting edge; usually a (_ ) body section; a small, low-placed thin D loop (absent on one German specimen, K.802); and, especially, very thin walls (their thickness is of the order of 1 to 2 mm). The walls are so thin that, despite the sharp cutting edges, the Geistingen-type axes could obviously never have been actually utilized as axes. This feature, extremely thin walls, is shared only with the few socketed axes of Kibbert’s Form Amelsbüren (see Section 5.1). The Amelsbüren axes are otherwise quite dissimilar in form to the Geistingen axes, and are really an odd version of the axes of Type Plainseau. The metal analyses of four Geistingen axes and four Amelsbüren axes (Tackenberg, 1971: pp. 49–51; Kibbert, 1984: p. 214) also fail to indicate any close relationship between these two socketed axe types. For example, the Amelsbüren axes have tin percentage values of 10 or more and lead values of >5, while only one of the Geistingen axes has 10% tin and the other three tin from 0.9 to 3.4%; and the four Geistingen specimens have lead values of 0.48 to 1.25%.

Some Type Geistingen axes have an ornament on the side, either as a raised inverted arch-shaped surface (Cat.Nos 551, 560) or an inverted arch-shaped rib (K.798–802). It is as if the wing ornament of other socketed axe types has been turned a quarter circle and transferred from the face to the side of the axe. Kibbert sees this as a simplified version of the side garlands on his Form Hollen axes (see Section 5.2.5: b). A few examples (e.g. Cat.Nos 560 and 562 below) have metal protrusions inside the socket which would have made the insertion of a haft end into the socket impossible.

Function: The Type Geistingen axes are impressive to look at, with their length of up to 16 cm, their fine external finish, and sharpened cutting edge. This result was achieved economically, requiring only half the weight of metal of many functional socketed axes, but it excludes their use as functioning tools or weapons. Evidently they were designed for display and/or ritual/ceremonial use. Kibbert sees two main possibilities for the Type Geistingen axes: either they were a form of ‘axe money’, or they were votive objects. The repeated occurrence of these axes in hoards of two, four, or (in the case of the Geistingen hoard) many more, or as river or bog finds, plus the very limited distribution of the type, would seem more appropriate for a votive than for a currency function. Other possible symbolic functions can be imagined, but are difficult to document.

Distribution: The main occurrences, apart from the large Geistingen hoard (which however stands alone on the Belgian side of the Maas), fall in a cluster of eight or ten find-spots (some of them hoards of two or four pieces, others river finds) in a remarkably compact area in the Rhine valley, extending from Nijmegen to the Rhine–Lippe confluence near Wesel. Beyond these, the distribution map of Kibbert (1984: Taf. 89C) shows a few strays up the Rhine as far as the Rhein–Main area. Up the Maas from Geistingen, there are the find-spots Caberg in south and Ool in middle (Neth.) Limburg.

In view of the homogeneity of the type and the compact distribution, it seems very likely (as Kibbert has also recognized) that all of Kibbert’s 16 examples, those that we know of the 26 or 28 examples from the Geistingen hoard, and the 13 examples here presented, are products of a single workshop over a short period of time. The Geistingen hoard must represent some kind of distribution centre. The production centre may or may not have been close by, but, given the distribution, it cannot have been very far away. To attain a considerable uniformity of product with such thin-cast walls, while having such
varied metal to work with, suggests a considerable degree of skill on the part of the fabricator of the axes.

7.2. Catalogue of socketed axes of Type Geistingen

CAT. NO. 550. CABERG, GEMEENTE MAASTRICHT, LIMBURG (dealer’s provenance; probable hoard).
L. 15.0; w. 4.0 cm. Oval socket and mouth (formula: 3.2×3.8; 2.65×3.2 cm). Loop: 2.35×0.8 cm. Collar slightly damaged (break is patinated). Cutting edge straight, sharp. Patina: overall glossy black; interior greeny with some light brown loamy encrustation, in part ochrous-tinted. (DB 1079)
Collection: BAI (now GIA), Inv.No. 1938/X.4. Purchased 1938 via the intermediation of E. van Aelst of Maastricht, together with a very similar second socketed axe (Cat. No. 551 hereafter) and a bronze rod-tanged socketed knife with bronze phantasy-handle, of Central European HaA2 character.

Map reference: Sheet 61F, c. 174/319
Documentation: letter E. van Aelst to H. Brunsting (then assistant to Van Giffen, BAI) 14 November 1938, with sketch map indicating the alleged find-spot.

CAT. NO. 551. CABERG, GEMEENTE MAASTRICHT, LIMBURG
L. 15.3; w. 4.1 cm. Oval socket and mouth (formula: 3.2×3.95; 2.4×3.3 cm; the width of the mouth is markedly the greater). Small D loop (2.23×0.8 cm). Plastic inverted arch under the collar on the part of the fabricator of the socketed axes were actually found together, 75 m from the axe, is another question. Their patina is not entirely in agreement; whether the differences could be accounted for by a slightly different lie in the ground, or by differential post-finding treatment, is difficult to judge for certain. At present we consider the two axes to represent a probable hoard.

CAT. NO. 552. NIJMEGEN (SURROUNDINGS), GELDERLAND. L. 15.7; w. 4.3 cm. Oval/subrectangular mouth opening (formula: 3.5×3.6; 2.75×2.9 cm). Truncated-conical head; long body with (? outline, nearly rectangular section (sides slightly convex). Cutting edge straight, sharp. Low-placed small D loop (2.2×0.7 cm). Plastic inverted arch on one side. Patina: dark, somewhat glossy green. Well preserved. (NB: mounted on wall in modern knee-shaft).

Museum: Enschede, Inv.No. 1075 (old Nos: 0.375; 351-5). (DB 1027)

CAT. NO. 553. BERG EN DAL, GEMEENTE UBBERGEN/GROESBEEK, GELDERLAND. L. 15.5; w. 4.3 cm. Oval socket and mouth, part of mouth damaged (formula: c. 3×3.5; 2.55×2.9 cm). Loop: 2.1×0.55 cm. Edge sharp. Patina: mottled green/black; encrustation of loam. Cf. Cat.Nos 554 and 555: all with similar patina; Cat.No. 553 is slightly broader across cutting edge.

Museum: Nijmegen, Inv.No. AC 19 (old No. E.III.11a). (DB 1488)
Map reference: Sheet 40D, c. 191/426

CAT. NO. 554. BERG EN DAL, GEMEENTE UBBERGEN/GROESBEEK, GELDERLAND. L. 14.1; w. 4.2 cm. Upper part broken off and missing; subrectangular body cross-section. Cutting edge slightly rounded, sharp. Patina: blackish with light green overlay; partly loam-encrusted.

Museum: Nijmegen, Inv.No. AC 20 (old No. E.III.11b). (DB 1489)
Map reference: Sheet 40D, c. 191/426

CAT. NO. 555. PROVENANCE UNKNOWN. L. 15.3; w. 4.05 cm. Oval socket and mouth (formula: 3.4×3.75; 3.1×2.95 cm). Small loop (2×0.5 cm). Cutting edge battered. Patina: blackish, with partial greenish overlay. Loam-encrusted.

Museum: Nijmegen, Inv.No. xxx.d.39. (DB 1538)

CAT. NO. 556. PROVENANCE UNKNOWN. L. 14.8; w. 4.05 cm. Oval socket and mouth (formula: 3.3×4; 2.65×3.15 cm). Loop: 2.5×0.6/0.9 cm. Casting seams present. Private possession. (DB 1709)

CAT. NO. 557. VIERLINGSBEEK, GEMEENTE VIERLINGSBEEK, NOORD-BRABANT (dealer’s provenance).
L. 13.5; w. 5.5 cm. Subrectangular mouth (formula: 3.7×3.85; 2.7×3.3 cm). Broad (,) collar, from base of which springs a small loop with (? outline (1.6×0.7 cm). Body with subrectangular section, faintly convex faces and sides, (? outline. Cutting edge straight, sharpened. Casting seams present, but apparently hammered down.
Fig. 33a. Long, thin socketed axes of Type Geistingen. 550–551: Caberg, Li (hoard); 552: Nijmegen surroundings (Ge); 553–554: Berg en Dal, Ge; 555: provenance unknown (see also figs 33b, c).
Fig. 33b. 556: provenance unknown; 557: Vierlingsbeek, N-B; 558: provenance unknown; 559: Nijmegen surroundings, Ge (see also figs 33a, c).
Fig. 33c. 560: Ool, Li; 561: Herten, Li (drawing HS); 562: gem. Nijmegen, Ge (see also figs 33a, b).

Map reference: Sheet 46D, c. 198/400.

CAT.NO. 558. PROVENANCE UNKNOWN
L. 14.95; w. 3.9 cm. Oval socket and mouth (formula: 3.35x3.2; 2.7x2 cm). Loop: 2x0.8/1.0 cm. Casting seams present. Private possession. (DB 1719)

CAT.NO. 559. PROVENANCE UNKNOWN
L. 14.9; w. 3.8 cm. Oval socket and mouth (formula: 3.2x3.7; 2.4x3.05 cm). Part of collar missing. Loop j-shaped (2.2x0.35 cm). On non-loop side, inverted arch-shaped rib. Casting seams present. Cutting edge irregular and battered anciently. Patina: glossy dark green, with lighter patches; olive face pitted, with partially brownish patina. Found 13 March 1967. Museum: Museon, Den Haag: Inv.No. 9647, presented by J.C. Wagner. (DB 1361)

CAT.NO. 560. OOL, GEMEENTE HERTEN (now GEMEENTE ROERMOND), LIMBURG
L. 15.35; w. 4.2; th. 3.1 cm. Circular mouth opening (formula: 2.4x2.6/2.7; 2.9x3.15 cm). Sharp, straight cutting edge, very thin casting seams (also inside), which project so that the axe could never have been shafted (why internal casting seams?). Slight inverted arch-shaped rib on each side. Prominent casting seams on outsides. Patina: blackish, very small loop (1.1 cm). Condition practically perfect. Found 1971 while dredging in gravel pit. Museum: Venlo, Inv.No. G10299, ex coll. Van Herten. (DB 1924)


CAT.NO. 561. HERTEN, GEMEENTE HERTEN (now GEMEENTE ROERMOND), LIMBURG. Oelerveld; River Maas.
L. 15.1; w. 3.9 cm (one tip slightly damaged). Oval socket and mouth (formula: 3.1x3.4; 2.85x3.2 cm). Loop j-shaped (2x0.5 cm). On unlooped side, inverted arch-shaped rib. Inside the socket, on each face at its edge, a rib pattern /\ . Casting seams present, but not prominent. Cutting edge sharp. Patina: dark bronze, tinnily; black inside socket. Perfectly preserved. Grey sand in bottom of socket. Dredge find 1974. Museum: Venlo, Inv.No. L3260; ex coll. Peters. (DB 2311)

Map reference: Sheet 58D, c. 195.60/355.70.


CAT.NO. 562. GEMEENTE NIJMEGEN, GELDERLAND
L. 15.2; w. 4.2 cm. Round socket-mouth, somewhat damaged (formula: 3.7x3.8; 3.1x3.25 cm). Single shallow biconical collar, low loop (2.5x0.6/0.85 cm). Straight, sharp cutting edge. Some rough projections inside socket. Casting seams sharp. Patina: partly glossy dark green, partly lighter dull green, less encrustation. Museum: RMO Leiden, Inv.No. e.1931/2.74, legacy collection Gildemeester. (DB 437)

Dating: None of the socketed axes of Type Geis­tingen have been found with datable associations (except, very dubiously, the two examples from Ca­berg, Cat.Nos 550-551); so we are left with typological considerations, plus the metal analyses of a few of the German specimens. Typologically, there is no clear relation between the Geisingen axes and other types, in the region or outside it. They are utterly different from the socketed axes of Armorican type, the largest and best-known group of 'votive' or 'proto-currency' axes. Nor are they closely related to the thin-walled Amelsbiiren axes, which may have a centre in Westphalia (Kibbert's map, Taf. 89D). If anything, we are inclined to suspect a derivation from the Form Wesseling axes to be discussed in the following part of this study. There is however no strong reason to depart from the hitherto consensual view that the Geisingen axes belong chronologically to the tail end of the Bronze Age, overlapping into the beginning of the Hallstatt period. Perhaps there will some day be a find that will confirm or alter this conception.

8. SOCKETED AXES OF ARMORICAN TYPES
(AXT:arm) (26 ex.; figs 34–39; map 7)

8.1. Definitions and dating

The most problematical of the socketed axe types here presented are those of Armorican type. The peculiarities of these socketed axes (seven varieties of which have been distinguished: Briard, 1965; Briard & Verron, 1976) are well known. They were made, and in their core area of western Armorica...
deposited, in incredible numbers, running into the
ten's of thousands. Many are unfinished: the clay core
is often still inside, the cutting edge unsharpened, the
casting seams not removed or reduced. When ana-
lysed they show a bronze with a very high propor-
tion of lead (examples are known of lead alone). They
are regarded as votive objects, or a kind of primitive
money (*un phénomène paléomonétaire* according
to Briard, 1995: pp. 190–191), though these concepts
are not without their critics (e.g. recently Huth, 1997:
pp. 177–193). Few Armorican socketed axes have
been found in association with other types of objects;
in so far as they have occurred in datable hoards they
belong to the very end of the Bronze Age and the
beginning of the Iron Age.

At least 26 Armorican socketed axes are pre-
served in museums and private collections in the
Netherlands (the actual number is probably larger,
since we may have failed to record some examples),
but 17 of these — two thirds! — are with ‘proven-
ance unknown’: a most extraordinary percentage.
And of the eight with a claimed provenance, almost
all are dealer’s provenances. Not one has been re-
corded as having been acquired from the actual
finder. Thus there was no demonstrable export of
Armorican socketed axes to the Netherlands in an-
tiquity; all examples present in the Netherlands are
likely to have arrived by way of the modern antique
trade.

*Parallels and literature: For Belgium:* Desittere,
1974: pp. 114–115, carte I, with selected list (three
times as many Armorican axes are regarded by De-
sittere as unreliable and are therefore not listed or
493–514 (ten find-spots with total of 26 examples,
including a hoard from Hoogstraten with a dozen
examples, smaller hoards from Luik and Tongeren,
but some uncertain provenances).

For Brittany: Briard, 1965: pp. 241–282, with
distribution maps of hoards figs 90–105; wider dis-
tribution in France, fig. 106. Also Briard, 1995: pp.
177–193; Briard, 2001: pp. 140–141, with further
references.

For Picardy: Blanchet, 1984: pp. 378–381, fig.
212.

For Britain: O’Connor, 1980: pp. 235–236; dis-
tribution in British hoards map 77, list 228. For North
Britain: Schmidt and Burgess, 1981: pp. 248–249
(nine ex., most of uncertain or approximate proven-
ance).

For middle West Germany: Kibbert, 1984: pp.
170–175; 39 ex. are catalogued, but only five of these
have an undoubted provenance; 16 ex. have an un-
certain or only a regional provenance attribution and
the remaining 18 ex. are unprovenanced.

8.2. Catalogue of Armorican socketed axes

8.2.1. Armorican, large, no neckrib, with slightly
\A sides (2 ex.; fig. 34)

**CAT.NO. 563. PROVENANCE UNKNOWN.**
L. 12.25; w. 3.1 cm. Rectangular mouth opening (formula: 2.9×3.9;
2×2.6 cm). Slightly biconical collar. Loop: 1.85×0.9 cm. Blowhole

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Fig. 34. Armorican socketed axes, no neckrib. 563: no provenance; 564: Wessem? (drawing HS); 565: Batenburg, Ge (dealer’s pro-
venance).
or damage beside loop. Casting seams not worked away. Corroded. Edge battered. Private possession. (DB 1747)

CAT. NO. 564. NEAR WESSEM, GEMEENTE WESSEM, LIMBURG?
L. 12.5; w. 3.3 cm. Rectangular mouth opening (formula: 3.35x3.8; 2.25x2.7 cm). Slightly biconical collar (anciently damaged in one corner). Loop: 2.1x0.7 cm. Casting seams prominent. Cutting edge sharpened. Patina: mottled green/black. Well preserved. Museum: Venlo, Limburgs Museum, Inv.No. L6061, ex coll. Niessen. Said to be found in Cuyk in Maas gravels from the surroundings of Wessem. (DB 2439)

CAT. NO. 565. BATUREN, GEMEENTE WIJCHEN, GELDERLAND (dealer’s provenance).
L. 13.0; w. 3.4 cm. Rectangular mouth opening (formula: 3.2x3.8; 1.8x2.3 cm). Pronounced <--> collar, from which springs D ribbon loop (1.7x0.8 cm). Nearly parallel sides; rectangular cross-section; straight cutting edge, sharpened. Prominent casting seams. Patina: dark green. Very well preserved. Purchased from antique dealer J.N.E. Esser together with other objects as ‘from surroundings of Nijmegen’, but later (in 1950, according to a marginal note in the RMO inventory book signed L. Appelboom) found to contain in the socket a paper giving the find-spot as ‘Baturen’. Museum: RMO Leiden, Inv.No. e.1948/81. (DB 515)

Note: see also Cat.No. 576. Cat.No. 565 is very similar to Cat.No. 569 (but has one neckrib).

8.2.2. Armorican, small with 1 neckrib and slightly \ outline (AXT:arm\Nr<) (3 ex.; fig. 35)

CAT. NO. 566. NO PROVENANCE.
L. 7.5; w. 2.6 cm. Weight 81.4 gr. Mouth formula: 1.85x2.25; 1.2x1.5 cm. Loop: 1.3x0.6 cm. Prominent casting seams; never sharpened. Patina: mottled green. Museum: Museum Het Valkhof, Inv.No. xxx.d.45. Ex coll. Kam. (DB 1541)

CAT. NO. 567. PROVENANCE UNKNOWN.
L. 7.7; w. 2.5 cm. Weight 72.5 gr. Mouth formula: 1.75x2.3; 1.1x1.4 cm. Loop: 1.45x0.5 cm. Prominent casting seams; never sharpened. Patina: mottled green/black. Museum: Nijmegen, Museum Het Valkhof, Inv.No. xxx.d.44. Ex coll.Kam. (DB 1540)

CAT. NO. 568. BEUGEN, GEMEENTE BOXMEER, NOORD-BRABANT (dealer’s provenance).
L. 7.5; w. 2.5 cm. Mouth formula: 1.75x2.25; 1.25x1.75 cm. Loop: 1.55x0.5 cm. ‘Found in a gravel layer’. Patina: glossy dark green. Museum: Enschede, Inv.No. 1078 (old No. 500-230; ex coll. Ter Kuile. Purchased 1906 by Ter Kuile from the antique dealer Grandjean at Nijmegen. (DB 1053)

8.2.3. Armorican, large, with thin neckrib and slightly \ outline (AXT:arm\Nr>) (17 ex.; fig. 36a–c)

CAT. NO. 569. OVERASSELT, GEMEENTE OVERASSELT (now GEMEENTE HEUMEN, GELDERLAND) (dealer’s provenance).
L. 12.9; w. 3.6 cm. Mouth formula: 3.1x3.9; 2.3x2.8 cm. Prominent <--> collar + single thin neckrib (not on loop-side). Band loop (2.1x1.0 cm). Prominent casting seams. Straight cutting edge; never sharpened. Patina: dark green. Very well preserved. Museum: RMO Leiden, Inv.No. c.1950/10.2; purchased from antique dealer J.N.E. Esser. (DB 532)

CAT. NO. 570. PROVENANCE UNKNOWN.
L. 12.3; w. 3.7 cm. Weight 34.7 gr. Mouth formula: 3.2x4.0; 2.0x2.2 cm. Prominent casting seams. Band loop (2.0x1.0 cm). Never sharpened; the ‘cutting edge’ is 0.7 cm thick. Patina mottled green. Museum: Nijmegen, Museum Het Valkhof, Inv.No. xxx.d.42. Ex coll.Kam. (DB 1539)

CAT. NO. 571. PROVENANCE UNKNOWN.
L. 13.3; w. 3.45 cm. Rectangular mouth (formula: 3.3x4.0; 2.4x2.6 cm). Strong <--> collar, with large stumps of three (of the original four) casting runners. Neckrib not on loop-side. Band loop (1.9x0.9 cm). Faces slightly convex. Cutting edge never sharpened. Blowholes on both faces. Casting seams sharp. Patina: originally black; mostly peeled off, showing mottled green; otherwise well preserved. Loamy encrustation. Museum: ’s-Hertogenbosch, Inv.No. 8562. (DB 267)

The museum fiche attributes the find-spot to Bergeijk, with reference to a letter from P.N. Panken to C.R. Hermans, dated 6 October 1846, but Panken didn’t mention any find-spot in this letter.

Fig. 35. Armorican socketed axes, one neckrib. small size. 566–567: no provenance (drawings HS); 568: Beugen, N-B (dealer’s provenance).
Fig. 36a. Armorican socketed axes, one neckrib, medium size. 569: Overasselt, Ge (dealer’s provenance); 570–573: provenance unknown; 574: De Duno, Ge (dealer’s provenance) (570, 572–574: drawings HS) (see also figs 36b, c).
Fig. 36b. 575: De Duno, Ge (dealer’s provenance); 576: St. Joost, Li (dealer’s provenance); 577–580: no provenance (575, 577: drawings HS) (see also figs 36a, c).
Fig. 36c. 581–584: provenance unknown (581: drawing HS, 583: sketch JJB) (see also figs. 36a, b).

"Hooggeleerde Heer en Waarde Vriend, Hiernevens het bedoelde metaal werknig. Bij de ontdekking was het zoodanig inge… dat het toen scheen geheel groen gevormd te zijn. Om beter de stof te kunnen onderscheiden is er op 2 plaatsen, gelijk te zien is, de korst wat afgeveild …".


CAT.NO. 572. PROVENANCE UNKNOWN.
L. 13.1; w. 3.75 cm. Rectangular mouth (formula: 2.75×3.8; 1.8×2.6 cm). Prominent collar, with traces of four jets, from which springs loop (recently broken off): 1.6×h. 0.7 cm. Single neckrib, on faces only. Trapeze shape, rectangular section. Blowhole on one side. Casting seams prominent. No core. Patina: mottled green. Slight traces of dark glossy green surface. Some brown loamy deposit inside. Museum: Enschede, Inv.No. 1978-33 (old No. E44), via antique dealer Tielkens, Delden. (DB 2404)
CAT. NO. 573. PROVENANCE UNKNOWN.
L. 13.3; w. 3.2 cm. Rectangular mouth opening; prominent single mouth-moulding (formula: 2.8x3.8; 1.95x2.75 cm), from which springs D loop (1.6x0.6 cm), somewhat thinned by corrosion. Single neck moulding on faces only. Trapeze outline, rectangular section. Casting seams prominent. Has been sharpened (anciently). In the socket, jammed in, a fragment of plate bronze, exact form not visible. Patina: mottled green; surviving traces of smooth surface. Mostly now dull. Some brown loamy deposit inside socket. Museum: Enschede, Inv.No. 1034.1 (old No. 600-103 in red ink). (DB 2341)

CAT. NO. 574. DE DUNO, GEMEENTE DOORWERTH, GELDERLAND?
L. 12.95; w. 3.65 cm. Rectangular mouth (formula: 3.2x4.0; 2.2x2.8 cm). Prominent collar, from base of which springs D-shaped band loop (1.9x1.0 cm). Single neckrib on faces only. Trapeze outline, rectangular section. Cutting edge anciently sharpened. Casting seams prominent. Blowhole under neckrib on reverse face, near edge. Patina: mottled green, surface rough. Some brown loamy deposit inside. Museum: Enschede, Inv.No. 1034.2 (old No. 600-104 in red ink), ex coll. Van Deelen. Card inside socket: ‘Duno near Arnhem’ in blue ink. (DB 2342)

CAT. NO. 575. DE DUNO, GEMEENTE DOORWERTH, GELDERLAND?
L. 12.35; w. 2.8 cm. Rectangular mouth; single mouth moulding (formula: 3.0x3.8; 2.3x2.5 cm), with one strongly projecting jet attachment. One neckrib, from which springs D-shaped band loop (1.5x1.0 cm). Casting seams mostly removed. Blade unsharpened. Patina: mottled green; no core, but traces of burnt clay in socket. Surface dull, rough. Cutting edge corners have slight modern damage. Museum: Enschede, Inv.No. 1034.3 (old No. 500-237), ex coll. Ter Kuile. (DB 2343)

Note: Cat.Nos 574 and 575 were, according to Dr A.D. Verlinde (Enschede), almost certainly purchased by the collectors concerned from a dealer, although this is not explicitly so stated in the records. The Duno is a well known early historic fortified hill site overlooking the Rhine, not otherwise known to have yielded any prehistoric material.

CAT. NO. 576. ST.-JOOST, GEMEENTE ECHT, LIMBURG.
Boonenbroek (dealer’s provenance).
L. 13; w. 3.4 cm. Rectangular mouth opening, with 1 casting stump (formula: 3.4x3.7; 2.3x2.7 cm). No neckrib on loop-side. Loop: 2.05x0.9 cm. Casting seams present. Edge unsharpened. Patina: mottled green; heavy encrustation. Museum: RMO Leiden, Inv.No. k. 1948/6.2, purchased from antique dealer J.N.E. Esser as ‘from the Nijmegen area’; thus inventorized, with the letter ’e’ (for Gelderland) as prefix to the inventory number; but later (according to a marginal note in the inventory book signed L. Appelboom) found to contain in the socket a paper citing ‘Boonenbroek at St.-Joost, gem. Echt’ (thus Neth. Limburg) as the find-spot (cf. above, Cat. No. 557). (DB 516)

CAT. NO. 577. PROVENANCE UNKNOWN.
L. 12.7; w. 3.15 cm. Weight 245 gr. Mouth formula 3.0x3.55; 2.2x2.75 cm. Single thin neck rim on three sides (absent on non-looped side). Loop: 1.8x0.8 cm. Casting seams present (also on unsharpened cutting edge). Blowhole near cutting edge on one face. Patina: mottled green, part blackish; some rubbed-off spots showing golden bronze (similar to Verleur series). Museum: Nijmegen, Museum Het Valkhof, Inv.No. 28.1.28(3). (DB 1579)

CAT. NO. 578. PROVENANCE UNKNOWN.
L. 13.1; w. 3.15 cm. Weight 190.7 gr. Mouth formula: 2.75x3.7; 1.8x2.7 cm. __<_ loop, with jet stumps front and back; below moulding single rib, on faces only. D loop (1.95x0.55 cm). Body with mildly A outline, rectangular section. Casting seams present. Cutting edge with (modern) abrasion; also abraded along one edge. Patina: mottled green, part blackish. Museum: Nijmegen, Museum Het Valkhof, Inv.No. 6.8.31.1. Purchased (along with Cat.Nos 579 and 580) from A. Verleur (Nijmegen). (DB 1565)

CAT. NO. 579. PROVENANCE UNKNOWN.
L. 12.8; w. 3.5 cm. Weight 159.9 gr. Mouth formula: 2.6x3.7; 2.3x3.2 cm. Biconical collar, single thin rib on faces only. D loop (1.75x0.8 cm). Body with rectangular section. Casting seams present (also on unsharpened cutting edge). Two blowholes on non-looped side. Comparatively thin-walled. Patina: mottled green, part blackish; powdery green deposit, especially inside socket. Well preserved. Museum: Nijmegen, Museum Het Valkhof, Inv.No. 6.8.31.2. Purchased (along with Cat.Nos 578 and 580) from A. Verleur (Nijmegen). (DB 1566)

CAT. NO. 580. PROVENANCE UNKNOWN.
L. 11.8; w. 3.1 cm. Weight 162.2 gr. Mouth formula: 2.55x3.9; 1.9x2.9 cm. Biconical collar (partly broken away), below which single thin rib on faces only. Cutting edge not sharpened. Elongated blowhole on non-looped side. Patina: mottled green. Museum: Nijmegen, Museum Het Valkhof, Inv.No. 6.8.31.3. Purchased (along with Cat.Nos 578 and 579) from A. Verleur (Nijmegen). (DB 1567)

Note: Cat.Nos 578–580: purchased together from dealer A. Verleur; very similar in patina, and possibly (part of?) a hoard. Cat. No. 577 may, to judge by its similar patina, belong to the same find.

CAT. NO. 581. PROVENANCE UNKNOWN.
L. 13; w. 3.39 cm. Weight: 194.4 gr. Mouth formula: 2.9x3.5; 2.1x2.6 cm. Rectangular collar. Patina: green, bronze colour shines through. Casting seams present. Blowholes in the side with the loop. Private possession, purchased at a fair. (DB 2526)

CAT. NO. 582. PROVENANCE UNKNOWN.
L. 12.6; w. 3.1 cm. Rectangular collar (formula: 2.9x3.4; 1.9x2.4 cm). Castings seams present. Private possession. (DB 1748)

CAT. NO. 583. PROVENANCE UNKNOWN.
L. 13.1; w. 3.25 cm (measurements from sketch). Body with rectangular section. Loop 2.0x0.4 cm, broken in antiquity. Patina: originally green, but heavily ‘cleaned’. Sketch J. Musch. Private possession. (DB 1785)

CAT. NO. 584. PROVENANCE UNKNOWN.
L. 12.9; w. 3.35 cm. Loop: 2.0x0.8 cm. Cutting edge not sharpened. Was in museum Valkenburg (Streekmuseum), but on inquiry 1999 not present. (DB 738)
**Fig. 20.** Plainseau socketed axes with 2 neckribs and arch facet on face. 528: Swalmen, Li; 529: Bladel, N-B.

**Documentation:** letter Lt. Col. Jonkh. Van der Brugghen van Croy to C.R. Hermans (Noord-Brabants Museum), 4 December 18?? (dossier KHS A2 in Bibliotheek Katholieke Universiteit Brabant, unit ‘Kostbare handschriften’). In the first paragraph, the writer suggests an appointment with Hermans to discuss two bronze objects of uncertain use (presumably two axes, or one axe and the one gouge) which he intends to present to the Society for Arts and Sciences in Den Bosch (“Voorzienens zijnde twee bronzen snijdenlen instrumenten wier gebruik mij echter onbekend is, en welke deze zomer in mijnheer het noor gevoonden zijn aan het Genootschap van Kunsten en Wetenschappen aan te bieden, neemt ik de vrijheid Uwe ...... te dienende belet te vragen tegen 9 ure in de morgen”). Presumably he then presented the second axe to the Leiden museum.

**Reference:** Hermans, 1865: p. 96, Pl. XX:2.

CAT.NO. 525. BORGHAREN, GEMEENDE MAASTRICHT, LIMBURG.
L. 11.45; w. 4.6 cm. Oval mouth (formula: 3.85x4.05; 2.75x3.05 cm). (___) collar + 2 neckribs, from which springs D-shaped ribbon loop (2.35x0.9 cm). Ribbed semi-'wings' depend from the lower horizontal thin rib. Outline ogival. Slight arch-shaped moulding on non-loop side. Patina: dark bronze; patches of black. Museum: Maastricht, Inv.No. 222. (DB 213)

**Map reference:** Sheet 61 F, c. 179/320.


CAT.NO. 526. NEAR NIJMEGEN, GELDERLAND.
L. 12.2; w. 4.0 cm. Round to subrectangular mouth opening (formula: 3.7x4; 3.8x2.85 cm). (___) collar + 2 neckribs; low loop (2.3x1.035x0.8 cm; irregular hourglass outline); ribbed ‘wings’ + pellet; under ‘wings’ a horizontal bar. Body with [ ] outline, rectangular cross-section. Prominent casting seam, which passed eccentrically through the loop. Patina: dark brown (peeled off in places). Museum: Museum Het Valkhof, Inv.No. GAS 1958-9-30, ex coll. G.J. Olt of Ressen (on loan in museum Harderwijk). (DB 39)

**Map reference:** Sheet 40C, c. 186/427.


CAT.NO. 527. KESSELEIK, GEMEENTE KESSEL, LIMBURG.
L. (9) cm; w. (3.3) cm. Round mouth opening (formula: 3.7x3.8; 2.8x2.8 cm). (___) collar, 2 small neckribs; whereunder ribbed ‘wings’ and a pellet between the ‘wings’; under the ‘wings’ a horizontal bar; Body concave, rounded sides; low loop (2.3x0.9 cm). Patina: glossy dark green, where damaged powdery light green. On non-loop side craquele under the collar. Private possession. (DB 1819)

**Map reference:** Sheet 58B, c. 199/365.

5.2.4. Plainseau axes with arch facets on faces (AXT:pls.A) (2 ex.; fig. 20)

CAT.NO. 528. SWALMEN, GEMEENDE SWALMEN, LIMBURG.
L. 11.9; w. 4.6 cm. Round to subrectangular mouth opening (formula: 3.7x3.8; 2.9x2.7 cm). ‘Western’ collar; D loop (2.3x0.8 cm); subrectangular section at neck; slight plastic arch-facet forming face; pellet below collar; place of 2 runners plain (front-back). Thin casting seams. Patina: mottled (black, brownish, reddish, bronze; has been scrubbed). Blackish inside. Museum: Asselt, Inv.No. 201. (DB 1163)

**Map reference:** Sheet 58D, 199/360.


CAT.NO. 529. BLADEL, GEMEENDE BLADEL, NOORD-BRABANT. De ‘Pals’.
L. 12.4; w. 4.2; th. 3.85 cm. (___) collar (formula: 3.5x3.8; 2.6x2.45 cm) and 2 ribs; low loop (2.2x0.7 cm); arch facets on face; horizontal ribs on sides (two on loop-side, 3 on other side, on one of the halves; absent on the other half); blade sharpened, but somewhat
blunted; socket rectangular (inside and outside); section rectangular below, oval above. Traces of four runners. Patina: black (partly removed by mechanical 'cleaning'). Found 1951/1952 while cleaning the Grote Beerze (a small stream). Private possession. (DB 1702)


References: Beex, 1965: pp. 61, 69, afb. 3.

Parallel: Belgium: 1 ex. from the Lutlommel hoard, with pellet above the facial arch (Van Impe, 1995/1996: p. 14, No. 39). Present locus unknown. Two arch-faceted examples are present in the Amiens-le Plainseau hoard (AM 135, AM 137; the latter with plastic 'wings'). Three arch-faceted Plainseau axes, with single neckrib, are present in the Maaseik-Heppeneert hoard, on the Belgian side of the Maas; a fourth axe attributed by Van Impe to the hoard (his fig. 19b), but found earlier, is similar. Related examples include one in the Basland hoard, Jutland, Denmark (below, fig. 30b), one in the Jardin des Plantes hoards, Nantes, Loire-Atlantique, France (Inventaria Arch. F.157; Huth, 1997: Taf. 57-68, esp. Taf. 65:1), one in the Vénat hoard (Coffyn, Gomez & Mohen, 1981: Pl. 20:8 with three neckribs and three horizontal ribs on each side).

A socketed axe in the Trieu des Cannes hoard, Jemeppe-sur-Sambre, Namur, with single neckrib and rib 'wings', has a pointed-arch, rather 'Gothic' facet on each face.

5.2.5. Plainseau axes: regional variants

a) Plainseau variant with single neckrib, 'jail window' rib pattern (AXT:pls.jail) (1 ex.; fig. 21)

CAT.NO. 530. ‘NOORD-BRABANT’ (no further provenance).
L. 12.35; w. 4.25 cm. Round mouth opening (formula: 3.1x3.1; 2.6x2.6 cm). ( ) collar and rib; low loop (2.2x0.75 cm); body of rectangular cross-section; upper part face ornamented with vertical ribs, closed with a single horizontal rib; over the central rib is a pellet. Straight grinding line. Prominent casting seams. Upper part damaged. Edge battered (recent damage). Patina: dark glossy green; surface here and there damaged. Museum: Tilburg, Inv.No. 322, ex coll. J. Lainiers of Esbeek. (DB 2048)

In view of the indefinite provenance, it is conceivable that this axe is really a stray from the Hoogstraten or Antwerpen-Kattendijkdok hoards, but this cannot be proven.

Parallels: Plainseau socketed axes decorated with the 'jail window' pattern are best known from the Belgian hoards from Hoogstraten, prov. Antwerpen (very close to the Netherlands border), with nine examples (Warmenbol, 1991), and Antwerpen-Kattendijkdok with two examples; the latter found with a half-dozen other Plainseau axes (Warmenbol, 1987a). A single example is present in the Amiens-le Plainseau hoard (Blanchet, 1984: p. 283, fig. 156:40; O'Connor, 1980: fig. 56: 14). No further examples with the 'jail window' pattern seem to be known; we seem to have...
to do with a local variant, perhaps produced in the Schelde area.

b) Plainseau derivative (‘Form Hollen’ (Kibbert, 1984: pp. 149–150)) (AXT:hol) (1 ex.; fig. 22)

This extravagant variant of the Plainseau type is characterized by a somewhat elaborated version of the Rippenlappen motif: a pattern composed of two or three concentric ribs which, viewed from the face shows as doubled rib ‘wings’, and seen from the side as concentric U’s.

The only example in the Netherlands is the long, handsome, richly decorated axe from Belfeld, Limburg. With a length of 14.7 cm it is among the longest of our socketed axes. It seems to combine elements of the Plainseau type (of which it is an extravagant version), together with features of the Form Helmeroth (especially the horizontal furrows on the collar and the vertical furrows on the faces) as well as with the rib-‘wing’ tradition.

CAT.NO. 531. BELFELD, GEMEENTE BELFELD (now GEMEENTE VENOLO), LIMBURG.
L. 14.5; w. 5.1 cm. Oval socket; mouth formula: 4.0×3.8; 2.7×2.7 cm. Slightly biconical collar, ornamented with vertical hammer­faceting, from the base of which springs D loop with oval section (2.4×0.9 cm); single thin neck rib; long body with \( \rho \) outline; subrectangular section, with slightly convex faces and sides. On neck wrap-around ‘wings’ consisting of three concentric ribs, joining so as to form concentric rings on sides; pellet between ‘wings’. Vertical fluting on faces and sides. Cutting edge with ancient (patinated) battering. Patina: dark glossy green; part of patina peeled off, there light dusty green. Museum: Maastricht, Inv.No. 2434 L.1 (since 1961 on loan from private owner). (DB 229)


Parallels and distribution: Related are two axes (K. 720, 721), listed by Kibbert under ‘Form Hollen’: K.721 is from the river Rhine at Mainz Laubenheimer Grund, K.720 is of unknown provenance. The ‘Form’ is named by Kibbert after a find from Hollen, Kr. Ammerfeld (Tackenberg, 1971: pp. 51–52 with note 185; p. 264, Liste 31:3, Taf. 20:3, as from Hollen, Kr. Ammerland). Also illustrated by Tackenberg is an example from Schwindebeck, Kr. Harburg (Tackenberg, 1971: Taf. 20:4). Further examples are known from Jemeppe-sur-Sambre, prov. Namur, Belgium (hoard ‘Trieu des Cannes’: Mariën, 1953: B.2.3); Merkplas, prov. Antwerp, Belgium (Museum Antwerp; cited in Mariën, 1953: B.2); Han-sur-Lesse, prov. Namur, Belgium, dredge find from cave exit (Mariën & Vanhaeke, 1965: Taf. 2; colour photo: Glansdorff, 1989: p. 99, upper, left). Thus, despite the small number of examples, probably all from the same workshop, the distribution is rather wide, extending from the Belgian Schelde area to the Elbe mouth region.

6. SOCKETED AXES OF ‘FORM HELMEROTH’
(18 ex.; figs 23–32; map 5)

6.1. Definitions and dating

The ‘Form Helmeroth’ was first distinguished and defined by Kibbert (1984: pp. 139–141). He lists 17 examples in middle West Germany (his Nos 655–671). He subdivides them into a Variante Bottrop, with ten examples (K.655–664) and a Variante Kirchhoven, with five examples (K.665–669), plus two nahestehehende (K.670–671) which he also designates as an Untervariante Eschwege. His distribution map (his Taf. 88D) shows a wide scatter across his middle West Germany area. In body form the Helmeroth axes are slender, and usually with slightly \( \rho \) outline. The mouth opening is circular. On almost all specimens the collar is truncated-cone-shaped; from it, or from its base (not from an underlying neckrib, as with the Plainseau axes), springs a large, usually flattened-D loop, usually of ribbon cross­section, sometimes of \( | \) or \( \rangle \) outline. The loop may be 3 to 4 cm in length (thus larger than the loop characteristic for Plainseau axes), but is not angular (as are often the loops of comparably exaggerated size of the Hunze-Ems group in the North).

Besides similarity in body form, Kibbert considers the presence of vertical furrow ornament as a prime characteristic of the type in all three of its variants. Actually, parallel furrow ornament is present on some Early and Middle Bronze Age axes (including some British–Irish Early Bronze Age axes), on decorated flanged stopridge axes of Type Plaisir, including two examples in the Netherlands (Butler, 1987: pp. 12, fig. 3; Nos 1 and 4, Butler, 1997: pp. 228–230, Cat.Nos 156–157), even on some winged axes (examples illustrated by Kibbert: K.85, 144, 145, 177, 360, 377, 399, 417, 477, 506), and on a considerable number of socketed axes of various types in the Hunze-Ems area. Five of the axes of Kibbert’s Var. Bottrop, four of Kibbert’s Var. Kirchhoven, and both of its Untervar. Eschwege, without arch-shaped face facets, have surface decoration consisting of parallel furrows, usually horizontal on the collar and vertical on the faces and/or sides. Five Bottrop axes have a single vertical furrow on the face. Only a few examples have some ribbed ornament; a few have pellets.

A special characteristic of Var. Bottrop is with what Kibbert terms a blade mit abgesetztem Schneidenteil, i.e. the lower part of the blade has an arch­shaped facial facet (rarely it is more or less rectangular), and is sometimes somewhat pressed down (clearly seen in the side view). The majority of Kibbert’s Helmeroth axes have this feature, yet paradoxically it is not present (except for the single Netherlands specimen Cat.No. 544/DB 54, with a deviant body form) on Helmeroth axes in the Netherlands.
A noteworthy negative feature of the Helmeroth axes, both in West Germany and in the Netherlands, is the absence of neckribs. Neckribs are also absent from the southern Types Niedermaas and Geistingen; yet they do also occur on axes in the north of the Netherlands that may have various other features in common with the Helmeroth axes.

In the Netherlands only two socketed axes are present that can be assigned to Kibbert’s Helmeroth-Var. Bottrop; both are atypical specimens. Cat.No. 544, from Diergaarde, Neth. Limburg, has an idiosyncratic body shape. Cat.No. 547, with various exceptional features, is without recorded provenance; its true find-spot could have been on either side of the modern Netherlands–German border. Most of the Helmeroth axes in the Netherlands may however be assigned to Kibbert’s Form Helmeroth-Var. Kirchhoven. Two examples, Cat.Nos 538 and 539, are from a probable hoard, considering that they are from the same find-spot (Peij, Limburg) and have identical patina. Similar examples are Cat.No. 543 (with pellet) from Maasbracht, Limburg, and Cat.No. 540 from Meerlo, Limburg. Very similar in form, but without furrow or other ornament, are Cat.No. 532, from the river Waal at Winseling, gem. Nijmegen, and Cat.No. 533, from the probable hoard already mentioned from Peij, Limburg.

Kibbert lists no Helmeroth axes without ornamentation. Actually he illustrates one (K.654, from the hoard of Ockstadt, Wetteraukreis, Hessen) that can be considered a good example of an undecorated Helmeroth-Kirchhoven axe, but he oddly places it angeschlossen by his (in any case minimal and heterogeneous) Form Lowskal-Bargoosterveld, where it seem rather mismatched. In the Netherlands we can recognize two examples (Cat.No. 532, from Winseling, gem. Nijmegen, Gelderland, and Cat.No. 533, from the presumed hoard from Peij, Limburg, probably found with two Helmeroth axes of similar form with vertical furrow ornament) that can surely be accepted as unornamented Helmeroth-Kirchhoven axes.

A few specimens in the Netherlands combine predominantly Helmeroth features with elements not typical for the Helmeroth canon:

The probable Helmeroth axe (broken; the top is missing) Cat.No. 535, with the approximate location ‘Meierij van ’s-Hertogenbosch’, has a pellet.

Cat.No. 534, from Wijk bij Duurstede, Gelderland, has a pellet with a sort of garland around it; similar to if somewhat simpler than the unprovenanced K.720.

Cat.No. 543, from Maasbracht, Limburg, has a pellet as well as vertical furrow ornament.

Cat.No. 546, with unknown provenance, has semi-‘wings’.

The bronze half of a casting mould, Cat.No. 549, from Roermond would produce a Helmeroth socketed axe with faint rather elongated semi-‘wings’, and a pellet between them; its flattened-D loop is 3.5 cm long.

Cat.No. 547, with unknown provenance, has a pellet ‘wings’ connected by a bar like this: )-( ; also arch facets, and a slight midridge on the blade, a half-pellet under the horizontal-furrowed collar.

Cat.No. 545, from the Old Maas, Limburg, has J-shaped ‘wings’ and vague arch facets (cf. the Basland hoard).

Cat.No. 544, from Diergaarde, Limburg, has a trapeze-shaped lower part of the blade. It is not difficult to identify the source of most of the deviant features on these Helmeroth-related specimens: they are apparently borrowings from the ornament repertoire of the Plainseaux axes. The trapeze blade of Cat.No. 544 may have been influenced by the axes of Type Sompting, such as have occasionally been found in the area; K.661, with rib-and-pellet ornament on one face, may also reflect Sompting influence.

An extraordinary specimen is Cat.No. 548, from Vlodrop, Limburg. Its horizontally furrowed collar relates it to K.667 in the Ockstadt hoard. The pair of pellets below the collar relates it to some axes of the Plainseaux family. Its vertical furrowing covers the sides, and on its face forms a drapery pattern. Cf. also K.678 from ‘Köln’ (placed by Kibbert in his Lappen­zier Gruppe A), which is clearly closely related to our Cat.No. 548.

Unusual also is Cat.No. 544, from Diergaarde, gemeente Echt, Limburg. Its upper part is typically Helmeroth, with vertical fluting on the collar and face, and a large ribbon loop with ) outline. The lower part of the blade is, however, trapeze-shaped in outline: a feature not otherwise found in the Helmeroth family, but which recalls the trapeze-shaped blade of the axes of the Sompting family.

The Helmeroth-Kirchhoven axe from the Elzenerveen hoard (Cat.No. 536) has, however, J-tips, like the two Helmeroth-Eschwege axes K.670–671.

Cat.No. 546, with unknown provenance, is a typical Helmeroth-Kirchhoven axe, but has on the face semi-‘wings’ in relief, which relates it to the Plainseaux axe without neckribs but with ‘wings’ Cat.No. 501 (q.v.), and to some other Plainseaux axes. The small group of Netherlands socketed axes: Cat.Nos 538 and 539 (Peij) (facial furrows, hoard?), Cat.No. 543 (‘Maasbrachterbroek’) (facial furrows, pellet on face), Cat.No.540 (Swolgen) (facial and side furrows) are closely related to Kibbert’s K.660–669. Another specimen, Cat.No. 544 from Contine near Diergaarde, gem. Echt (with facial furrows, furrows on collar), is evidently closely related to these, but differs in having an unusual trapeze-shaped blade part of the body. But the form of the upper part, the facial arch­facet and fluted surface ornament clearly show its relationship to Kibbert’s Helmeroth-Bottrop series.
Evidently closely related to the Helmeroth axes in West Germany and the Netherlands, but especially close to the Netherlands examples Cat.No. 545, from Ohe en Laak, Limburg, and Cat.No. 537, from Stevensweert, Limburg, are three of the four socketed axes in a Danish hoard, found at Basland, Randers Amt in Jutland (fig. 30b: Nos 2-4; Broholm, 1946 (III): p. 202, M.89; Jacob-Friesen, 1967: No. 522, Taf. 169; Thrane, 1967 (= Inventaria Arch., DK. 5); Kibbert, 1984: pp. 71, 141). Body form, mouth mouldings and loop are quite similar to what is found on some of the Helmeroth axes. The vertical furrows below the collar are also very similar, though in the case of the Basland specimens the furrows separate what look like ‘wings’ with a \[\] shape (in one case semi-‘wings’ of this shape), rather like Kibbert’s unprovenanced specimen No. 661.

Kibbert assigns these three Basland axes to his *Form Helmeroth–Var. Bottrop*, with some reservation (due to the none too accurate character of the previously published drawings; those on our fig. 30b, drawn from the originals in 2000, are of guaranteed better quality). But closest to the Basland specimens, despite some variations in detail, are our Cat.No. 545, from the Old Maas at Ohe en Laak and Cat.No. 537 from Stevensweert, both in Neth. Limburg, and a few specimens in Belgium. These include Thon-Samson (Warmenbol, 1987b: fig. 9), Namur-Salzinnes (Warmenbol, 1987b: fig. 8) and Mohilville-Scoville (Warmenbol, 1987b: fig. 6) in the province Namur, and Schoonaarde and Nineve in Oost-Vlaanderen. Several of the socketed axes from the cave of Han-sur-Lesse are at least closely related.

Also to be grouped with Helmeroth axes of this variety is the bronze half-mould for a socketed axe attributed to Roermond, Neth. Limburg (Cat.No. 549), already mentioned above. Its ‘Belgian Helmeroth’ characteristics are present, even slightly exaggerated; it has also a pellet and long faint semi-‘wings’. A reasonable parallel (but minus the pellet) is in the German hoard of Kattenbühl, in the Weser area (Prüssing, 1982: Taf. 29:16).

*Distribution:* Almost all the Netherlands Helmeroth axes are from the Maas valley in Netherlands Limburg. Together with two of Kibbert’s specimens on the German side of the modern border they form a small Maas–Roer find-group. Similar minor groups are discernible in the Rhine–Lippe area, the Rhine–Main area, and even along the Weser in Hessen.

The exception is Cat.No. 536, and is from the hoard of Elsenerveen, Overijssel, contains the Helmeroth axe Cat.No. 536. Associated with it were two other socketed axes: a ‘Hunze-Em’ socketed axe with facial arches, ‘wings’ with furrow ornament on the faces and sides, two neckribs, a pellet, and large angular loop (DB 495); and a looped socketed axe with four neckribs and a drum-shaped swelling belonging to the *Typ Seddin-Var. Karbow* type (DB 498; Kibbert, 1984: K.727, pp. 151–153, with further references) and a Central European Urnfield socketed axe of typical HaB3 form (cf. Prüssing, 1982: pp. 142–148). Another hoard from the same vicinity, though not a bog find (Butler, 1965: pp. 175, 179, fig. 12; Verlinde, 1980: p. 24, *Depot V*), consisting of omega bracelets and twisted and untwisted wire ornaments, contained also a fragment of a socketed axe with vertical furrow ornament on the sides; thus possibly a Helmeroth axe, though perhaps a Hunze-Em axe as suggested in 1965. For western Germany, Kibbert cites a variety of hoards containing Helmeroth axes, including: Frankfurt-Grindbrunnen (K.664); Frankfurt-Stadt­wald (K.659); Kattenbühl, Kr. Hann. Münden (Prüssing, 1982: Taf. 29); Ockstadt, Kr. Stadt Friedberg, Wetteraukreis, Hessen (K.654); Konz, Kr. Saarburg­Trier, Rheinland-Pfalz (K. Taf. 93D). All these hoards...
are assigned to the South German Stufe Wallstadt
(speite Urnenflederzeit/IIbB2-B3/South Scandinavian-North German Period V).

In Denmark, there is the hoard of Basland
(’Orum-Basland’ in Kibbert, 1984: pp. 71–73, 141),
Randers Amt, Jutland, Denmark (Danish National
Museum, B. 9791–9800), cited above. It contains
three examples (Inventaria B.9792–9794) already re-
garded by Kibbert as possibly Helmeroth axes; we
have above suggested describing them provisionally
as belonging to a Helmeroth Variant Namur-Basland.
Also in the hoard are a fourth socketed axe (fig.
30b:1), a winged axe assigned by Kibbert to his
’Form Hillesheim, var. Linz/Öl’), three spear-
heads, a sickle, a fragment of a sword blade. The
fourth socketed axe in the Basland hoard (fig. 30b:1)
is of a different type: unusually large; facial arch
facet of exaggerated size; enlarged D loop; narrow
biconical collar with two neckribs. It is more or less
comparable with Kibbert’s No. 653 from Haltern-
Lavesum (which he places in his small but hetero-
geneous frühe Var. Løvska/nahestehend group). The
dating of this hoard is unclear: Northern Period IV
according to Broholm (1946(III): p. 202, M 89); Period V according to Sprockhoff (1956(I): p. 94, note 8) and Tackenberg (1971: p. 77), whereas
Thrane (1967) and Jacob-Friesen (1967) leave the
question open. Actually there are no typical Nordic
objects in the hoard. Kibbert, on the basis of the
winged axe, inclines to place it in his Lindenstruth
phase (HaB1=a late phase of Period IV).

A single Netherlands specimen (Cat.No. 537)
attributed to Stevensweert, Limburg (but a dealer’s
provenance) is similar in form to Kibbert’s Helme-
roth axes; its faint facial arch-facets relate it to Kib-
bert’s Var. Bottrop, but the vertical furrow on the
face is a feature also occurring on some of Kibbert’s
Var. Bottrop and one of Var. Kirchhoven, and (par-
ticularly close) the three specimens in the Danish
Basland hoard.

6.2. Catalogue of socketed axes of Form Helmeroth

a) Form Helmeroth, plain (AXT:helm.P) (2 ex.; fig.
23)

CAT.NO. 532. WINSSELING, GEMEENTE NIJMEGEN, GEL-
DERLAND. River Waal.
L. 11.7; w. 4.25 cm. Subrectangular mouth opening (formula: 3.65×3.75; 2.8×2.6 cm). <__> collar, just below of the base of which
is a fairly large D band loop (2.9×0.9 cm). Body with \j\ outline, subrectangular cross-section. Casting seams prominent; jet stumps
top & bottom. Patina: dark brown. Vertical split through moulding
and part of one face. Split in side. Found 1893 while dredging.
Museum: Nijmegen, Inv.No. AC 17 (old No. E III No. 10 a). (DB
1486)
Map reference: Sheet 40C,186.75/429.25.
Reference: Jaarverslag 1893: p. 4, III, No. 10a; catalogues: Abeleven
& Bijleveld, 1895; Felix, 1945: pp. 179, 228.

CAT.NO. 533. PEIJ, GEMEENTE ECHT, LIMBURG. Pepinusbrug.
L. 12.0; w. 3.1 cm. Oval mouth opening (formula: 3.7×4; 2.7×3.05
cm). Slightly biconical collar, from which springs small loop (2.6×2
cm; hour-glass; abraded). Body of subrectangular cross-section (no
b) **Form Helmeroth, with pellet** (AXT:helm.Pel) (2 ex.; fig. 24)


**Map reference:** Sheet 39E, c. 151/441.

CAT.NO. 535. ‘MEIJERIJ VAN ’S-HERTOGENBOSCH’, NOORD-BRABANT. Exact provenance unknown. L. (10.75); w. 4.25 cm. Mouth mouldings and most of loop broken off and missing. Body of rectangular cross-section, but faces and sides are slightly convex; with prominent pellet on face; upper part broken off (the breaks show recent damage). Cutting edge blunted, and at least in part recently resharpened. Some irregular protrusions in the body wall inside the socket. Patina: originally black, but for the most part peeled off; showing dark bronze to blackish. Museum: ’s-Hertogenbosch, Inv.No. 20. (DB 1404)

**Reference:** Hermans, 1865: p. 138, Pl. XX:3.

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c) **Form Helmeroth, with single vertical furrow** (AXT:helm.I) (2 ex.; fig. 25a,b)

CAT.NO. 536. ELESEN, GEMEENTE MARKELO, OVERIJSSEL. Elsenerveen (from the hoard). L.10.6; w. 4.5 cm. Single, flattish, irregular collar; parallel-sided body with subrectangular cross-section; large D loop (c. 3.5×0.5 cm); expanded cutting edge. Vertical groove on face. Patina: dark brown. Found before 1885 in the Elsenerveen. Museum: RMO Leiden, Inv.No. d.1942/12.4. Plaster cast in Museum Enschede, under Inv.No. 951a. (DB 497)

**Associations:** DB 495: ‘Hunze-Ems’ socketed axe with facial arch, ‘wings’ and 2 neckribs; DB 496: socketed axe Type Seddin-Karbow, with drum-shaped swelling; and DB 498: socketed Urnfield knife (cf. above, fig. 25a).

**Map reference:** Sheet 28C, c. 230/476.


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CAT.NO. 537. STEVENSWEERT, GEMEENTE STEVENSWEERT, LIMBURG (dealer’s provenance). L. 12.6; w. 4.6; th. 3.9 cm. Subrectangular mouth (formula: 3.9×3.9; 3×2.7 cm). Slightly biconical collar, from which springs fairly large ribbon D loop (2.8×1.2 cm). Nearly parallel sides. Section oval on upper part, (,) below. Flat faces, rounded sides. Long body, slight blade expansion; longitudinal groove central on upper part of each face. Edge sharp. Patina: mottled (black; greenish grey, white patches); patches of sand encrustation. Museum: RMO Leiden, Inv.No. l. 1947/10.1, purchased from A.J. Sprik (Zaltbommel). (DB 506)

**Map reference:** Sheet 60A, c. 186/349.
Fig. 25a. Bog hoard from the Elsenerveen, Ov, with Helmeroth axe (Cat.No. 536), Seddin-Karbow axe, Hunze-Ems axe with 'wings' and face arches, and Urnfield socketed knife.

Note: Paper inside socket states 'Zaltbommel'.

Parallels: Kibbert, 1984: Nos 662 (Hirschberg, Kr. Arnsberg) and 663 (Alpen-Böninghardt, Kr. Moers), both from Nordrhein-Westfalen, but with facial arch; No. 664 from Frankfurt-Grindbrunnen, Hessen.

d) Form Helmeroth, with vertical parallel furrows (AXT:helm.II) (4 ex.; fig. 26)

CAT.NO. 538. PEIJ, GEMEENTE ECHT. LIMBURG. Pepinbroek.
L. 12.3; w. 3.8 cm. Round socket-mouth (formulan: 3.8×3.8; 2.6×2.6 cm). Loop: 3.6×1.2/0.7/1.0 cm (hourglass). Slightly biconical collar; body of subrectangular cross-section; sides and upper part of faces hammer-fluted vertically. Edge blunted (recently). Patina: glossy brownish, partly mottled green; where surface corroded, light dusty green or red-brown. Museum Asselt, Inv.No. 237, ex coll. Philips. Paper inside: environ Pepinbroeken les Pey (sp?). (DB 58)

Map reference: Sheet 60B, 193/345.

Documentation: Inventaire Philips, No. 237, with drawing.


Fig. 25b. Socketed axe of Form Helmeroth, with single vertical furrow. 537: Stevensweert, Li.
Fig. 26. Socketed axes of *Form Helmerath*, with vertical parallel furrows. 538: Pepinusbroek, Li; 539: Pepinusbroek, Li; 540: Svolgen, Li; 541: Susteren, Li (drawing HS).

CAT. NO. 539. PEIJ, GEMEENTE ECHT, LIMBURG. Pepinusbrug. L. 12.5; w. 3.2 cm. Subrectangular mouth (*formula*: 3.5×4; 2.3×2.7 cm); slightly biconical collar, from which depends a loop (3.3×1.3/0.9/1.1 cm); subrectangular cross-section; vertical hammer-fluting. Edge damaged. Patina: glossy brownish-greenish; dusty light green where surface gone. Museum: Asselt, Inv.No. 239, ex coll. Philips. (DB 60)

Documentation: Inventaire Philips, No. 239, with drawing.
CATNO. 540. SWOLGEN, GEMEENTE MEERLO, LIMBURG.
L. 13.2; w. 3.9 cm. Weight 362.4 gr. Nearly circular mouth, subrectangular socket (formula: 4.2x4.1; 2.9x2.9 cm). (_ _) collar, from base of which springs large band D loop with D section (3.3x1.4/0.8 cm); _) outline. Long body with slightly _) outline, convex faces and sides. Vertical fluting survives vaguely on the faces and sides, despite the rather heavy-handed mechanical 'cleaning' to which the axe has been subjected. Cutting edge sharpened (recently somewhat blunted). Patina: mostly dark glossy green; small surviving patches of black; dark bronze in places. Found, according to Beckers & Beckers, during reclamation of a heath parcel. Museum: Stein, Inv.No. IIB10. (DB 1333)


CATNO. 541. SUSTEREN, GEMEENTE SUSTEREN, LIMBURG. 'De Meule'.
L. 12.2; w. 4 cm. Truncated-cone collar with horizontal facet (formula: 3.8x3.8; 2.65x2.75 cm). Ribbon loop (3.1x1.1 cm). Vertical furrows on upper half of faces and sides; slender body with _) outline, almost square cross-section. Wood inside (poplar or willow: identification BIAX, Amsterdam). Casting seams visible. Patina: glossy grey-green. One face is heavily corroded and battered. Found October 2001 by C. Blaak during field survey, in the side of a road cutting, c. 45 cm below surface, at the transition ploughsoil — sandy clay. Museum: Echt, Inv.No. 332; presented by finder. (DB 2543)

Map reference: Sheet 60B, 187.999/341.06.

CATNO. 542. WESSEM, GEMEENTE WESSEM (now GEMEENTE HEEL), LIMBURG.
L. 11, w. 4.8 cm. Round socket-mouth (formula: 4.3x9; 2.9x2.7 cm). (_ _) collar, from which depends D loop (2.9x0.6/0.65 cm). Surface vertically hammer-fluted on sides and upper part of faces. Patina: bronze colour (river patina). Found in autumn 1972. Private possession. Drawing: ROB, Amersfoort. (DB 838)

Map reference: Sheet 58C, c. 190/352.


f) _Form Helmeroth, with pellet (AXT:helm.Pel) (1 ex.; fig. 28)

CATNO. 543. MAASBRACHT, GEMEENTE MAASBRACHT, LIMBURG.
L. 11.35; w. 3.4 cm. Round socket-mouth (formula: 3.8x3.8; 2.7x3.1 cm); slightly biconical collar; fairly large D loop (3.8x0.8/1.5 cm); cross-section subrectangular; pellet below collar; surface vertically hammer-fluted on sides and upper part of faces. Prominent casting seams. Patina: glossy brownish; partly mottled greenish; where surface corroded, light dusty green. Loop of band firm, slightly expanded top and base; "Déterrée dans le broek de Maasbracht" (unearthed in the morass of Maasbracht). Museum: Asselt, Inv.No. 235, ex coll. Philips. (DB 56)


Parallel: Kibbert, 1984: No. 660 (Broichweide, Kr. Aachen).
Fig. 29. Socketed axes of *Form Helmeroth*, Var. *Bottrop*. 544: Diergaarde, Li.

**g) Form Helmeroth, Var. *Bottrop* (AXT:helm.bott)**

[1 ex.; fig. 29]

**CAT NO. 544. DIERGAARDE, GEMEENTE ECHT, LIMBURG.**

Contine.

L. 10.2; w. 4.4 cm. Round socket-mouth (formula: 3.3x3.3; 2.4x2.4 cm); slightly biconical collar. Body oval section, with vertical hammer-fluting. Prominent arch-facet on lower part of body, which is trapeze-shaped. Large loop: 3.4/0.6/0.9 cm (hour glass). Prominent casting seams. Socket mouth asymmetrical in side view. Patina: dark brown one face, nearly black reverse; partly peeled off (dull green). Museum Asselt, Inv.No. 233, ex coll. Philips (acquired by Philips Jan. 1929 with coll. Orta (Inv.Nos 233-243). (DB 54)

**Associations:** Cat.Nos 538, 539 and 543 have very similar patina, suggesting the possibility of association.

**Map reference:** Sheet 60B, 195/343.

**Documentation:** Inventaire Philips, No. 233, with drawing.


**Parallel:** Kibbert, 1984: No. 655 (Bottrop).

Fig. 30a. Socketed axes of *Form Helmeroth*, with plastic 'wings'. 545: Oude Maas (gem. Ohé en Laak), Li.

**h) Form Helmeroth, with plastic 'wings' (AXT:helm.Wij)**

[1 ex.; fig. 30a,b]

**CAT NO. 545. 'OUE MAAS', GEMEENTE OHÉ EN LAAK, LIMBURG.**

L. 12.7; w. 4.5 cm. Subrectangular socket (formula: 4.3x4.5; 3.1x2.8 cm). (_) collar, from which springs band D loop (3.6x1.6 cm). Body with j] outline, with oval section above, (_) below. Plastic 'wings' of unusual elongated form. Arch facets on faces. Patina: dark brown, with some ochreous encrustation; with gravel and loam. Casting seams prominent, but removed toward base. Cutting edge sharp. Found March 1929, during re-bedding of the Old Maas. According to maps of 1936 and 1955 the findplace is situated on the former boundary of the *gemeenten* Ohé en Laak and Echt. Museum: Maastricht, Inv.No. 245 (find spot wrongly given as Roosteren). Acquired through mediation of the State. Fragment letter W. Goossens to Holwerda (RMO): “Gisteren moest ik op het bureau van het Juliannakanaal naar gevonden voorwerpen gaan kijken. Ze hadden absoluut geen oudheidkundige beteekenis, op een stuk na, n.l. een bronzen bijl, een z.g. "Tijlenuxt" met vierkant geslepen steeltje, die gevonden was in het grint te Roosteren bij het ongravend der omlegging v.d. Oude Maas bij k.m. 5,100, 22+ NAP en 4,25m onder het maaiveld. Het zou mij genoeg doen wanneer het stuk hier in het museum kon gedeponeerd worden...” (DB 224)

**Map reference:** Sheet 60A, 187.25/346.40.

**Documentation:** correspondence W. Goossens to Holwerda 1928–1930 (in depot Algemeen Rijksarchief inv. nr. 157); section Roosteren-Ohé en Laak in unpublished *scriptie* Leon van Hoof (2000); e-mail Leon van Hoof to authors 26-11-2001 with the text fragment of the letter mentioned above.


**i) Form Helmeroth, exceptional pieces (AXT:helm. X)**

[3 ex.; fig. 31]

**CAT NO. 546. PROVENANCE UNKNOWN.**

L.13.1; w. 4.5 cm. Circular mouth opening (formula: 4.7x4.7; 2.9x3 cm). (____) collar, from which springs large D loop (3.5x0.8 cm). Body outline slightly J}; cross-section subrectangular, with slightly convex faces and sides. Plastic half-'wings', meeting at centre of face. On collar and sides faint vertical fluted ornament. Acquired by museum in 1943; the records concerned were destroyed in the Second World War. Museum: Arnhem (*Openhefmuseum*), Inv.No. 3079. (DB 1161)

**CAT NO. 547. PROVENANCE?**

L. 13.0; w. 4.2; loop 3.5 cm. Weight: 380 gr. Circular socket. Collar
Fig. 30b. Socketed axes in the Basland hoard, Jutland, Denmark (drawings HS).

of /\ form, with three horizontal facets, from the base of which sprngs a large D loop (3.5x... cm). Sides almost parallel. Faint D 'wings' on neck of oval cross-section. On face arch facet, with faint midridge. The sides and the 'wings' are ornamented with vertical hammer-facets. Cutting edge blunt. Patina: glossy mottled green (brownish; old surface partly corroded away, there pale dusty green).

Museum: Aalten (Oudheidkamer), Inv.No. 386. (DB 729)
Fig. 31. Socketed axes of Form Helmeroth, exceptional. 546–547: provenance unknown; 548: Vlodrop, Li.

CAT. NO. 548. VLODROP, GEMEENTE VLODROP, LIMBURG. Field ‘Kroddel’. L. 13.2; w. 5.0 cm. Nearly circular mouth opening (formula: 4.6x4.4; 3.4x3.2 cm). Large \_\_/ collar with 3 horizontal furrows; from its base springs a large D-sectioned D-shaped loop (3.7x1.8/0.8/1.8 cm). On the face, just below the collar, a pair of bulging circular pellets. Body with \_\_ outline; its neck is of oval cross-section, subrectangular with slightly convex faces and sides. On the faces, long ‘drapery wings’. The faces of the ‘wings’ are ornamented with fine facets, which echo the form of the ‘wings’ and extend down the whole length of the sides. The cutting edge is blunt. Patina: blackish; very well preserved. Found 1950–1955 by owner in the field ‘Kroddel’. Private possession. (DB 2052)


j) *Form Helmeroth*, bronze casting half-mould (BMA XT: helm) (1 ex.; fig. 32)

Cat.No. 549. GEMEENTÉ ROERMOND, LIMBURG. River Maas.
L. 17.1; w. 5.9 at shoulder, 5.7 cm at base. A plaster cast taken from the mould has a length of 17 cm, and a blade width of 4.6 cm. The mould has an hourglass shape, with a projection that would have housed, a clay funnel for the input of the molten metal. The shoulder is strengthened with three horizontal ribs. On the external face is a D loop with [ ] outline. On the edges are small lugs for keying with the (missing) other half-mould. The axe (plaster cast) has a prominent round, hollow-edged truncated-conical collar, from the base of which springs a flatted D loop (3.0 x 2 cm). The body cross-section is ( ), the outline an elongated [ ]. On the face are semicircular 'wings' with a pellet between. Museum: Antwerpen (Pleesnlis), Inv.No. 56.35.2331, ex coll. Hasse. (DB 643 )

*Documentation:* The manuscript catalogue of the large Hasse collection contains, under No. 42, a primitive but unmistakable thumb-nail sketch, with the information 'RI /remol/d 19 31. Mel/se', but with no further details.


7. LONG, THIN, NARROW SOCKETED AXES OF TYPE GEISTINGEN (AXT: geis) (13 ex.; fig. 33A–C; map 6)

7.1. Definitions and dating


This series of extraordinary socketed axes is named after a hoard allegedly of 26 (or 28) examples, as far as known all of the same type, found in 1935 by Mr Geerkens at the Letterveld, Geistingen, along the Belgian side of the Maas in gem. Ophoven. The axes were said to have been tied together with a cord, which crumbled and was not preserved. The find-spot is just across the Maas from Ohe-en Laak and Stevensweert in Netherlands middle Limburg. The axes were dispersed among family and friends of the finder; some have found their way, sometimes via an-
tique dealers, into museum collections. In the museums it is not always known whether their specimens are strays from the Geistingen hoard or independent finds.

The Geistingen axes and their counterparts from other finds in Belgium, Germany and the Netherlands are characterized by a mostly oval socket mouth; long (lengths up to 15.7 cm in the Netherlands, 16.2 cm in west Germany), narrow body outline, slightly expanding gradually from a high truncated-cone-shaped collar without neckribs to a rather straight, sharp cutting edge; usually a ( ) body section; a small, lowplaced thin D loop (absent on one German specimen, K.802); and, especially, very thin walls (their thickness is of the order of 1 to 2 mm). The walls are so thin that, despite the sharp cutting edges, the Geisingen-type axes could obviously never have been actually utilized as axes. This feature, extremely thin walls, is shared only with the few socketed axes of Kibbert’s Form Amelsbüren (see Section 5.1). The Amelsbüren axes are otherwise quite dissimilar in form to the Geisingen axes, and are really an odd version of the axes of Type Plainseu. The metal analyses of four Geisingen axes and four Amelsbüren axes (Tackenberg, 1971: pp. 49–51; Kibbert, 1984: p. 214) also fail to indicate any close relationship between these two socketed axe types. For example, the Amelsbüren axes have tin percentage values of 10 or more and lead values of >5, while only one of the Geisingen axes has 10% tin and the other three tin from 0.9 to 3.4%; and the four Geisingen specimens have lead values of 0.48 to 1.25%.

Some Type Geisingen axes have an ornament on the side, either as a raised inverted arch-shaped surface (Cat.Nos 551, 560) or an inverted arch-shaped rib (K.798–802). It is as if the wing ornament of other socketed axe types has been turned a quarter circle and transferred from the face to the side of the axe. Kibbert sees this as a simplified version of the side garlands on his Form Hallen axes (see Section 5.2.5: b). A few examples (e.g. Cat.Nos 560 and 562 below) have metal protrusions inside the socket which would have made the insertion of a haft end into the socket impossible.

Function: The Type Geisingen axes are impressive to look at, with their length of up to 16 cm, their fine external finish, and sharpened cutting edge. This result was achieved economically, requiring only half the weight of metal of many functional socketed axes, but it excludes their use as functioning tools or weapons. Evidently they were designed for display and/or ritual/ceremonial use. Kibbert sees two main possibilities for the Type Geisingen axes: either they were a form of ‘axe money’, or they were votive objects. The repeated occurrence of these axes in hoards of two, four, or (in the case of the Geisingen hoard) many more, or as river or bog finds, plus the very limited distribution of the type, would seem more appropriate for a votive than for a currency function. Other possible symbolic functions can be imagined, but are difficult to document.

Distribution: The main occurrences, apart from the large Geisingen hoard (which however stands alone on the Belgian side of the Maas), fall in a cluster of eight or ten find-spots (some of them hoards of two or four pieces, others river finds) in a remarkably compact area in the Rhine valley, extending from Nijmegen to the Rhine-Lippe confluence near Wesel. Beyond these, the distribution map of Kibbert (1984: Taf. 89C) shows a few strays up the Rhine as far as the Rhein-Main area. Up the Maas from Geisingen, there are the find-spots Caberg in south and Ool in middle (Neth.) Limburg.

In view of the homogeneity of the type and the compact distribution, it seems very likely (as Kibbert has also recognized) that all of Kibbert’s 16 examples, those that we know of the 26 or 28 examples from the Geisingen hoard, and the 13 examples here presented, are products of a single workshop over a short period of time. The Geisingen hoard must represent some kind of distribution centre. The production centre may or may not have been close by, but, given the distribution, it cannot have been very far away. To attain a considerable uniformity of product with such thin-cast walls, while having such
varied metal to work with, suggests a considerable degree of skill on the part of the fabricator of the axes.

7.2. Catalogue of socketed axes of Type Geistingen

CAT. NO. 550. CABERG, GEMEENTE MAASTRICHT, LIMBURG (dealer’s provenance; probable hoard).

L. 15.0; w. 4.0 cm. Oval socket and mouth (formula: 3.2×3.8; 2.65×3.2 cm). Loop: 2.35×0.8 cm. Collar slightly damaged (break is patinated). Cutting edge straight, sharp. Patina: overall glossy black; interior greeny with some light brown loamy encrustation, in part ochreous-tinted. (DB 1079)

Collection: BA1 (now GIA), Inv.No. 1938/X.4. Purchased 1938 via the intermediation of E. van Aelst of Maastricht, together with a very similar second socketed axe (Cat.No. 551 hereafter) and a bronze rod-tanged socketed knife with bronze phantasy-handle, of Central European HA2 character.

Map reference: Sheet 61F, c. 174/319

Documentation: letter E. van Aelst to H. Brunsting (then assistant to Van Giffen; BA1) 14 November 1938, with sketch map indicating the alleged find-spot.

CAT. NO. 551. CABERG, GEMEENTE MAASTRICHT, LIMBURG

L. 15.3; w. 4.1 cm. Oval socket and mouth (formula: 3.2×3.95; 2.4×3.3 cm; the width of the mouth is markedly the greater). Small D loop (2.23×0.8 cm). Plastic inverted arch under the collar on the side opposite the loop. Casting seams present, but partly hammered flat. Patina: part mottled green, slightly corroded; partly glossy black. Purchased via the intermediation of E. van Aelst (Maastricht).

According to Van Aelst, found together with Cat.No. 550 above and a bronze Urfeld knife at Caberg. Collection: BA1 (now GIA), Inv.No. 1938/X.5. (DB 1080)


Documentation: see above, Cat.No. 550.

Note: Cat.Nos 550–551: Van Aelst was a printer and publisher, who was evidently much concerned with archaeological activity in the neighbourhood of Maastricht, and offered various collections of artifacts of various periods for sale in behalf of finders who preferred to remain anonymous out of fear that their finds would be confiscated. Such was the case with the three bronze objects here concerned, sent on approval to the BA1 in Groningen (along with other groups of artifacts) in October 1938. Van Giffen purchased the three bronzes for the BA1 study collection. On request from the BA1 for information concerning the find circumstances, Van Aelst reported that the three objects had been found by unnamed persons at Caberg, along the Brusselse Weg, close to the Belgian border, c. 500 m and across the road from a site excavated a few years previously by Holwerda of the RMO Leiden. The socketed axes (‘klokmessen’) and the knife were excavated at a distance of 75 m from each other. A rough sketch at the bottom of the letter indicates the find-spots mentioned. Despite some ambiguity, we interpret this to mean that the two axes were found together, and the differently patinated knife at a distance of 75 m therefrom.

Comment: it seems clear that the bronze knife was not found together with the two socketed axes; chronologically it is much too early, and its green patina is quite different. Whether the two Type Geistingen socketed axes were actually found together, 75 m from the axe, is another question. Their patina is not entirely in agreement; whether the differences could be accounted for by a slightly different lie in the ground, or by differential post-finding treatment, is difficult to judge for certain. At present we consider the two axes to represent a probable hoard.

CAT. NO. 552. NIJMEGEN (SURROUNDINGS), GELDERLAND.

L. 15.7; w. 4.3 cm. Oval/subrectangular mouth opening (formula: 3.5×3.6; 2.75×2.9 cm). Truncated-conical head; long body with (f outline, nearly rectangular section (sides slightly convex). Cutting edge straight, sharp. Low-placed small D loop (2.2×0.7 cm). Plastic inverted arch on one side. Patina: dark, somewhat glossy green. Well preserved. (NB: mounted on wall in modern knee-shaft). Museum: Enschede, Inv.No. 1073 (old Nos: 0.375; 351-5). (DB 1027)

CAT. NO. 553. BERG EN DAL, GEMEENTE UBBERGEN/ GROESBEEK, GELDERLAND.

L. 15.5; w. 4.3 cm. Oval socket and mouth, part of mouth damaged (formula: c. 3×3.5; 2.55×2.9 cm). Loop: 2.1×0.55 cm. Edge sharp. Patina: mottled green/black; encrustation of loam. Cf. Cat.Nos 554 and 555: all with similar patina; Cat.No. 553 is slightly broader across cutting edge. Museum: Nijmegen, Inv.No. AC 19 (old No. E.III.No.11a). (DB 1488)


CAT. NO. 554. BERG EN DAL, GEMEENTE UBBERGEN/ GROESBEEK, GELDERLAND.

L. 14.1; w. 4.2 cm. Upper part broken off and missing; subrectangular body cross-section. Cutting edge slightly rounded, sharp. Patina: blackish with light green overlay; partly loam-encrusted. Museum: Nijmegen, Inv.No. AC 20 (old No. E.III.No.11b). (DB 1489)


CAT. NO. 555. PROVENANCE UNKNOWN.

L. 15.3; w. 4.05 cm. Oval socket and mouth (formula: 3.4×3.75; 3.1×2.95 cm). Small loop (2×0.5 cm). Cutting edge battered. Patina: blackish, with partial greenish overlay. Loam-encrusted. Museum: Nijmegen, Inv.No. xxx.d.39. (DB 1538)

CAT. NO. 556. PROVENANCE UNKNOWN.

L. 14.8; w. 4.05 cm. Oval socket and mouth (formula: 3.3×4; 2.65×3.15 cm). Loop: 2.5×0.6/0.9 cm. Casting seams present. Private possession. (DB 1709)

CAT. NO. 557. VIERLINGSBEEK, GEMEENTE VIERLINGSBEEK, NOORD-BRABANT (dealer’s provenance).

L. 13.5; w. 5.5 cm. Subrectangular mouth (formula: 3.7×3.85; 2.7×3.3 cm). Broad ( ) collar, from base of which springs a small loop with (f outline (1.6×0.7 cm). Body with subrectangular section, faintly convex faces and sides, (f outline. Cutting edge straight, sharpened. Casting seams present, but anciently hammered down.
Fig. 33a. Long, thin socketed axes of Type Geistingen. 550–551: Caberg, Li (hoard); 552: Nijmegen surroundings (Ge); 553–554: Berg en Dal, Ge; 555: provenance unknown (see also figs 33b, c).
Fig. 33b. 556: provenance unknown; 557: Vierlingsbeek, N-B; 558: provenance unknown; 559: Nijmegen surroundings, Ge (see also figs 33a, c).
Fig. 33c. 560: Ool, Li; 561: Herten, Li (drawing HS); 562: gem. Nijmegen, Ge (see also figs 33a, b).

Map reference: Sheet 46D, c. 198/400.

CAT.NO. 558. PROVENANCE UNKNOWN
L. 14.95; w. 3.9 cm. Oval socket and mouth (formula: 3.35x3.2; 2.7x2 cm). Loop: 2x0.8/1.0 cm. Casting seams present. Private possession. (DB 1719)

CAT.NO. 559. PROVENANCE UNKNOWN
L. 14.9; w. 3.8 cm. Oval socket and mouth (formula: 3.2x3.7; 2.4x3.05 cm). Part of collar missing. Loop: O-shaped (2.2x0.35 cm). On non-loop side, inverted arch-shaped rib. Casting seams present. Cutting edge irregular and battered anciently. Patina: glossy dark green, with lighter patches; olive face pitted, with partially brownish patina. Found 13 March 1967. Museum: Museon, Den Haag: Inv.No. 9647, presented by J.C. Wagner. (DB 1361)

CAT.NO. 560. OOL, GEMEENTE HERTE (now GEMEENTE ROERMOND), LIMBURG.
L. 15.35; w. 4.2; th. 3.1 cm. Circular mouth opening (formula: 2.4x2.6/2.7; 2.9x3.15 cm). Straight, sharp cutting edge, very thin casting seam (also inside!), which project so that the axe could never have been shafted (why internal casting seams?). Slight inverted arch-shaped rib on each side. Prominent casting seams on outsides. Patina: blackish, very small loop (1.1 cm). Condition practically perfect. Found 1971 while dredging in gravel pit. Museum: Venlo, Inv.No. G10299, ex coll. Van Herten. (DB 1924)


CAT.NO. 561. HERTE, GEMEENTE HERTE (now GEMEENTE ROERMOND), LIMBURG. Oelerveld; River Maas.
L. 15.1; w. 4.2 cm (one tip slightly damaged). Oval socket and mouth (formula: 3.1x3.4; 2.85x3.2 cm). Loop: O-shaped (2x0.5 cm). On unlopped side, inverted arch-shaped rib. Inside the socket, on each face at its edge, a rib pattern A. Casting seams present, but not prominent. Cutting edge sharp. Patina: dark bronze, tinny, black inside socket. Perfectly preserved. Grey sand in bottom of socket. Dredge find 1974. Museum: Venlo, Inv.No. L3260; ex coll. Peters. (DB 2311)

Map reference: Sheet 58D, c. 195.60/355.70.


CAT.NO. 562. GEMEENTE NIJMEGEN, GELDERLAND
L. 15.2; w. 4.2 cm. Round socket-mouth, somewhat damaged (formula: 3.7x3.8; 3.1x3.25 cm). Single shallow biconical collar, low loop (2.5x0.6/0.85 cm). Straight, sharp cutting edge. Some rough projections inside socket. Casting seams sharp. Patina: partly glossy dark green, partly lighter dull green, loss encrustation. Museum: RMO Leiden, Inv.No. c.1931/2.74, legacy collection Gildemeester. (DB 437)

Dating: None of the socketed axes of Type Geistingen have been found with datable associations (except, very dubiously, the two examples from Cäberg, Cat.Nos 550-551); so we are left with typological considerations, plus the metal analyses of a few of the German specimens. Typologically, there is no clear relation between the Geistingen axes and other types, in the region or outside it. They are utterly different from the socketed axes of Armorican type, the largest and best-known group of 'votive' or 'proto-currency' axes. Nor are they closely related to the thin-walled Amelsbieren axes, which may have a centre in Westphalia (Kibbert's map, Taf. 89D). If anything, we are inclined to suspect a derivation from the Form Wesseling axes to be discussed in the following part of this study. There is however no strong reason to depart from the hitherto consensual view that the Geistingen axes belong chronologically to the tail end of the Bronze Age, overlapping into the beginning of the Hallstatt period. Perhaps there will some day be a find that will confirm or alter this conception.

8. SOCKETED AXES OF ARMORICAN TYPES
(AXT:arm) (26 ex.; figs 34–39; map 7)

8.1. Definitions and dating
The most problematical of the socketed axe types here presented are those of Armorican type. The peculiarities of these socketed axes (seven varieties of which have been distinguished: Briard, 1965; Briard & Verron, 1976) are well known. They were made, and in their core area of western Armorica map...
deposited, in incredible numbers, running into the
tens of thousands. Many are unfinished: the clay core
is often still inside, the cutting edge unsharpened, the
casting seams not removed or reduced. When anal-
ysed they show a bronze with a very high propor-
tion of lead (examples are known of lead alone). They
are regarded as votive objects, or a kind of primitive
money ("un phénomène paléomonétaire" according
to Briard, 1995: pp. 190–191), though these concepts
are not without their critics (e.g. recently Huth, 1997:
pp. 177–191). Few Armorican socketed axes have
been found in association with other types of objects;
in so far as they have occurred in datable hoards they
belong to the very end of the Bronze Age and the
beginning of the Iron Age.

At least 26 Armorican socketed axes are pre-
served in museums and private collections in the
Netherlands (the actual number is probably larger,
since we may have failed to record some examples),
but 17 of these — two thirds! — are with 'proven-
ance unknown': a most extraordinary percentage.
And of the eight with a claimed provenance, almost
all are dealer’s provenances. Not one has been re-
corded as having been acquired from the actual
finder. Thus there was no demonstrable export of
Armorican socketed axes to the Netherlands in anti-
quity; all examples present in the Netherlands are
likely to have arrived by way of the modern antique
trade.

Parallels and literature: For Belgium: Desittere,
1974: pp. 114–115, carte I, with selected list (three
times as many Armorican axes are regarded by De-
sittere as unreliable and are therefore not listed or
493–514 (ten find-spots with total of 26 examples,
including a hoard from Hoogstraten with a dozen
examples, smaller hoards from Luik and Tongeren,
but some uncertain provenances).

For Brittany: Briard, 1965: pp. 241–282, with
distribution maps of hoards figs 90–105; wider dis-
tribution in France, fig. 106. Also Briard, 1995: pp.
177–193; Briard, 2001: pp. 140–141, with further
references.

For Picardy: Blanchet, 1984: pp. 378–381, fig.
212.

For Britain: O’Connor, 1980: pp. 235–236; dis-
tribution in British hoards map 77, list 228. For North
Britain: Schmidt and Burgess, 1981: pp. 248–249
(nine ex., most of uncertain or approximate prov-
enance).

For middle West Germany: Kibbert, 1984: pp.
170–175; 39 ex. are catalogued, but only five of these
have an undoubted provenance; 16 ex. have an un-
certain or only a regional provenance attribution and
the remaining 18 ex. are unprovenanced.

8.2. Catalogue of Armorican socketed axes

8.2.1. Armorican, large, no neckrib, with slightly
A sides (2 ex.; fig. 34)

CAT.NO. 563. PROVENANCE UNKNOWN.
L. 12.25; w. 3.1 cm. Rectangular mouth opening (formula: 2.9x3.9;
2x2.6 cm). Slightly biconical collar. Loop: 1.85x0.9 cm. Blowhole

Fig. 34. Armorican socketed axes, no neckrib. 563: no provenance; 564: Wessem? (drawing HS); 565: Batenburg, Ge (dealer’s prov-
enance).
or damage beside loop. Casting seams not worked away. Corroded. Edge battered. Private possession. (DB 1747)

CAT NO. 564. NEAR WESSEM, GEMEENTE WESSEM, LIMBURG?
L. 12.5; w. 3.3 cm. Rectangular mouth opening (formula: 3.35x3.8; 2.25x2.7 cm). Slightly biconical collar (anciently damaged in one corner). Loop: 2.1 x 0.7 cm. Casting seams prominent. Cutting edge sharpened. Patina: mottled green/black. Well preserved. Museum: Venlo, Limburgs Museum, Inv.No. L6061, ex coll. Niessen. Said to be found in Cuyk in Maas gravels from the surroundings of Wessem. (DB 2439)

CATNO. 565. BATENBURG, GEMEENTE WIJCHEN, GELDERLAND (dealer’s provenance).
L. 13.0; w. 3.4 cm. Rectangular mouth opening (formula: 3.2x3.8; 1.8x2.3 cm). Pronounced <__> collar, from which springs D ribbon loop (1.7x0.8 cm). Nearly parallel sides; rectangular cross-section; straight cutting edge, sharpened. Prominent casting seams. Patina: dark green. Very well preserved. Purchased from antique dealer J.N.E. Esser together with other objects as ‘from surroundings of Nijmegen’, but later (in 1950, according to a marginal note in the RMO inventory book signed L. Appelboom) found to contain in the socket a paper giving the find-spot as ‘Batenburg’. Museum: RMO Leiden, Inv.No. e.1948/8.1. (DB 515)

Note: see also Cat.No. 576. Cat.No. 565 is very similar to Cat.No. 569 (but has one neckrib).

8.2.2. Armorican, small with 1 neckrib and slightly \ outline (AXT:arm\{Nr<) (3 ex.; fig. 35)

CATNO. 566. NO PROVENANCE.
L. 7.5; w. 2.6 cm. Weight 81.4 gr. Mouth formula: 1.85x2.25; 1.2x1.5 cm. Loop: 1.3x0.6 cm. Prominent casting seams; never sharpened. Patina: mottled green. Museum: Museum Het Valkhof, Inv.No. xxx.d.45. Ex coll. Kam. (DB 1541)

CAT NO. 567. PROVENANCE UNKNOWN.
L. 7.7; w. 2.5 cm. Weight 72.5 gr. Mouth formula: 1.75x2.3; 1.1x1.4 cm. Loop: 1.45x0.5 cm. Prominent casting seams; never sharpened. Patina: mottled green/black. Museum: Nijmegen, Museum Het Valkhof, Inv.No. xxx.d.44. Ex coll.Kam. (DB 1540)

CATNO. 568. BEUGEN, GEMEENTE BOXMEER, NOORDBRABANT (dealer’s provenance).
L. 7.5; w. 2.5 cm. Mouth formula: 1.75x2.25; 1.25x1.75 cm. Loop: 1.55x0.5 cm. ‘Found in a gravel layer’. Patina: glossy dark green. Museum: Enschede, Inv.No. 1078 (old No. 500-230); ex coll. Ter Kuile. Purchased 1906 by Ter Kuile from the antique dealer Grandjean at Nijmegen. (DB 1053)

8.2.3. Armorican, large, with thin neckrib and slightly \ outline (AXT:arm\{Nr>) (17 ex.; fig. 36a–c)

CATNO. 569. OVERASSELT, GEMEENTE OVERASSELT (now GEMEENTE HEUMEN, GELDERLAND) (dealer’s provenance).
L. 12.9; w. 3.6 cm. Mouth formula: 3.1x3.9; 2.3x2.8 cm. Prominent <__> collar + single thin neckrib (not on loop-side). Band loop (2.1x1.0 cm). Prominent casting seams. Straight cutting edge; never sharpened. Patina: dark green. Very well preserved. Museum: RMO Leiden, Inv.No. e.1950/10.2; purchased from antique dealer J.N.E. Esser. (DB 532)

CATNO. 570. PROVENANCE UNKNOWN.
L. 12.3; w. 3.7 cm. Weight 314.7 gr. Mouth formula: 3.2x4.0; 2.0x2.2 cm. Prominent casting seams. Band loop (2.0x1.0 cm). Never sharpened; the ‘cutting edge’ is 0.7 cm thick. Patina mottled green. Museum: Nijmegen, Museum Het Valkhof, Inv.No. xxx.d.42. Ex coll.Kam. (DB 1539)

CATNO. 571. PROVENANCE UNKNOWN.
L. 13.3; w. 3.45 cm. Rectangular mouth (formula: 3.3x4.0; 2.4x2.6 cm). Strong <__> collar, with large stumps of three (of the original four) casting runners. Neckrib not on loop-side. Band loop (1.9x0.9 cm). Faces slightly convex. Cutting edge never sharpened. Blowholes on both faces. Casting seams sharp. Patina: originally black; mostly peeled off, showing mottled green; otherwise well preserved. Loamy encrustation. Museum: ’s-Hertogenbosch, Inv.No. 8562. (DB 267)

The museum fichie attributes the find-spot to Bergeijk, with reference to a letter from P.N. Panken to C.R. Hermans, dated 6 October 1846, but Panken didn’t mention any find-spot in this letter:

Fig. 35. Armorican socketed axes, one neckrib. small size. 566–567: no provenance (drawings HS); 568: Beugen, N-B (dealer’s provenance).
Fig. 36a. Armorican socketed axes, one neckrib, medium size. 569: Overasselt, Ge (dealer’s provenance); 570–573: provenance unknown; 574: De Duno, Ge (dealer’s provenance) (570, 572–574: drawings HS) (see also figs 36b, c).
Fig. 36b. 575: De Duno, Ge (dealer’s provenance); 576: St. Joost, Li (dealer’s provenance); 577–580: no provenance (575, 577: drawings HS) (see also figs 36a, c).
Fig. 36c. 581–584: provenance unknown (581: drawing HS, 583: sketch JJB) (see also figs 36a, b).

"Hooggeleerde Heer en Waarde Vriend, Hiernevens het bedoelde metaal werk nij. Bij de ontdekking was het zoodanig inge.... dat het toen scheen geheel groen gevormd te zijn. Om beter de stof te kunnen onderscheiden is er op 2 plaatsen, gelijk te zien is, de korst wat afgeveild ......."


**CAT.NO. 572. PROVENANCE UNKNOWN.**
L. 13.1; w. 3.75 cm. Rectangular mouth (formula: 2.75×3.8; 1.8×2.6 cm). Prominent collar, with traces of four jets, from which springs loop (recently broken off): 1.6×c. 0.7 cm. Single neckrib, on faces only. Trapeze shape, rectangular section. Blowhole on one side. Casting stambs prominent. No core. Patina: mottled green. Slight traces of dark glossy green surface. Some brown loamy deposit inside. Museum: Enschede, Inv.No. 1978-33 (old No. E44), via antique dealer Tielkens, Delden. (DB 2404)
CAT.NO. 573. PROVENANCE UNKNOWN.
L. 13.3; w. 3.2 cm. Rectangular mouth opening; prominent single mouth-moulding (formula: 2.8×3.8; 1.95×2.75 cm), from which springs D loop (1.6×0.6 cm), somewhat thinned by corrosion. Single neck moulding on faces only. Trapeze outline, rectangular section. Cutting seams prominent. Has been sharpened (anciently). In the socket, jammed in, a fragment of plate bronze, exact form not visible. Patina: mottled green; surviving traces of smooth surface. Mostlly now dull. Some brown loamy deposit inside socket. Museum: Enschede, Inv.No. 1034.1 (old No. 600-103 in red ink). (DB 2341)

CAT.NO. 574. DE DUNO, GEMEENTE DOORWERTH, GELDERLAND?
L. 12.95; w. 3.65 cm. Rectangular mouth (formula: 3.2×4.0; 2.2×2.8 cm). Prominent collar, from base of which springs D-shaped band loop (1.9×1.0 cm). Single neckrib on faces only. Trapeze outline, rectangular section. Cutting edge anciently sharpened. Cutting seams prominent. Blowhole under neckrib on reverse face, near edge. Patina: mottled green, surface rough. Some brown loamy deposit inside. Museum: Enschede, Inv.No. 1034.2 (old No. 600-104 in red ink), ex coll. Van Deelen. Card inside socket: ‘Duno near Arnhem’ in blue ink. (DB 2342)

CAT.NO. 575. DE DUNO, GEMEENTE DOORWERTH, GELDERLAND?
L. 12.35; w. 2.8 cm. Rectangular mouth; single mouth moulding (formula: 3.0×3.8; 2.3×2.5 cm), with one strongly projecting jet attachment. One neckrib, from which springs D-shaped band loop (1.5×1.0 cm). Casting seams mostly removed. Blade unsharpened. Patina: mottled green; no core, but traces of burnt clay in socket. Surface dull, rough. Cutting edge corners have slight modern damage. Museum: Enschede, Inv.No. 1034.3 (old No. 500-237), ex coll. Ter Kuile. (DB 2343)

Note: Cat.Nos 574 and 575 were, according to Dr A.D. Verlinde (museum Enschede), almost certainly purchased by the collectors concerned from a dealer, although this is not explicitly so stated in the records. The Duno is a well known early-historic fortified hill site overlooking the Rhine, not otherwise known to have yielded any prehistoric material.

CAT.NO. 576. ST.-JOOST, GEMEENTE ECHT, LIMBURG. Boonenbroek (dealer’s provenance).
L. 13; w. 3.4 cm. Rectangular mouth opening, with 1 casting stump (formula: 3.4×3.7; 2.3×2.7 cm). No neckrib on loop-side. Loop: 2.05×0.9 cm. Casting seams present. Edge unsharpened. Patina: mottled green; heavy encrustation. Museum: RMO Leiden, Inv.No. k. 1948/8.2, purchased from antique dealer J.N.E. Esser as ‘from the Nijmegen area’; thus inventorized, with the letter ‘e’ (for Gelderland) as prefix to the inventory number; but later (according to a marginal note in the inventory book signed L. Appelboom) found to contain in the socket a paper citing ‘Boonenbroek at St.-Joost, geen Echt’ (thus Neth. Limburg) as the find-spot (cf. above, Cat.No. 557). (DB 516) References: Briard, 1965: p. 282; Desittere, 1974: p. 114, liste 1, No.15; De Laet, 1982: p. 500.

CAT.NO. 577. PROVENANCE UNKNOWN.
L. 12.7; w. 3.15 cm. Weight 245 gr. Mouth formula 3.0×3.55; 2.2×2.75 cm. Single thin neck rim on three sides (absent on non-looped side). Loop: 1.8×0.8 cm. Casting seams present (also on unsharpened cutting edge). Blowhole near cutting edge on one face. Patina: mottled green, part blackish; some rubbed-off spots showing golden bronze (similar to Verleur series). Museum: Nijmegen, Museum Het Valkhof, Inv.No. 28.1.28(3). (DB 1579)

CAT.NO. 578. PROVENANCE UNKNOWN.
L. 13.1; w. 3.15 cm. Weight 190 gr. Mouth formula: 2.75×3.7; 1.8×2.7 cm. _<_ col., with jet stumps front and back; below moulding single rib, on faces only. D loop (1.95×0.55 cm). Body with mildly A outline, rectangular section. Casting seams present. Cutting edge with (modern) abrasion; also abraded along one edge. Patina: mottled green, part blackish. Museum: Nijmegen, Museum Het Valkhof, Inv.No. 6.8.31.1. Purchased (along with Cat.Nos 579 and 580) from A. Verleur (Nijmegen). (DB 1565)

CAT.NO. 579. PROVENANCE UNKNOWN.
L. 12.8; w. 3.5 cm. Weight 159.9 gr. Mouth formula: 2.6×3.7; 2.3×3.2 cm. Biconical collar, single thin rib on faces only. D loop (1.75×0.8 cm). Body with rectangular section. Casting seams present (also on unsharpened cutting edge). Two blowholes on non-looped side. Comparatively thin-walled. Patina: mottled green, part blackish; powdery green deposit, especially inside socket. Well preserved. Museum: Nijmegen, Museum Het Valkhof, Inv.No. 6.8.31.2. Purchased (along with Cat.Nos 578 and 580) from A. Verleur (Nijmegen). (DB 1566)

CAT.NO. 580. PROVENANCE UNKNOWN.
L. 11.8; w. 3.1 cm. Weight 162.2 gr. Mouth formula: 2.55×3.9; 1.9×2.9 cm. Biconical collar (partly broken away), below which single thin rib on faces only. Cutting edge not sharpened. Elongated blowhole on non-looped side. Patina: mottled green. Museum: Nijmegen, Museum Het Valkhof, Inv.No. 6.8.31.3. Purchased (along with Cat.Nos 578 and 579) from A. Verleur (Nijmegen). (DB 1567)

Note: Cat.Nos 578–580: purchased together from dealer A. Verleur; very similar in patina, and possibly (part of?) a hoard. Cat.No. 577 may, to judge by its similar patina, belong to the same find.

CAT.NO. 581. PROVENANCE UNKNOWN.
L. 13; w. 3.39 cm. Weight: 194.4 gr. Mouth formula: 2.9×3.5; 2.1×2.6 cm. Rectangular collar. Patina: green, bronze colour shines through. Casting seams present. Blowholes in the side with the loop. Private possession, purchased at a fair. (DB 2526)

CAT.NO. 582. PROVENANCE UNKNOWN.
L. 12.6; w. 3.1 cm. Rectangular collar (formula: 2.9×3.4; 1.9×2.4 cm). Castings seams present. Private possession. (DB 1748)

CAT.NO. 583. PROVENANCE UNKNOWN.
L. 13.1; w. 3.25 cm (measurements from sketch). Body with rectangular section. Loop 2×0.4 cm, broken in antiquity. Patina: originally green, but heavily ‘cleaned’. Sketch J. Musch. Private possession. (DB 1785)

CAT.NO. 584. PROVENANCE UNKNOWN.
L. 12.9; w. 3.35 cm. Loop: 2×0.8 cm. Cutting edge not sharpened. Was in museum Valkenburg (Streekmuseum), but on inquiry 1999 not present. (DB 738)
8.2.4. *Armorican, with parallel sides* (AXT:arm||)

(a) *Miniature specimen* (AXT:arm||<>) (1 ex.; fig. 37)


**CAT.NO. 585. PROVENANCE UNKNOWN.**

L. 4.7; w. 1.4 cm. Weight 21.7 gr. Mouth formula: 1.4×2; 1.0×1.6 cm. Loop 1.0×0.5 cm. Single collar. Prominent casting seams. Cutting edge moderately sharp. Patina: mottled green; light brownish loamy encrustation. Museum: Nijmegen, Museum Het Valkhof, Inv.No. xxx.d.48. Ex coll. Kam. (DB 1542)

(b) *Large* (AXT:arm||>) (1 ex.; fig. 38)

**CAT.NO. 586. NIJMEGEN, GEMEENTE NIJMEGEN, GELDERLAND* (dealer’s provenance).**

L. 12.3; w. 3.4 cm. Rectangular mouth opening (formula: 3.5×3.9; 2.7×2.45 cm). Biconical collar: D loop (2×0.75 cm). Patina: dark green to black. Very corroded. Edge broken anticiently (break patinated). Museum: RMO Leiden, Inv.No. e.1948/7.7; purchased from antique dealer J.N.E. Esser in 1948. (DB 514)

**Map reference:** Sheet 40C, c. 186/427.

(c) *Large, with thin neckrib* (AXT:arm||Nr>) (2 ex.; fig. 39)

**CAT.NO. 587. PROVENANCE UNKNOWN.**

L. 13.2; w. 3.4 cm. Weight 257.6 gr. Mouth formula: 3.7×4.1; 2.5×2.75 cm. Biconical collar with casting jet stamps front and back. Single thin neckrib on all four sides. Band D loop (2.2×0.8 cm); ribbon D loop (2.0×1.1 cm). Casting seams present (also on cutting edge). Long blowhole (5 cm long) on non-looped side. Patina: mostly mottled green; blackish in part. Light brown loamy encrustation. Museum: Nijmegen, Museum Het Valkhof, Inv.No. 28.1.282(2). (DB 1578)

**CAT.NO. 588. NIJMEGEN, GEMEENTE NIJMEGEN, GELDERLAND* (dealer’s provenance).**

L. 13.0; w. (3.4) cm. Weight 257 gr. Mouth formula: 3.75×4.0; 2.3×2.55 cm. Loop: 2.0×0.65 cm. Nearly square socket. One neckrib, present on three sides, but absent on the loop-side. Parallel sides, strictly rectangular cross-section. Cutting edge not sharpened. Patina: dull green; where damaged blackish. Some brown loam inside socket. Has suffered a heavy blow on the non-looped side; somewhat squashed in, and part of the cutting edge is broken away. Museum: Nijmegen, Museum Het Valkhof, Inv.No. 6.1940.2; purchased from A. Verleur (for f 3.00). (DB 1910)

**Map reference:** Sheet 40C, c. 186/427.

9. SUMMARY AND CONCLUSIONS

In the above we have listed, described and classified 85 socketed axes (plus one bronze half-mould for casting a socketed axe) of types which in the Netherlands occur exclusively or almost exclusively in the southeastern part of the country, i.e. in the provinces of Limburg and Noord-Brabant.

In addition, we list details of 26 socketed axes of Armorican types in museums and private collections in the Netherlands; which, however, as far as available documentation goes ('provenance unknown' or dealer’s dubious provenances) can safely be regarded as exclusively the result of modern import, entirely without significance for Netherlands prehistory.

Most numerous among our four principal southern types are the socketed axes of Type Plainseau, a type common and characteristic in the northern part of France and in Belgium in the French Bronze fi-
nal IIIb. Plainsean axes are well represented in the Maas valley and in eastern Noord-Brabant; very few have been found farther north (map 4). It is at present impossible to say to what extent the Plainsean axes in Belgium and the south of the Netherlands are import from France; the variety of the ornament on the numerous axes in the Heppeneert hoard might provide clues as to the possibility of local manufacture of Plainsean axes in the Lower Maas area.

Almost as frequent in the south of the Netherlands are axes of the varieties grouped together under the name Niedermaas type. In the Netherlands their distribution is similar, but slightly more limited, than that of the Plainsean axes (map 3), with which they are contemporary. They are rare in western Germany, and we do not know of any in France. There is no reason to doubt that they were manufactured in the Lower Maas area, though their typological variety suggests that they are not from a single source.

By way of contrast, axes of Kibbert’s Form Helmeroth are fairly common and widespread in middle West Germany, where they may have been made, but there is no distinct concentration within that area. In the Netherlands their chief occurrence is in middle Limburg, with some examples in the Maas-Waal-Rhine river area (map 5). The bronze half-mould (Cat.No. 549) attributed to Roermond is of the Helmeroth type. Note worthy is the find of three Helmeroth axes in Denmark, in the Period IV hoard of Basland (fig. 30b).

Both the Niedermaas and Helmeroth types may have originated in the Stufe Obernbeck of Kibbert, though a more solid in chronological grounding would be most desirable; in any case, both of these types may have been in production in the time of the Plainsean axes.

An extraordinary group of socketed axes consists of the long, impractically thinly cast socketed axes of Type Geistingen. They occur especially in a concentration of small hoards and river finds along the Rhine from the Nijmegen area to the mouth of the Lippe within which area they were presumably manufactured; with a few strays into the Rhein-Main area; along the Maas is the large Belgian hoard from Geistingen (map 6). The unusual character, typological homogeneity, and concentrated distribution suggest that they originate in a single workshop. It is generally believed that they date from the transition Late Bronze Age–Early Iron Age, though direct dating evidence is absent.

In a subsequent part of this study we will discuss:

a) the socketed axes of Kibbert’s Form Wesel-ling, a relatively numerous type in the North German Rhineland, but also in the eastern half of the Netherlands, fairly equally divided between northeast, middle east, and southeast;

b) the socketed axe types occurring principally in the northeast of the Netherlands (the ‘Hunze-Ems’ types); c) the considerable number of socketed axes,
mostly import, of types represented in the Netherlands by too few examples to display a characteristic distribution;

d) the hoards of the Late Bronze Age in the Netherlands.

10. ACKNOWLEDGEMENTS

We express our heartfelt thanks to all — colleagues, museum directors and curators, private owners of objects, helpers in various ways in the Netherlands and outside — who have contributed to this and related parts of the present study. They are far too numerous to name individually, so we hope they will accept this collective thank-you.

Our special indebtedness to Kurt Kibbert will be evident from the frequency of our citations of his monumental work on the axes of the mittlere Westdeutschland in the Prähistorische Bronzefunde series.

We must also record our gratitude to the past and present draughtsmen of the Biologisch-Archaeologisch Instituut, now absorbed into the Groninger Instituut voor Archeologie: B. Kuitert, B. Kracht, J.M. Smits and M.A. Los-Weijns; as well as parttimers or freelancers L. Hart and G. de Weerd. We are especially indebted to Jan Smit and Miriam Roelink, L. Smit and M.A. Los-Weijns; as well as Informatiecentrum voor Archeologie: B. Kuitert, B. Kracht, H.

The distribution maps (by HS) are on the basis of the automatic mapping facility provided by J. Kraak and J.T. Ubbink of the University of Groningen Computer Centre.

For a contribution to travel costs we are grateful to the Foundation Netherlands Museum for Anthropology and Prehistory. See also the acknowledgements in our Part II:2 (Palaeohistoria 39/40, p. 272).

11. REFERENCES


logische kartering en inventarisatie van de vondsten, behorende tot een prehistorisch vondstcomplex in de gemeente Margraten. Archeologie in Limburg 50, pp. 53–60.


