

Bronze Age bronzes and the Portable Antiquities of the Netherlands (PAN): a state of affairs

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PAN Project background

The Portable Antiquities of the Netherlands (PAN) project started in 2016, the year in which metal detecting in the Netherlands became formally allowed for the topmost 30 cm of the soil. Its primary aim was to document artefacts held in private collections in order to facilitate wider scientific research, by using site visits to private owners to inventory, photograph and document their collections. Particularly private collections that were at risk of information loss due to old age of their keepers were prioritized (Heeren & Roymans 2017; Kars & Heeren 2018, 18; Vos et al. 2018, 14). As a secondary objective, it was hoped that it could reconnect communities of metal-detectorists and scholars that were previously disjointed due to issues of trust and legality (cf. Lewis 2016; Thomas 2016; Kars & Heeren 2018, 19; Dobat et al. 2020).

In order to systematically register finds, to handle issues of access rights and find-spot-obfuscation and in order to have the data be useable for scientific approaches, an integral GIS interface with object taxonomy and thesauri was compiled (Vos et al. 2018, 14). Through this interface (www.portable-antiquities.nl) new finds can be registered, characterized and disseminated. As of September 2019, PAN holds 59.002 finds from 6090 find locations derived from 647 private collectors, but the time spent on proper validation within object taxonomies and typologies means that currently c. 60% still awaits full accessibility.

Bronze Age artefacts in PAN: numbers and contexts

Amongst the over fifty-thousand finds registered, 113 Bronze Age bronze items have been documented. After weeding out a few cases that were attributed to the Bronze Age erroneously or whose date range was too wide, a total of 93 items is discussed here. These 93 items are not all recent finds, as a total of 31 was already known in the Butler Archives (Netherlands Bronze Age Catalogue; NBAC) now housed at the Groningen Institute for Archaeology (cf. Arnoldussen 2015; Steegstra 2018). The NBAC catalogue provides a solid source for comparison and contextualization of the PAN results (fig. 1).

Artefact types

In the PAN collection, axes ($n=50$), spearheads ($n=24$) and pins ($n=9$) dominate. These are also the three most dominant groups listed in the NBAC inventory (fig. 1, below). Sword fragments and bracelets (or arm- and leg-rings) are both in PAN and NBAC the fourth and fifth largest groups. Only the three sickles (cf. Arnoldussen & Steegstra 2016) registered in PAN appear to be less well represented in the NBAC catalogue (3%

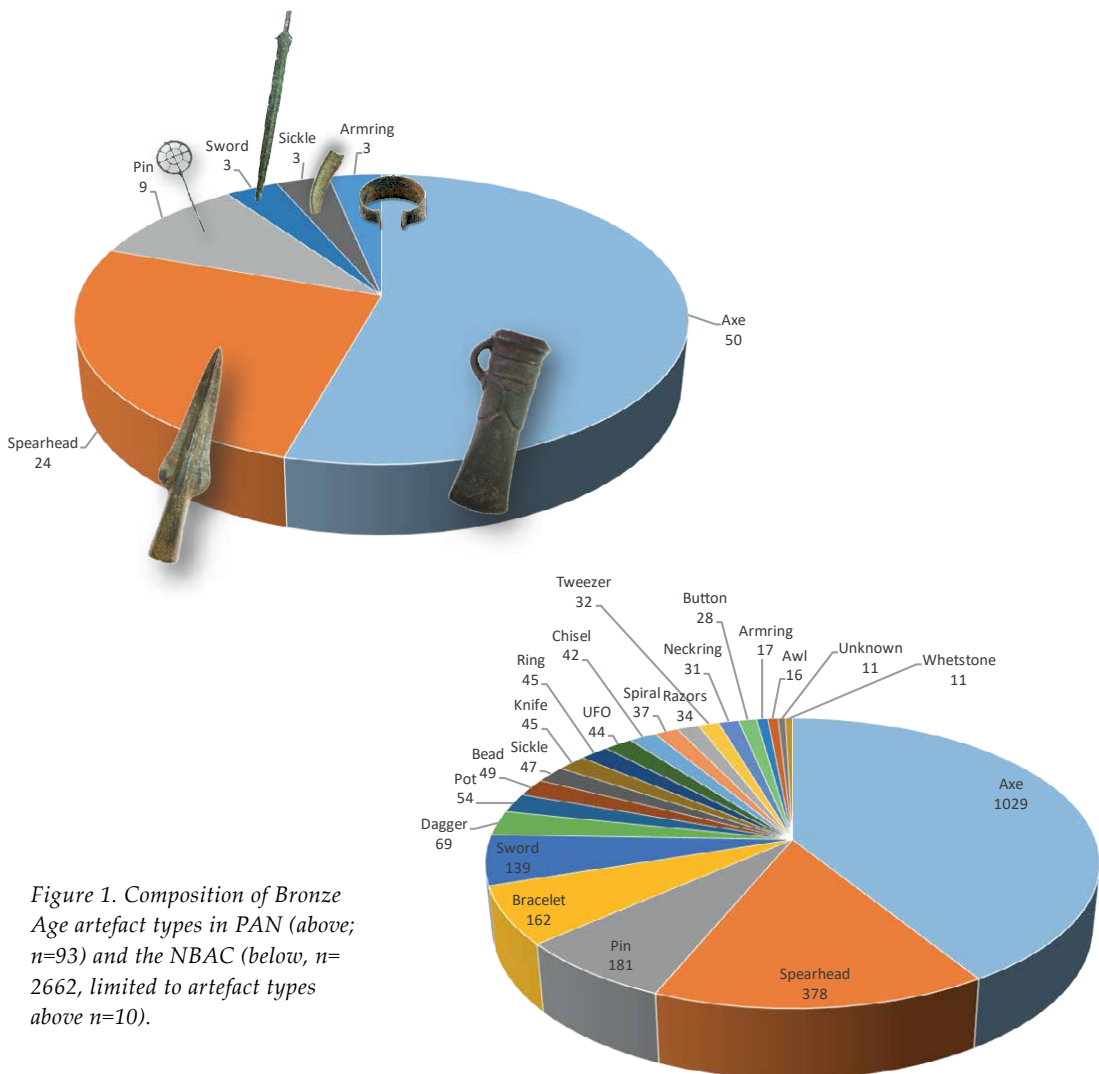


Figure 1. Composition of Bronze Age artefact types in PAN (above; $n=93$) and the NBAC (below; $n=2662$, limited to artefact types above $n=10$).

in PAN versus 1,7% in NBAC). Overall, however, the PAN listings present us with a selection of metalwork that in terms of frequency and types, aligns well with what is known based on other records.

Yet, the two data-sets are different in terms of background of discovery for their items listed. NBAC finds are mostly stray finds (42,7%), or originate from graves (11,9%), peatlands (9,6%), hoards (8,9%) or dredging (6,2%) – with only 11,5% being discovered through metal detecting. PAN, conversely, consists of 72% metal detecting finds (and 7,5% finds from dredging and gravel quarries and 6,5% stray finds). Remarkable new types of sites are recreational sites such as lake-shores, where metal-detectorists mostly look for recent coins and jewelry. One of these locations yielded not just those categories, but a Bronze Age spearhead as well (Van der Sanden 2018). This local swimming spot turned-out to be a pingo remnant used in later prehistory for votive offerings and for leisure in more recent times (op. cit, 43; 46). While it is clear that this is a rare chance find, it ties-in with the wider established pattern of votive offering in wetland parts of the landscapes for Bronze Age bronzes (fig. 2; cf. Essink & Hielkema 2000, 278; Fontijn 2003, 261; 264; Van Beek 2010, 519).

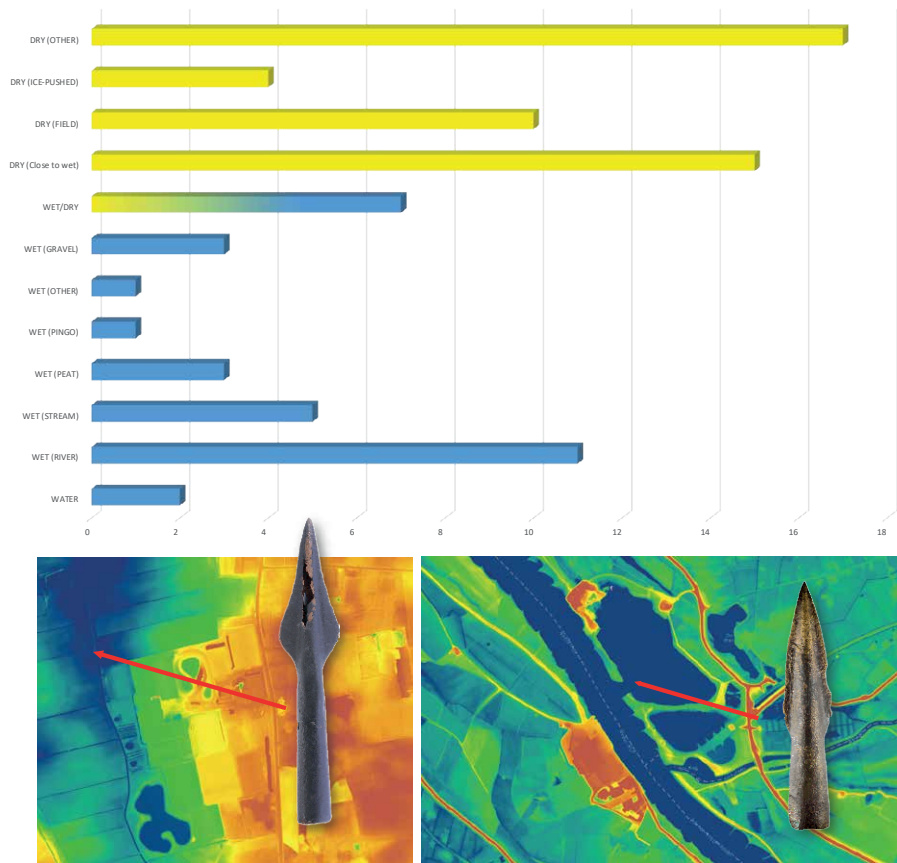


Figure 2. Top: Landscape context for the 93 Bronze Age bronzes in PAN. Bottom: Examples of possible wetland depositions (left: PAN-00014108 (Hapert), right: PAN-00025890 (Duiven)).

Fig. 2 shows the landscape context for the Bronze Age bronzes from PAN. It is clear that a substantial series of bronzes come from stream valleys and rivers (either directly or in dredge/gravel sediments). Here a spearhead from the ‘Waagenbroeks loopje’ streamvalley (fig. 2, lower left: PAN-00014108) near Hapert and a spearhead from the gravel quarry ‘Loowaard’ near Duiven (fig. 2, lower right: PAN-00025890) serve as examples of the wider corpus. Moreover, for the finds for which a dryland origin is plausible, it was noted that many of these were still recovered close to wetland locations. For example, an Early Bronze Age flat-axe found near Schinnen (PAN-00048583), was recovered from an elevation directly adjacent to the Geleenbeek streamvalley. Similarly, a cutting edge fragment of a Late Bronze Age socketed axe (PAN-00030985) was recovered from a terrace edge adjoining the Oude Maas. Such finds stress once more the importance that wetlands (and wetland-dryland interfaces) played in the cultural topography of later prehistoric communities.

Whats new?

In the above sections, we have argued that whilst in terms of object composition PAN presents an assemblage similar to the wider NBAC catalogue, in terms of method of discovery it differs significantly. It thus begs the question what other new information can be obtained from an analysis of the PAN bronzes. Foremost, the entering of new finds into PAN allows for the re-evaluation of distribution patterns and characterisations of regional versus supra-regional types (fig. 3).

Supra-regionality and regionality

For example, amongst the types of axes added to PAN, Type Oldendorf axes figure most prominently. These are parallel-sided high-flanged axes (Kibbert 1980, 37-38; Butler 1999/1996, 203) dated to c. 1600-1475 cal. BC (Fontijn 2003, 87 fig. 6.2). They represent locally made sturdy utilitarian axes that shared their basic form across Denmark, north- and west Germany, Belgium and the Netherlands (fig. 3, top-left; Authenrieth & Visser 2019, 55). From studies of their context of recovery, it has become clear that Oldendorf axes occur frequently as single finds from wetland contexts such as peatbogs, marshlands and stream- or river valleys (Butler 1995/1996, 203-220; Vandkilde 1996, 117-121; Verlaeckt 1996; Laux 2000, 71-79).

This pattern is also visible for the PAN Oldendorf axes: DB2781 (PAN-49460) was found in the Sellingen stream-valley and DB2811 (PAN-14071) was found c. 140 m from the Goorloop stream valley. For others, such as DB2789 (PAN-45927), DB2821 (PAN-7615) and DB2846 (PAN-57165), their actual findspots appear to be dryland locations in close vicinity of (former) meanders of the Meuse river. Others, however, have a plausible dryland origin, such as DB2773 (PAN-51863), DB2201 (PAN-56022) or DB2780 (PAN-49563) which were found at Texel, Geldrop and Reusel respectively. The spatial distribution of the PAN Oldendorf axes only slightly revises the previously known distribution pattern (fig. 3, top-left), with the notable north-westward expansion of the Texel (DB2773) axe. By and large, however, the PAN Oldendorf axes reinforce the interpretation that they are part of a widely shared, supra-regional tradition in axe-production.

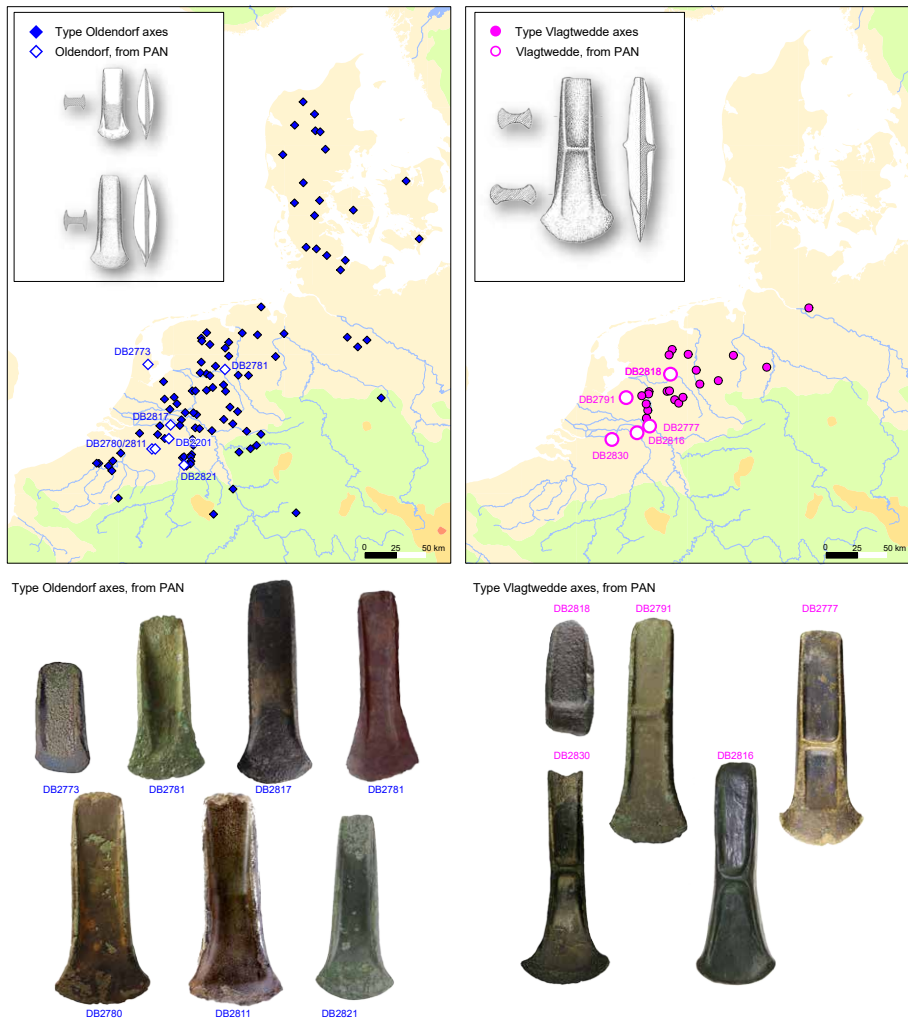


Figure 3. Distribution patterns (top) and PAN objects (below) for Oldendorf axes (left) and Vlagtwedde axes. Distribution patterns based on Kibbert 1980; 1984; Butler 1995-1996, 208 Map 11; 230 Map 17; Laux 2000; 2005; Authenrieth & Visser 2019.

Vlagtwedde axes (fig. 3, top right) are the second largest typological group amongst the PAN axes. Vlagtwedde axes are high-flanged stopridge axes, with a well-developed ‘ledge’ stopridge and with predominantly parallel sides and a long leaf-shaped outline in side view (Butler 1995/1996, 230-231). They date c. 1575-1375 cal. BC, but may span into the fourteenth century BC (Butler 1995/1996, 236; Fontijn 2003, 87 fig. 6.2; 96). The spatial distribution of the PAN Type Vlagtwedde axes expands their previously known distribution area (fig. 3, top right): DB2791 (PAN-40737; from Ermelo), DB2777 (PAN-50232; from Lobith), DB2816 (PAN-11226; from Heumen) and DB2830 (PAN-606) all extend the distribution pattern in a southwestern direction. This may in turn call for a refinement of previous views that hold type Vlagtwedde axes as characteristic for the IJssel area (Hulst 1989; Butler 1995/1996, 236; Fontijn 2003, 96). Clearly, the (north)eastern Netherlands-western German bor-

der zone still persists as the center of weight of their distribution, but it extends more towards the south (this study) and the northeast (cf. Laux 2000, 21 nos. 337; 341-344; as predicted by Butler (1996/1996, 236)).

Whereas the discussion of the Oldendorf and Vlagtwedde axe types has shown that both regional and supra-regional distribution patterns can be outlined and refined with the PAN finds, some PAN finds allow us to question our typological schemes as well.

Typological considerations

For example, the Late Bronze Age socketed axe from Rijssen (fig. 4, left: DB2807, PAN-17931), displays an unusual combination of characteristics otherwise seen on axes classified as separate (sub)types. It shares the decorated wings with some socketed axes from the north-eastern Netherlands classified as ‘Socketed axes with ‘wings’ and biconical collar, embellished’.¹ It lacks, however, the angular loop often seen on Hunze-Ems tradition axes (fig. 4, DB2747; Butler 1960, 111) whose distribution also centers on the Drenthe-Niedersachsen border zone (Butler 1960, 220(46); fig. 13). An axe from the Period V hoard of Elsenerveen (Butler & Steegstra 2000/2001, 294; 297 fig. 25a) shares the decorated wings (albeit in vertical rather than horizontal motif) and pellet of the Rijssen axe, but this axe is previously classified as a ‘Socketed Axe with face arches, “wings” and three neck ribs’.² Axes of this group are found in southern Drenthe and Overijssel (Butler & Steegstra 2003/2004, 256; 263-264). In this aspect, DB2647 from Werkhoven – a ‘Socketed axe with face arches, wings, embellished’³ – is a geographic outlier (but compare fig. 3, topright). The neck of the Rijssen axe shows a distinct pattern of two smaller neckribs that delimit a concave wider zone in between. This pattern is named ‘astragalus’ neckribs (Butler & Steegstra 2003/2004, 243) after German characterisations of such motifs on lurs (e.g. Hundt 1952, 407) and pins (e.g. Kubach 1977, Taf. 18). Such axes are traditionally classified as ‘Socketed axes with astragalus neck ribs, embellished’ and originate from Groningen, Drenthe and Gelderland.⁴

Clearly, the Rijssen axe exhibits traits from all previously described groups of axes, and should serve as a warning that the analytics and methodological rigor of typological classification may have veered too much on the side of ‘splitting’ whereas there is much to be said here for ‘lumping’. Evidently, the Rijssen axe is a proponent of a group of socketed axes whose distribution focusses on the north-eastern Netherlands (and adjacent German area), and that are characterized by a conical mouth, a sometimes angular (‘elbow’) loop and more individual (or sub-regional) choices for embellishments such as ‘astragalus neck ribs’, ‘decorated wings’, ‘neck ribs’ and or pellets. Of these embellishments, the decorated wings and astragalus necks are the most prominent markers of regionality – as pellets and neck ribs do occur on axes from other areas as well (e.g. on type Plainseau in the southern Netherlands; Butler & Steegstra 2001/2002, 284-290). Novel PAN finds such as the Rijssen axe serve as tangible reminders that typologies are works-in-progress that sometimes benefit more from lumping (to show variability of

1 E.g. AXT:WiCol<>Emb.Fur and AXT:WiCol<>Nr2.VVV.Fur; DB283; DB495; DB1017; DB2398; DB1630; Butler & Steegstra 2003/2004, 210-211; 216; 256; 263.

2 AXT:AWiNr3; Butler & Steegstra 2003/2004, 263.

3 AXT:AWiNr1.Emb.Fur; Butler & Steegstra 2003/2004, 256 no. 692.

4 AXT:AnrAstrag.Emb; Butler & Steegstra 2003/2004, 243, cf. *op.cit.*, 241-247; DB1152.

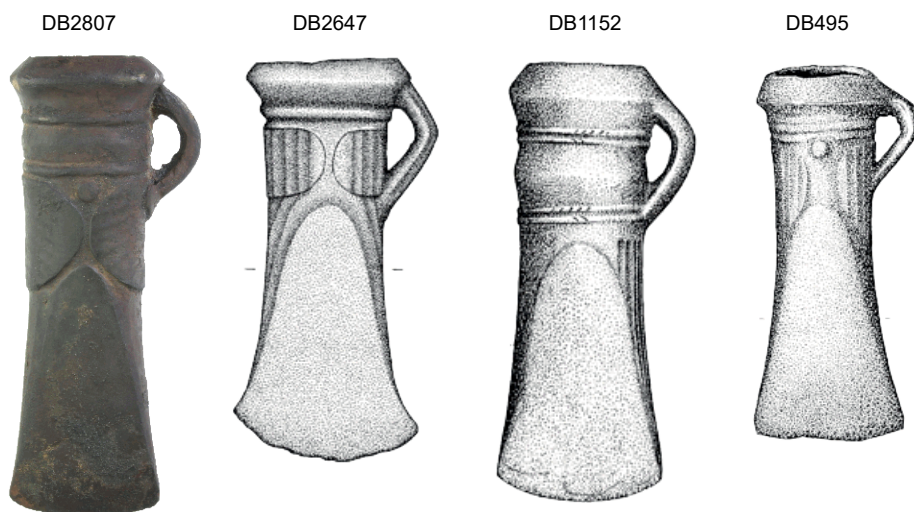


Figure 4. Photograph of Rijssen socketed axe (left: DB2807/PAN-17931; photograph PAN) and similarly decorated axes (from: Butler & Steegstra 2003/2004, 245 fig. 78b no. 676 (DB1152); 254 fig. 84b, no. 692 (DB2647); 263 fig. 89 no. 710 (DB495)).

cultural repertoire) rather than minute stylistic or technological subdivisions (that do allow for accurate characterization, but do not inform us much on supra-local affinities and affiliations).

Rarer types

Also, it is clear that metal detecting – and the more systematic inventory (and reporting) of its fruits – will enrich our knowledge on the bronze toolkits of the pasts. Using metal detectors, find types that were often missed in excavation prior to the widespread use of the metal detector (*e.g.* small finds as arrowheads (PAN n=3), pins (PAN n=9) or sickles (PAN n=3) are expected to rise in prominence within the overall (NBAC) corpus. For larger objects such as swords and daggers (Fig. 5, top; PAN n=3), it is not due to any small sizes that these have been overlooked. Rather, their scarce presence in funerary context (but see: Bourgeois & Fontijn 2012, 540-541; Bourgeois 2013, 165 tab. 7.3) and settlements (but see: Fontijn 2003, 144-145; Ziermann 2004, 408; Gaffrey & Deiters 2005, 341) has been noted before (Bradley 1988, 254; 257; Fontijn 2013, 215; Harding 2006, 509; Bruck 2011, 389). Again it is no coincidence that the three sword(fragments) now listed in PAN were all found close to rivers. DB2825 (PAN-2052) is a part of the handle of a type Rosnoën sword (datable to c. 1325-1125 cal. BC; O'Connor 1980, 111-112; Fontijn 2003, 117 fig. 7.2) found at Elst (Gld.), which is located on an Rhine-precursor meander known as the Ressen system (active c. 3650 cal. BC – 170 cal. BC; Berendsen & Stouthamer 2001, 54; 205-206). Alas its context of retrieval in terms of fluvial geogenesis (*e.g.* floodbasin, palaeochannel, levee) is unknown, unlike for the Ewart-Park sword (DB840/PAN-15554, c. 915-800 cal. BC; Fontijn 2003, 153 fig. 8.2) which was dredged from the river Meuse near Wessem (Willems 1986, 215-216; fig. 8; Fontijn 2003, 117 fig. 8.13; Van der Veen 2019, 27 fig. 2). The type Rixheim sword

registered as ‘Maasbracht’ (DB2793/PAN-38013; datable to c. 1325-1125 cal. BC; Fontijn 2003, 117 fig. 7.2; 131) was presumably also dredged from the stretches of the Meuse river in middle Limburg.

Even for bronze types documented in great numbers in the NBAC such as spearheads (n=378), PAN yields new information. For example, amongst the 24 spearheads listed in PAN there is an unpegged spearhead with ribs near the base of the socket (fig. 5, bottom: DB2812/PAN-14343) from Eastermar. Spearheads with a similar morphology have been listed by Jacob-Friesen (1967, Taf. 130-132) and Tackenberg (1971, Liste 41; Karte 16) as ‘Lanzespitze mit Tüllenrippen’ and have a distribution that centers on the Elbe and Weser areas (*i.e.* middle and northern Germany) but extends as far north as Sweden and Gotland (fig. 5, bottom; Jacob-Friesen 1967, Taf. 130



Figure 5. Top: Bronze Age swords registered in PAN (Top: DB2793/PAN-38013, Middle: DB2825 on idealized Rosnoën outline), Lower: DB840/PAN-38013, all to same scale). Bottom: Location of the Eastermar (DB2812/PAN-14343) spearhead (red dot) in relation to other finds of Lanzespitze mit Tüllenrippe (round: single, triangle: funerary context, square: hoard, open: uncertain identification, after Jacob-Friesen 1967, Taf. 130-132; Tackenberg 1971, Liste 41; Karte 16).

no. 1-2: Badene). Towards the east it extends along the Baltic coast into Poland and the upper reaches of the Rhine tributaries form the southern limit (*ibid.*).

The dating of such spearheads relies on their association in hoards and graves. At Oberbimbach (fig. 5, bottom: Jacob-Friesen 1967, Taf. 132 no. 9-10), a Lanzespitze mit Tüllenrippen was associated in a grave with a low-open cup (Henkeltasse) dated to the Late Bronze Age or Early Iron Age. A more precise date is possible for the funerary assemblage of Arnitlund in Jutland (fig. 5, bottom: Jacob-Friesen 1967, Taf. 131 no. 1-4) where a similar spearhead was found with a set of razor, tweezer and (tattooing?) awl. Such toilet-sets date to periods IV and V (c. 1125-800 cal. BC; Arnoldussen & Steegstra 2018, 33 fig. 22) and may signal persons of elevated, possibly martial, importance in Late Bronze Age societies (*op.cit.*, 37-38).

The Eastermar spearhead appears to represent an example of a group of such spearheads in the north-eastern Netherlands. To these communities, the supra-regional affinities (and tentative bellicose connotations) of the Eastermar spearhead will have been evident, as ribbed sockets and unpegged spearhead are rare and uncommon respectively for the region and period. Like argued previously for the Vlagtwedde axes, they seem to reflect a region of frequent interaction along the north(eastern) Dutch and adjacent German areas.

Minor problems and major prospects

Whereas the accessibility, uniformity of object descriptions and explicit object taxonomy of the PAN project is of great help to scholars studying artefact distributions, we feel that there still is room for refinement. First, some typological classifications that have chronological or cultural relevance, are not (yet) embedded into the PAN taxonomy. For example, the archetype drawing for a stopridge axe shown in PAN is actually for a palstave, yet both differ in start date and longevity (cf. Fontijn 2003, 87 fig. 6.2; 117 fig. 7.2).⁵ In other cases, the high-level taxonomy of PAN means that important regional or supra-regional characteristics are overlooked or not registerable. In addition to the Eastermar spearhead discussed above, the flat axe registered as PAN-60186 (DB2864) is a case in point: whereas in PAN the object is listed as a generic Early Bronze Age flat axe, more careful consideration proved it to be a unique – probably Irish or Scottish – insular import of a Type Cardiff Castle axe (with lozenge-shaped sides; Needham 2017, 26-27; Arnoldussen et al. 2020). A more low-level taxonomy, referring to the most recent publications (in the object descriptions or the type descriptions) and cross-linkage with NBAC database numbers could all increase the relevance and ease of scientific capitalization of PAN.

Second, the present infrastructure does not allow to register (or quantify) uncertainties. Particularly for (precision of) find-spots, (confidence in) typological characterisation and reliability of provenance, later scholarly approaches could gain much in quality from being able to filter by such criteria. That said, the present study has shown how even a presently modest corpus of Bronze Age artefacts can already further our

5 A stopridge axe is a high-flanged axe with a ledge (midrib), meaning that the blade is of comparable thickness above and below the ledge. With palstave the part towards the cutting edge (below the ledge) is thicker.

understanding of Bronze Age regional and supra-regional interaction patterns – and inspire scholars to keep critically evaluating typological characterisations.

We predict that in the coming years, the popularity of metal detecting will result in a substantial and important enrichment of the corpus of known Bronze Age artefacts: more – and more smaller – artefacts will come to light and will quickly play (through their ease of access and quality of registration in PAN) their role in scholarly narratives on the salience of Bronze Age material culture.

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REDACTIE:

M. HENDRIKSEN, E. NORDE & N. DE VRIES

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Inhoudsopgave

Uiterlijk vertoon. Pracht, dracht en identiteit in de metaaltijden	7
Menk Hendriksen, Eric Norde & Nynke de Vries	
Splendour. Beauty, wear and identity in the metal ages	10
Menk Hendriksen, Eric Norde & Nynke de Vries	
Een dame uit het noorden in het Land van Maas en Waal. De armband van Dreumel in context	15
Liesbeth Theunissen	
Twee bronzen armbanden in een crematiegraf uit de midden- of late ijzertijd te Bennekom. Voorbeelden van leeftijds- en geslachtsgebonden grafgiften?	33
Erik Drenth & Jeroen Flamman	
Alternatieve ideeën over productie en distributie in de late ijzertijd aan de hand van glazen armbanden	53
Johan van Kampen	
Middle Iron Age (500-250 BC) cemeteries in the Southern- Netherlands, the Rhineland and Flanders	69
Lasse van den Dikkenberg	
An unusual Late Iron Age or Early Roman burial discovered at Oegstgeest, the Netherlands	81
Frank J. van Spelde, Corrie C. Bakels & Lisette M. Kootker	
Zoeken naar huizen, de midden-bronstijd nederzetting van Opheusden ABC terrein	89
Lourens M.B. van der Feijst & Axel Müller	
Conische objecten uit West-Friesland. Inventarisatie van mysterieuze voorwerpen uit de late bronstijd	103
Ben Naardin & Wouter Roessingh	

Bronze Age bronzes and the Portable Antiquities of the Netherlands (PAN): a state of affairs	123
Stijn Arnoldussen, Hannie Steegstra & Stijn Heeren	
Handgevormd aardewerk uit de ijzertijd en de Romeinse tijd van de cultusplaats te Empel	135
Peter W. van den Broeke	
Van de hoed en de rand. Over de typologie van maalstenen uit het Eifelgebied	161
Rob Houkes	
Auteursgegevens	173