

The Function of Mesolithic Bone and Antler Points

Léo B. M. VERHART

1. Introduction

Late Paleolithic and Mesolithic bone and antler points are artefacts that always receive a lot of attention in the study of European hunter-gatherer communities. Often the question has been raised what these implements were used for and a large number of possibilities have been suggested. The aim of this paper is to offer the archaeological data for a functional interpretation within an economic context (Verhart, 1990). The available archaeological data will be examined critically. I will discuss the various functional main types that can be distinguished, the purpose to which these implements were used and what, if possible, this implies for our ideas concerning Late Paleolithic and Mesolithic hunting strategies.

2. Functional classification

On the basis of morphological attributes and statistical research three functional groups can be distinguished within the main group of bone and antler points:

1. harpoons,
2. points for lances or spears,
3. arrowheads.

2.1. Harpoons

Harpoons are points with a thickening, notch or hole at the base, where a line can be attached. These harpoons are affixed to the top of a javelin and the line, fixed to the base of the harpoon, is connected to a shaft or held by the person throwing the harpoon. As it hits the prey animal, the harpoon penetrates the body, the shaft is released and the animal can be controlled by the line. Another possibility is to attach various objects at the end of the line, to hamper the prey in its movement. A well known example is the inflated seal skin used by the Inuit in hunting sea mammals. The major function of the harpoon is not its penetrating power, hitting

vital body parts and organs, but rather its fixation potential. Dependent on the position of the fixation point three variants of use can be recognised (Thompson, 1954).

2.2. Points for lances or spears

In contrast to harpoons, points for a lance or a spear are fixed permanently on to a shaft. By lances are defined implements not used for throwing, but rather for stabbing a prey. Spears cover a greater distance and are thrown at a prey animal. Both types are hunting equipment with penetrating potential, aimed at bringing down a prey animal by hitting vital body parts and organs, but a fixation function plays also a role.

2.3. Arrowheads

The hunting implement that can be distinguished hardly among points of bone and antler is the arrowhead. By studying a large findgroup of bone and antler points from Europoort, this type could be inferred statistically (Verhart, 1988). In metrical aspects the arrowheads of Europoort can be characterised as points with a maximum length of 85 mm, a mean barb length of 4.3 mm and a mean base width of 8.8 mm (fig. 1). Within the Europoort group most arrowheads demonstrate a tendency towards fixation, somewhat comparable to the harpoon, whereas others, like the simple plain points, show more penetrating potential.

3. The function of bone and antler points

Graham Clark's ideas have been decisive for our interpretation of bone and antler points (Clark, 1948; 1975). He felt that this type of artefact was mainly used for fishing. He supported this hypothesis by pointing at three finds of barbed points associated with skeletons of pike (Kunda in Esthonia & Esperöds Mosse in Sweden; Clark, 1936:122) and comparisons with "modern" fishing gear used by the Inuit of

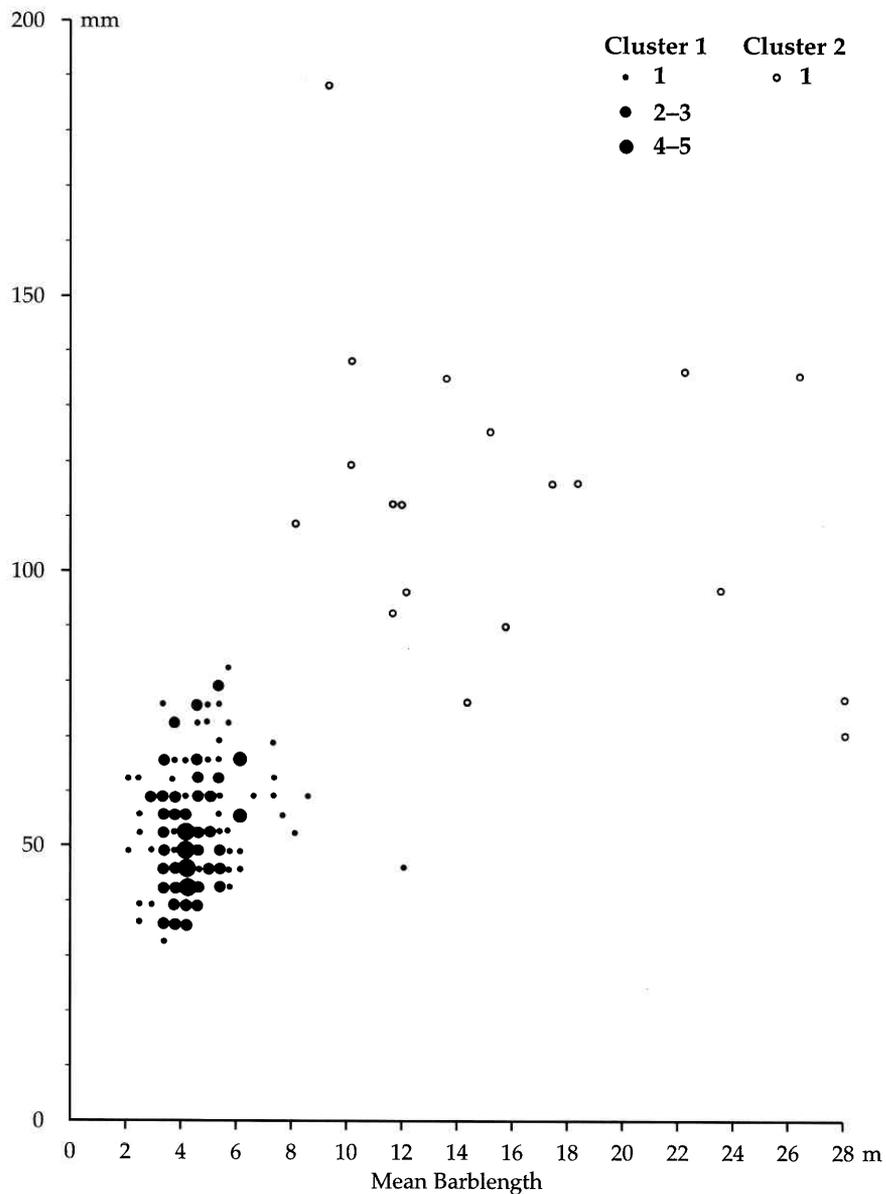


Fig. 1 — Europoort, the Netherlands. Diagram of length in relation to mean barb length in cluster 1 (arrowheads) and cluster 2 (spearheads).

Canada and Greenland (Rau, 1884). Especially the ethnographic comparison led many scientists to the conclusion that barbed points were parts of leister prongs (fig. 2). This attribution needs to be modified.

The problem to what purpose the three functional groups were used, can be approached in four ways:

1. which weapons are found in the prey animals: the direct association,
2. which weapons are found in the *vicinity* of a prey animal: the indirect association,
3. association by way of weathering traces,
4. association by way of statistical analyses of large find groups.

In direct association four harpoons have been found. Two finds concern harpoons in skeletons of harp-seals (*Phoca groenlandica*; Närpiö, Finland [Leppäaho, 1936]; Skarvtjärn, Sweden [Cederschiöld, 1959]). The third find is a ringed seal (*Phoca hispida*; Nörköpings, Sweden [Lönnberg, 1908]). The fourth is also a harpoon found in a ringed seal, but the identification of this last point as a harpoon is dubious, since only the upper part survived (Oulujoki, Finland [Leppäaho, 1936]). Furthermore, in the description a stick with a diameter of 3.5 cm is mentioned. It is not inconceivable that this point was fixed to a shaft and used as a spear. On the other hand, the skeleton was

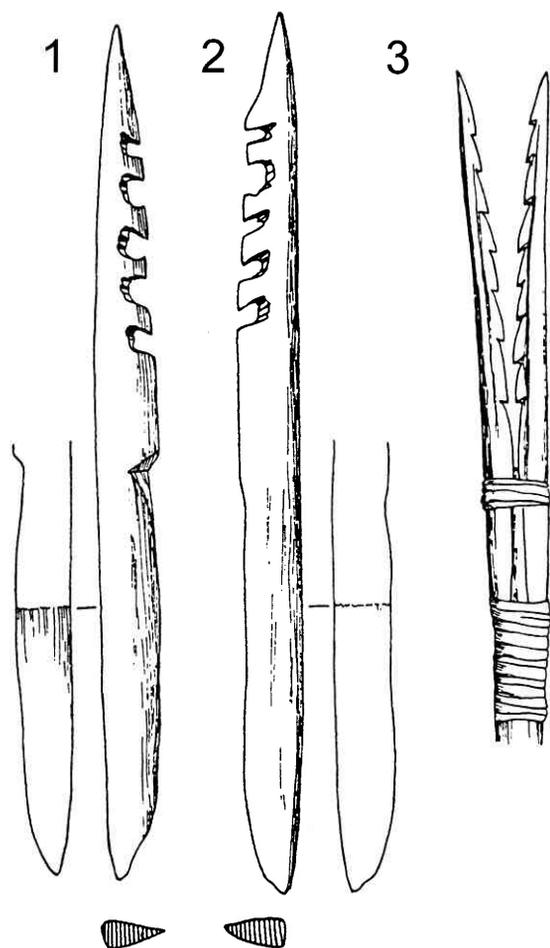


Fig. 2 — The use of barbed points analogous to an ethnographic example. Left a pair of barbed points from Siretorp, Mjällby, Sweden (1–2) and right (3) bone leister prongs, mounted on wooden shaft, from the northern Hudson's Bay region. (After Clark, 1936:fig. 46).

found approx. 30 km from the former coastline, which suggests an interpretation as a harpoon. These data suggest that harpoons have been used exclusively for hunting seals, especially in the last phase of the Mesolithic. This is,

however, a false impression. First of all, the coastal settlements dating from the early phase of the Mesolithic have been covered by Holocene deposits, obliterating finds from this period. Secondly, on a number of inland sites, far from the coast, harpoons have been found that could not be connected to the hunt for sea mammals. They might have been used in hunting large terrestrial mammals, but exactly which species is not clear. Usually reindeer is suggested, but settlements with many remains of reindeer rarely, if ever, contain harpoons. These are only known from Meiendorf and Ahrensburg, three harpoons in all. The complete absence of harpoons at Pincevent (Leroi-Gourhan & Brézillion, 1966) and the recent research into the hunting techniques and hunting strategies of the Late Paleolithic in northwestern Europe (Grønnow, 1985; Bratlund, 1991), imply that bow and arrow must have been more important in hunting than previously assumed.

Spears or lances are more frequently directly associated with a wide range of animals. They have been found in direct association with fish, for example pike [4×] (Esperöds mosse, Sweden [Clark, 1948:58]; Kunda, Estonia [Indreko, 1948:49–50, 52]; Abschruten, Poland [Gross, 1938:85]) [fig. 3] and an unknown species of fish (Zinten, Poland [Engel, 1935:298–299]). Terrestrial animals represented are: two Mesolithic (Klezewer Brücke, Poland [Engel, 1935:299] and Friesack 27, Germany [Gramsch, 1990:21]) and two Neolithic red deer (Wehrstedt, East Germany [Hemprich, 1938:88]; Køge, Denmark [Andersen, 1981:98]), one elk (High Furlong, Great Britain [Hallam *et al.*, 1973]) [fig. 4], one wild boar (Ordrup mose, Denmark [Gramsch, 1973:93; Mathiassen, 1935:135]) and one dog (Allerum, Sweden [Lidén, 1942:16–18]). Finally,

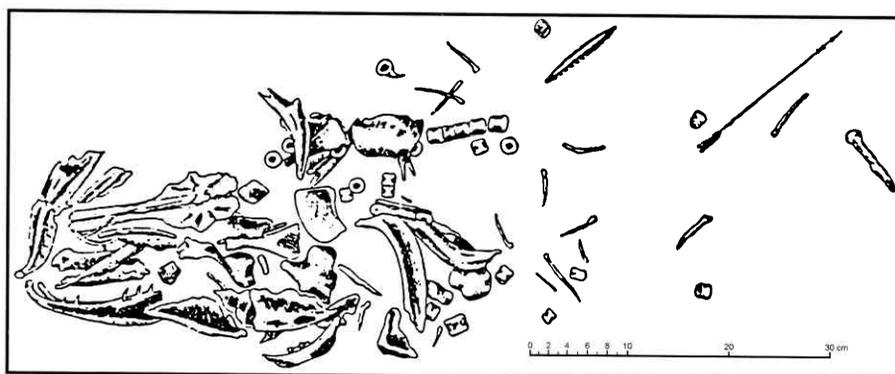


Fig. 3 — Skeleton of a pike with a barbed point in the region of the back from Kunda, Estonia. (After Indreko, 1948:fig. 15).

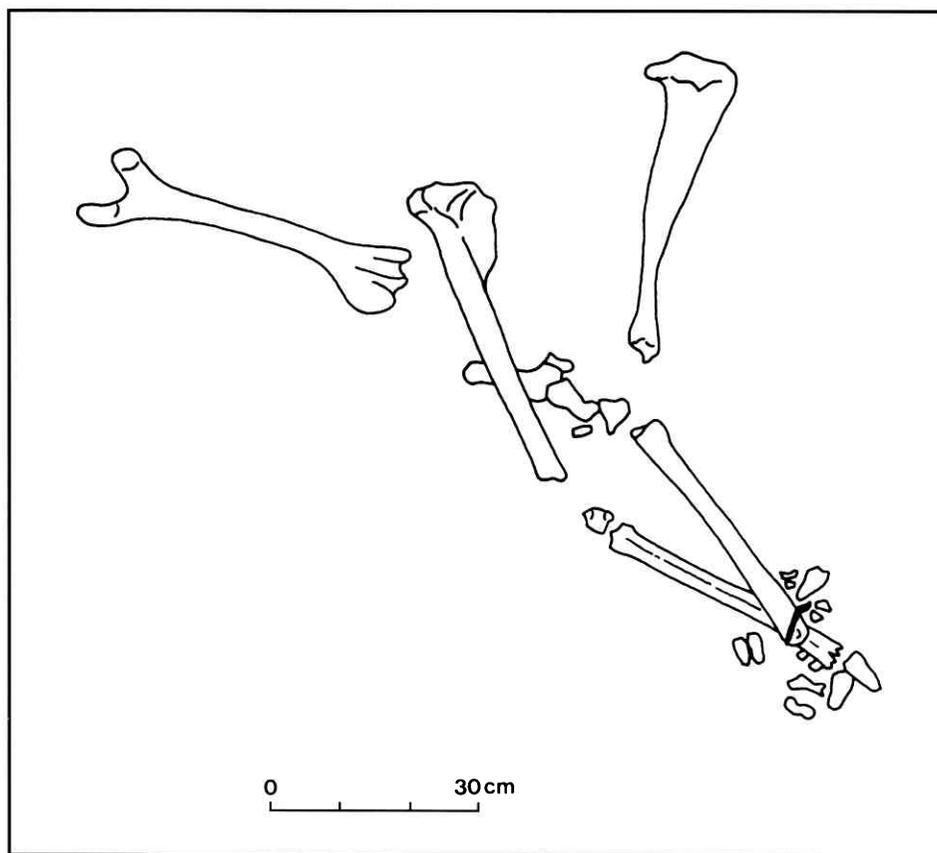


Fig. 4 — Bones of the left leg of an elk from High Furlong, Lancashire, Great Britain. In black the barbed point shot into the animal. (After Hallam *et al.*, 1973:fig. 2).

there is a direct association from the cemetery of Bøgebakken, where a point was found in a human body (Bøgebakken, Vedbaek, Denmark [Albrethsen & Petersen, 1976:11]) [fig. 5]. There are two examples from Denmark of an indirect association with an elk (Skottemarke, Denmark [Møhl, 1978]; Taaderup, Denmark [Gramsch, 1973:93]). The third type of association—the weathering traces—suggests the use of points in fishing. On specimens from the Danish Åmosen traces of weathering have been found that could be connected with fishing (Andersen, 1983:fig. 24) [fig. 6]. The associations suggest a wide range of possible uses. Fishing with spears, particularly for big fish, seems to have been limited almost exclusively to the Mesolithic. From the Neolithic hardly any examples of this method of fishing are known. Hunting with the aid of a leister prong, derived from ethnographical sources, can be substantiated only rarely in the Mesolithic. A single find from Siretorp in Sweden (Clark, 1936:123, pl. VI:1, 2) might indicate this. The points still affixed to the shaft, like those from Friesack (Gramsch,

1987a; 1987b) and Ulkestrup (Andersen *et al.*, 1982:fig. 68) [fig. 8] and the impressions from bindings on points (Verhart, 1988), all prove the use of a single point. More often, wooden fish spears as known from Aero (Jensen, 1982:47) [fig. 7], Siggeneben-Süd (Meurers-Balke, 1983) and Bergschenhoek (Louwe Kooijmans, 1987), will have been used. Small fish will have been caught mainly with traps and nets. These are known from Mesolithic sites in Denmark (Maglemosegård Vaenge [Jensen, 1982:47]; Tybrind Vig [Andersen: 1985]) and the Early Neolithic site at Bergschenhoek (Louwe Kooijmans, 1987) [fig. 9].

Only one direct association of an arrowhead with a prey animal is known. This is a Neolithic red deer from Trylleskoven, Denmark (Trylleskoven, Denmark [Andersen, 1979:98]). Using statistical analysis the occurrence of this type of implement could be demonstrated in Europoort (Verhart, 1988) [fig. 1]. This concerns small bone and antler points. Such points are rare in northwestern Europe. Examples are known from Svaerdborg (Petersen, 1971) and

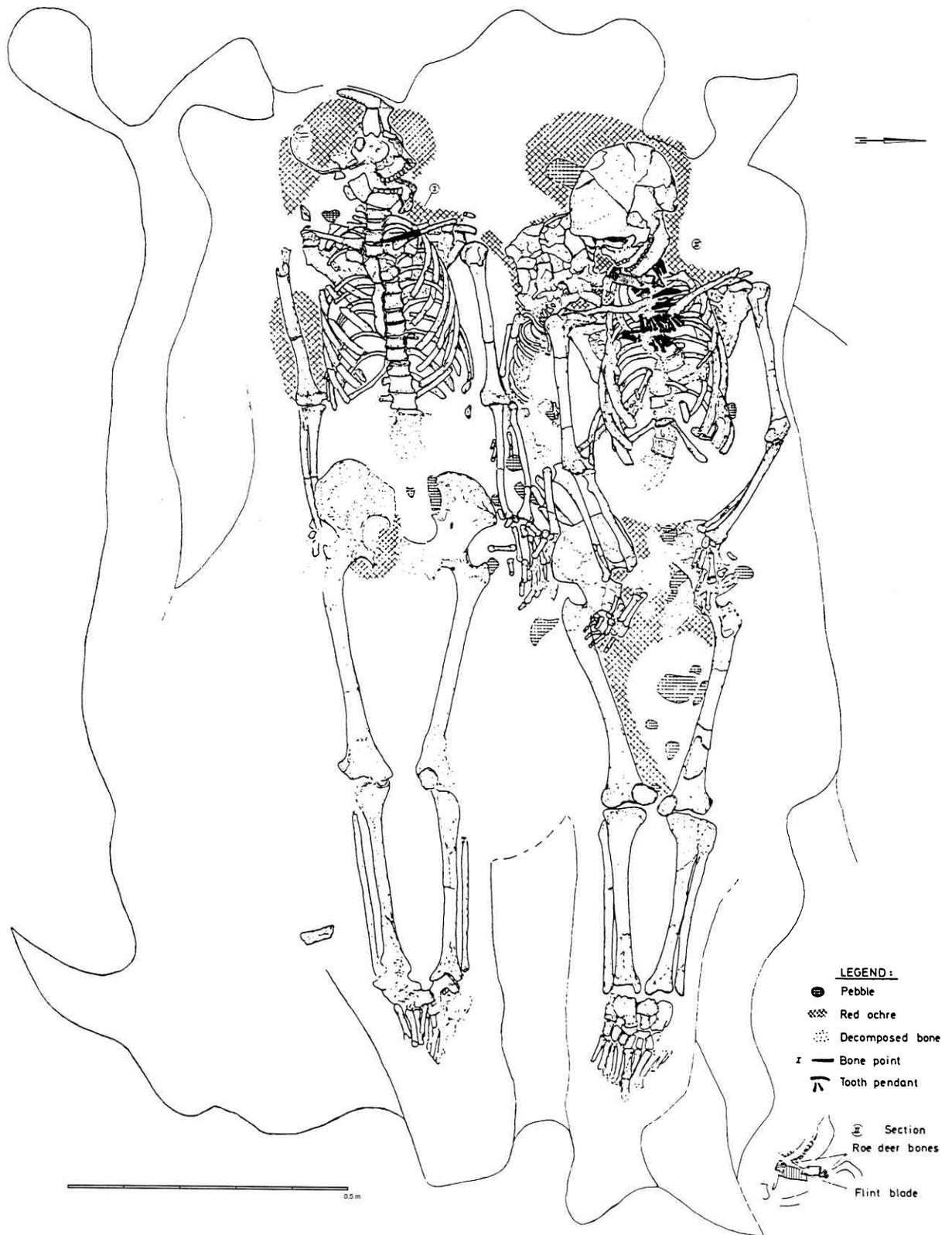


Fig. 5 — Bøgebakken, Denmark. Grave 19, triple grave with two adults and a child. In the neck of the left individual a bone point is visible. (After Albrethsen & Petersen, 1976:fig. 15).

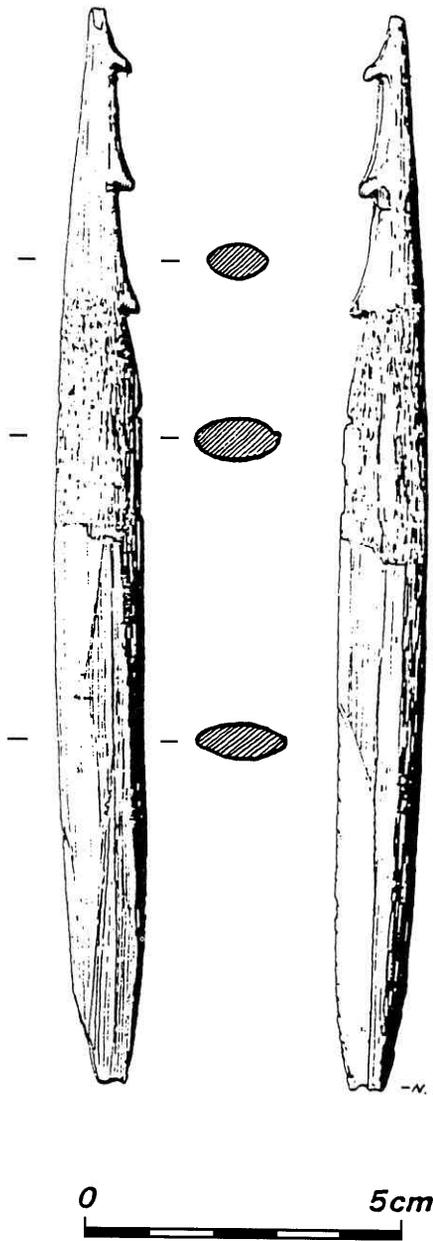


Fig. 6 — Bone point with traces of weathering indicating the use for fishing, Øgårde, Denmark. (After Andersen, 1983:fig. 31).

Friesack (Gramsch, 1990). It is hard to decide for which prey animals they were used. In the case of Europoort it has been suggested that they might have been used for fowling, as well as for fishing. Especially for fowling, the fixation potential of barbed points is of major importance.

4. Hunting strategy

The available data only allow some general remarks on which hunting strategy was used. Big terrestrial animals were hunted with spears

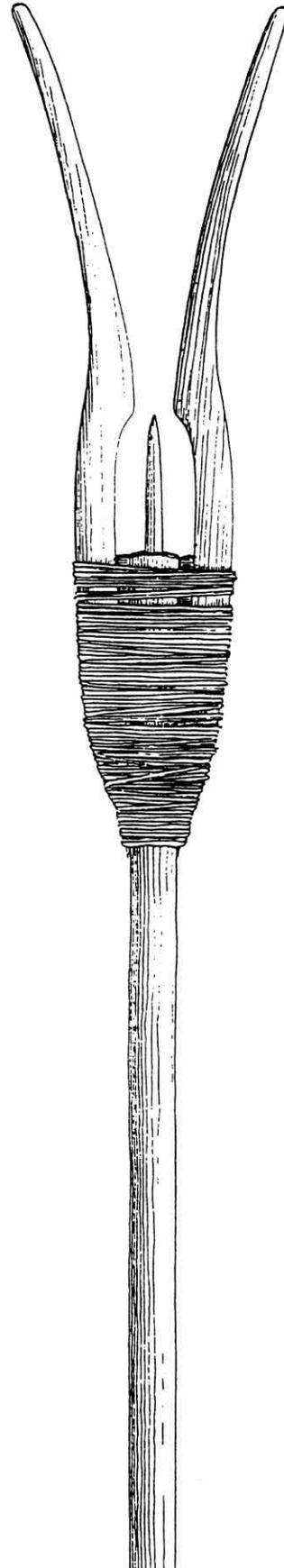


Fig. 7 — Reconstruction of a wooden fishspear. (After Andersen, 1981:63).

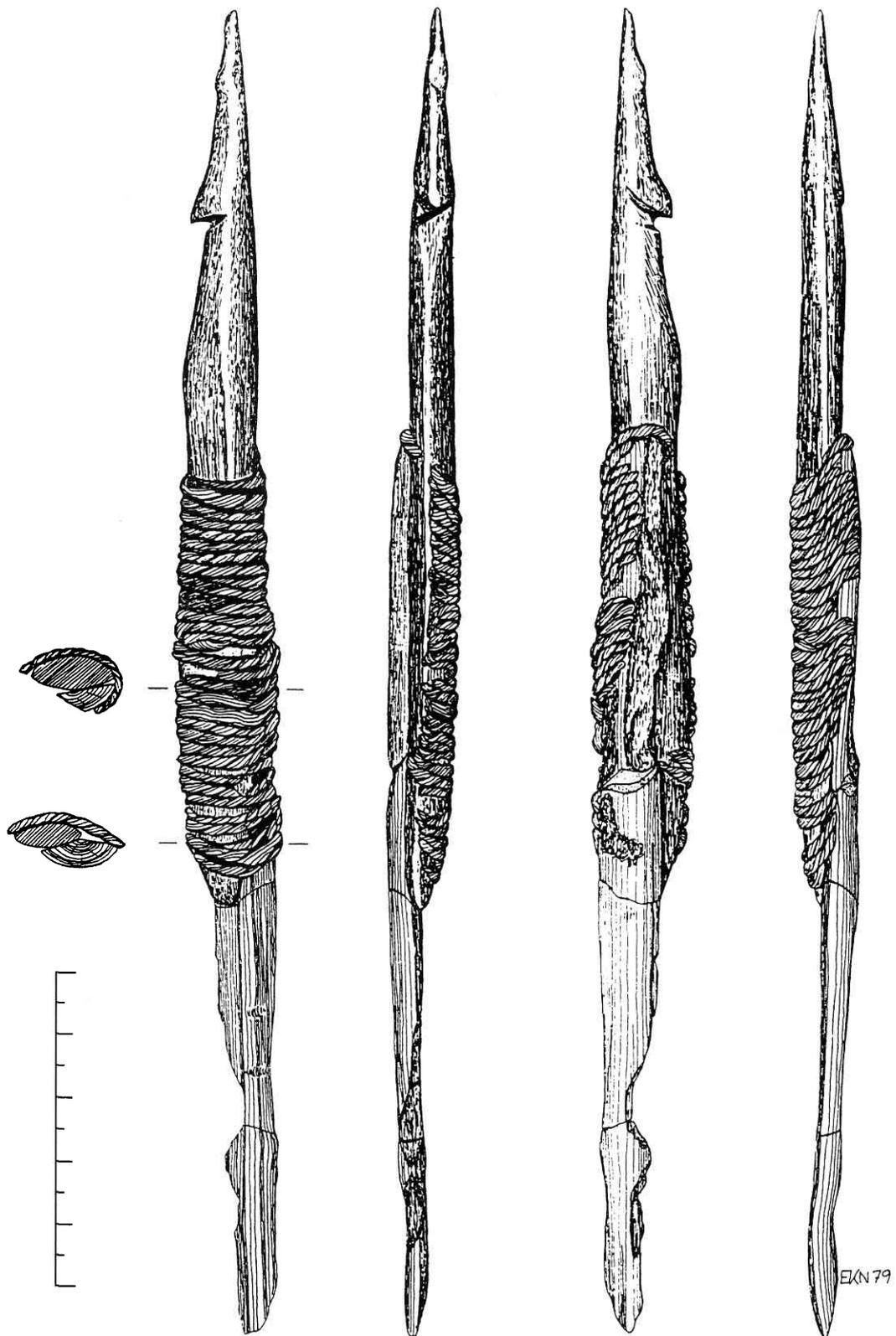


Fig. 8 — Bone point with preserved shaft fragment from Ulkestrup Lyng, Denmark. (After Andersen *et al.*, 1982: fig. 68).

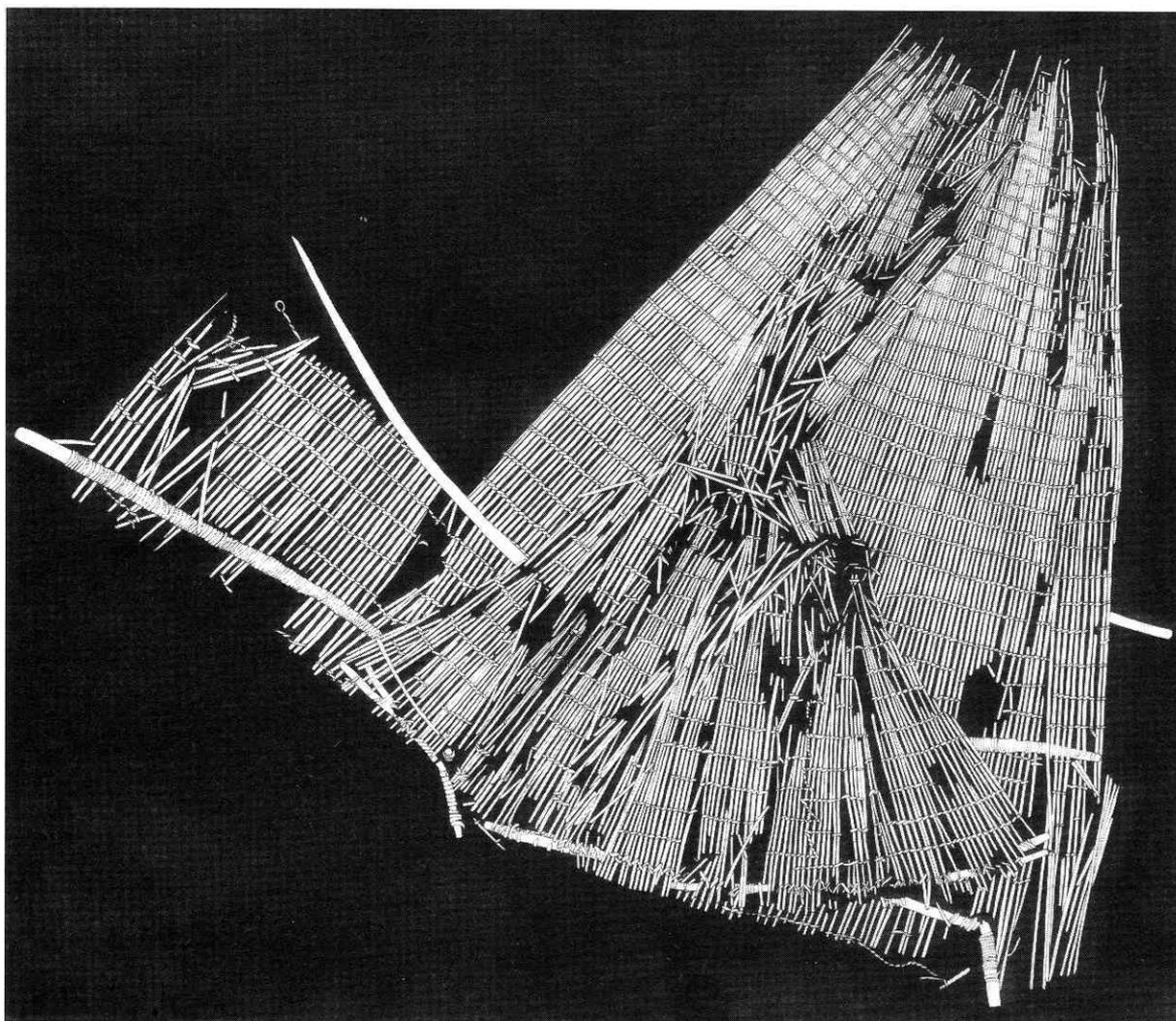


Fig. 9 — Early Neolithic fishtrap from Bergschenhoek, the Netherlands.

and with bow and arrow (Noe-Nygaard, 1974). The harpoon seems to have been of minor importance, even for the Late Paleolithic reindeer hunters. Although a restricted number of harpoons has been found in Late Paleolithic context, the detailed study of the hunting strategy for Ahrensburg and Meiendorf indicates that mainly bow and arrow were used (Grønnow, 1985; Bratlund, 1991). The French sites in the Paris Basin, like Pincevent, where large amounts of bone material have been discovered, lack harpoons, too. Here a large number of flint arrowheads were found. The animals may have been caught in communal drives, but solo operations may have been possible as well. Very suggestive in this respect are the finds of wounded aurochs in Danish bogs and Germany Vig, Denmark (Noe-Nygaard, 1973); Prejlerup, Denmark (Aaris-Sørensen, 1984); Schlaatz, Germany (Gramsch, 1987c). The many arrowheads

in the aurochs of Prejlerup suggest participation by several hunters (Aaris Sørensen, 1984). Small terrestrial animals and birds will usually have been caught with bow and arrow and snares. Big and small fish can be caught with a wide range of equipment, small fish mainly with nets and traps. Only for big fish we may presume the additional use of harpoons, fish spears and bow and arrow.

5. Conclusion

The data presented clearly demonstrate the need for circumspection when attempting a functional classification of bone and antler points. The range of use is extremely wide.

Furthermore, it is clear that many other types of implement, often made of very perishable material, like for example rope and wood, have been used as well for activities always supposed

to have been particular to points of bone and antler.

References

- ÅRIS-SØRENSEN K., 1984. Om en uroksetyr fra Prejlerup — og dens sammenstød med Maglemosekulturen. *Fra National Museets Arbejdsmark*: 165–173.
- ALBRETHSEN S. E. & PETERSEN E. Brinch., 1976. Excavation of a Mesolithic Cemetery at Vedbak, Denmark. *Acta Archaeologica*, **47**: 1–28.
- ANDERSEN K., 1983. *Stenalder bebyggelsen i den Vestsjællandske Åmosen*. Copenhagen.
- ANDERSEN K., JØRGENSEN S. & RICHTER J., 1982. Maglemose hytterne ved Ulkestrup Lyng. *Nordiske Fortidsminder*, Ser. B, 7.
- ANDERSEN S. H., 1981. *Danmarks historien, stenalderen*. Copenhagen.
- ANDERSEN S. H., 1985. Tybrind Vig. A Preliminary Report on a Submerged Ertebølle Settlement on the West Coast of Fyn. *Journal of Danish Archaeology*, **4**: 52–69.
- BRADLUND B., 1991. A study of hunting lesions containing flint fragments on reindeer bones at Stellmoor, North Germany. In: N. Barton, A. Y. Roberts & D. A. Roe (eds), *The Late Glacial in north-west Europe: human adaptation and environmental change at the end of the Pleistocene*. Oxford: 193–207.
- CEDERSCHIÖLD L., 1959. Om två salharpuner fran Halsinglands stenalder. *Fornvännen*, **54**: 36–40.
- CLARK J. G. D., 1936. *The Mesolithic Settlement of Northern Europe*. Cambridge.
- CLARK J. G. D., 1948. The development of fishing in prehistoric Europe. *Antiquarian Journal*, **28**: 45–85.
- CLARK J. G. D., 1975. *The Earlier Stone Age Settlement of Scandinavia*. Cambridge.
- ENGEL C., 1935. *Vorgeschichte der Altpreussische Stämme*, I. Königsberg.
- GRAMSCH B., 1973. *Das Mesolithikum im Flachland zwischen Elbe und Oder*. Berlin.
- GRAMSCH B., 1987a. Ausgrabungen auf dem mesolithischen Moorfundplatz bei Friesack, Bezirk Potsdam. *Veröffentlichungen des Museums für Ur- und Frühgeschichte Potsdam*, **21**: 75–100.
- GRAMSCH B., 1987b. Zwei mesolithische Knochenspitzen-Depots von Friesack, Kr. Nauen. *Ethnografisch-Archaeologische Zeitschrift*, **28**: 222–231.
- GRAMSCH B., 1987c. Betrachtungen zum Ur-Fund am Schlaatz bei, Potsdam. *Veröffentlichungen des Museums für Ur- und Frühgeschichte Potsdam*, **21**: 69–74.
- GRAMSCH B., 1990. Die frühmesolithischen Knochenspitzen von Friesack, Kr. Nauen, *Veröffentlichungen des Museums für Ur- und Frühgeschichte Potsdam*, **24**: 7–26.
- GRØNNOW B., 1985. Meiendorf and Stellmoor revisited. An Analysis of Late Palaeolithic Reindeer Exploitation. *Acta Archaeologica*, **56**: 131–166.
- GROSS H., 1938. Die ältesten Steinzeitfunde Altpreussens (Stand vom 1.4.1938). *Alt-Preussen III*, **3**: 83–85.
- HALLAM J. S., EDWARDS B. J. N., BARNES B. & STUART A. J., 1973. The Remains of a Late Glacial Elk Associated with Barbed Points from High Furlong, Near Blackpool, Lancashire. *Proceedings of the Prehistoric Society*, **39**: 100–128.
- HEMPRICH A., 1938. Neue Funde aus dem Sammelgebiet des Halberstadter Heimatmuseums. *Nachrichtenblatt für Deutsche Vorzeit*, **XIV**: 87–89.
- INDREKO R., 1948. *Die mittlere Steinzeit in Estland*, Kungl. Vitterhets historie och antikvitets akademien handlingar, **66**. Uppsala.
- JENSEN J., 1982. *The Prehistory of Denmark*. London.
- LIDÉN O., 1942. *De flintaeggade benspetsarnas nordiska Kulturfas*, Skrifter utgivna av Kungl. Humaniska Vetenskapssamfundet i Lund, **XXXIII**.
- LEPPÄÄHO J., 1936. Narpion ja Oulujoen kivikauden hyljeloydot. *Suomen Museo*, **43**: 1–9.
- LEROI-GOURHAN A. & BRÉZILLON M., 1966. L'habitation magdalénienne n° 1 de Pinchevent près de Montereau (Seine-et-Marne). *Gallia Préhistoire*, **9**: 263–385.
- LÖNNBERG E., 1908. Om några fynd i Litorinälarna i Norrköping 1907. *Arkiv. f. Zoologi*, **4** (22): 1–27.

- LOUWE KOOIJMANS L. P., 1987. Neolithic Settlement and Subsistence in the Wetlands of the Rhine/Meuse Delta of the Netherlands. *In*: J.M. Coles & A.J. Lawson (eds.), *European Wetlands in Prehistory*. Oxford: 227–251.
- MATHIASSEN M.J., 1935. *Om Mullerup Mose og Mullerup-Kulturen*. Fra Holbaek Amt, Historiske Årbøger.
- MEURERS-BALKE J., 1983. Siggeneben-Süd. Ein Fundplatz der frühen Trichterbecherkultur an der holsteinische Ostseeküste. *OffaBücher*, 50.
- MØHL U., 1978. Elsdyrsketterne fra Skotte-marke og Favrbø. Skikog brug ved bore-altidens jagter. *Årbøger*: 5–32.
- NOE-NYGAARD N., 1973. The Vig bull. New information on the final hunt. *Bulletin of the Geological Society of Denmark*, 22: 244–248.
- NOE-NYGAARD N., 1974. Mesolithic Hunting in Denmark Illustrated by Bone Injuries Caused by Human Weapons. *Journal of Archaeological Science*, 1: 217–248.
- PETERSEN E. Brinch., 1971. Svaerdborg II. A Maglemose hut from Svaerdborg bog, Zealand, Denmark. *Acta Archaeologica*, 62: 43–77.
- RAU C., 1884. *Prehistoric Fishing*.
- THOMPSON M. W., 1954. Azilian Harpoons. *Proceedings of the Prehistoric Society*, 2: 193–211.
- VERHART L. B. M., 1988. Mesolithic barbed points and other implements from Euro-poort, the Netherlands. *Oudheidkundige Mededelingen uit het Rijksmuseum van Oudheden te Leiden*, 68: 145–194.
- VERHART L. B. M., 1990. Stone Age Bone and Antler Points as Indicators for “Social Territories” in the European Mesolithic. *In*: P.M. Vermeersch & P. Van Peer (eds), *Contributions to the Mesolithic in Europe*. Leuven: 139–151.

Author's address:

L. B. M. VERHART

National Museum of Antiquities

Post Box III 4

NL-2301 EC Leiden (Netherlands)