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Mesolithic Bone Points: Hunting Weapons or Fishing Equipment

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Mesolithic sites with preservation of organic materials demonstrate that bone points including antler points had been usual components of the equipment of Mesolithic man. In the Northern Plain of Central Europe there had been three main types of bone points in the Earlier Mesolithic (Pre-boreal and Boreal times): (1) Simple points (fig. 1 : 1–3), (2) notched points (fig. 1 : 4–15), (3) points with few barbs in the terminal part made by deep oblique notches (fig. 1 : 16–20). In the Later Mesolithic Age (Atlantic times) simple points dominated, mostly of small size (fig. 1 : 21–27). The points mainly had been made of splinters produced from metapods of roe deer, of red deer and sometimes of elk, or of splinters cut from stag antler.

One of the Mesolithic sites in the Northern Plain is Friesack 4,60 km north-west of Berlin, excavated from 1977 to 1989 (Gramsch, 1987). Bone, antler, wood, bark and bast including artefacts of these materials are well preserved there. Between 7700 B.C. and 4700 B.C., the site was many times occupied by Mesolithic hunter-gatherer groups, as sediments, stratigraphy, pollen-analysis and radiocarbon-datings, structures and many artefacts have shown.

The following evaluations are mainly based on the analysis of the bone points found at Friesack. There had been excavated 391 bone-(inclusive of few antler-) points, among them 107 complete points and 284 fragments.

For the problem of the function of the bone points it is important that at Friesack fixing of the points to the shaft is shown by: (a) 3 complete points, which are fixed to the fragment of the wooden shaft by pitch (fig. 2 : 11); (b) 14 complete and 16 fragmented points with remains of the fixing pitch (fig. 2 : 3–10; fig. 3 : 5–6); (c) 5 points with remains of narrow stripes of bast for binding to the shaft without use of pitch (fig. 3 : 1–4), at one of them a fragment of the shaft is preserved.

Because of their length and weight the points seem to have been mounted partly to spears partly to arrows. Shaft-fragments of pine from Friesack are differentiated into two classes by thickness: (1) 5–7 mm in diameter (fig. 2 : 2); (2) 12–15 mm in diameter (fig. 2 : 1). The class (1) is representing arrows, as shown by one object with string-notch, at one end, whereas class (2) should document spears. If class (2) would be interpreted as arrow-shafts, there must have existed a very strong bow-type, for example made of yew-tree, but such is evident not earlier than in Neolithic times.

Two of the points attached to the wooden shaft by pitch are clearly mounted to shafts of the "spear-class" (fig. 2 : 11). The points are relatively small—8,4 and 10 cm. Points of this size order are weighing 4,5–6 g (fig. 4). But the fixing-pitch is doubling the weight of the head of the projectile. For example, the point with a length of 10 cm (fig. 2 : 11), together with the pitch and the fragment of the wooden shaft, is weighing 11 g. Such a weight is somewhat too heavy for an arrow-head, as Rausing (1967 : 164) has stressed.

If bone points would have been arrow-heads they should not weigh more than 4 g. Among the 107 complete points from Friesack, 43 points have weights between 1,3 g and 4 g, and these points have lengths between 4,9 cm and 8,4 cm. They include 30 simple points (fig. 1 : 21–27; 2 : 7–9), 12 notched points (fig. 1 : 10, 1 : 12–15), but only one barbed point (fig. 3 : 5).

In the Earlier Mesolithic (Pre-Boreal, Boreal) 18 out of 74 complete points had been arrow-heads, in the Later Mesolithic (Atlantic times) 25 out of 33. Therefore, in the Later Mesolithic bone points more frequently were mounted to arrows. If we are looking for the types: in the Earlier Mesolithic the weight-class of arrow-heads includes 5 simple points, 12 notched points, and one barbed point, whereas in the

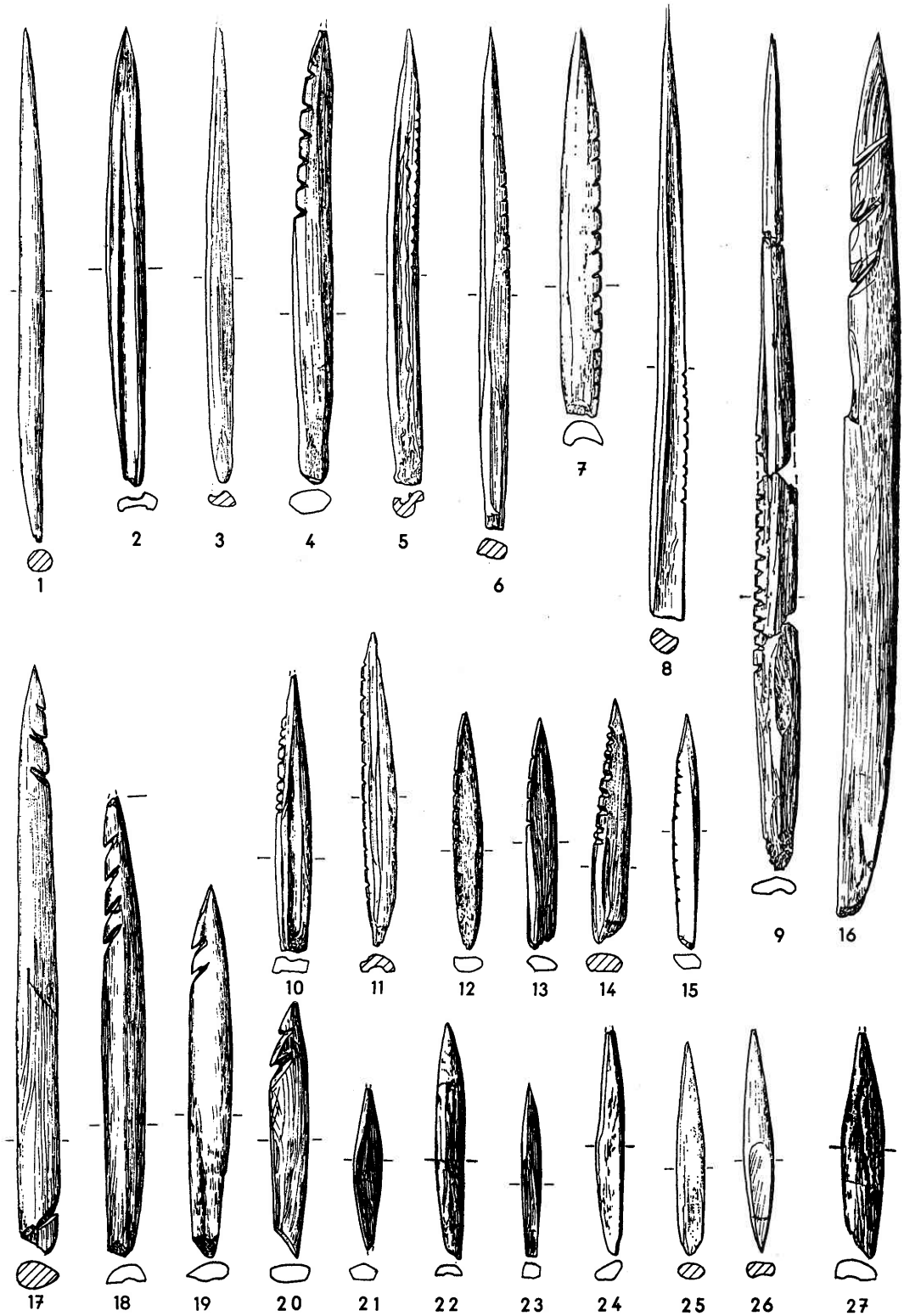

Fig. 1 — Bone points, Friesack, site 4.

Later Mesolithic all 25 arrow-heads are simple points.

All other points having more than 4 g—altogether 64 objects including simple points, notched points, and barbed points—in all probability were spear-heads.

In general, spears and arrows equipped with bone points without any doubt had been

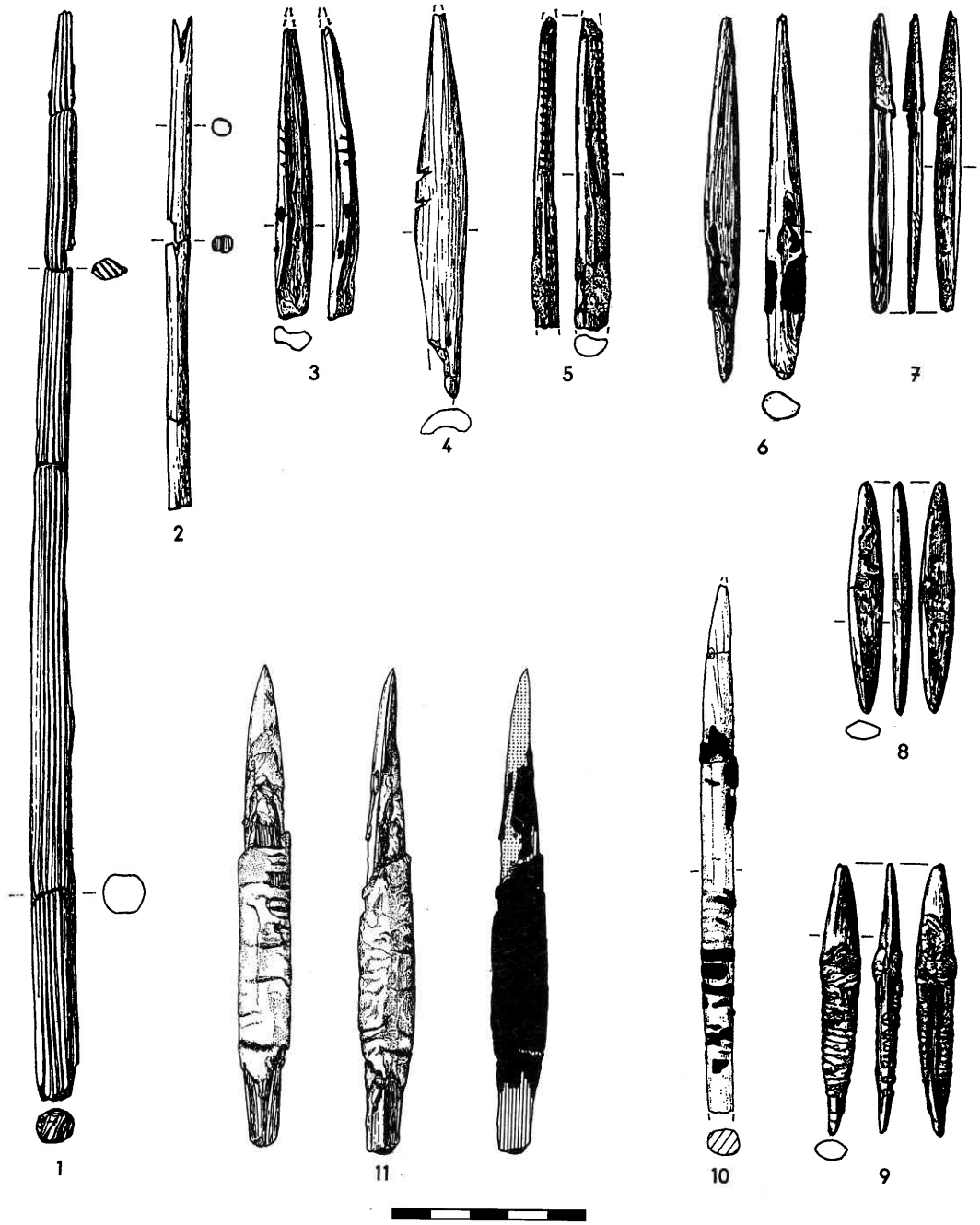

Fig. 2 — 1 Fragment of wooden spearshaft; **2** Fragment of wooden arrow-shaft with dovetailed tip for a foreshaft (?); **3–10**: Bone points with remains of pitch; **11**: Simple bone point with wooden shaft and pitch, all Friesack, site 4.

used in hunting and in fishing. But, which objects had been used in hunting game, and which in fishing? Indications for answering this question are given by the points which are still attached to the wooden shaft-fragment by pitch as well as by the points with remains of fixing-pitch (fig. 2:2–11). The pitch remains are indicating that these points were fixed to the shafts for two thirds up to three quarters of their length, so that only a short terminal part of a point projected beyond the shaft. Moreover, an oblong thickening few centimetres below the tip resulted from the smearing over with the pitch. But, if only a short part of a bone point was not covered by pitch, such point hardly seems to have been useful for spear-fishing. The pitch-mounted points—the larger ones as spear-heads, the smaller ones as arrow-heads—therefore most probably had been used in hunting game. Typologically, they include simple points, notched points and barbed points.

Fig. 3 — 1, 3, 4: Barbed antler points with bast binding; **2**: Barbed bone point with remains of bast binding and wooden shaft; **5–6**: Barbed bone points with pitch; **7**: Barbed bone point with binding and part of the wooden shaft; **1–7**: Friesack, site 4; **8**: Ulkestrup Lyng (after Andersen *et al.*, 1982: fig. 68).

According to the evidence, only points with few barbs in the terminal part probably may have been heads of fishspears resp. leisters. Five points of this type from Friesack with narrow stripes of bast for binding to the shaft (fig. 3 : 1–4) and 2 points with stripes of corrosion as "imprints" of the binding (fig. 3 : 7) are showing that only the basal half of these points was bound to the shaft while the upper including the barbed region projected beyond the shaft. This

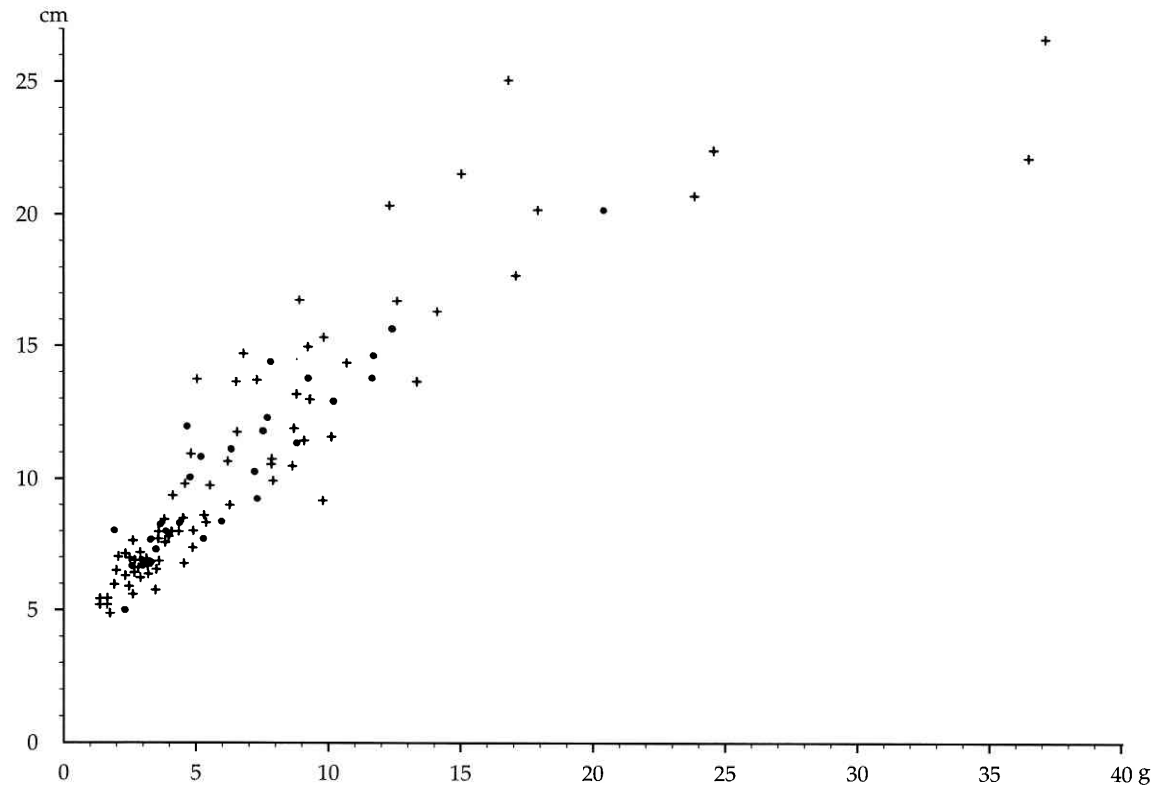

Fig. 4 — Length-weight-diagram of 107 complete bone/antler points from Friesack, site 4. + : complete points; • : slightly damaged points.

manner of mounting is also demonstrated by a barbed point from Ulkestrup, Denmark (fig. 3 : 8; Andersen *et al.*, 1982: fig. 68).

At Friesack, large-sized barbed points have been excavated only from the late Pre-Boreal and from the early Boreal layers. They amount to no more than 10 % of all bone and antler points from the Friesack site. Possibly, this ratio is not by accident in accordance with the very low quantity of fish-remains in the site, in contrast to the very high numbers of mammalian bones of hunted game. The use of bone points in hunting is shown by a tip-fragment of a bone point penetrated into a vertebra of red deer, excavated at another site of the Earlier Mesolithic near Friesack, only 500 m distant from the site Friesack 4.

About 70 % of all points from the Friesack site are fragmented. This shows that the points had been strongly "stressed" in their use as spear- or arrow-heads. Such strain would be only explicable if the points would have been shot to mammalian bodies. Very often the points have not got over that load test. Basal fragments and fragments lacking the terminal part amount to about 70 % of all fragments. This provokes the supposition that after use-break the remaining parts of the bone points were dismounted at the camp-site where they had been excavated in the subaquatic refuse-area.

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