Archaeology

Return of the Euro-boomerang

Paul G. Bahn

PAWEL Valde-Nowak and colleagues on page 436 of this issue[1] report the discovery of a curved piece of mammoth tusk in a cave in southern Poland. They claim that the tusk is about 23,000 years old, and that it is the oldest boomerang in the world.

In the minds of children and adults alike, the boomerang is considered as uniquely Australian as the kangaroo or the vegemite sandwich. It has certainly been part of the Australian scene for a long time, as shown by the three complete wooden specimens from Wyrie Swamp, South Australia, which are 9,000 or 10,000 years old[2].

But boomerangs and 'kylies' (killing-sticks) have been found on five continents: some cave paintings in North

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Pitt Rivers Museum, Oxford

Ancient Egyptian throwing sticks or boomerangs (from a, *XII Dynasty Thebes;* b, *XII Dynasty or later). Scale bars, 5 cm.*

Africa, for example, dating to perhaps 7,000 BC, are thought to depict an object of this kind, and boomerangs with gold caps at either end were found in Tutankhamun's tomb, dating to the mid-second millennium BC. Some form of throwing stick is also known to have been used by groups as far-flung as Eskimos, Hopi, Polynesians and Indians. In most regions, the invention of the bow and arrow eventually made the technique obsolete[3].

In Europe, there have been finds both from the Iron Age (an oak specimen of 300 BC, preserved in a bog in Holland[4]) and from the Mesolithic (a find in Jutland from a settlement of about 5,000 BC). A piece of mammoth bone from an Austrian site was claimed to be a fragment of an Upper Palaeolithic boomerang, but its date and its identification are far from certain.

Valde-Nowak and colleagues think their new find, from a cave in the Oblazowa Rock in southern Poland, is a complete boomerang. It was well stratified with animal remains and with stone and bone tools attributed to the Pavlovian culture.

Not all curved objects, however, are necessarily boomerangs. The old joke — what do you call a boomerang that doesn't come back? A stick — is of relevance to this discussion. Killing sticks are far more numerous than boomerangs in both prehistoric and historic times, and probably predate the boomerang. The chances are high that the remarkable aerodynamic properties of sticks which happened to be curved were noticed and exploited independently on many occasions.

The only way to be sure that a curved object is a boomerang is to try it out, but few scholars would contemplate hurling prehistoric specimens into space to see if they come back! The best method is therefore to experiment with a cast or a replica, as has been done successfully with a plywood copy of the Dutch specimen, and with a replica of one from the eleventh Dynasty of Egypt[4]. But there is always the problem that many such prehistoric objects have been warped or damaged during the time they were buried.

No such experiment has yet been done for the Polish find, and meanwhile Valde-Nowak *et al.* are basing their claim on its shape, its curvature and the flattening at both ends. It has a span of 70 cm, is up to 6 cm wide, and up to 1.5 cm thick (see their Fig. 1 on page 437). One side preserves the external, convex tusk-surface, whereas the other has been polished almost flat. On the evidence of morphology, therefore, the object certainly makes a plausible boomerang, and the find is of potentially great importance for our knowledge of palaeolithic techniques of exploiting game, as killing sticks, for example, can be accurate up to about 200 m, much farther than a man can throw a stone or spear[3]. □

1. Valde-Nowak, P., Nadachowski, A. & Wolsan, M. *Nature* **329**, 436–438 (1987).
2. Luebbers, R.A. *Nature* **253**, 39 (1975).
3. Bell, J. *New Scient.* **99**, 839 (1983).
4. Hess, F. *Antiquity* **47**, 303 (1973).

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Palaeoecology

Chalk grasslands in the ice age

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FOR 50 years, studies on the history of the British landscape have shown that there are no habitats that have escaped the influence of human activity, either directly or by the grazing of domestic animals. Indeed, many of the most wild and remote habitats that might have been considered relatively insulated have turned out to be the direct product of human management, including moorland, heathland, blanket mires, many valley mires and montane grassland. Research on the history of the chalk and limestone grasslands of Britain has been hampered by a paucity of evidence, but it is generally assumed that these areas were wooded and that former woodland was cleared by Neolithic or subsequent cultures over the past 5,000 years or so. On page 434 of this issue[1], Bush and Flenley describe the results of pollen analysis of sediments in the Yorkshire wolds, where the chalk exposures of England reach their northernmost limit. The authors show that grassland in this region persisted through the early part of this Flandrian interglacial, 10,000–8,000 years ago.

Chalklands present several problems for the palaeoecologist. The porosity of the substrate means that lakes and peat deposits are scarce or absent, so there are no stratified sediments for fossil analysis. In Britain, the chalk lies in the lowlands of the south and east where precipitation is generally low, so waterlogging and peat formation become even less likely. Spring lines close to the chalk may bear wet woodland, particularly of alder, but when fed by calcareous water and subject to periodic drying and aeration, the preservation of microfossils like pollen grains is generally poor. Similarly, soils contain little pollen, but the lime-rich shells of gastropods do survive and provide valuable information about immediately local habitats. Much of what is known about the history of the English chalk is based on the evidence from fossil snails, both in late-glacial times[2] and during the periods of prehistoric forest clearance[3,4].

Pollen evidence concerning the history of vegetation on the chalk is not wholly lacking, however; information is currently available from the Isle of Wight off the south coast of England and from Sussex in the south of England. Scaife's work on the Isle of Wight[5] shows that the open grasslands of the late-glacial were invaded by juniper and birch woodland soon after 10,000 years before present. The records in Sussex[6,7] do not go back very far and are difficult to interpret because of the abundance of *Alnus* (alder) pollen in the stratigraphy. Because alder is likely to have been a local tree of the valleys, it confuses the picture of vegetation on the upper slopes of the downs.

Bush and Flenley have now discovered a site in Yorkshire where the sediments date back to the end of the last glaciation