



SPEAR THROWER

When in the second half of the 19th century the question of the origin of man was discussed more and more intensively the first systematic excavations for the bequests of our prehistoric forbears began. Preferably caves were examined, since they usually preserve finds very well being natural sediment traps with steady climatic conditions. In some French caves several items made of antler supplied with hooks were discovered, but their function could not be determined. Only in 1864 did an Irish scientist succeed in interpreting correctly the purpose of these devices - a comparison with Australian spear-throwers gave him the right idea. Although conclusions by drawing analogies with the field of ethnology bear a great danger of misinterpretation, in this case an excursion into ethnic studies put him on the right track. So obviously the Ice Age people already had a hunting device as sophisticated as this, and bow and arrow were not the first composite distance weapon in history. Since then several experts on prehistory have worked on the spear-thrower (or *atlatl*) and its technology, a comprehensive survey being provided by U. Stodiek in his thesis published in 1993.



The antler hooks found on excavations are the only evidence for the presence of spear-throwers. There might have been precursors made of wood, a material, which however is not well preserved in soil. The oldest hitherto known hook end of a spear-thrower was found in the French cave “Combe Saunière” and a radiocarbon analysis dated it at $19\,630 \pm 320$ years B.P. (before present). The height of usage of the spear-thrower was between 14 500 and 12 500 B.P., and the last specimens date from around 11 500 B.P. After that bow and arrow emerged because the then rapid end of the Ice Age brought back forests that provided the Stone Age hunters with wood suitable for building bows. The European finds mainly come from France, but evidence for the use of spear-throwers was also found in Switzerland and Germany.



A spear-thrower consists of an antler hook and a shaft probably made of wood. Please note that our replicas are ideal reconstructions, the original design of an upper Palaeolithic *atlatl* will probably never be established, because wood is preserved in the soil only in exceptional circumstances, and an entire spear-thrower has not been found yet. The

ethnographic evidences for such hunting devices in populations that have been using them until not long ago like the Inuit (Eskimos) or the Australian aborigines, are very differently designed, depending on the environment and the purpose they were used for. Australian *woomer*as are often over one metre long and the spears that go with them measure more than 4 metres. This equipment would be quite useless for an inhabitant of the Arctic hunting sea mammals from a small skin canoe. Today's replicas have lengths of about 70 cm, the spears ranging from 1,80 m up to 2,50 m.



Often the original hook ends are very plain and functional, but some are beautifully carved, mainly in the shape of horses, birds and caprides. With very few exceptions reindeer antler was used as raw material - a highly suitable one because of its toughness, elasticity and variety of shapes, a material, which is easy to work and was available in unlimited abundance in the Upper Palaeolithic.

For the design of the functional end (the part where the spear is put on the thrower) there are at least 3 possibilities: hook throwers, hook-hollow throwers and hollow throwers, only the first two being represented among the finds from the Palaeolithic. There are also different kinds of design for the base (the joint between the hook end and the shaft): either the base was perforated once or several times, pushed into a groove at the end of the shaft and tied to it with sinew, plant fibres or raw hide, or the base was bevelled on one or both sides and glued to the shaft with a glue made of wax and resin, possibly supported by pins of wood or antler and the joint being additionally strengthened by sinew or fibres wound around it.



The throwing technique is not particularly easy to learn, because it is not possible to aim directly at the target. Position, inclination of the spear, throwing angle and throwing speed determine the flight of the projectile, and these movements have to be practiced until they are performed „automatically“. It is a matter of years until you can get a real sense of achievement.

© archaeo-technik 2005

