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For oral presentation

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Use-wear traces on Mesolithic composite bone arrowheads from the Volga-Oka interfluve, Russia

Excavations of multilayer peat bog sites conducted by the author during 1989-2002 in the Volga-Oka interfluve in the center of European Russia yielded a number of slotted bone arrowheads dated from the very beginning of the Mesolithic to the Early Neolithic. Some of them preserved flint inserts in their slots, fixed with the help of a dark glue. Traceological analysis of these artefacts conducted by the author revealed various traces of their manufacture and use. The latter include blunting and rounding of the tip of the bone point, accompanied by polishing and linear traces, when an arrowhead hit some soft material. The shape and orientation of linear traces make possible to see if the arrow was rotating when hitting the target or not. Damage scars, severe smashing and splitting of the point indicate hitting hard material. Specific use-wear traces on points of arrowheads similar to ones observed on digging tools indicate hitting the ground, probably when the arrow missed the hunted mammal.

Use-wear traces observed on flint inserts preserved in situ in slots of arrowheads include edge damage in the shape of microchipping or breaking off segments of the edge, sometimes accompanied by a thin streak of polishing along the edge and scarce or single linear traces. The latter consist of thin strips of interrupted bright polishing sometimes accompanied by scarce thin scratches running subparallel to the insert edge or at an acute angle to it. Abrasion of the edge observed on inserts of some arrowheads could be a result of attrition inside a quiver or of a secondary use of an arrowhead.

Use-wear traces are rather poorly developed on most studied arrowheads indicating a short lifetime of an arrowhead. However, some bone slotted arrowheads yielded very well pronounced use-wear traces pointing at a long use of such arrowheads. Some of the latter show traces of repair after breakage, mostly reshaping of the point. Their owners treated these arrowheads with special care.

Inserts were fixed in slots with the help of glue made of birch bark tar with an admixture of charcoal dust. First, the tar was put in the slot, after it, inserts already arranged in a line were placed into the slot and extra glue was removed. Similar glue on bevels of bone arrowheads indicate hafting in a split shaft or into a conical nest drilled at the end of an arrow shaft.

Key words: Mesolithic, Russia, composite bone arrowheads, use-wear analysis