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**Organic Material Associated with the Bronze Dagger from Snail
Barrow, Wiltshire**

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Summary

Identification of the organic additions to the bronze dagger that have been preserved in the copper corrosion. Includes illustrations of the dagger and electron micrographs of the structure of the wooden mouth-piece from the sheath.

Keywords

Bronze Age

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This copper alloy dagger comes from the burial G4, at Collingbourne Ducis, and was excavated by Colt Hoare in the 19th century. It is recorded as coming from the primary cremation, apparently in a tree trunk lined coffin (Annable & Simpson, 1964), and currently forms part of the collections at Devizes Museum. Traces of organic material remain within the copper corrosion, and are recorded in detail below. The dagger has been analysed and found to have a composition of 86.6% copper, 13.2% tin with trace elements.

The pin associated with this dagger, was recorded by Colt Hoare as being found in a wooden sheath lined with cloth. No traces of organic material remain to confirm this observation, as the pin has been stripped to the metal surface to reveal the decoration at some earlier date.

Organic additions

The hilt of this dagger was made from horn, and has an omega-shaped hilt-line clearly visible in the illustration from Annable and Simpson (fig.1). The mineral preserved remains of horn on the dagger are insufficient to confirm whether the hilt was made from a single piece of horn or two plates held together by the rivets at the top of the blade. These rivets though do indicate the thickness of the hilt at this point as being about 12.5mm (fig.2), which is the normal size. In the photograph the impression of a textile is clearly visible in the corrosion on the right-hand rivet, but was not noticeable on recent examination.

In addition to traces of the hilt, are some of the remains of the organic sheath preserved on the blade. The most noticeable being a wooden strip that corresponds to the sheath mouth, which was made from *Fraxinus* sp. (ash), and has a radial surface with the grain aligned across the width of the blade, as indicated in the original publication drawing. Using the scanning electron microscope (SEM) the condition of the copper preserved wood can be seen (figs.3 and 4), where almost all of the structure has been replaced by copper salts, and the wood structure itself has largely dissolved. Both sections illustrate just over 1 year's growth, and it is possible to make out the large spring vessels and compare them with the typical twinned vessels at the end of the growing season that are associated with ash. The original shape of this sheath mouth could easily have been fashioned using a knife or flint blade, working with the grain to pare off slivers of wood.

There are no recognisable remains on the blade to suggest what the main part of the sheath was made from, but it is assumed to have been of leather like other examples (see below).



Figure 1. Organic material preserved on the copper alloy dagger. (Taken from Annable & Simpson, 1964)

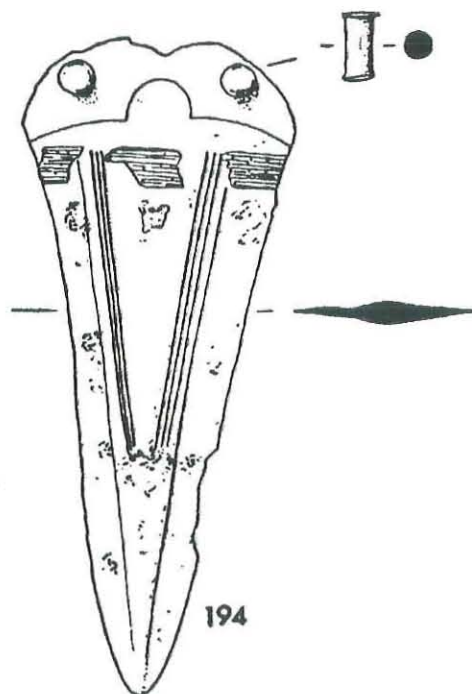


Figure 2. Drawing of copper alloy dagger. (Taken from Annable & Simpson, 1964, p.101)

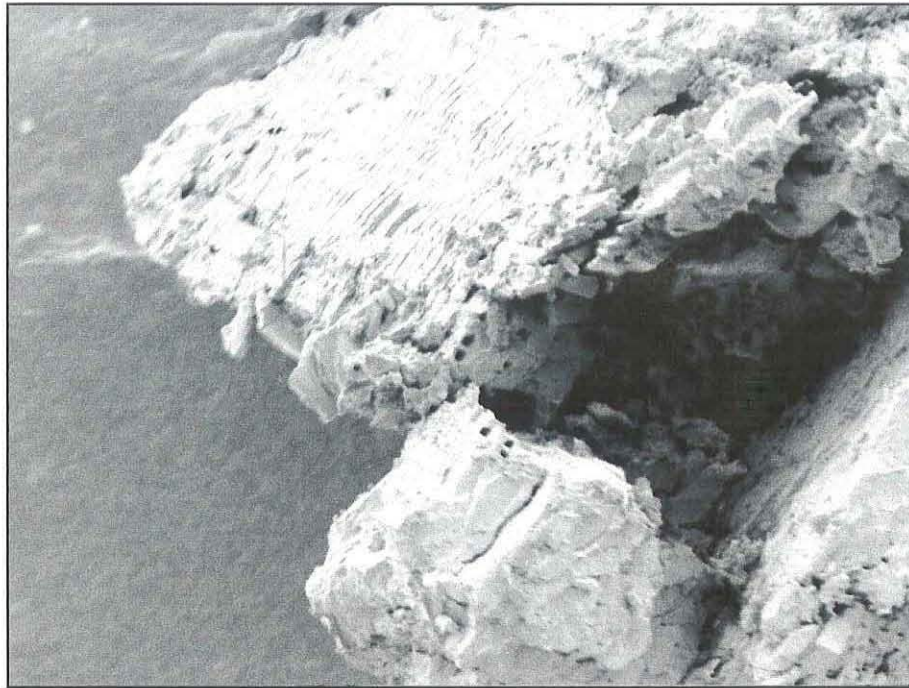


Figure 3. Cross-section of the wood from the sheath mouth, covering one years growth. Mag. around 180x.



Figure 4. Tangential section of wood from the mouth, note large vessels in the earlywood and ray cells replaced by copper salts, the wood structure has been lost. Mag. around 250x.

Comparison with other daggers

Most of the hilts with omega-shaped hilt-lines that have been identified, appear to be made from one piece of horn or wood, the latter are often ornately decorated with precious metal rivets. The dagger from Lockington, Leicestershire, has a horn hilt with omega-shaped hilt-line also, attached with four rivets and with a much larger blade (Hughes, 2000). Although not described as such in the catalogue, the dagger from G4 Winterbourne Stoke (Annable and Simpson, cat 220, p. 48, 102) appears to have a horn hilt also. The dagger from Wilsford G.56 (cat 159, p 44, 98,) has a horn hilt, but with three rivets attaching the hilt to the blade and with a wooden mouth-piece. In the case of the dagger from Wilsford G.5, Bush Barrow (cat 170, p. 45,99) the horn hilt was attached to the blade with six rivets. All four daggers in the Devizes collections have been published with enlarged photographs of their hilts and the top of the blades (Annable & Simpson, 1964).

The dagger from Hove, Sussex, has a horn handle with an Ω -shaped hilt line attached to the blade with two copper alloy rivets. Also appears to have wood across the top of the blade, very like the sheath mouth-piece on the Snail barrow dagger (Clarke *et al*, 1985, p.277 cat 97.3)

Audrey Henshall's corpus of dagger graves (1968) from Scotland includes seven daggers with omega-shaped hilt-lines. Four of these have been identified as being made wholly or in part of horn, and the description of a fifth implies that was made of the same material. Where present, the rivets indicate that the hilts are between 9-13mm thick at the top the blades.

Another dagger from Bargerosterveld, Drenthe, Netherlands has a single piece horn hilt attached with 4 bronze rivets and decorated with grooves and tin nails. (Clarke *et al*, 1985, cat 170).

Where the evidence remains, the construction of the sheaths and scabbards are even more variable than the hilts. The dagger from Wilsford G.56 which still has the remains of a wooden mouth-piece, the rest of the sheath was recorded by Colt Hoare as being lined with textile. In the case of the dagger from Wilsford G.5, Bush Barrow (Annable & Simpson, 1964, cat 170, p.45, 99) an animal pelt is clearly visible on the blade. The dagger from Lockington had a sheath made of wood lined with an animal pelt, and with a resin on the outside of the wood (Hughes, 2000). From Barrow Hills, Oxfordshire, a piece of decorated resin or very degraded leather was found with knife/dagger M8 and it is thought to be the remains of a decorated sheath (Barclay & Halpin, 1999, p.145).

In the Scottish examples, Henshall (1968) details both wood and animal skin sheaths. The dagger from Gilchorn, Angus (p.191,178) has a wooden sheath that extends into the omega-shaped void in the hilt-line. The wooden mouth-piece of the Snail Barrow example does not interlock in this way. Another dagger with traces of a wooden sheath comes from Gask Hill, Collesie, Fife (p.186,185). Leather sheaths on the other hand seem to be more common, but still of complex construction and often decorated. The dagger from Ashgrove, Fife (p.184, 182) had a sheath made from animal skin with lines of sewing that created ribs. In the case of the dagger from Kirkaldy, Fife (p.

186, 179) the sheath was made from two layers of animal skin stitched together with gut, and had a sheath mount made from horn. The Auchterhouse dagger (p.180, 188) has the remains of a black substance on the blade, thought to be degraded animal skin.

Acknowledgement

I would like to thank Dr Paul Robinson, of Devizes Museum, for allowing me to sample the sheath mouthpiece for identification.

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