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A jade axe from the Somerset Levels

PLATE XXIV

This beautiful jadeite axe is published by John Coles, Department of Archaeology, University of Cambridge, Bryony Orme, Department of History, University of Exeter, and A. C. Bishop and A. R. Woolley, both of the Department of Mineralogy, British Museum (Natural History).

The peat deposits of the Somerset Levels have yielded many prehistoric finds, including objects reported in *Antiquity* (Coles, 1968; Coles and Hibbert, 1971). Recent archaeological excavations in the area have been concentrated upon a neolithic track of the late fourth millennium BC, the Sweet track. This was built of numerous worked wooden pieces to form a footpath of single plank width, raised above the marsh and connecting the Polden Hills and the island of Westhay in the middle of the Levels. Quantities of neolithic debris have been recovered from beside the track, discarded during the building and use of the footpath, or flooded in, including pottery, wooden artifacts and flints. These neolithic objects and the results of the first two seasons' work on the Sweet track have recently been published (Coles, Hibbert and Orme, 1973).

In July 1973, during the excavation of a further 100 metres of the track, the end of a polished stone axe was discovered protruding from beneath one of the many stray boards lying beside the track (PL XXIV*a*). When the board was lifted, a complete and perfect pale green axe was revealed (PL. XXIV*b* and FIG. 1). It has subsequently been identified in the British Museum (Natural History) as jadeite. It is undamaged, its context is known and well-dated, and it is reliably associated with a wealth of neolithic material. The axe, which is beautiful by any standards, is an important addition to the slowly increasing inventory of neolithic material culture, and it may throw light upon the place of jadeite axes in neolithic society.

The axe measures 203 mm. by 64 mm. by 22 mm., and its weight is 403·56 g.; its specific gravity of 3·35 is commensurate with jadeite. The implement is smooth and highly polished over the whole of its surface, and has an unblemished cutting edge. It is almost perfectly symmetrical and would appear to be unused. The axe is a grey-blue to pale green colour, best described as glaucous, or greenish glaucous (Ridgway, 1912). It has a rough, but distinctive, foliation and a light-coloured band runs obliquely across one face of the axe. At the butt end the axe is a beautiful translucent pale green colour.

There are two principal mineralogical constituents: a pale green hard mineral which grades into a softer white variety giving a marbled appearance to much of the surface. X-ray powder photographs of both the green and white material gave a jadeite pattern. The second mineral occurs as isolated grains amongst the jadeite. The grains are yellow-brown and some have weathered out leaving pits. An X-ray powder photograph of this material gave a rutile pattern. Rutile is the commonest of the polymorphs of titanium dioxide (TiO_2).

A petrographic examination of the axe has

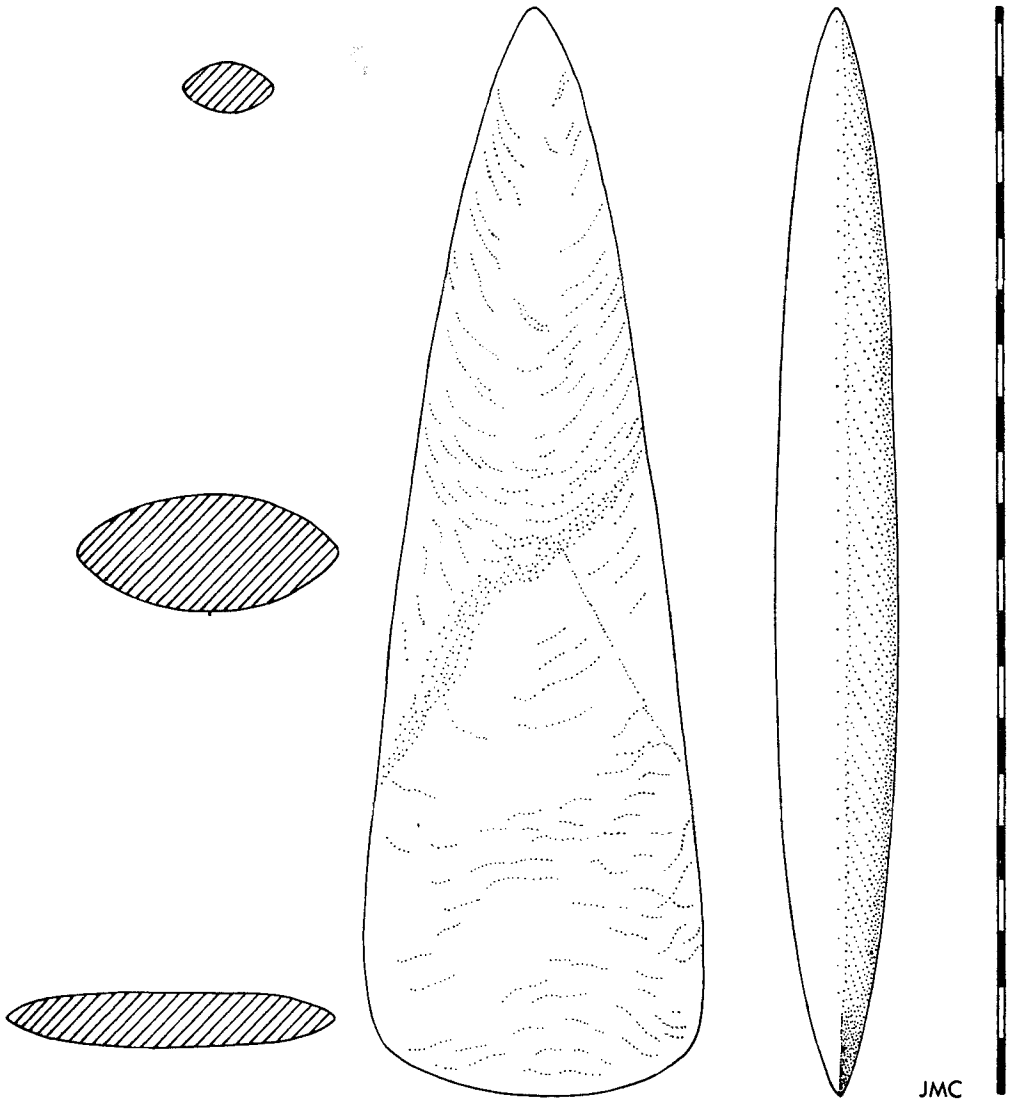

Fig. 1. Jadeite axe from the Sweet track, Somerset

not been made because it was decided, in view of the perfection of the implement, that for the present it would be best not to remove a slice, even by the thin wire saw technique (Bishop and Woolley, 1973). One or two grains have been removed, however, and it is hoped that it will be possible to obtain a chemical analysis of this material in due course, and to use this in comparative studies of jadeite implements.

Campbell Smith, who has handled the majority of the jadeite axes found in the British Isles, is of the opinion that this axe is, from the point of view of quality, one of the finest to have been found. Its polish, undamaged nature, and perfect symmetry affords comparison with the Canterbury axe hitherto recorded as the finest of British jadeite axes. It is also similar to the Canterbury axe in the

translucence of the jadeite at the butt end, a feature also displayed by the fine quality jadeite of the Braemore axe.

Apart from considerations of quality of workmanship, there are three distinctive features of the Sweet track axe which can be used for comparison with other axes, namely the colour, the texture, and the presence of the mineral rutile.

Only five of the axes described by Campbell Smith (1963, 1965, 1972) are referred to as 'glaucous', i.e., Histon, Falmouth, Sidmouth, Braemore, and Oxnam I. However, Campbell Smith states that the glaucous colour of the Falmouth axe is superficial, forming a skin only 0·3 mm. thick, beneath which the colour is deep bluish grey-green. It seems possible, indeed probable, from the distribution of colour in the Falmouth axe, that the relatively pale shade referred to as glaucous may be produced by some sort of alteration, possibly during burial, so that the grouping of the five glaucous-coloured axes may have only superficial significance.

It is apparent from the plates in Campbell Smith's article (1963) that the textures of jadeite axes are very variable. From this point of view the Sweet axe is distinctive by reason of its foliation, and the only axe at all comparable texturally among those illustrated by Campbell Smith is again from Canterbury. Rutile seems not to have been reported from any other jadeite axe, and so in this respect the Sweet axe is unique.

The axe was found directly associated with the Sweet track, and there is no doubt of its contemporaneity with that structure. The eight radiocarbon dates for the Sweet track so far obtained indicate that the track was built *c.* 3200 bc. The associated material consists of early neolithic pots of several fabrics and shapes, curved pins made of yew, wooden dishes and knives and digging tools, planks and boards, fragments of bows, unidentified wooden objects, grass rope, leaf-shaped arrowheads including one hafted example, hafted flint flakes and one flint axe. This last was found lying immediately beside the track, but about one km. to the south of the jadeite axe. The flint axe was made of greyish flint, possibly from Easton Down, Wiltshire; its condition shows no marks of use (PL. XXIV*b*).

Jadeite axes are found throughout the British Isles, but as the map shows (FIG. 2), there are clear regional concentrations and gaps. In view of the known distribution of neolithic material from the British Isles, there are interesting gaps for jadeite axes in northern England, south-eastern England, Wales and Ireland. Axes are scattered throughout Scotland and the northern Midlands, but there are clusters across southern England from East Anglia to Wessex and beyond, not too far from the Icknield Way.

Campbell Smith records 75 axes, and only two of these are dated. A fragment of a jadeite axe was found in the causewayed ditch at High Peak, Devon, where the neolithic settlement has been dated to 2860 ± 150 bc (BM-214). A tiny fragment was found in the chambered tomb of Cairnholy, Kirkcudbrightshire. Apart from these two broken axes, the remainder published lack both date and context; most are stray finds. Some come from ploughed fields, several from rivers and streams or clay deposits, and one from a prehistoric boat now lost. But the majority lack any precise provenance.

The Sweet jadeite axe is therefore important for its late fourth-millennium date, for its neolithic cultural associations, and for any consideration of the function of stone axes in neolithic society and the mechanism of their distribution. Grahame Clark has suggested the possibility of cycles of gift exchange in neolithic Europe, with stone axes being one of the objects exchanged. The many studies of British stone axes have tended to support this possibility, as they establish a wide distribution from different sources to all parts of the British Isles, including those areas possessing their own sources. The jadeite axes may have been included in this network of exchange, and must widen the sphere of British contacts to include western Europe, the closest links being perhaps with central Germany where jadeite axes similar in shape to the British examples are known. The source of jade is as yet unknown,

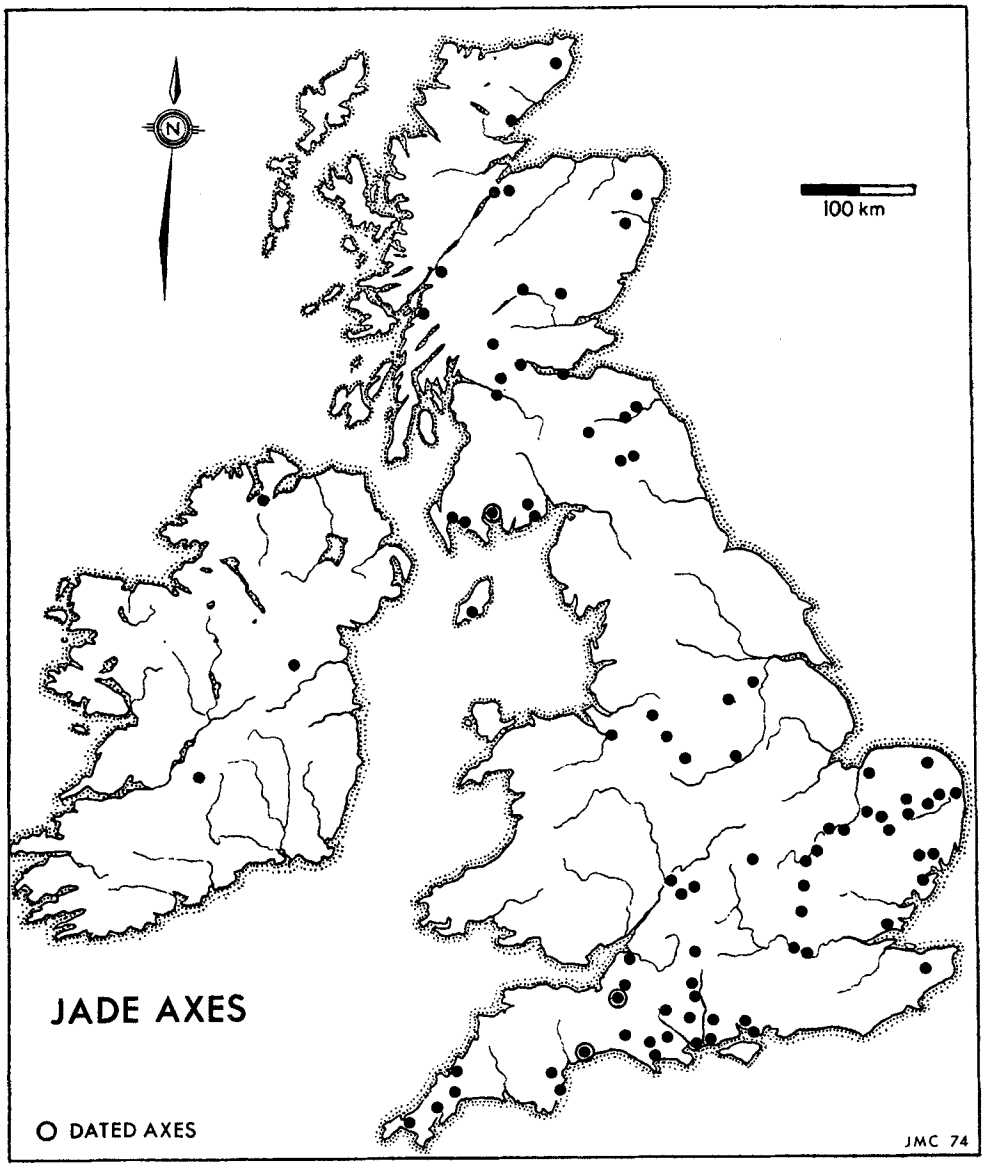

Fig. 2. Distribution of jade axes in the British Isles, based on Campbell Smith, 1963, 1965, 1972, with additions

although it is generally held to be continental, and Switzerland rather than Brittany is considered to be the most likely area of origin. Relatively little is known of the continental axes, whether made of jadeite or other stones.

Obviously some of the neolithic stone axes were used to cut wood. Others, however, may have been used primarily in a system of gift exchange or may have had some other function apart from that of chopping wood, and they may never even have been hafted, let alone used. From observations of Maori jade working, it

may be estimated that an axe of comparable size and finish to that of the Sweet axe would take 100 hours to produce. Further, the discovery of several jade axes in or near streams or rivers, or in other fluviatile deposits, and the one found actually in a boat, suggest that they were either lost during transport or deliberately consigned to water. The Sweet axe, although clearly associated with cultural remains, was similarly found in a watery situation, with implications of transport in the very existence of the track. Whether lost by accident, or deliberately put beside the track, its discovery supports the interpretation of jade axes as more than mere chopping tools.

Moreover, the association of both the jade axe and the unused flint axe with the Sweet track, and hence with each other, may suggest that axes of all materials were at times removed from the functional sphere. It is important to note, in this context, that despite the quantity of wood preserved in the peat, neither the jadeite nor the flint axe was found with anything remotely resembling a haft, nor was there any trace of binding material, nor of any bag or container. Also, although there is abundant evidence that the wood used in building the track was often cut to shape on the spot, with a stone blade, neither of the axes shows signs of use, and all the authors are agreed that these two axes were unlikely to have been lost or discarded in the building of the track.

Activity of a ceremonial nature is well documented in later neolithic contexts in Britain, and such activity has been suggested from the earliest British Neolithic, on the basis of evidence from causewayed enclosures. This suggestion is now perhaps reinforced by the discovery of the two axes from the Sweet track.

Acknowledgements: The excavations were financed by the Crowther-Beynon Fund, the Maltwood Fund, and the Department of the Environment, and were conducted with the permission of Fisons Agrochemicals Limited and the Nature Conservancy. The jadeite axe was discovered by Miss Janice Brown of Exeter University.

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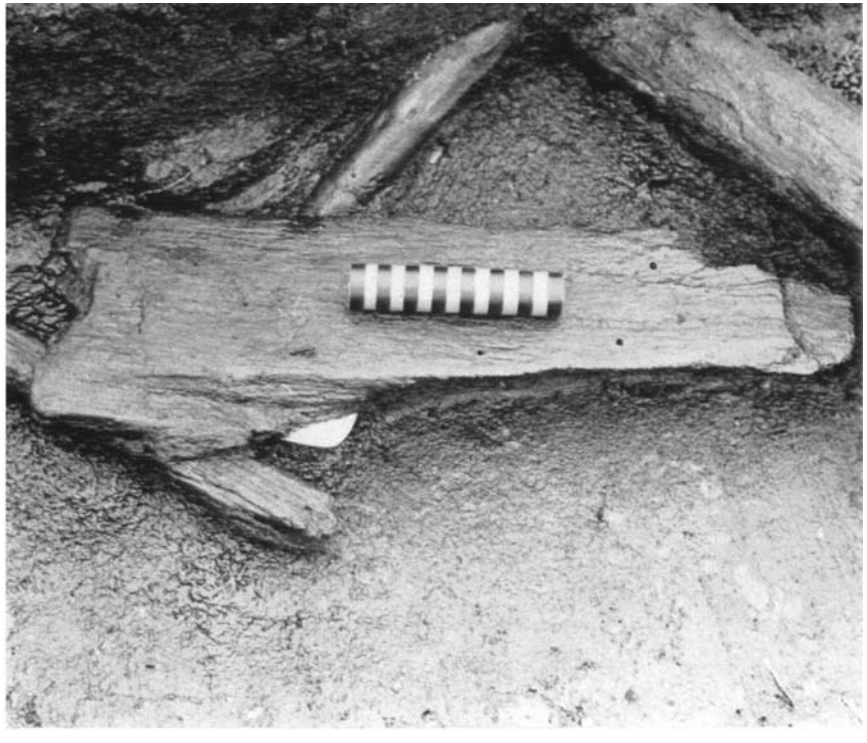
Neolithic flax in Bulgaria

R. W. Dennell, Lecturer in the Department of Ancient History and Prehistory, University of Sheffield, sends us the following note.

Flax seeds occur sporadically on many neolithic sites in the Near East and Europe. So far, the earliest finds are from Çayönü Tepesi, where seeds of *Linum* cf. *bienne* were recovered from a horizon dated to *c.* 7000 BC (van Zeist, 1972); slightly later finds are reported from Tepe Sabz, *c.* 5500–5000 BC (Helbaek, 1969) and Tell Brak, *c.* 4500 BC (Helbaek, 1960). In Europe, where flax is commonly supposed to have been introduced from Asia Minor (Helbaek, 1960), the earliest find of flax at present is from the Bandkeramik settlement of Heilbronn (Bertsch and Bertsch, 1949). It is, however, curious that flax has not so far been found on any neolithic site in south-east Europe, where it might be expected to occur after the sixth millennium BC. To date, the earliest find from this region is *c.* 3500 BC from a Gumelnitsa context at Kapitan Dimitrievo (Renfrew, 1973).

For this reason, the discovery of flax seeds in neolithic deposits in Bulgaria is of special interest. At the Karanovo I settlements of Chevdar and Kazanluk, dated to *c.* 5500–5000 BC, flax seeds were found by the author among the large quantity of carbonized plant material



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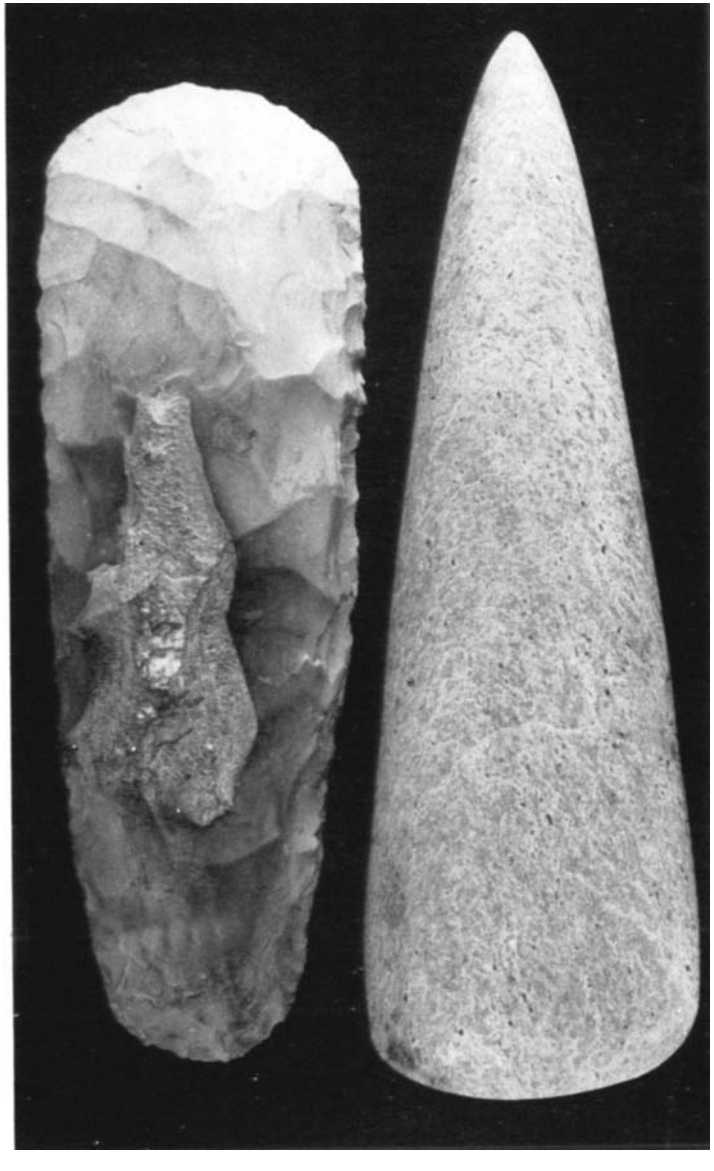

b

PLATE XXIV: A JADE AXE FROM THE SOMERSET LEVELS

(a) Discovery of the jadeite axe during excavations on the Sweet track, Somerset. (b) Stone axes from the Sweet track. Left, flint axe; right, jadeite axe. The length of the jadeite axe is 203 mm.

See pp. 216–20

Photos: John Coles