# A NOTE ON ROMAN BONE HINGES FROM THE CITY OF LONDON

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The article by Fremersdorf (1940) and the note in the Verulamium excavation report by Waugh and Goodburn (Frere 1972) identify the cylindrical bone objects that occur on Roman sites as hinges. These authors illustrate how the hinges function in structures with either a vertical or horizontal axis citing examples manufactured and discovered outside the British Isles (see Fig. 1)[1]. From an initial survey of British excavation reports it would appear that British finds consist only of the outer bone sheath and do not contain the central wooden spindle and pegs as illustrated in Fig. 2[2]. That the internal fitting fails to survive can be attributed to unfavourable burial conditions. It is of interest to note, therefore, the recent discovery of two hinges from the City of London that consist of both outer case and inner spindle.

The 1983/84 excavation of a River Thames waterfront site at Billingsgate Lorry Park by the Museum of London's Department of Urban Archaeology uncovered waterlogged deposits that included Roman material. After the archaeological excavation, much of the remaining material from the site was removed by private contractors. It is from dumps of this unstratified spoil that two bone hinges were recovered. These contained their wooden spindles that had been preserved in the waterlogged conditions of their original deposition. Although one remains in private ownership the other hinge was acquired by the Museum of London (Accession Number 84.126).

The Museum hinge (Fig. 3) is the more complete of the two examples. It measures 70mm long and along one face are two perforations, some 6mm in diameter and spaced 21mm apart. Made from a limb bone of an ungulate this double hinge is polished and decorated with incised lines. Since its recovery some shrinkage of the wood inside has occurred due to drying out and the central spindle no longer fits tightly within the case. However, the spindle, made from the wood of an ash tree (*Fraxinus* sp.)[3] clearly shows how the inner piece of wood had holes bored into it, their position corresponding to the holes made in the bone. Into these inner holes were fixed wooden pegs which then protruded beyond the bone casing. The Museum example retains one of these pegs whilst the hole for another peg is clearly visible in the wooden shaft directly beneath the one in the bone case.

The second hinge brought into the Museum for recording and published here with permission of the owner, is shorter (26mm) but of similar diameter (Fig. 3). It is a single hinge, having only one perforation (8mm diameter) and whilst polished, has no incised decoration (cf. Waugh and Goodburn p. 151 no. 190). A minute hole in the bone wall opposite the main perforation suggests damage caused by the drill bit penetrating too far when boring the main hole. The wooden spindle was found inside the hinge, but shrinkage and the loss of its peg mean that it is no longer permanently fixed inside the case. Nonetheless it is again clear that this spindle was prepared so that the inner and outer holes were aligned and a peg could be slotted in and affixed to the wooden shaft. It has not been possible in this instance to have the wood identified and in neither example, because of the extensive working of the bone, has it been possible to determine precisely the species of animal from which they derive[4]. However the perforation in the single hinge lies in a natural longitudinal groove. This feature has been identified in other examples as the point of fusion between the third and fourth metatarsals found in cattle (MacGregor 1985, 208, note 75), a species identification which may well hold true for this bone.

A third and previously unpublished bone hinge was recovered from the Walbrook streambed in the City of London during the 1950s[5]. It now forms part of the Greenway Collection in the British Museum (Prehistoric & Romano-British Department). Originally deposited in waterlogged conditions this single hinge, 20mm in length, also retains the central wooden spindle. Despite some shrinkage the spindle still has the subrectangular section that enabled it to fit tightly and without movement within the similarly shaped shaft of the bone casing, whilst each protruding terminal is of a circular cross section. In common with the single hinge mentioned above, the perforation lies in a natural longitudinal groove, again diagnostic of bovine origin. MacGregor (1985) notes that when situated in this groove the perforations and pegs would be hidden from view when the hinge was fitted. It may well be that such a feature, along with the application of wax (MacGregor 1985, 203) facilitated the rotary movement of the hinges. Many other hinges including the double hinge mentioned above (Acc. No. 84. 126), however, lack such a groove.

The opportunity was taken to publish these London hinges for, despite not having datable contexts, their almost com-

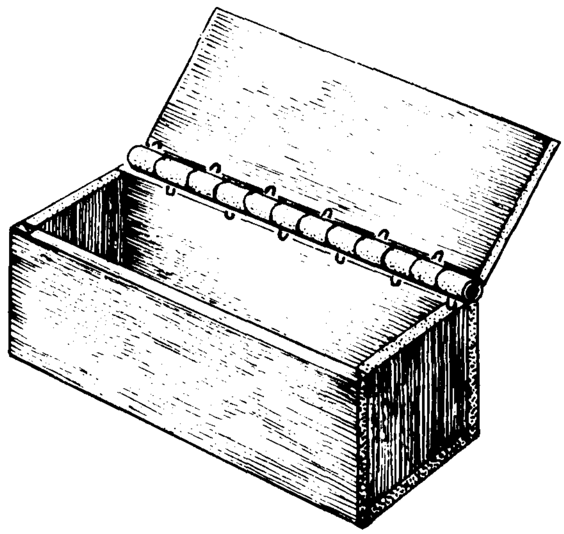

Fig. 1 Roman bone hinges: A wooden chest from Egypt and now housed in the Ashmolean Museum [E3701] illustrating the use of single hinges (N. A. Griffiths).

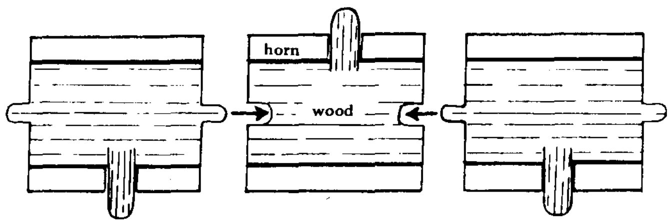


Fig. 2. Roman bone hinges: Section diagram showing internal features.

plete state makes them of special interest. Together the three hinges certainly form a unique set of finds from the City of London, probably from the rest of the country, and the presence of a peg in the double hinge remains unparalleled from Romano-British contexts.

NOTES

1. Fremersdorf refers to examples from Mainz, Trier, Vindonissa, Pompeii and Egypt while Waugh and Goodburn cite hinged boxes from Egypt which are now housed in the Ashmolean Museum to demonstrate how the hinges work. McWhirr (1982, 58–9) also provides clear illustrations of the individual components and how they link together to form the complete hinge. (A replica wooden cupboard has been constructed and is displayed in the 1st-century Roman room setting in the Museum of London, showing a vertical door hinge made as described by Fremersdorf.)
2. Spindles are known to have been made from other organic materials although British examples are again rare. A long bone spindle (*c.* 73mm long) is recorded from Chelmsford and a possible bone spindle has been recorded from Verulamium in late 1st to 2nd-century deposits (Frere 1972, fig. 54, 191). The latter has been published as a hinge segment but may indeed be a spindle. I am grateful to S. Greep for bringing these two items to my attention. There is also the possibility that iron pins may have been used in constructing hinges; see MacGregor (1985) who makes reference to possible evidence from Augst.
3. Analysis of the wood was undertaken by J. Nation of the Historic Buildings and Monuments Laboratory to whom I would like to express my thanks. Boxwood plugs are known from Vindonissa, where hinges were preserved in waterlogged conditions (Fremersdorf 1940; MacGregor 1985).
4. My thanks to Barbara West, Acting Environmental Officer, Department of Urban Archaeology, who kindly examined both hinge sections.
5. I am indebted to Stephen Greep for notifying me of this example and to Ralph Jackson for details of its recovery and structure.

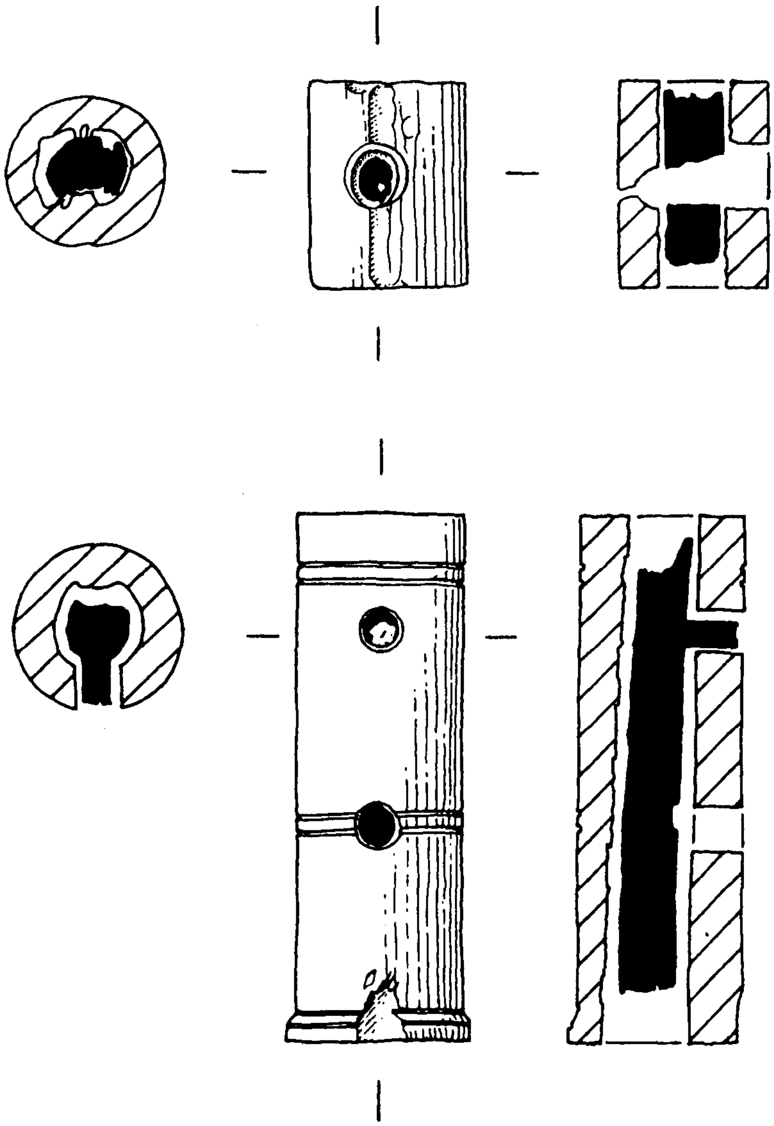

Fig. 3. Roman bone hinges: The single hinge (above) and the double hinge (M.o.L Acc. No. 84.126) below (E. Rigby and A. Sutton). Scale 1/1.


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I wish to thank E. Taylor for permission to publish the hinge which he recovered. Thanks are due to Anne Sutton and Emma Rigby for their illustrations, and also to Alan McWhirr and Nick Griffiths for permission to reproduce the illustration of the hinged box (Fig. 1). I am indebted to Jenny Hall and Hugh Chapman who encouraged publication of these hinges.

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