

# A Viking Sword Found at Chertsey

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## Circumstances of discovery (PL)

A fine example of a Viking period sword (pl 1) was discovered in June 1981 by Mr Harry Cooper of Laleham, an employee of the gravel firm A & J Bull Ltd, while extracting gravel by machine from the quarries known as Mixnams Pit, Chertsey. This pit (centred at TQ 040 676) is bordered on the east by the Abbey River, a backwater of the Thames, and the area to the immediate north of the site has produced many objects including a high proportion of Bronze Age weaponry (Needham 1976; 1979; Tomalin 1982). The gravel raising machinery was operating below water level, at a depth of around 2.5m below topsoil, so that it was not possible to investigate the stratigraphy or to discover whether there were any related artifacts. Mr Cooper reports that at this point the gravel had given way to a dark, silty deposit which workers on the site had come to recognise as one which would be likely to produce artifacts, suggesting that the find spot was within a silted up watercourse, perhaps a meander of the Thames. The day after the discovery of the sword a Bronze Age spear ferrule was recovered in similar circumstances by the same excavator (Needham 1982, 39, 52, & fig 13); the ferrule is in Chertsey Museum.

Danish activity in the vicinity of Chertsey Abbey is recorded for the year 871, when the Abbot, Beocca, his priest, Ethor, and 90 monks were slaughtered.<sup>1</sup> Clearly this episode antedates the 10th century sword, but the possibility of a later incursion on the Abbey in which the sword may have been lost or deposited is not to be ruled out. The evidence for ritual deposition is discussed below.

The sword, having been conserved at the British Museum, has been purchased by Chertsey Museum through funds raised by a public appeal and through a Victoria and Albert Museum purchase grant, an agreement having been reached with the gravel company that the purchase price, £5,000, should be paid in full to the excavator. The accession number of the sword is D 2465.

## Description and comparisons (KE)

Iron two-edged Viking-period sword complete with pommel and guards. The length of the sword is 98.4 cm, the blade is 81 cm long, its width at the hilt is 6.2 cm. The sword (pls 1, 2, fig 1) has the bulbous trilobed pommel and thick, heavy guards with expanded ends typical of Viking swords of Petersen's type S (Petersen 1919). Radiography has revealed that the pommel is attached to the upper guard by a single U-shaped rivet passing through the pommel and clenched on the underside of the upper guard where the ends are clearly visible on either side of the tang. This method of attachment has been demonstrated on both Norwegian and English swords (Petersen 1919, figs 81, 135; Wilson 1965, 47).

The pommel and guards are of iron, decorated with silver and copper inlays. There is a simple outline design on the upper surface of the lower guard and more complicated patterns of loops and swags on the major surfaces; these are consistently better preserved on one side than on the other but it is not possible to say whether this was caused by rubbing of the reverse against clothing while the sword was being worn or is the result of differing rates of corrosion while it lay in the ground. From the existing remains of the inlay it appears that silver wire or strip was wound helically round copper wire, hammered into position and bordered by very fine copper wires.

On the tang adjacent to the lower guard are traces of the hilt material; this has not been positively identified but appears to be horn.



Plate 1. The Chertsey sword, after cleaning. (Photo: British Museum)

The blade, which is fullered, is in a remarkably fine state of preservation though bent into a gentle curve, a distortion which has almost certainly arisen since the sword was deposited. On one side, between crosses, the name ULFBERIT has been welded into the blade; on the reverse a single similar cross is visible and a radiograph shows vertical lines and the diagonal lines of a lattice pattern. The letters of the inscription have been preformed from iron rods and show clearly the sloping chisel marks produced when they were hammered into the surface of the blade. The initial M-like figure has been formed from a vertical stroke united with the U and L but there is no doubt from the appearance of the inscription and from the lattice pattern on the reverse that we have here a typical Ulfberht sword. It is clearly comparable to the sword blade from Vanse, Norway, now in the Stavanger Museum (Lorange 1889, pl 3 fig 2). Jankuhn has put forward strong arguments in favour of accepting Ulfberht as the name of a Rhenish forger of sword blades and has recorded 116 swords carrying this inscription.<sup>2</sup> They have a wide distribution from Ireland to Scandinavia and across northern Europe to the USSR; they are found on swords of various hilt types of late 9th to late 10th century date. In England, in addition to the Chertsey sword, there are three others with some form of Ulfberht inscription, one on a 10th/11th century Z-type sword from the Thames at Shifford, Berkshire, one on a sword from Battersea of late 10th century date<sup>3</sup> and one recently excavated from a ditch outside the walls of Bath (Brown & O'Leary forthcoming).

The sword from Chertsey is a 10th century S-type, a type not included by Wheeler (1927) in his classification of Viking swords from England and only the second S-type sword to be found in the British Isles; the previous find (BM MLA 87, 2-9, 1), believed to have come from the Thames in London (Read 1887), has a 5-lobed pommel and guards decorated with sheet silver and silver and copper wire (pl 3); the blade is pattern-welded but not inscribed<sup>4</sup>.

Though there are clear similarities between the decoration on the Chertsey and London hilts, in the latter the ribbons develop lobed tendrils and an animal head can be seen in the fragmentary silver remains. Animal ornament in Jellinge style is characteristic of Norwegian S-type hilts of the first half of the 10th century but the tendrils on the London example suggest a later development, perhaps late 10th century. The ribbon interlace seen on the Chertsey hilt (also on one from Århus, Telemark, Norway (Petersen 1919, fig 114; University of Oslo Oldsaksamling C 11451)) would seem to have more affinity with continental or late Saxon ornament than with Scandinavian.<sup>5</sup> The sword type however has a predominantly east Norwegian distribution and the occurrence of two examples in England must be seen as a consequence of Viking raids and settlements in the 10th century. Other sword types were more common in England during this period but a sword apparently of S-type is depicted in a late Saxon manuscript from Canterbury (BL Cotton Claudius B IV f 38) dated to the last quarter of the 10th century (Temple 1976, cat no 86 and pl 270).

The Chertsey sword by reason of its type, its decoration and its inscription is a find of very great importance. No other finds are associated with it and we do not know whether it was buried, lost or discarded. Its pre-conservation appearance as well as the situation in which it was found suggests that it may have been associated with an earlier watercourse. This raises the question as to whether this sword should be added to the large group of Viking-period swords found in rivers. It is possible that the preponderance of river finds results from preservation conditions. This certainly seems more likely than the alternative suggestion sometimes put forward that swords were lost while crossing rivers or fighting at river crossings but it is also possible that swords and other weapons were deliberately thrown into rivers; this has been seen as the revival of a custom recorded for the 1st century AD in literature and confirmed by archaeological evidence from northern Europe in the late Roman period (Wilson 1965, 51. See also Torbrügge (1970-71) where the whole question of river depositions, especially in the prehistoric period, is fully discussed). However, there is no hint of such ritual deposition during the whole of the Anglo-Saxon pagan period when our sword finds come predominantly from

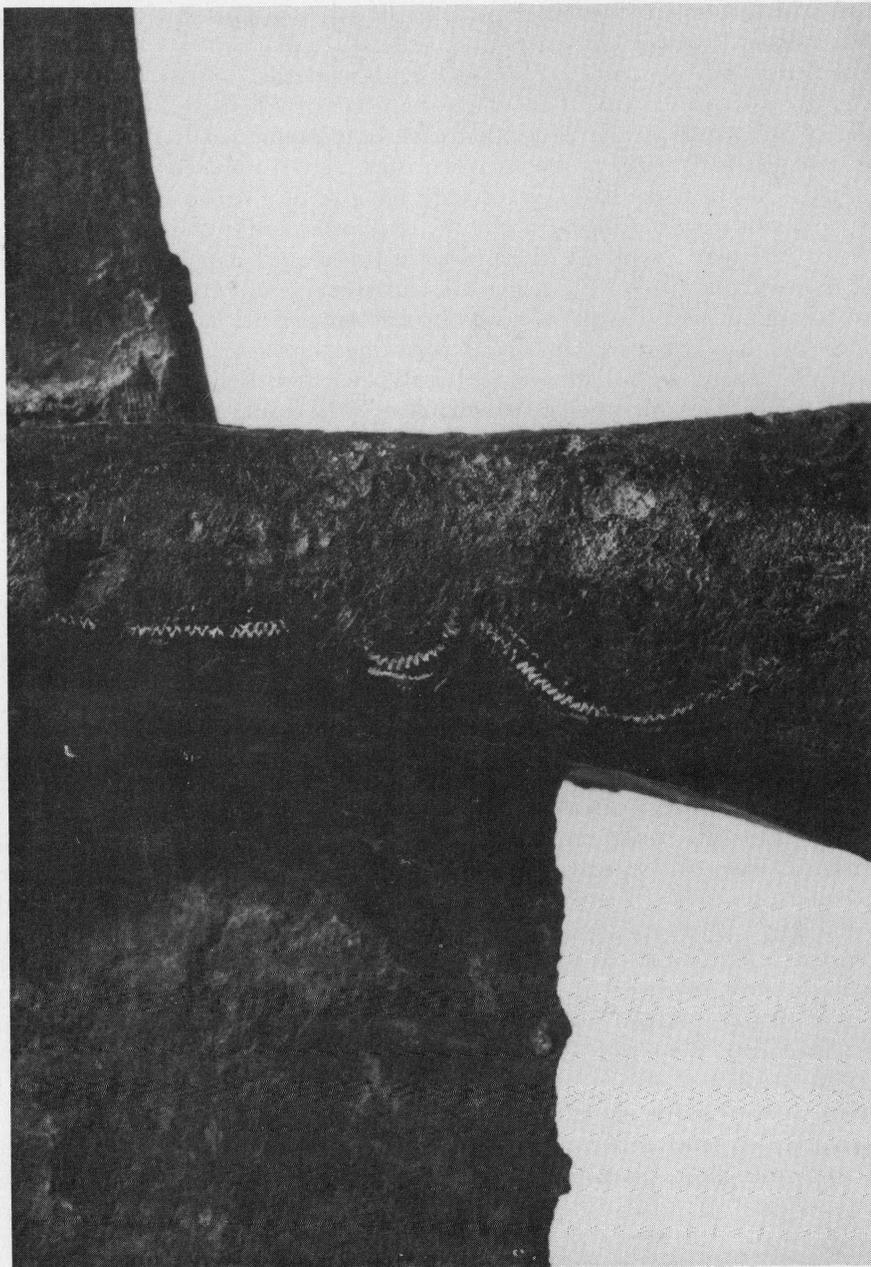


Plate 2. Detail of the inlay on the Chertsey sword, scale approx 2/1.

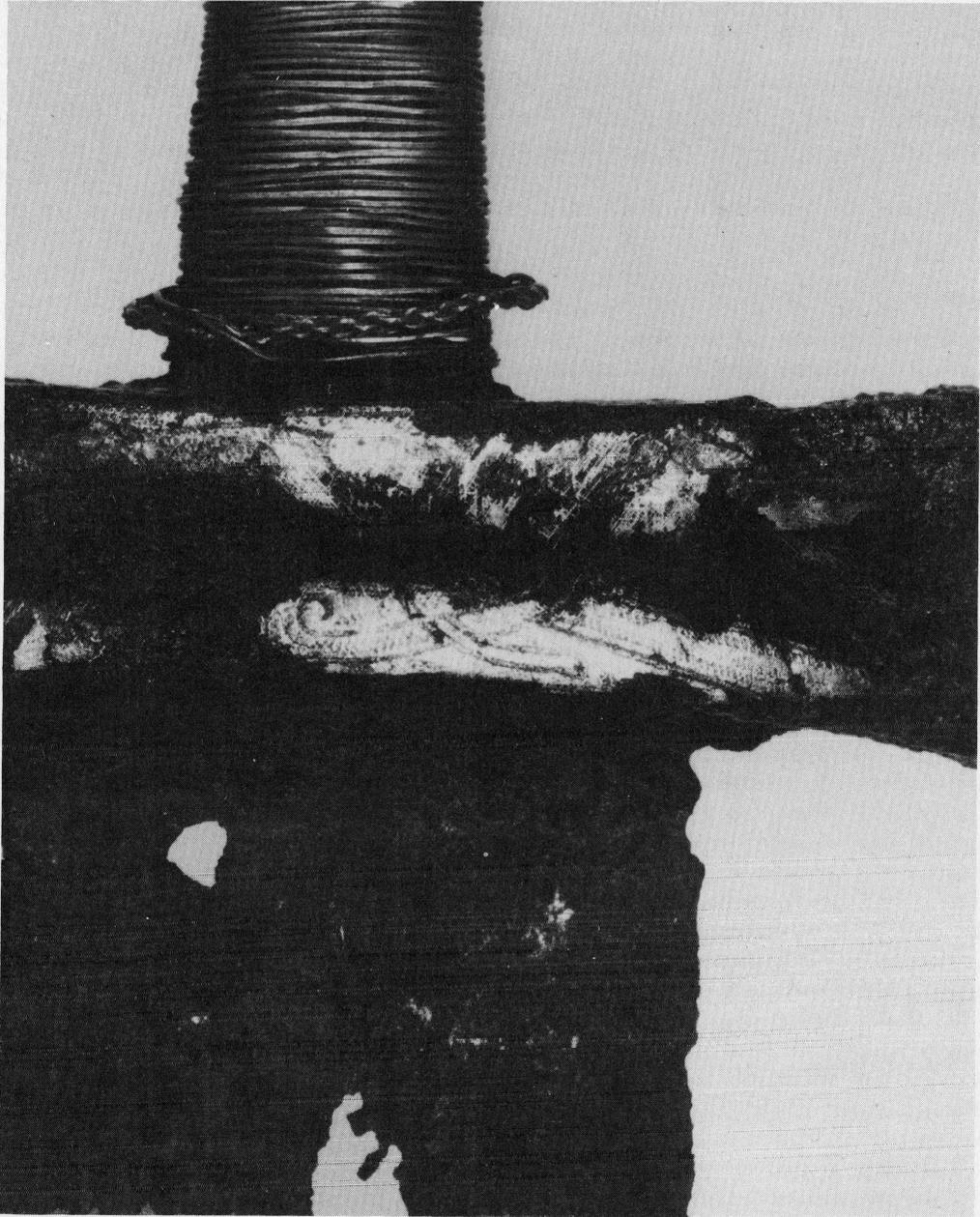


Plate 3. Sword from the Thames, London, scale approx 2/1. (Photo: British Museum)

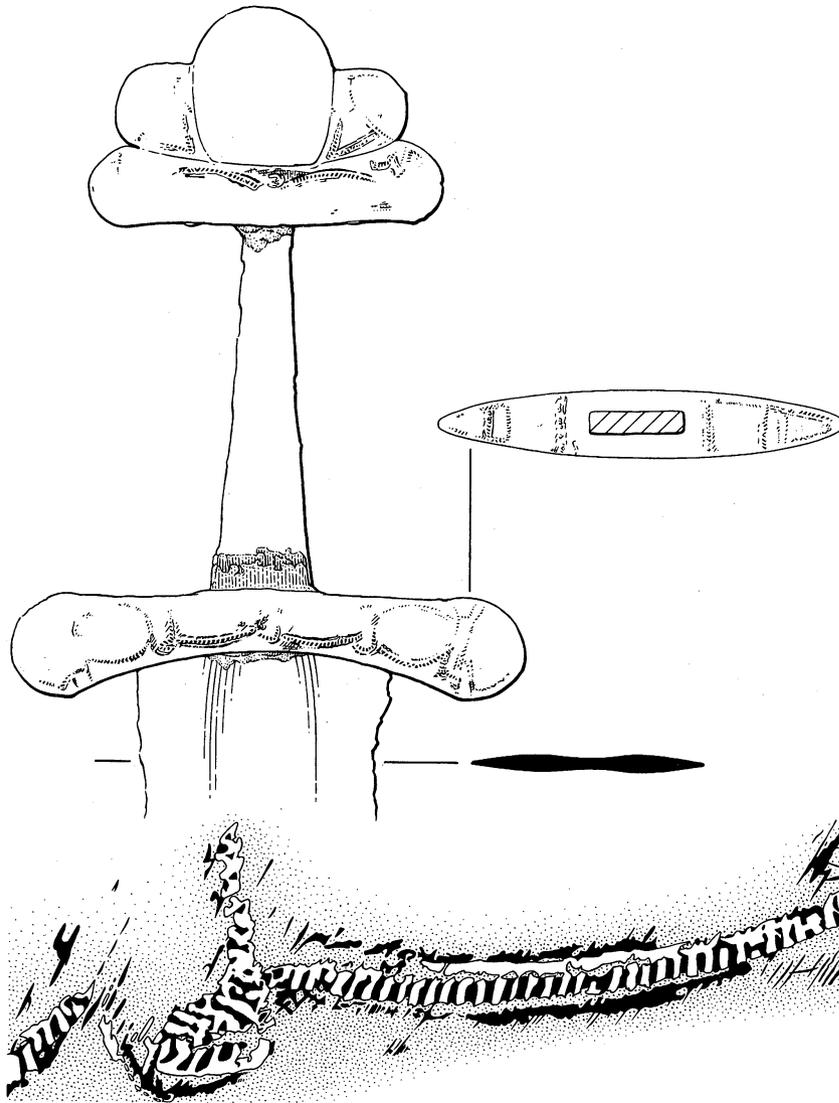
graves. It seems therefore conceivable that when Christian burial without grave goods became the established practice but a mixture of beliefs persisted, a new custom arose and a rare and a treasured weapon, excluded from the churchyard, was given its own burial in river or bank. The honour accorded to weaponry is also manifested in the contemporary practice of setting up tombstones showing fully equipped Viking warriors (as at Middleton, Yorkshire). It is noteworthy that the river finds of swords of the Viking period belong primarily to the Christian areas of N Europe and the British Isles at a time when warrior graves containing weapons were still normal in pagan Scandinavia and its settlements such as Dublin and the northern and western isles of Scotland.<sup>6</sup>

### Conservation (PW)

The Chertsey sword was not presented for examination and conservation until over a year after its discovery. During this period it had been much handled, as evidenced by the broken nature of the corrosion crust on the blade. Any post-excavation changes in the corrosion products would have taken place unnoticed during this period. The sword was in a remarkably good condition when found, having suffered only a slight bending of the blade and the development of a corrosion crust which must have protected the metal from the air and moisture. Tests made using a simple magnet indicated that there existed a substantial iron core beneath the encrustation. This encrustation (coloured white to buff) consisted of calcareous material, probably derived from the river water, iron corrosion products and debris from the fauna and flora associated with the burial environment. This crust was 2–5 mm thick and was most heavily built up on the hilt. It was missing from some areas of the blade where it had flaked when the blade flexed slightly.

The sword type had been recognised immediately by the archaeologists and X-radiographs were made of the area where an inscription would normally be expected, and also of the hilt to locate any decoration that might have survived. These radiographs were made by staff of the Research Laboratory at the British Museum. The stereo pair of radiographs taken of the upper part of the blade confirmed the presence of an inscription on one side of the blade of the ULFBERHT type and a trellis motif on the other side. The inscription appeared to have been made by inlaying iron strips into grooves cut into the blade since no strong differences of film density exists between the blade and letters. Further examination of the radiographs revealed no evidence of a pattern welded construction of the blade nor any sign of the application of a cutting edge made from a different composition of iron. The radiographs of the hilt gave no indication of any decoration being present, though it did show the construction of the pommel very clearly; particularly the presence of a large U-shaped rivet securing it to the upper guard.

The initial conservation work was done on the blade; the corrosion products were removed using a scalpel, needles and a small chisel. The encrustation came away easily revealing a corroded, but apparently stable, iron surface. The exposure of the inlay was somewhat more difficult but manual cleaning, working under stereo microscope, and reference to the radiographs enabled the inscription to be revealed. When the loose iron corrosion had been removed, tool marks became visible on the inlay; these probably resulted from a chisel-type tool being used to force the presumably red hot iron wire into the grooves pre-cut for the inlaid letters. This is best illustrated in the top bar of the first (+) and in the letters BERIT. The removal of the corrosion crust on the other side of the blade did not result in the inlaid pattern being as clearly revealed as in the ULFBERIT inscription. Only fragments of the pattern shown by the X-radiographs can be readily seen and only the use of acid etching solutions is likely to improve its visibility. Such a treatment is not considered appropriate since it would result in the destruction of the fine patinated surface which is only present in this area of the blade. The corrosion on the hilt was much more dense than that on the blade and did not respond to light manual and mechanical cleaning techniques. As the concretion was essentially calcareous in nature it was decided to soften it using formic acid. This proved to be an effective, if slow, method of removing the



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Fig 1. The Chertsey Sword: (top) the sword-hilt, scale 1/2, (middle) detail of inlaid wires in the lower guard, scale 4/1, (bottom) inscription, scale 1/2. (Drawings: J Farrant)

concretion, but had the advantage that since the acid is volatile, no acid residues are left within the porous corroded iron that would have required removal by complex washing techniques. It soon became clear that the guard and pommel were decorated with an inlaid design of copper and silver wire. The design is incomplete, particularly on the upper more vulnerable areas, and it must be assumed that it was worn and/or damaged before the sword was lost. The design consists of a series of loops and whorls cut into the iron and these have been filled by hammering in copper and silver wires which had first been twisted together. Copper wire has also been inlaid on both sides of the twisted copper/silver wires, but is missing in many areas. It is possible that some areas of the guard were also decorated with sheets of silver or copper; there is some evidence of regular grooves cut into the iron which could be to key the softer metal in place, but it is also possible that this represents the etched grain structure of the wrought iron revealed as it corroded. The removal of iron corrosion and tarnish from the surface of the silver and copper inlay was achieved using a 10% solution of thiourea which had been acidified with orthophosphoric acid. The treated areas were then washed with industrial methylated spirits.

During cleaning care was taken not to damage the small fragment of fibrous organic material that was found on the tang close to the lower guard. It is probable that it is the remains of the grip, but it was not possible to identify the material from simple visual inspection.

A protective coating was applied to the inlay to prevent further tarnishing. Three coats of an acrylic resin (Paraloid B44) were used in the form of the commercial lacquer Incralac. It was decided that a wax coating would be most appropriate for the protection of iron surfaces of the blade and hilt. A mixture of Cosmolloid 80H wax and Ketone 'N' resin diluted with white spirit was used and it is hoped that this will prove an effective barrier to moisture but not hinder future scientific investigation of the sword. However, it is recommended that the sword should be stored or exhibited at a relative humidity controlled to below 45% and that any display or packing materials should be checked for their suitability for use with silver and copper.

There is a need for more scientific analysis to be done on the sword and inlays. In particular a metallographic examination of the blade would be very interesting, as would an analysis of the silver and copper alloy inlay and the identification of the organic remains on the tang.

## NOTES

- 1 Cotton MS Vitellius A xiii BL f33-4.
- 2 The blades may all be the work of a single lifetime re-used with up-dated pommels and guards, or the name Ulfberht may have continued in use in a particular workshop after the death of the original master. In view of the variations and debasements of the signature it also seems likely that the name was used by copyists elsewhere. By far the commonest form of the inscription has a cross interposed between the H and the T. The H is rarely omitted altogether and Chertsey is the only example so far noted in which the ending . . .RIT followed by a cross is firm and clear; this well-executed inscription is the work of a highly skilled craftsman. Müller-Wille (1970) catalogues 98 swords with the Ulfberht inscription, giving transcriptions of the signatures on 62 of them.
- 3 For the Shifford sword see R E Oakeshott in Ellis-Davidson 1962, 225; for the Battersea sword see Evison 1967, 181 and fig 4b. In addition to these two, Müller-Wille (op cit) 65-91, lists two other Ulfberht swords but on both of these (Raven's willow, Peterborough and the Thames, Carlisle museum) the inscription is dubious; see Ellis-Davidson (op cit 47) and Evison (op cit 165 and fig 5a).
- 4 A distribution map of S-type swords is given in Müller-Wille 1973.
- 5 eg BL Add 40618 f50 and decorative initials of Wormald type 2, all late 10th-11th century; Temple 1976, cat nos 50 and 30; St Gall Cod 54 (Merton 1923).
- 6 John Morris (1959, 132), refers to 'a very considerable number' of weapons from the Thames. There are certainly many Thames spearheads from the Greater London area dated to the pagan as well as to the later period; the earlier types are, however, outnumbered by Surrey and Middlesex grave finds. There seem to be only four swords from the London Thames which can reasonably be dated to the 6th-7th centuries as compared with fifteen of the Viking period published by Wilson (op cit, 51).

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