Some Viking-period Weapons from the Thames.

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READING Museum contains much archæological material dredged from the present bed of the Thames and deposited on loan by the Thames Conservancy Board. Prominent among the dredged objects is a series of iron spears, swords and axes of Saxon, Viking and Norman types. The present note concerns several objects which were recently given a thorough cleaning in the museum laboratory. Complete stripping of the rust from three spearheads with " Deoxidine " revealed interesting details of structure and ornament which had long remained hidden. The blade of each (Fig. A, Nos. 1–3 and Pls. I and II) shows one or more ornamental panels on each side containing a herring-bone pattern worked in the metal. This is not damascening (*i.e.* the inlay of another totally different metal), since the pattern is all achieved in iron or steel. Dr. Kendrick has named this the " false Bulat " process (T. D. Kendrick, " Some types of Ornamentation on Late Saxon and Viking Period Weapons in England " (*Eurasia Septentrionalis Antiqua* IX, 392–8 (Helsinki, 1934)). In a more recent paper (" A sword of the Nydam type from Ely Fields Farm near Ely," (*Cambs. Antiq. Soc. Proc.* XLI, 73–6 (Cambridge, 1947)), Mr. H. Maryon gives this process the name of " pattern welding " and investigates its method of manufacture.

This method, briefly, consists of the manufacture of a separate ornamental panel by welding together twisted bundles of fine iron strips or wires which must have had a thickness of not more than one hundredth of an inch. The panel would later be welded into a weapon composed in origin of several components—a plain core, ornamental panels on each side of this, and cutting edges (perhaps of better quality steel). In the process of forging, all these components would be welded into a solid whole. The same method appears to have been followed with the spearheads. The short spearhead from Sunbury weir is especially worthy of close examination. Each side of the blade has a double panel of herring-bone pattern welding. On one side the original surface has been preserved almost intact and shows that in the process of welding the simple herringbone effect originally produced by juxtaposing bundles of strips twisted in opposite directions has been complicated by the hammering involved into a far more wavy effect. The plain herringboning seen on the other side of this spear and on each of the other two is a result of considerable corrosion which has removed the outer layers which had been " frilled " by the hammering. Each of the panels tapers at one end to a fairly fine point and here the twisting of the component strips has been slackened until at the very tip they remained a straight bundle of parallel strips.

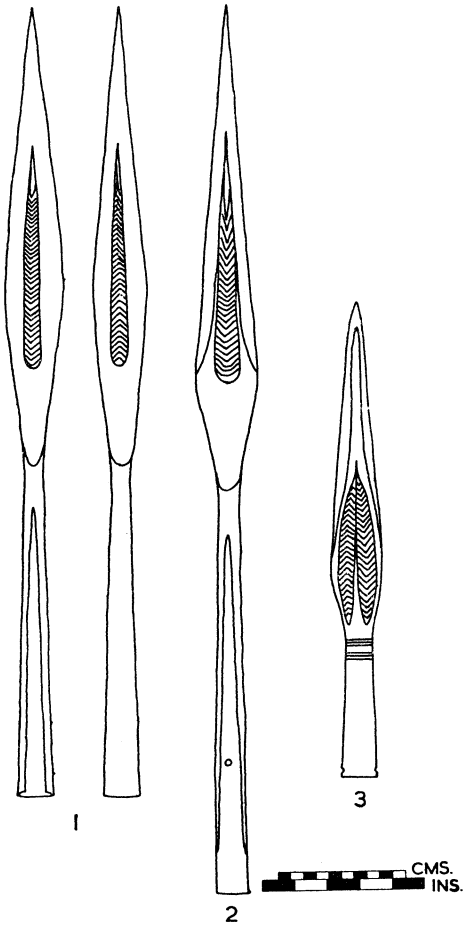

FIG. A. Pattern-welded spearheads from the Thames at Kingston, Cookham and Sunbury Weir.

This method of ornamenting spears and swords cannot be used for dating within close limits. It is found in the Nydam Moor swords of the 5th century A.D. Yet the spears which are the subject of this note are unlikely to be earlier than the Viking raids of the 9th century A.D. The great length and sturdiness of Figs. 1 and 2 place them quite apart from the smaller and less well forged examples from early Pagan cemeteries. Fig. 1 may have had a baluster-moulded junction of socket and blade. Fig. 2 has a definite " beaked " junction (*cf.* R. E. M. Wheeler, *London and the Saxons*, Fig. 40, No. 2). The presence of the early Saxon characteristic of a split socket does not preclude a later date. The closed tubular socket of Fig. A, No. 3 is almost universal in Viking-period spears from Scandinavia.

Pattern welding is also apparent on a fragmentary spearhead from Surbiton. A scramasax 21½ in. long, from the Thames at Magna Carta Island has a band of pattern welding ¼ in. wide along the centre of each side of the blade. This example is of the Hurbuck type (R. E. M. Wheeler, op. cit., p. 179) datable to the 10th century.

Two iron axe-heads in the collection, though devoid of pattern welding are worthy of record. The first, from the Thames at Moreton Swifts, is a typical Viking battle-axe with broad, thin blade of Wheeler's Type VI (*London and the Viking*, p. 25 and Fig. 9, No. 3). It is comparable with several from the hoard of weapons from London Bridge and appears to date from about A.D. 1,000. The blade has a width of 7 in. The second example is strictly a tool and not a weapon. It comes from the Thames at Basildon and is the narrow T-shaped axe, Type II in Wheeler's classification. Cleaning has revealed the neat formation of coiled terminals on each end of the blade (Pl. III). The use of one of these tools in boat-building is shown in the Bayeux Tapestry (*cf.* E. Maclagan, *The Bayeux Tapestry*, pp. 37–8 (London, 1943)). The type occurs also in the Hurbuck hoard of about A.D. 900, so it remained in use for at least 150 years from that date.

The finding of these Viking-type objects in the Thames can occasion no surprise to the historian. Some of the earlier examples may date back to the raids of A.D. 872, when the Viking or Danish army under Halfdan wintered on the tongue of land between the Kennet mouth and the Thames at Reading. Later period weapons may well be relics of the raids of the Danes who went up the Thames as far as Wallingford in 991 and again in 1013.