

The Viking Age weight from Portmahomack

Description

The lead bullion weight recovered from the monastic site at Portmahomack is very well preserved. It is cylindrical in shape and weighs 26.3g (before conservation) It measures 21.8mm in diameter and 7.1mm in height. The top of the cylindrical weight has a small dent or cut, probably the result of damage in antiquity or during deposition. Two small markings are also visible, which may be the remains of two hollow-punched decorations. Both surfaces have slight cracks and scratches. As the weight has little evidence of corrosion and only minimal damage, it seems likely that its present weight (26.3g) is close to its original weight. On this basis, the weight generally conforms to the Viking Age metrological system, it was almost certainly intended to indicate the imprecise Viking øre (Owen 1999)

The context

The lead weight was recovered from the topsoil of the site, where the archaeology has been heavily truncated by ancient and modern ploughing. Although this ploughing has removed artefacts from their context, it is interesting that the weight seems to derive from an industrial zone of the site where some of the best-preserved artefacts have been recovered and a known workshop building exists. The focus of activity in this area is thought to have occurred during the 8th and 9th centuries AD.

Weight systems

Throughout the Viking period in Scandinavia (c. late 8th – 11th centuries AD), silver and gold was treated as bullion and there was no coin-based economy. Silver was obtained in vast quantities from the east in the form of Arabic silver coins, these were normally melted down in Scandinavia and recast into ingots for compact storage, or made into jewellery. Both ingots and jewellery could be cut up later if small change was required (the resulting fragments known as hack silver). Silver hoards, some of immense value and containing a variety of coins, objects and hack silver, were buried for safekeeping and were occasionally not retrieved. Payments for goods or services were made in silver measured by weight; any silver, whether coin, ornament, hack silver or ingots, was valid in this metal weight economy. The silver was often weighed using a small pair of scales, which were designed to fold up and fit into a small box for portability. Weights of lead, iron and other metals were used by merchants and chieftains to weigh out silver as required. Viking Age weights from archaeological contexts are normally found either in male graves or at

trading centres such as Birka, Hedeby, Wolin, Truso and Dublin. It is exceptionally rare to find a whole set of weights and the scales that accompany them (Owen 1999, 120-1)

In late medieval Scandinavia, the standard unit of weight was the mark, divided into eight øre (or ounces), each of which consisted of three ørtugar (singular ørtog) (e.g. Kruse 1988, 286; Owen 1999, 121). However, a number of archaeological studies have identified units apparently equivalent to half an ørtog, or one sixth of an øre. Kruse notes that a weight unit of one sixth of an ounce allows for the convenient division of the ounce both into halves and into thirds. A division into sixths is also consistent with the Viking tendency towards a duodecimal system (Kruse 1988, 289-9). There is little doubt that variations of this system were in use in the Viking Age. However, the actual systems underlying the exchange of Viking silver is not clear and it seems likely that weight systems varied across the Viking world.

A number of studies concerning weight systems have been undertaken on the basis of archaeological evidence. A.W. Brøgger's classic study, based on Norwegian finds, identified two separate øre standards, one of 26.5g and one of 24g. According to Brøgger, the heavier standard was used in the early Viking Age, with a later shift to the lighter standard (Brøgger 1921, 77-85, 102-3). Another early study by T.J. Arne, based on Swedish finds, identified a smaller weight unit of c. 4g – and possibly another of c. 4.25g – or half an ørtog (Arne 1914, 176-196). Both versions of these units find some corroboration in more recent studies. Kyhlberg identified units of c. 4g and 4.266g on the basis of weights from Birka (1980, 259) while Steuer suggested units of c. 4g and 4.26g on the basis of weights from Hedeby (1973, 10-17). Sperber came to similar conclusions having studied the Swedish evidence. The system was adopted and adapted from the Islamic world as a result of the inflow of Arabic silver to the Baltic Sea region (Sperber 1996, 42-54).

The Islamic system was defined by the Caliph Abd al-Malik in the year AD 696-7 and was based on the Islamic weight unit for gold, the mitqal, a coin weight established to be 4.233g (Hinz 1970). It was a dual system, intended to be used for both silver and gold without elaborate conversion of the weight figures, provided that gold was exactly 14 times more expensive than silver. Its sub-unit, the dirham, was set at 0.7 of a mitqal. However, the gold and silver prices changed and so did their relative values. The factor 0.7 became irrelevant and the simpler factor of two-thirds of a mitqal replaced it; this system is known as the Islamic trade system. The standard mitqal remained unchanged, but the dirham fluctuated by as much as 5% from 2.96g to 2.82g (Sperber 1996, 54). The Swedish/Islamic system described by Sperber was based on the three-mitqal unit (12.7 g). The actual weight sets used by merchants and traders were fractions based on these systems, and the standard unit weight was the ounce, or øre. Deviations within the standard øre of the Viking period weight systems are relatively small, the lowest being about 24g and the highest about 28g (Sperber 1996, 55).

This Swedish/Islamic system in Scandinavia and the Baltic region has been recognised in the main in the type of weight that is spherical with flat poles or

polyhedral ('cubo-octahedral') in shape. These weights probably had Islamic prototypes and were probably used for weighing precious metals on small portable scales (Sperber 1996, 61). However, in the Viking homelands there were other forms of weights. At the early Viking market place in Ribe, Denmark, a large number of cylindrical weights have been recovered through excavation around a bronze workshop. Some of them are very small, weighing about 1g, and none are much heavier than the equivalent of about one Scandinavian øre. It has been suggested that these small and simple weights from Ribe may have been used not only for weighing small quantities of precious metals in trade, but also for weighing out base metals in the workshop (Owen 1999, 124-5). The northwest of the expanded Viking world also commonly used many different types and shapes of weight. One of the most interesting assemblages comes from Dublin, containing more than 200 lead weights. Discs, bowls, hemispheres and cones of both plain and perforated varieties, as well as rings, hammer-finished lumps and lead-filled copper-alloy containers were recovered. The basic standard unit of the great majority of the weights from Dublin was 26.6 g; with multiples or fractions of this weight being prevalent, no matter what their shape (Wallace 1987, 212-4). This is slightly heavier than the most common Scandinavian standard unit (24.4g +/- 0.8g), an observation that, together with the absence of Scandinavian-type polyhedral weights, of stamped weight markings and the apparent infrequency of the one-third (ørtugar) unit in Dublin, strengthens the argument that the weight system of Viking Age Scandinavia and the Baltic was slightly different than that of Dublin (Owen 1999, 123). The basic standard unit from Dublin (26.6 g) was close to the Roman and Carolingian ounces of 26.8 g and 25.6 g respectively. The weights from the Dublin excavations probably emphasise and underline Dublin's trade links with the ports of western England (the 'fuzzy unit of 26g' see Kruse's (1988) analysis of ingots from hoards found in England) and the northwest Continental region, and indicate the region's relative economic independence from the Scandinavian world (Wallace 1987; 213). Indeed, a possible changeover in the weight systems of Viking Age Ireland (from a lighter to a heavier øre standard) may be visible as a result of the excavations at the Kilmainham/Islandbridge (Dublin) 9th century cemetery, where weight specimens of both the light and heavy øre standard were recovered (Wallace 1987; 213).

A number of possibilities thus arise from the (albeit limited) archaeological evidence: a single øre standard of somewhere in the 24g - 26.6g range, but only very approximately applied, two main standards of c. 24g and 26.6 g, both subject to considerable variation in different times and places; or no single standard across the Viking world, but a variety of similar local standards, with potential for some variation in weight standards over extended periods (Williams 2000, 33).

Discussion

The weights used during the Viking period vary a great deal in size and shape. However, the most common weights in the Baltic Viking Age were polyhedral and spherical weights with flat poles, which appear to have been

used across a large geographical area. Lead weights similar to the Portmahomack weight are also very common in both Scandinavia and regions with a Scandinavian influence. These lead weights could be cast by almost anyone, anywhere. In many cases they were not subject to the same rigid control as the bronze weights, which were evidently manufactured in a very limited number of well-equipped workshops – such as that attached to the royal centre of Sigtuna.

There are only three comparable finds to the Portmahomack weight in the Scottish archaeological record: a lead disc-shaped weight of about 9.9g from Buckquoy, Birsay (Ritchie 1977, cat. no. 96), and the two lead weights from Scar, Orkney (associated with the excavation of the fine Viking boat burial) are both cylindrical in shape and both weigh 26.65g. They are decorated with what are probably weight markings (Owen 1999, 124). Unfortunately, neither of the weights was discovered *in situ*, although their association with the burial (thought to date to sometime between AD 875 and 950) is not in doubt (Owen 1999, 118). Elsewhere, the simple cylindrical form can be found in the weight assemblages from both Dublin and Ribe (Owen 1999, 125). Given the rarity of the Viking weight in the archaeological record of Scotland, the similarities between the Portmahomack weight and the Scar weights are both striking and intriguing, indeed, the correspondence of these weights to the Dublin øre standard may reward further research.

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