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ON THE FORT BOVISAND ANCHOR STOCK CORE

Abstract: An alleged ancient lead anchor stock core of Mediterranean design, which had spent many years under the stairs in the lobby leading to the bar at Fort Bovisand, was transferred to Plymouth City Museum in May 2010. Due to the possible overlap of British and Mediterranean lead isotope ratios, it was decided to refrain from sample extraction and provenance analysis. With reference to typological and historical data, particularly comparable artefact discoveries from in and outside of the Mediterranean as well as the absence of evidence for significant lead exploitation before the Roman Conquest, this article will argue that the object is probably not British.
Keywords: *Anchor Stock Core; Fort Bovisand; Plymouth; Lead Mining; Non-Invasive Provenancing.*

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In May 2010, a lead object (Figures 1-5) which had spent many years under the stairs in the lobby leading to the bar at Fort Bovisand near Plymouth (Devon, UK), was presumed to be an anchor stock core of Classical Greek design, and moved to Plymouth City Museum (now *The Box Plymouth*) where it received accession number AR.2010.155.

Such a core would have been formed within a hollowed wooden beam for an anchor stock, in which molten lead was poured, to increase the overall weight of the anchor. The stock's purpose was to orient a fluke to dig into the seabed (Figure 4). The hollowed orifice will have been wider at the bottom, narrowing towards the top, so the solidified core could not fall out. It is trapezoidal in section, 620mm long, 102mm high and 65mm wide at its widest point on the lower side. There is a semi-circular notch in the centre of its upper side which is 25mm in diameter (where a tenon would have been fitted to stabilise it within the wooden stock). It is possible that the wider part of the core is actually the upper side, i.e. that it is displayed upside-down in the figures. There will have been one or two of such cores in the wooden stock on both stock-wings.[1] It weighs 26kg – incidentally, around one Greek talent. Despite its notional age[2] and the fact that it probably spent the better part of that period under water, it is in good, albeit corroded condition, with remains of marine growth all over the surface.

It shows a distinct similarity to a series of cores from the Tektaş Burnu shipwreck published by Trethewey[3] – as well as to other so-called Type IIa lead anchor stock cores as described in Haldane's typology from 1984,[4]

[1] Cf. BASS *et alii* 2006, 4, Fig. 3C.
[2] The possible period in which these anchors were in use is given as between as early as the late 6th and the early to mid-2nd Century BCE: HALDANE 1984, 7; EISEMAN 1980, 45.
[3] TRETHEWEY 1999, 9; TRETHEWEY 2001, 109-114.
[4] HALDANE 1984, 4.

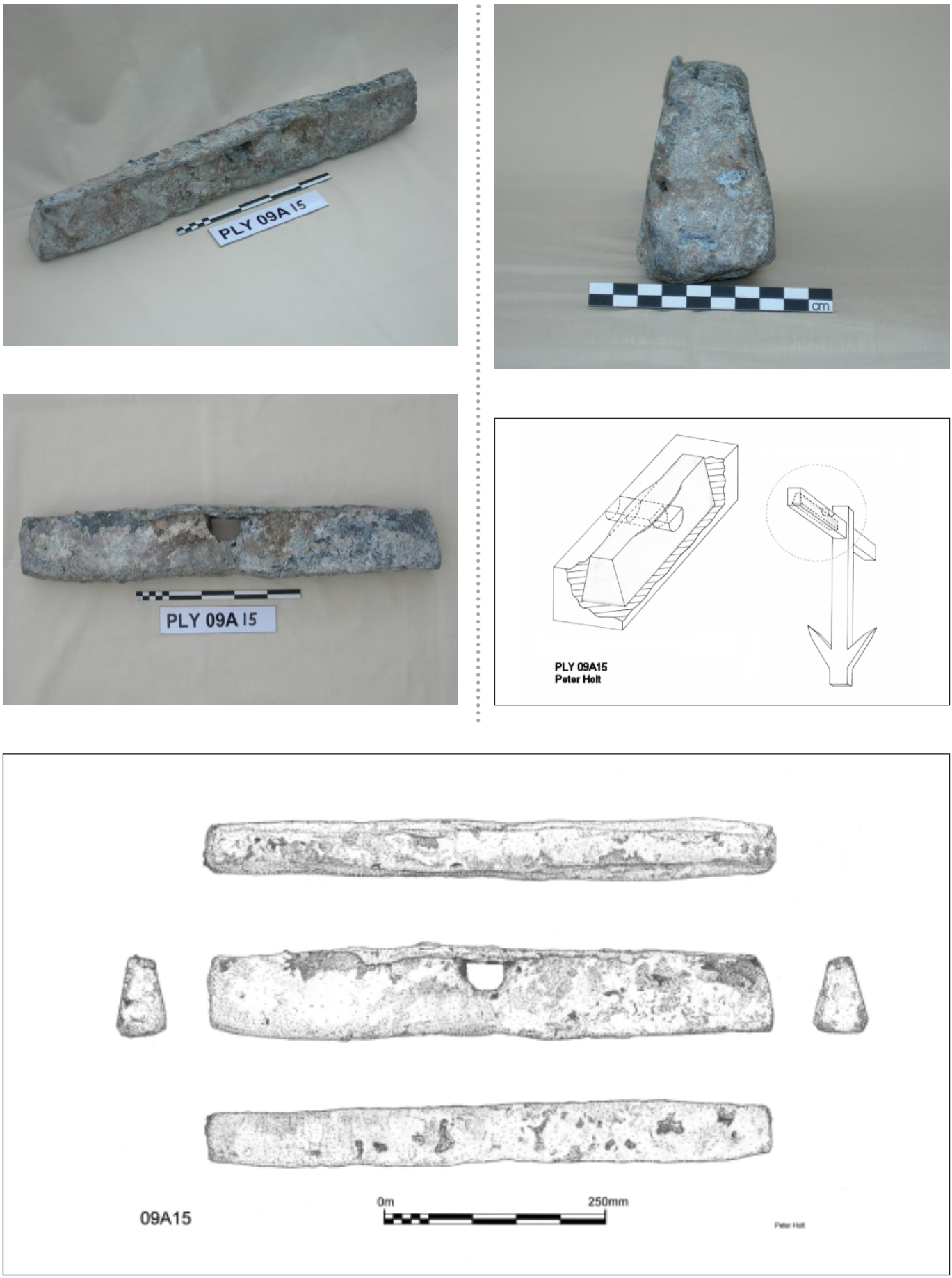

Fig. 1-5. The Fort Bovisand Anchor Stock Core (drawings by Peter Holt); © The SHIPS Project – used with permission http://www.ship-sproject.org/Finds/Fd_09A15AnchorStock.html (09.07.2022).

which correlates for the most part with Kapitän's typology published in the same year, wherein the type is similarly defined as a Type 2a wooden anchor with a lead-filled stock.[5]

The core has not undergone any invasive scientific analysis. It was initially considered to extract a sample and submit it for lead isotope provenancing.[6] Due to the possible overlap of lead isotope ratios however, provenance analyses to distinguish between British and Mediterranean lead, despite being geographically remote, may not bring an unequivocal result.[7] The museum therefore decided against destructive sampling. The aim of this article is thus to bring the Anchor Stock Core from Fort Bovisand into the academic record, while trying to address the question of the (un)likelihood of it being made of lead from British mines, without isotope analysis.

Although lead, in the Mediterranean, is a common by-product of silver mining at least since exploitation began at Lavrion[8] – in the British Isles it is less so. The probable beginnings of large-scale lead-exploitation can be dated to the Claudian conquest. Several ingots have been recovered from the Mendips; one dated 49 CE,[9] while further ingots have been dated to the reign of Vespasian.[10]

Earlier sources for lead mining in the British Isles pre-dating the Roman Conquest are scarce. The earliest lead artefact in Britain, found near the Scottish border, is a lead-bead necklace which has been dated to the Early Bronze Age.[11] A study into lead isotope concentrations within tooth enamel concluded that concentrations within the teeth of Britons were never above (median) 0.1 mg kg^{-1} during the entire prehistoric period, with the highest (i.e. 0.1 mg kg^{-1}) coming notably from individuals from the Neolithic. In contrast, from the 1st to 4th Centuries CE, concentrations increased significantly to median figures of 1.21 mg kg^{-1}, suggesting that large-scale lead mining was being performed in Britain only from the start of Roman conquest, and that the "appearance of increased lead concentrations only during the Romano-British period supports the observation that people "had little use for (lead) until the plumbing revolution of Greco-Roman times"".[12] In contrast, lead anchor stock cores were in use centuries earlier.[13]

There have been further discoveries of lead anchor stock cores in recent years,[14] perhaps most notably during the two diving seasons of the Moroccan Maritime Survey (MMS) at Cap Spartel near Tangier, in 1999 and 2002.[15] In the first survey season, one Type IIa/2a core was found with the wood from the stock still attached.[16] While it was left in situ on the seabed, a sample of the wood was taken and subsequently C^{14}-dated to a range between 785-400 BCE. This range falls within the lifespan of Type IIa cores as described by Haldane.[17] In addition, lead isotope provenance analysis was performed on samples from six anchor pieces recovered from both survey seasons, and the conclusion was reached that while Italy is an unlikely source, the ratios indicate that they could be compatible with mines from Southern Spain.[18]

In conclusion: the Anchor Stock Core from Fort Bovisand is probably not made of British lead, because lead mining on a scale which would allow for the manufacturing of an anchor part this size only began a few hundred years later. Compared to other recently discovered anchor stock cores, given their proximity to Cadiz and other Punic settlements in southern Iberia, it may have come from a Phoenician ship. Weighing one Attic talent, the Fort Bovisand Anchor Stock Core could be Greek. In the absence of firm scientific data however, it could have come from anywhere and its origin must remain an open question.

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REFERENCES

BASS/CARLSON/POLZER 2006

Bass, G. F./Carlson, D. N./Polzer, M. E., A Brief History of Ships' Hulls and Anchors as Revealed Along the Turkish Coast by the Institute of Nautical Archaeology. In: Avunç, Betül (ed.), *Hayat Erkanal'a Armagan; Kültürin Yansimasi / Studies in Honor of Hayat Erkanal; Cultural Reflections* (Istanbul: Homer Kitabevi ve Yayincilik Ltd), 138-144.

BRILL/WAMPLER 1967

Brill, R. H./Wampler, J. M., Isotope Studies of Ancient Lead, *American Journal of Archaeology* 71/1, 63-77.

EISEMAN 1980

Eiseman, C. J., Greek Lead, *Expedition* 20, 41-47.

ERBATI/TRAKADAS 2008

Erbati, E./Trakadas, A., *The Morocco Maritime Survey; An archaeological contribution to the history of the Tangier peninsula* [British Archaeological Reports. International Series 1890] (Oxford: Archaeopress).

GALE 1980

Gale, N. H., Some aspects of lead and silver mining in the

[5] KAPITÄN 1984, 36-37.
[6] Cf. VILLA 2009; STOS-GALE/GALE 2009.
[7] BRILL/WAMPLER 1967.
[8] GALE 1980, 177-178.
[9] But see WHITTICK 1982, 113-115, who considers it to be a commemorative plaque.
[10] TYLECOTE 1986, 61; MONTGOMERY *et alii* 2010, 202.
[11] MONTGOMERY *et alii* 2010, 202.
[12] MONTGOMERY *et alii* 2010, 210; and TYLECOTE 1987, 41, cited in MONTGOMERY *et alii* 2010, 219.
[13] Cf. chronology of wooden anchors in HALDANE 1984, 13, Fig. 5.
[14] See e.g. ROSLOFF 2007; Van DUIVENVOORDE 2012.
[15] TRAKADAS/CLAESSON 2001; TRAKADAS 2002; ERBATI/TRAKADAS 2008; TRAKADAS/ERBATI 2009.
[16] TRAKADAS 2002, 19; ERBATI/TRAKADAS 2008, 45.
[17] Supra, nr. 4.
[18] ERBATI/TRAKADAS 2008, 46-48.

Aegean. In: Doumas, C. (ed.). *Thera and the Aegean World II (Papers and Proceedings of the Second International Scientific Congress, Santorini, Greece)* (London: Thera and the Aegean World (distributed by Aris & Phillips), 161-95.

HALDANE 1984

Haldane, D. D., *The Wooden Anchor*. Master's Thesis, Dept. of Anthropology, Texas A&M University.

KAPITÄN 1984

Kapitän, G., Ancient Anchors – Technology and Classification, *International Journal of Nautical Archaeology* 13/1, 33-44.

MONTGOMERY/EVANS/CHENERY/PASHLEY/KILLGROVE 2010

Montgomery, J./Evans, J. A./Chenery, S. R./Pashley, V./Killgrove, K., 'Gleaming, white and deadly': using lead to track human exposure and geographic origins in the Roman period in Britain, *Journal of Roman archaeology; supplementary series*, Suppl. 78, 199-226.

ROSLOFF 2007

Rosloff, J. P., A one-armed anchor of c. 400 BCE from the Ma'agan Michael vessel, Israel. A preliminary report, *International Journal of Nautical Archaeology* 20/3, 223-26.

STOS-GALE/GALE 2009

Stos-Gale, Z. A./Gale, N. H., Metal provenancing using isotopes and the Oxford archaeological lead isotope database (OXALID), *Archaeological and Anthropological Sciences* 1/3, 195-213.

TRAKADAS/CLAESSON 2001

Trakadas, A./Claesson, S., On the Shores of the Maghreb-el-Asqa: The 1999 Survey of Tangier Bay, Morocco, *International Journal of Nautical Archaeology* 28/3, 3-14.

TRAKADAS 2002

Trakadas, A., Morocco Maritime Survey: the 2002 Season, *International Journal of Nautical Archaeology* 30/1, 12-21.

TRAKADAS/ERBATI 2009

Trakadas, A./Erbati, E., Lead anchor elements from Tangier, Morocco, *Bulletin D'Archéologie Marocaine* 21, 250–267.

TRETHEWEY 1999

Trethewey K., An Interesting Anchor from the Tektaş Burnu Shipwreck, *International Journal of Nautical Archaeology* 26/4, 9.

TRETHEWEY 2001

Trethewey K., Lead anchor-stock cores from Tektaş Burnu, Turkey, *International Journal of Nautical Archaeology* 30/1, 109-114.

TYLECOTE 1986

Tylecote, R. F., *The Prehistory of Metallurgy in the British Isles*. The Institute of Metals (London).

TYLECOTE 1987

Tylecote, R. F., *The Early History of Metallurgy in Europe* (Harlow: Longman).

VAN DUIVENVOORDE 2012

Van Duivenvoorde, W., The Anchor of the 3rd Century BC ship from Kyrenia, Cyprus: a one-armed wooden anchor with a lead-filled stock, *International Journal of Nautical Archaeology* 41/2, 397-407.

VILLA 2009

Villa, I. M., Lead isotopic measurements in archaeological objects, *Archaeological and Anthropological Sciences* 1/3, 149-53.

WHITTICK 1982

Whittick, G. C., The Earliest Roman Lead-Mining on Mendip and in North Wales: A Reappraisal, *Britannia* 13, 113-23.