

[Supplementary material]

Scales, weights and weight-regulated artefacts in Middle and Late Bronze Age Britain

Lorenz Rahmstorf*

* Seminar für Ur- und Frühgeschichte, University of Göttingen, Nikolausberger Weg 15, D-37073 Göttingen, Germany (Email: lorenz.rahmstorf@uni-goettingen.de)

Table S1. Potential weights from Middle and Late Bronze Age and Early Iron Age Britain.

Figure	Site	Material	Weight (g)	Date	Reference
2.1	Cliffs End, Kent	Lead	144(–)	Late Bronze Age	Mepham & Schuster (2014: fig. 5.9)
2.2	Salcombe, Devon	Bronze	29.8	Middle Bronze Age	Needham <i>et al.</i> (2013: fig. 3.21)
2.3	Denton with Wootton, Kent	Bronze	32.66	unknown	Ahmet (2017)
2.4	Salcombe, Devon	Bronze	44.7	Middle Bronze Age	Needham (2017: fig. 4.4)
2.5	Runnymede Bridge, Berkshire	Lead	112.3	Late Bronze Age/Early Iron Age	Needham & Hook (1988: fig. 2.1)
2.6	West Caister, Norfolk	Lead	158	Late Bronze Age	Lawson (1979: fig. 9.2)
2.7	Heathery Burn Cave, County Durham	Stone	96.1	Late Bronze Age	Britton (1968: 10, 182)
2.8– 11	Flag Fen, Cambridge- shire	Lead	–	Early Iron Age	Combs (2001: fig. 10.8)

Table S2. List of the 52 gold bar torcs with weights between 82.4 and 1180g from Ireland, Britain and France used for the Cosine quantogram analysis (cf. Figure 5A).

No.	Site	Weight (g)	No. in Northover (1989) (or other publication)
1.	St Germain Museum, Paris	82.4	C. Louboutin <i>pers. comm.</i>
2.	Ireland	91	Eogan 1994: 128 (weight corrected; cf. Armstrong 1933: 59, no. 61)
3.	Burton, Wrexham	92.9	Barton 2011
4.	Haxey, Lincolnshire	94.2	Eogan 1994: 128
5.	Towednack, Cornwall	94.6	Eogan 1994: 128
6.	Towednack, Cornwall	96.6	Eogan 1994: 128
7.	Ireland	99	38
8.	Thomastown, Kilkenny	123.8	Eogan 1994: 127
9.	Tiers Cross, Pembrokeshire	125.2	Eogan 1994: 129
10.	In the Minch, Outer Hebrides	139.2	Cowie 1994; A. Sheridan <i>pers. comm.</i>
11.	Bittering Common, Foulsham, Norfolk	143.1	Eogan 1994: 129 (complete)
12.	Grunty Fen, Cambridgeshire	166	2
13.	Yeovil, Somerset	167.2	19
14.	Tiers Cross, Pembrokeshire	176.5	Eogan 1994: 129
15.	Tiers Cross, Pembrokeshire	178.5	Eogan 1994: 129
16.	Ropley, Hampshire	182.7	10
17.	Stanton, Staffordshire	185.9	20
18.	County Mayo	186.7	32
19.	Ansty/Hilton, Dorset	202	44
20.	Hampton/Malpas, Cheshire	210	6
21.	Llanwrthwl, Brecknockshire	214.6	29
22.	Scultorphe, Norfolk	216	16
23.	Glamorgan	231.5	26
24.	Central Wales	237	30
25.	Birthdir, Merionethshire	261	27

26.	Harlech, Merionethshire	272	28
27.	Armagh	283.8	Eogan 1994: 127
28.	Fahan, Donegal	290.8	Eogan 1994: 127
29.	Enniscorthy, Wexford	306.7	Eogan 1994: 128
30.	Ireland	316	36
31.	Sudbrook, Lincolnshire	319.5	Varndell 1997
32.	Daoulas, Finistère	320	40
33.	Mullingar, Westmeath	336.9	35
34.	Giants Causeway, Antrim	341.6	Eogan 1994: 127
35.	Flamanville, Manche	353	Eogan 1994: 130
36.	Fresn��-la-M��re	355.2	39
37.	Romsey, Hampshire	363.7	Eogan 1994: 128
38.	Castlemount, Dover	367.1	11
39.	Mouldsford, Oxfordshire	373	100; Eogan 1994: 128
40.	Tara, Meath	384.9	34
41.	Aughrim, Galway	389.4	Eogan 1994: 127
42.	Cesson-Sevigne, Ille-et-Vilaine	389	41
43.	Kerdrin/Plouguin, Finist��re	456	66
44.	Augan, Morbihan	458	42
45.	Ireland	487	37
46.	Kingsfurze/Tipper, Kildare	567	31
47.	Corrard, Fermanagh	720	Ramsey 2014
48.	East Cambridgeshire	732.4	Fowler 2015
49.	St. Helier, Jersey	746	1
50.	Ysgeifiog, Clwyd	752	25
51.	Tara, Meath	851.8	33
52.	Fanty Hill/Pattingham, Staffordshire	1180	53

For the Cosine quantogram analysis of the dress-fastener and the penannular bracelets (Figure 5b) all complete finds listed in Eogan (1994: 142–46) ('dress-fastener'), Eogan (1994: 148–58) (Irish-type penannular bracelets; Penannular bracelets, terminal form uncertain; British type penannular gold bracelets) and recent finds of 'dress-fastener and penannular bracelets

stored in the British Museum (Monkston Park, Milton Keynes hoard; Salcombe; Fittleworth, Fitzleroi Farm) or registered in the Portable Antiquities database (LEIC-A3A9AE; HAMP-5E48D1; PAS-E92EA0; CAM-08B4E0; BERK-6870F5; BERK-6863E4; BERK-683F91) were included (n = 151).

References

- AHMET, J. 2017. ID: KENT-115078: an unknown weight. Available at: <https://finds.org.uk/database/artefacts/record/id/854238> (accessed 31 May 2019).
- ARMSTRONG, E.C.R. 1933. *Guide of the collection of Irish antiquities: catalogue of Irish gold ornaments*. Dublin: Brown & Nolan.
- BARTON, C. 2011. ID: PAS-5B1745: a Bronze Age hoard. Available at: <https://finds.org.uk/database/artefacts/record/id/436588> (accessed 3 June 2019).
- BRITTON, D. 1968. *Inventaria archaeologica. Great Britain 9th set: GB.55*. London: British Museum.
- COOMBS, D. 2001. Metalwork, in F. Pryor *The Flag Fen Basin: archaeology and environment of a fenland landscape*. Swindon: English Heritage.
- COWIE, T. 1994. A Bronze Age gold torc from the Minch. *Hebridean Naturalist* 12: 19–21.
- EOGAN, G. 1994. *The accomplished art: gold and gold-working in Britain and Ireland during the Bronze Age (c. 2300–650 BC)*. Oxford: Oxbow.
- FOWLER, H. 2015. ID: CAM-E5D871: a Bronze Age torc. Available at: <https://finds.org.uk/database/artefacts/record/id/743503> (accessed 3 June 2019).
- LAWSON, A.J. 1979. A Late Bronze Age hoard from West Caister, Norfolk, in C. Burgess & D. Coombs (ed.) *Bronze Age hoards: some finds old and new* (British Archaeological Report, British Series 67): 173–79. Oxford: British Archaeological Reports Publishing.
- MEPHAM, L. & J. SCHUSTER. 2014. Bronze Age metalwork, in J.I. McKinley, M. Leivers, J. Schuster, P. Marshall, A.J. Barclay & N. Stoodley (ed.) *Cliffs End Farm, Isle of Thanet, Kent* (Wessex Archaeology Report 31): 179–82. Salisbury: Wessex Archaeology.
- NEEDHAM, S. & D.R. HOOK. 1988. Lead and lead alloys in the Bronze Age—recent finds from Runnymede Bridge, in E.A. Slater & J.O. Tate (ed.) *Science and archaeology Glasgow 1987* (British Archaeological Reports British series 196): 259–74. Oxford: British Archaeological Reports Publishing.
- NEEDHAM, S., D. PARHAM & C.J. FRIEMAN. 2013. *Claimed by the sea: Salcombe, Langdon Bay, and other marine finds of the Bronze Age* (CBA Research Report 173). York: Council for British Archaeology.

- NORTHOVER, J.P. 1989. The gold torc from Saint Helier, Jersey. *Société Jersiaise. Annual Bulletin for 1989*: 113–37.
- RAMSEY, G. 2014. Corrard torc. Available at:
<https://fermanaghastoryin100objects.wordpress.com/tag/dr-greer-ramsey> (accessed 3 June 2019).
- VARNDELL, G. 1997. A Bronze Age gold torc from Sudbrook, Lincs. *Oxford Journal of Archaeology* 16: 73–77. <https://doi.org/10.1111/1468-0092.00026>