This 203rd volume of the British Museum Research Publication presents the results of the excavation and scientific/technical analysis of a unique hoard, a single deposit from Chiseldon in Wiltshire, which contained 17 more or less complete multi-sheet globular cauldrons plus numerous fragments. The rims, ring-handles with their staples, and the collars are made of iron, the hemispherical lower sections of sheet bronze. The overlapping sheets are joined by rivets. Handle plates of two cauldrons show Early La Tène Waldalgesheim/Vegetal Style ornament, while another has a raised wing- or horn-shaped handle plate which is interpreted as a stylized bovine head, all so far unique on cauldrons. Apart from two cattle skulls there were no other associations. Radiocarbon dates between the 4th and late 3rd centuries BC place the skulls in the earlier part of the British Middle Iron Age. This is much earlier than initially believed, when the only associated and therefore datable upper part of a Chiseldon type cauldron (Letchworth) was dated by its accompanying pottery to the mid-2nd century BC (Moss-Eccardt 1965).

Prior to the discovery of Chiseldon no complete vessels of this type, which is also known from the Continent, had been found in Britain or Ireland. Here they only survived as fragments from a handful of sites in southern England (Gerloff 2010, 374 ff. App. 3, 1–4; Joy 2014, 348ff. App. B, 9, 23. 27. 33. 41–2). Also, not only has the Chiseldon assemblage yielded the earliest date for this type of cauldron from Britain or the Continent, but it is also the largest single deposit of Iron Age cauldrons so far discovered in Europe. But recently, since 2013, it has been rivalled by the discovery of eleven similar cauldrons, one also decorated, from the large Iron Age settlement site at Glenfield Park near Leicester. Here, remains of at least two further examples had previously been discovered in 2009 (Joy 2014, 352). Unlike Chiseldon the large Glenfield Park site, as yet unpublished, has yielded other diagnostic features and objects of Iron Age date, such as pottery, iron tools and weapons, dress items and a bronze horn-cap. Once the Glenfield excavations and finds are fully researched and published they should contribute not only to the evaluation of the Chiseldon hoard, but also to that of the British Iron Age as a whole, its social and ritual aspects as well as its chronology. For preliminary accounts of the Glenfield Park finds see: https://www2.le.ac.uk/services/ulas/discoveries/projects/iron-age/glenfield-cauldrons;
The Chiseldon publication is divided into Parts I and II. The first, main part has 12 chapters by the various contributors describing, discussing and illustrating the discovery/setting of the hoard, its on-site and later micro-excavations in the British Museum, conservation techniques, CT (Computed Tomography) scans of the soil blocks, the vessels' technology, manufacture and decoration, their metal composition, analysis of carbonised residues on cauldrons, wooden and botanical remains adhering to their insides and outsides, dating of the find and, last, the archaeological and social context of the hoard. The individual chapters are illustrated with many explanatory diagrams, charts and photographs. Part II includes the catalogue of the 17 more or less complete cauldrons and of major and minor fragments. It provides schematic drawings of each object, stating its position and orientation in the ground, state of preservation, dimensions and description of individual components. The catalogue is followed by four Appendices. A: Analysis and metallography by Peter Northover of samples from a sheet bronze vessel sent to him by the original finder; B: Survey methods and equipment; C: Anatomical features of the four woods identified from the Chiseldon cauldrons and D: Methods for the analysis of the partially carbonised residues. This is followed by a list of contributors to the volume, the bibliography and an index.

The hoard was discovered by a local metal detectorist on ploughed farmland 1 km south-west of the village of Chiseldon, near Swindon in Wiltshire. The findspot (SU 17875-78872) is close to the Ridgeway and overlooked by at least two hillforts, Barbury Castle and Liddington Castle. The finder contacted a local archaeologist and with help of the Chiseldon Local History Society undertook the first trial excavations in 2004. They discovered an area filled with a mass of sheet bronze fragments and some iron rings. Realizing the fragility and complexity of the assemblage and its possible importance, they sought professional assistance. This proved difficult, as a prehistoric date of the objects was questioned. Therefore, the finder took the matter into his own hands and send some sheet bronze samples to the archaeometallurgist Peter Northover at Oxford University, who analysed the samples and declared them to be most likely of Iron Age date (see App. A), thus prompting Wessex Archaeology to excavate the site in cooperation with conservationists from the British Museum.

The excavation of an area of 5 square metres took place in the summer of 2005. It revealed that the hoard was contained in a large circular pit, 2 m wide and 0.65 m deep. The pit was cut into the natural chalk, had no lining and contained a single homogeneous fill of dark clay loam interspersed with a few fragments of Middle Iron Age pottery and disarticulated bone fragments, which were identified as being from domesticated as well as wild animals Geophysical survey of the surrounding area revealed a concentration of further probable pits and evidence for
structures, field boundaries and enclosures just to the north of the hoard as well as traces of a possible pit circle, probably first dug in the Late Neolithic. Field-walking revealed traces of a Romano-British settlement in the area. Material in the backfill of the pit indicated that there may have been an Iron Age settlement at the time of the deposition of the hoard.

On-site excavations revealed 11 more or less complete cauldrons (nos 1–11) and five additional significant sections of sheet bronze (nos 18–22). After recognizing the extent of the assemblage, the cauldrons were block-lifted in seven soil blocks, so they could be extracted and analysed in the British Museum. After funding (Leverhulme Trust) had been secured, remains of six more cauldrons (nos 12–17) were discovered in the laboratories of the BM between 2010 and 2014. As it was not possible to micro-excavate all blocks in time for the present publication, two blocks containing three cauldrons were simply scanned using a micro-focus X-CT scanner to record dimensions and structures.

The cauldrons and fragments had been placed in several layers around the wall of the pit, some stuck in to each other. They formed an open ring with the gap to the south. Their orientation was varied: some were placed upwards, some downwards, whereas others rested on their side. The vessels were densely packed into the pit and depending on their position, they were more or less deformed. The copper alloy sheet(s) of the lower section, only between 0.2 and 0.4 mm thick, was very fragile, often fragmented and crushed.

Extensive technical and scientific investigations revealed sophisticated metalworking techniques and details of manufacture. For instance, X-radiography was used to show hidden details on the corroded iron parts, such as construction of rim, repairs, riveting and most importantly to discover further details of the decoration on the iron upper bands. Gas Chromatograph-Mass Spectrometry (GC-MS) and Scanning Electron Microscopy (SEM) were employed to identify organic remains preserved on the exterior and interior of the vessels. Black sooty material from the outside revealed that the vessels were used over fires, while mineralized wood on and near their rims may be interpreted as remains of wooden lids and ladles. On the inside fatty – including milk fat – and plant remains indicated the cooking of meat and vegetables, as well as cereal- and milk-based dishes, for instance stews, gruels and porridges.

In addition to Peter Northover's original analysis of copper alloy samples (App. A), 35 samples (16 iron, 19 copper alloy) were analysed in the British Museum. The iron components of at least four of the analysed five cauldrons may have been made of the same metal, whereas the bronze components of individual cauldrons are likely to have been manufactured from different blanks. It was not possible to identify the origin of the iron, however, that of the copper alloy is believed to be probably southern Britain. The tin contents of the sheet bronze vary between 6.7 and 14.4 wt%, the average being 11%. As in all Late Bronze Age sheet bronze, the lead content is less than 1%.
The Chiseldon vessels belong to the traditional broad group of Iron Age and early Roman ‘Globular Cauldrons’ and are here assigned to Joy’s (2014, 328ff fig.3.) Group II (‘globular composite cauldrons’), projecting-bellied forms being Group I. Group II corresponds with Gerloff’s (2010, 377ff. fig. 9,1) multi-sheet Type Walthamstow-La Tène with iron upper and bronze lower section and its Variant Spetisbury/Baldock, where both upper and lower section are made of sheet bronze. However, in hindsight with knowledge of the Chiseldon examples Gerloff’s Type should have been named ‘Chiseldon-La Tène’, emphasizing that – unlike most British cauldrons – the type is also known from the continental La Tène Iron Age, where it occurs at the eponymous site. The continental counterparts come from central, western and northern Europe. Here they have been found in oppida, as for instance at Manching, Bavaria, in ritual deposits as at La Tène, Switzerland, or come from cremation burials as in north-west France and northern Europe. Because the present study concentrates on the technical and functional aspects of the Chiseldon find, the continental parallels are briefly mentioned but not discussed. Their date is cited as – in common with the British examples – being ‘Middle Iron Age’ (p.98). This terminology, however, applied to the continental examples is not quite correct, as there is no continental ‘Middle Iron Age’, merely an earlier (Hallstatt) and later (La Tène) Iron Age, both having been divided into various phases. The date of the continental counterparts of Joy’s Class II (Gerloff’s 2010 Type Walthamstow-La Tène) cauldrons is from Middle (La Tène II/Reinecke’s La Tène C) to Late La Tène (La Tène III/Reinecke’s La Tène D), ie, the central and west European ones belong to the middle and late phases of the Late Iron Age, the north European ones mainly to the later Pre-Roman Iron Age. A short discussion of the continental examples in relation to the British ones will be published elsewhere (Gerloff forthcoming).

The largely complete state of the Chiseldon vessels offered the opportunity to study their individual components in detail. Unlike their continental counterparts, which generally have three bands or tiers (iron rim, upper iron and lower bronze tier) most of the Chiseldon cauldrons are made in four main sections: an iron rim, an upper iron band (named A), a middle band (named B) and a bowl-shaped lower band (named C), both of sheet bronze. Exceptions are some with multiple A- or B-bands or no B-band at all. Because of the thinness of the bronze sheet, it is considered that all or most cauldrons originally had no B-band, ie, only a large bowl-shaped bottom tier (C). If this were the case, their mode of construction would correspond to that of their continental counterparts. As far as could be established, the upper iron band of the Chiseldon cauldrons is usually composed of two sections joined by iron rivets, while the lower B and C tiers have no vertical seams. The majority of cauldrons have bronze rivets in their horizontal A/B seams, many with domed heads to the outside, while the rivets in the B/C seams are always of bronze and hammered flat on the outside. The upper band or tier always fits outside the lower one, in contrast to the earlier Atlantic bronze cauldrons where the upper tier fits inside the lower. The external rim diameter of the cauldrons varies between 560 mm and 310 mm. Due to the damage of nearly all lower sheet bronze bands the exact original depth of
the vessels could not be established and is estimated to have been between c. 450 mm and 250 mm. The average capacity is estimated to have been about 46 litres or 10 gallons.

The collars, ie, Band A, show several profiles which define the shape and outline of the cauldrons. The section may be ‘doglegged’, flaring convex, straight convex or tapering convex. In the so-called ‘doglegged’ profile, the A-Band turns in under the rim, creating a slight shoulder or carination. Cauldrons with this profile always have triple-ribbed ring-holders and a hollow U-shaped rim which was hammered on to Band A. Cauldrons with the other profiles mostly have solid rims with a sub-rectangular section, containing a groove into which Band A was inserted and then hammered and/or quenched for a close fit. The relationship between upper iron and lower sheet-bronze sections lies between a 1:3 to 1:2 ratio. The iron ring-handles (diam. 96–130 mm) have a circular cross-section and are between 15 and 8 mm thick. Their iron staples are either plain or triple-ribbed loops with an upper shank passing through a hole in Band A and being domed over by a washer on the interior of the vessel. The handles are aligned with, or on the side of, the vertical seams of Band A. The smallest Chiseldon cauldron bears handle stops below each handle at the bottom of Band A to ensure that a dangling handle does not touch and damage the thin bronze sheet below. Many of the cauldrons are heavily repaired, especially on their fragile sheet bronze sections. These repairs resemble those on Atlantic cauldrons. Depending on the area of the damage, small patches or larger sheets were riveted on – never soldered – and mostly attached inside of the vessel. Again, in common with Atlantic vessels, a few show paper-clip repairs. Some vessels show evidence of multiphase patching, while other repairs may have been part of the original manufacturing process. Repairs on the iron sections are more difficult to detect because of their corrosion but include patches or strips attached by iron rivets.

As the title suggests, one of the main features of this publication is its discussion of the function of the vessels. It is argued that they were intended primarily for feasting, potentially for very large assemblies. The capacity of the 17 more or less complete cauldrons taken together is around 800 litres or 175 gallons, which would imply that if all had been used in one event, their contents could have fed hundreds of people, if not over a thousand. But this scenario is considered unlikely, at least for a specific event prior to their deposition, since the large amounts of animal bones and pottery fragments known from other sites associated with feasting were absent, while the two cattle skulls present are believed to have been displayed before deposition and not associated with a feast. Other interpretations are that the hoard represents conspicuous destruction, perhaps as a ritual offering or display of wealth. Also, all the Chiseldon vessels may not have belonged to the same group or clan, so their communal deposition could be interpreted as a demonstration of unity on the occasion of a political or military alliance between the groups. In addition to the interpretation of the Chiseldon find, general social aspects and evidence of large-scale Iron Age feasting are discussed.
The dating of the deposit rests on four samples from the two cattle skulls. Although these may have been displayed before their deposition, they were still in a relatively fresh condition. Digging of the pit is thus estimated to have taken place during the later 4th to early 3rd centuries or in the later 3rd century BC. In view of the 4th-century dating of the Waldalgesheim/Vegetal Style decoration on two of the cauldrons from Chiseldon plus at least one from Grenfield (mentioned above), the earlier date range is considered more likely, especially considering the numerous repairs of the vessels, so their manufacture should have preceded their deposition by some time.

This excellent publication with contributions from archaeologists, scientists and technicians demonstrates how much modern technology has contributed to our knowledge of manufacture, deposition and use of Iron Age cauldrons. The results are important not only for British Iron Age studies but, together with the forthcoming publication of the Glenfield excavations should also contribute significantly to our understanding and chronology of comparable cauldrons from continental Europe.

References

Gerloff, S. 2010. *Atlantic Cauldrons and Bucket of the Late Bronze and Early Iron Age in Western Europe: with a review of comparable vessels from Central Europe and Italy.* Stuttgart: Prähistorische Bronzefunde Abteilung II, volume 18


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