

III: Roman Middlewich: Reassessing its Form, Function and Chronology

by D Garner and M Reid¹

Recent work has enabled us to start to build up a coherent picture of Roman Middlewich. It is now known to have been the site of a Roman auxiliary fort, probably held c.AD 70–130, and its accompanying *vicus*. The *vicus* flourished for another generation. Thereafter occupation may have been less intensive, but continued until the AD 360s at least. Its economy was diverse, but salt extraction was a constant and important feature.

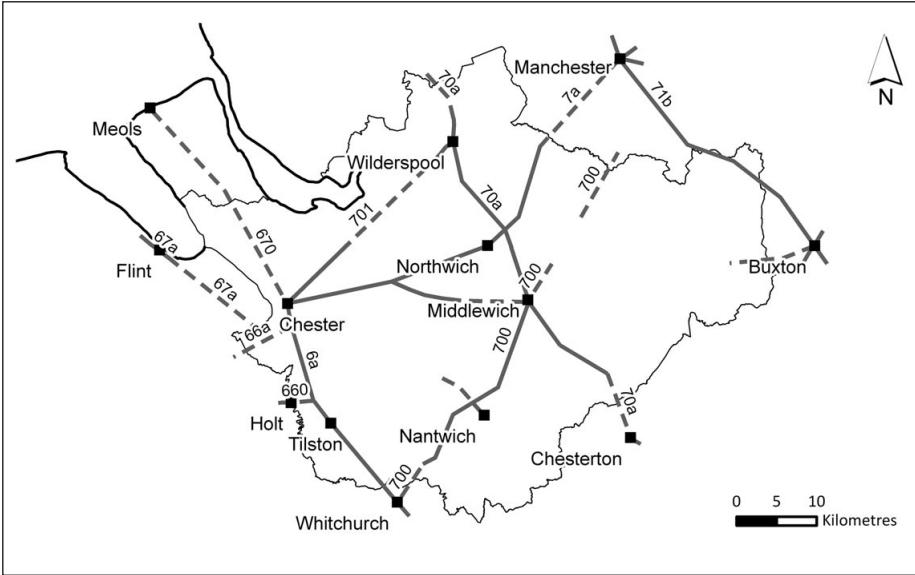
Introduction

This paper attempts a thematic review of the current state of knowledge of Roman Middlewich. It follows in the wake of the large number of developer-funded archaeological excavations undertaken to the north-east of the town centre since the introduction of *Planning Policy Guidance: Archaeology and Planning* (PPG 16) in 1990. It also draws together the available results from the significant body of work undertaken before that date and highlights possible future directions for research.

Location

The area of Roman occupation at Middlewich is situated on gently undulating land of the Cheshire Plain to the north-east of the centre (the medieval and post-medieval core) of the present town (III.III.1 and III.III.2). It consists of a fort next to the confluence of the Rivers Dane and Croco, with an associated civil settlement (*vicus*) to the south delimited on the western side by the Croco. Remains relating to contemporary farmland have been found to the east and south of the settlement. Roads ran from Middlewich to Wroxeter *via* Whitchurch and past Nantwich, to Holditch and Chesterton, to Wilderspool past Northwich, to Manchester, almost certainly to Chester, and possibly to Buxton.

The fort and *vicus* lie a short distance to the west of a geological fault (the King Street fault). To the west are the Lower Keuper Saliferous Beds and Middle Keuper Marl (both part of the Northwich Halite Formation), while to the east are the Upper Keuper Saliferous Beds (Wilkesley Halite Formation) and Middle Keuper Marl (Eldersfield Mudstone Formation) (Evans *et al* 1968, 5, fig 2: information from the British Geological Survey held in the Cheshire Historic Environment Record). Much of the area of Roman Middlewich



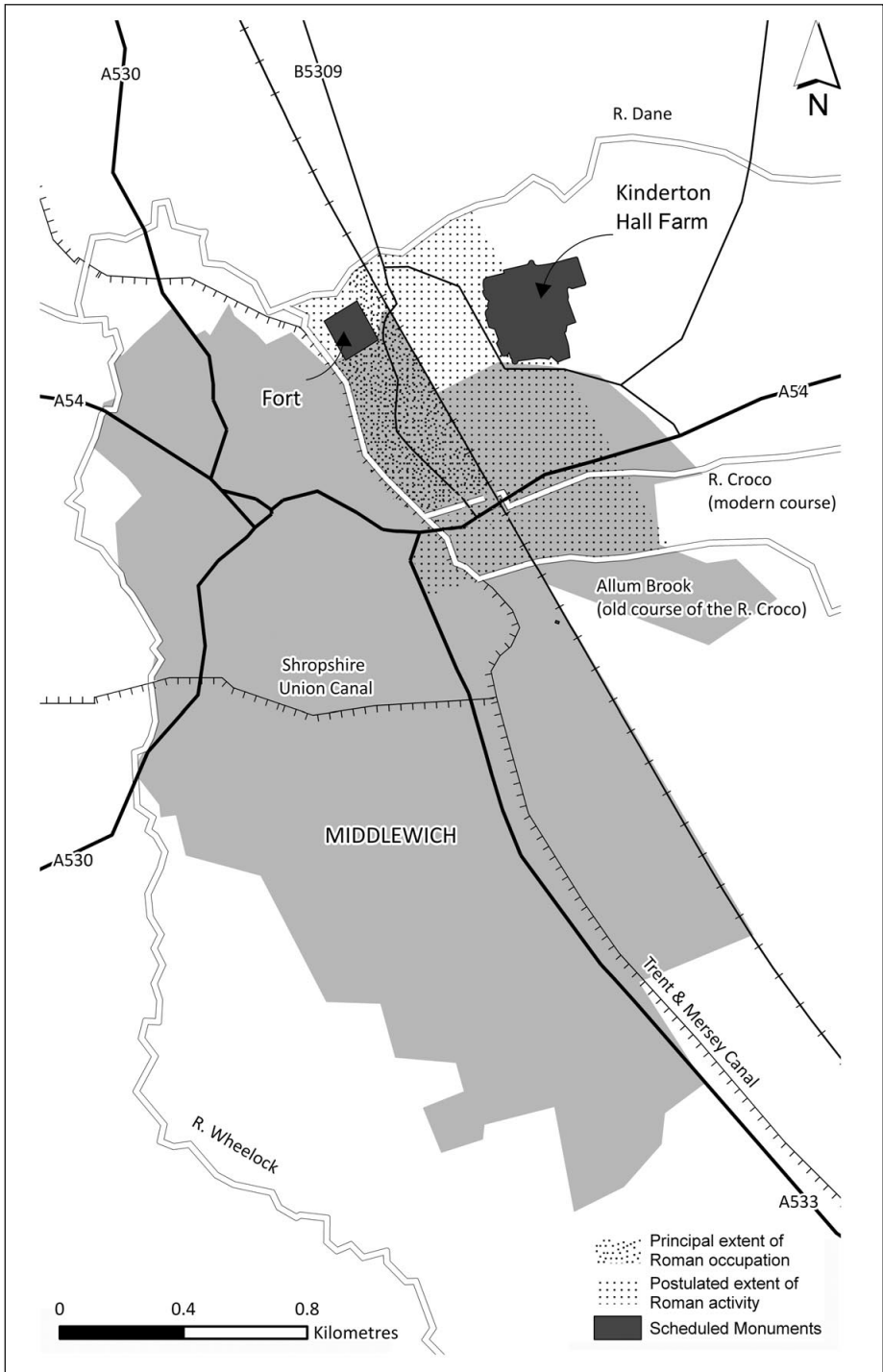
III.III.1: Location map, also showing Roman roads in Cheshire. (Nos refer to Margary 1973)

lies on a drift geology of undifferentiated river terrace deposits consisting of glaciofluvial drift — deep permeable sandy and coarse loamy soils (sandy gley soils) (Soil Survey of England & Wales 1983; Furness 1978), with till to the west adjacent to the River Croco and extending southwards from the southern part of the settlement (British Geological Survey 1968).

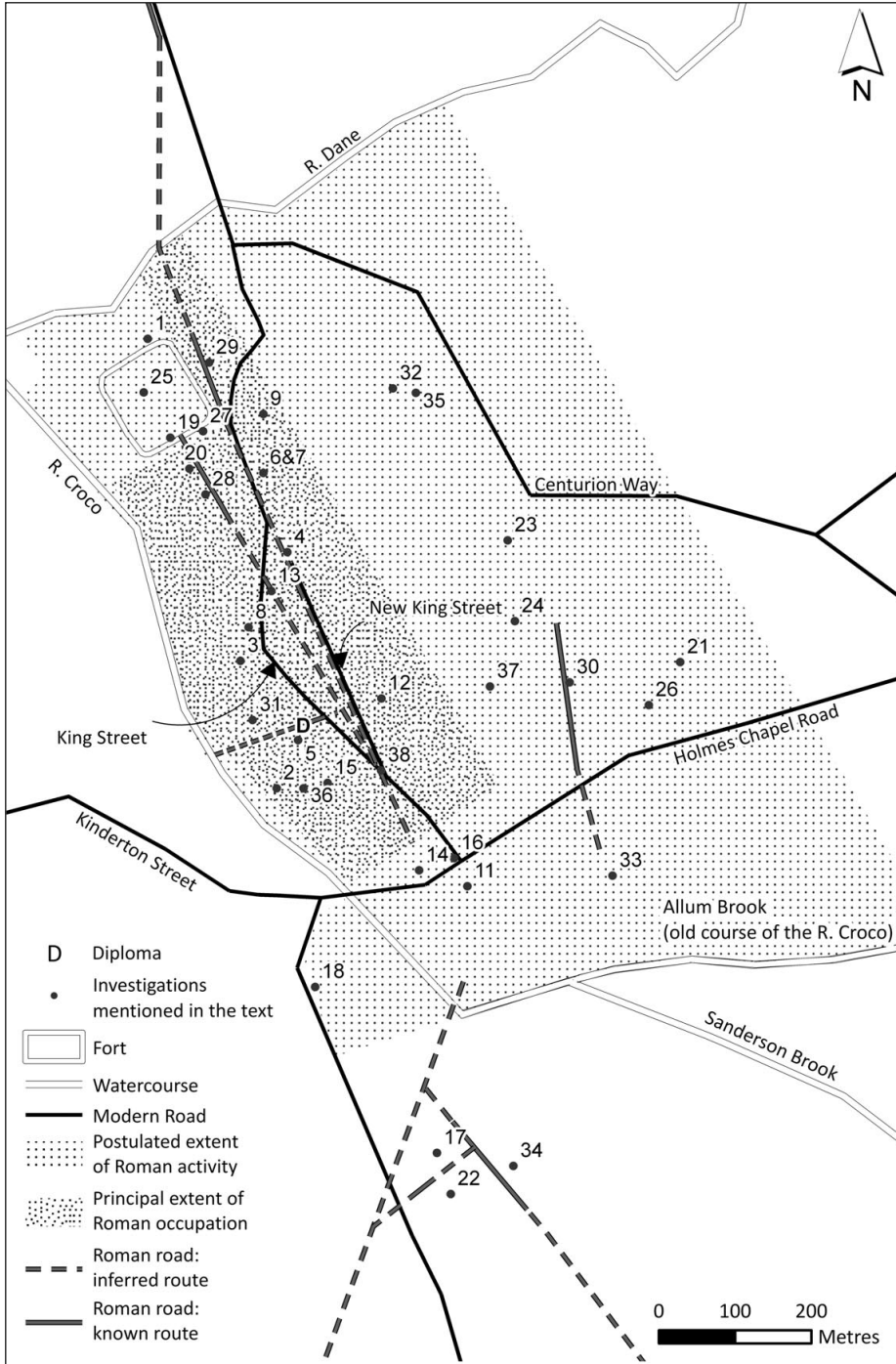
In the collapsed and disintegrated marl overlying the salt-bearing strata in this sequence (halite and saliferous beds), brine is formed by the dissolution of the rock salt by rainwater percolating through the ground. This natural or ‘wild’ brine can be exploited where it rises to the surface as a spring (Poole & Whiteman 1966, 100–1; Fielding & Fielding 2006, 6). In this area brine springs may occur in lines where the solution of the rock salt has resulted in linear subsidences (Evans *et al* 1968, 146–7, figs 28 and 29).

Investigations and changing perceptions

Roman Middlewich has long been the subject of investigation (III.III.3), giving rise to changing perceptions about its extent and character. In the mid-eighteenth century Ralph Vernon, a local resident, believed he had located a ‘Roman camp’ at Bell Pool Hill, now called Harbutt’s Field, adjacent to the Rivers Dane and Croco, in an area often referred to as Kinderton. He suggested that the ‘camp’ was the *Condate* (meaning the place at the confluence of two rivers) noted in the Antonine Itinerary and imagined that a contemporary ‘town’ existed close by (Watkin 1886, 243; Petch 1987, 203). Subsequent discoveries of Roman artefacts in this area were presented by Watkin together with a map showing their distribution, which extended from just south of the River Dane in the north to the Allum Brook in the south, a distance of about 1km (III.III.4). Hand-made bricks found at the gasworks site (a short distance to the south-west of Site 2), which Watkin recognised as resembling the briquetage found at coastal saltern sites (*ibid*, 248), provided the first



III.III.2: Roman Middlewich in relation to the modern town: map



III.III.3: Map showing location of archaeological investigations. (Dots show approximate centres of sites)

Middlewich: list of sites investigated (see III.III.3)

- 1 Harbutt's Field 1921: exact location unknown (Atkinson *unpublished*; summarised in Thompson 1965, 91–2)
- 2 NE of gasworks 1922 (Atkinson *unpublished*; summarised in Thompson 1965, 92, fig 25, Site G and 96)
- 3 Thompson Site D 1949 (Thompson 1965, 92, fig 25 and 94)
- 4 Thompson Site C no date (Webster *unpublished*; Thompson 1965, 92, fig 25)
- 5 Thompson Site F/Bestwick Site A 1960 (Harding and Blake *unpublished*; Thompson 1965, 92, fig 25 and 94–5)
- 6 Thompson Site B 1962 (Thompson 1965, 92, fig 25)
- 7 Bestwick Site B (Bestwick 1975b)
- 8 Bestwick Site C (Bestwick 1975b)
- 9 Bestwick Site D (Bestwick 1975b)
- 10 Bestwick Site E (Bestwick 1975b) location not known
- 11 Bestwick Site F (Bestwick 1975b)
- 12 Bestwick Site G (Bestwick 1975b)
- 13 Bestwick Site H (Bestwick 1975b)
- 14 Bestwick Site I 1972–3 (Bestwick 1973)
- 15 Bestwick Site J 1972–3 (Bestwick 1973; 1974a)
- 16 Bestwick Site K (Bestwick 1975b)
- 17 Church Fields 1989 (Waddelove in Frere 1990, 330–1)
- 18 Lewin Street 1992 (Gifford 1993b)
- 19 Harbutt's Field and Field 2981 1993 (Gifford 1993a)
- 20 King Street 1993 (Gifford 1994)
- 21 Kinderton Hall Farm 1995 (Gifford 1995)
- 22 Lewin Street 1996 (UMAU 1996)
- 23 Kinderton Hall Farm 1996 (Garner & Walker 1996)
- 24 Kinderton Hall Farm 1997 (Dodd 1997)
- 25 Harbutt's Field 1997 (Gifford 1997)
- 26 Holmes Chapel Road 1997 (Gifford 1998)
- 27 Harbutt's Field Sewer Trench 1999 (Gifford 1999b)
- 28 Field 2981 1999 (Gifford 1999b)
- 29 The Builder's Yard 1999 (Gifford 1999b)
- 30 Kinderton Hall Farm 1999 (Gifford *unpublished*; Burnham *et al* 2001, 348)
- 31 Field 3552 2000 (Gifford 2000)
- 32 Centurion Way 2001 (Gifford 2001)
- 33 Holmes Chapel Road and Prosperity Way 2001 (Clarke & Frost 2001; Dodd 2006)
- 34 Maidenhills 2003 (Gifford 2003)
- 35 Centurion Way 2004 (Dodd 2004)
- 36 Field 4334 — Buckley's Field 2005 (Gifford 2005)
- 37 Jersey Way 2007 (Oxford Archaeology North 2008)
- 38 Junction of King Street and New King Street 2011 (Reid 2011)

indications of Roman salt production at Middlewich utilising the locally available brine. These bricks were similar to those discovered at Tetton, 4.8km to the south of Middlewich (Wood 1850, 48), suggesting the extensive nature of this activity in the area. An antiquarian report of the discovery of two lead brine pans near the Croco at Middlewich ‘at a spot rich in Roman remains’ (Petch 1987, 203) provided additional indications of the focus of Roman saltworking.

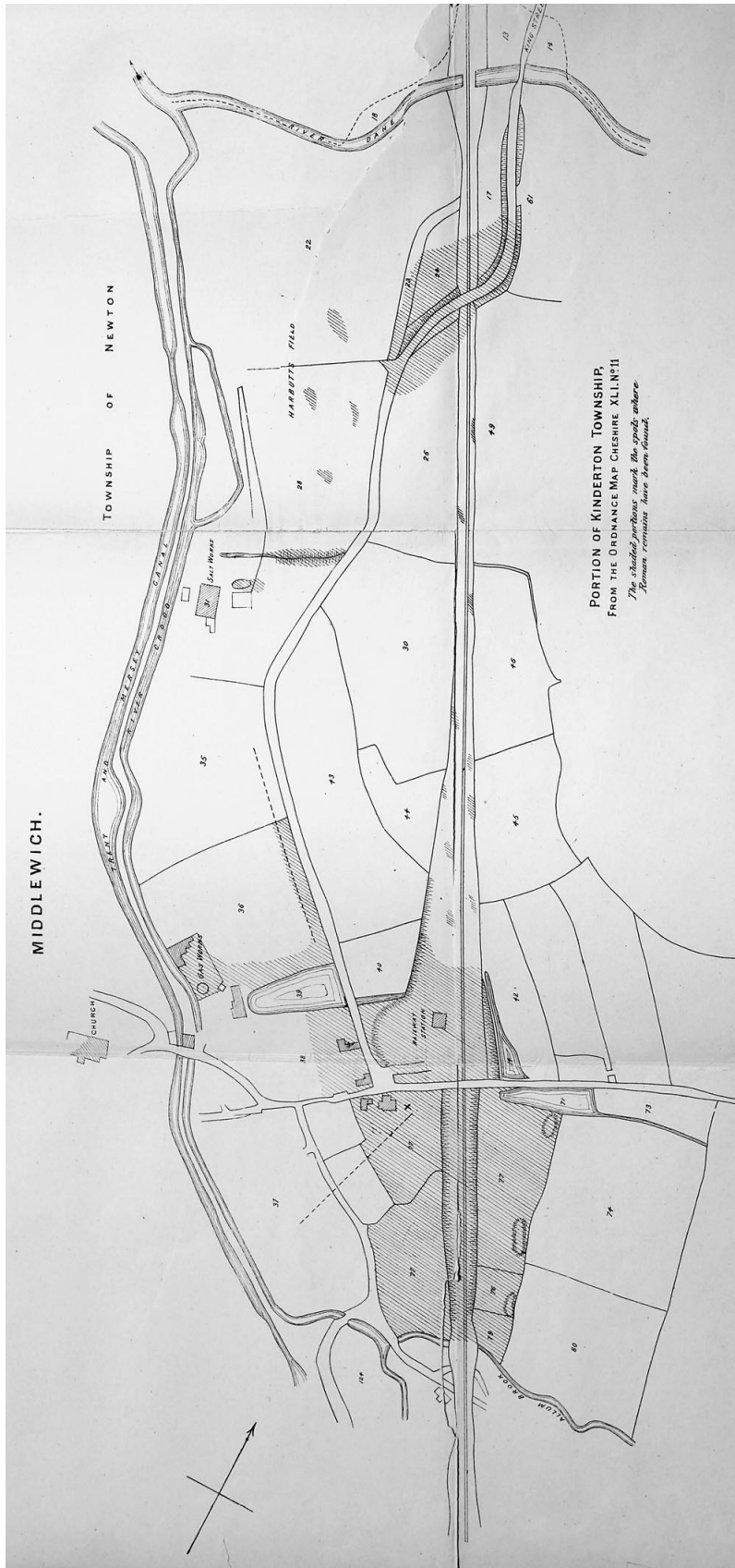
On the basis of work by Watkin and others, the ‘Site of Roman Station supposed to be *Condate*’ at Harbutt’s Field was noted on the Ordnance Survey map published in 1882. However, the existence of a military base at this location was put in doubt by an archaeological excavation undertaken by Professor Donald Atkinson in 1921 (Site 1), which concluded that sloping ground at the confluence of the two rivers was entirely natural (Thompson 1965, 91–2). In 1922 Atkinson undertook an excavation a short distance to the north-east of the gasworks (Site 2), where he found occupation deposits; the associated pottery and coins gave a date range from the late first to the mid-third century (Thompson 1965, 96). These discoveries, together with the material found by antiquarians, gave an indication of the extent and longevity of the settlement. From the late 1940s to the early 1960s house building and drainage works along the line of King Street provided additional opportunities for recording Roman stratigraphy. Construction trenches of timber buildings, associated ditches and gravel surfaces were found, together with pottery of late first to early second century date (Thompson 1965, 92–4) (Sites 3, 4 and 6). The importance of the settlement was highlighted by the discovery during house building on the western side of King Street in 1939 of an inscribed bronze diploma or discharge certificate issued to an auxiliary soldier in AD 105 (Thompson 1965, 92–4, figs 25, 26; RIB 2 (1) 2401.3) (Ill.III.3). In 1960 Dennis Harding and Ian Blake carried out an excavation close to where the diploma was found (Site 5). Floor deposits, interpreted as the remains of insubstantial timber buildings, were discovered, together with pottery of late first to late second century date (Thompson 1965, 92, fig 25, 94–5). However, perhaps the most significant find was a well preserved but undated rectangular brine evaporation hearth or kiln, containing pieces of briquetage (*ibid.*, plates 43–6). This structure was re-excavated in 2002 (Site 31) (Dodd 2004–5, 27–8; Williams & Reid 2008, 14–16).

The discovery of this brine hearth, and the earlier discoveries of briquetage and lead salt pans, challenged the accepted view that Middlewich was *Condate*. It is now considered to have been the *Salinae* — ‘salt-works’ — recorded in the Ravenna Cosmography (Thompson 1965, 91; Rivet & Smith 1979, 451; Petch 1987, 208), while Northwich is believed to have been *Condate* (Rivet & Smith 1979, 315–16). However, such a claim might now be disputed on the basis of the recent discoveries at Kingsley Fields in Nantwich, which clearly point to a sizeable operation of truly industrial proportions (Connelly & Power 2004–5; Arrowsmith & Power 2012a). Another possibility is that *Salinae* does not refer to a single saltworking centre but to a salt-producing area. If so, this area would probably have been centred on Middlewich and Nantwich but could have extended northwards to Northwich and south to Whitchurch (*Mediolanum*) (Petch 1987, 200–2, 222–3; Jones & Webster 1968, 210–11, fig 9). A similar proposal has been put forward by Lane (2001, 463) in relation to the area of Roman coastal salterns in the Lincolnshire Fens, which may also have been called *Salinae*.

Following the work of Harding and Blake in 1960 a programme of ‘research’ and ‘rescue’ excavations was carried out in the area of the Roman settlement by the Middlewich Archaeological Society under the direction of J D Bestwick between 1964 and 1974. Ten sites were excavated (Bestwick Sites B–K) (Sites 7–16 in this paper). None have been fully published, although interim reports and notes were produced (Bestwick 1972; 1973; 1974a; 1974b; 1975a; 1975b; Goodburn 1976, 321; Wilson 1967, 181; 1969, 210–11; 1970, 282; 1971, 255; 1972, 314; 1973, 284; 1974, 419; 1975, 242). (Incidentally, Bestwick Site A refers to Harding and Blake’s excavation). Unfortunately, all the records from Bestwick’s investigations appear to have been lost, but the majority of the finds are held by Cheshire West and Chester’s Museum Service, with a small collection on display in Middlewich library. Lists have been made of the finds from these investigations (Gifford 1999a; 2004). Information from these investigations, together with the earlier work, has been summarised by Finch Smith (1987, 308), Petch (1987, 202–8), Burnham & Wachter (1990, 225–8) and Nevell (1991). The excavations directed by Bestwick were largely small-scale but are no less significant because of that. They revealed a linear and seemingly planned settlement of rectangular buildings, with the ancient King Street as the principal thoroughfare. Occupation seemed to start about AD 80, with a surge in activity in the second century, followed by a decline in the third and fourth centuries. Complex and possibly deep stratigraphic sequences appear to have been revealed at several locations, but the lack of published information makes it difficult to confirm the extent of such remains. It was reported that damage to the upper levels often made it hard to determine the character of the later Roman occupation. Bestwick’s excavations clearly showed that salt-production was a significant activity. Evidence of other activities included iron-, lead- and bronze-working, leatherworking (eg making shoes), pottery production and window glass manufacture. On the basis of the excavated evidence and the supposed identification of the settlement as *Salinae*, the majority of the authors have viewed Middlewich as an ‘industrial settlement’, most notably Burnham and Wachter, who considered Middlewich to be part of a small group of ‘specialised industrial sites’ (1990, 225–8).

In his paper on the origins of Romano-British small towns, Burnham (1986, 186–7, 190–1, 199) suggested that the settlement at Middlewich probably developed following the establishment of a neighbouring fort. Possible evidence for a fort was found by A C and E Waddelove to the east of Lewin Street, about 300m south of the known area of the Roman settlement (Frere 1990, 330–1) (Site 17). However, a later investigation carried out in this area demonstrated that the ‘archaeological’ features identified by the Waddeloves were largely natural in origin and that a fort had not been constructed at that location (UMAU 1996) (Site 22). In 1993 the true location of the fort was identified at Harbutt’s Field — the very spot proposed as a Roman fort in the mid-eighteenth century. It was identified by geophysical methods, aerial photography and trial trenching (Gifford 1993a) (Site 19). Following the fort’s identification it was immediately given statutory protection as a Scheduled Monument (No 12615).

New housing schemes and industrial developments to the north-east and east of Middlewich town centre since 1990 have so far prompted twenty-one developer-funded investigations (Sites 18–38), undertaken in line with the measures contained in PPG 16.² These investigations have not only focused on the main area of the Roman settlement to the west of the



III.III.4: Map from Watkin's *Roman Cheshire* (1886) showing the distribution of Roman artefacts (indicated by the hatched areas)

railway line, but also on its outskirts and rural hinterland to the east of that line. The stratigraphy has mainly consisted of features overlying, and cutting into, the natural subsoil, with little evidence of deep, complex vertical sequences. Where deeply cut features have been encountered they often contain waterlogged deposits, sometimes preserving a wealth of organic remains. One excavation following the introduction of PPG 16 has been fully published in a conventional sense (Williams & Reid 2008) (Site 31), while the client reports (the so-called 'grey literature') resulting from other investigations form an important element of the Cheshire Historic Environment Record. There have been calls, both at a national level and with particular regard to Middlewich (Webster 2005), for the results of developer-funded work to be more widely disseminated. It is hoped that this paper will be successful in addressing those concerns and in bringing the information gained about one of Cheshire's most intensively investigated Roman settlements to a wider audience.

In recent years a series of important studies has emerged about Roman Middlewich, which have sought to bring together information from older and more recent investigations. Professor David Shotter has examined the Roman coins from the settlement to provide information about the nature and chronology of occupation (Shotter 1998–9; 2000, 101–7). The historical development of the present town and its archaeological history were assessed as part of Cheshire Historic Towns Survey, a project carried out by Cheshire County Council and funded by English Heritage (Shaw & Clark 2003). Aspects relating to the Roman settlement's form and function, most especially saltmaking, have been described by Garner (2004–5) and Dodd (2004–5).

Where a developer funds archaeological excavation there is often little opportunity to inform the general public about ongoing discoveries and to involve them directly in the investigative process. To rectify this situation in Middlewich, the Heritage Lottery Fund (HLF) and the Local Heritage Initiative (LHI) have both grant-aided projects. One of the most important outcomes of the HLF project was the publication of a colourful interpretative book (Strickland 2001), which not only put developments at Roman Middlewich in a local and regional context, but also made reference to contemporary international political and military events. Following the success of this project, the LHI funded a research-based 'community dig' in 2005 (Site 36). This excavation examined a well preserved and relatively deep stratigraphic sequence at the southern end of the settlement to the west of King Street, incorporating an area previously excavated by Bestwick (Gifford 2005; Hayes *forthcoming*).

The immediate area in the Pre-Roman Iron Age

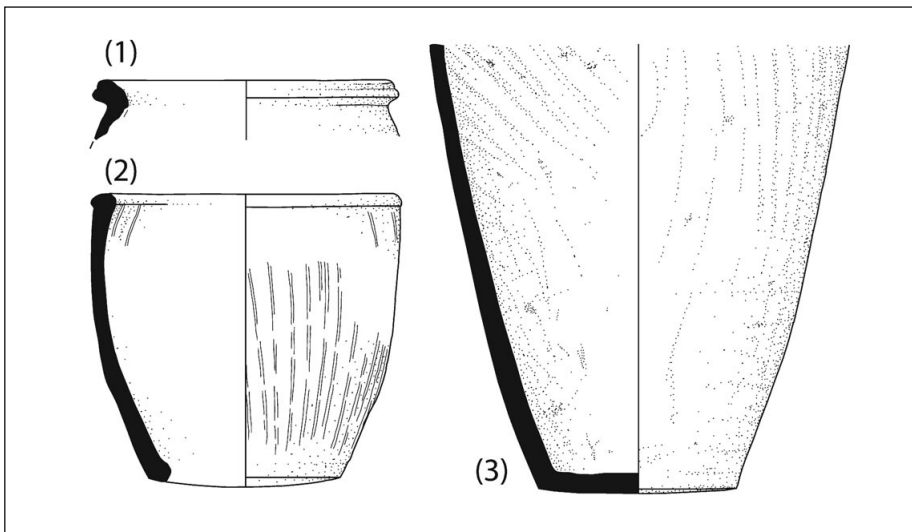
Burnham (1986) proposed that the origins and early development of Romano-British small towns were the result of two overlapping and competing systems: one focused on pre-existing settlements and the other on the development of the road network in association with Roman forts.

Investigations and chance discoveries provide tantalising glimpses of pre-Roman Iron Age occupation at Middlewich. The remains of two possible roundhouses, identified by short surviving lengths of curving gullies or wall trenches, have been found at Site 8 near the centre of the Roman settlement (Garner 2004–5, 18, fig 3, 23) and at Site 33, in an area

occupied by a field system probably laid out in the late first century AD (Dodd 2006, 23–4, 34, fig 11). These features are undated but appear to predate the earliest phases of Roman occupation at both locations. At Site 8 ‘native’-style pottery was also discovered, comprising a rim sherd of a Mersey Basin ware jar (Nevell 1994, 34–6, type 5), sherds of several Malvernian ware jars (Garner 2004–5, 23), and an almost complete profile of a hand-built jar in a local oxidized fabric (III.III.5). A buried soil and several cut features (two linear gullies and two pits) were found at Site 36 near the southern end of the settlement (Hayes *forthcoming*). These features have all been attributed to the pre-Roman Iron Age, but no artefacts have been recovered to help confirm their dating. Undated field or enclosure ditches to the east of the settlement (Site 37) are also claimed as possibly pre-Roman (Oxford Archaeology North 2008, 44).

Small quantities of sherds from salt-containers made from Cheshire Stony VCP (Very Coarse Pottery) have been found during several excavations and provide evidence of probable pre-Roman Iron Age saltworking. It is believed that salt-production using this type of pottery persisted after the Roman conquest of the area to the end of the first century (Nevell 2004–5, 12), although the most tangible evidence of late Iron Age activity at Middlewich comes from the chance finding of several pieces of high-status metalwork: two terret rings (Cheshire Historic Environment Record (CHER) Nos 1080/0/95 and 1080/0/109) and a scabbard chape (CHER No 2813).

The general impression gained from this evidence is of small-scale and dispersed settlement in the pre-Roman Iron Age, with people probably producing salt from the nearby brine springs. Given the apparently limited Iron Age occupation, it seems probable that the main impetus for the growth of the settlement here was the establishment of the Roman fort rather than the presence of the brine springs.



III.III.5 ‘Native’-style pottery from Site 8 after *T Morgan*: (1) Jar in Mersey Basin pottery type 5; (2) Malvernian ware jar; (3) Jar in local oxidised fabric. (Scale $\frac{1}{4}$)

Military installations: possible marching camp and fort

The fort at Harbutt's Field has a classic 'playing card' shape. Its situation, overlooking the river valleys of the Croco and Dane, provided good natural defence. It is unclear whether its siting was also influenced by the presence of brine springs. The defences of the fort consisted of a single ditch and an internal bank, defining an area of 1.4ha, with entrances at the middle of each side. A geophysical survey suggested that the entrance on the north-western side had an internal stagger, possibly a *claviculum* — an entrance type found in some marching camps (Gifford 1993a, 14, 40, fig 4). The survey also revealed a series of linear ditches or gullies within the interior, possibly representing the remains of enclosures or drains. However, it failed to find any evidence of internal roads or buildings. The geophysical work was supplemented by a limited excavation (Site 19). Two trenches were cut across the defences, which demonstrated that the ditch had been recut. In addition, remains of a construction trench of an associated timber building were found in the northern part of the fort interior. The excavation failed to produce any reliable dating evidence. Late first and second century pottery was recovered from upper layers, but these also contained medieval and post-medieval sherds. In 1997 a watching brief was conducted when the field was ploughed (Site 25) and recovered pottery of late first to early second century date, plus fragments of Roman tile (Gifford 1997).

Shotter (1998–9; 2000, 101–7) has argued that coin loss at Middlewich points to a pre-Flavian or very early Flavian date for the start of the military presence, a possible break in the middle Flavian years, a resumption *c.*AD 87 coinciding with the withdrawal from Scotland, and an end in the Hadrianic period; he has also argued, on the strength of the high average value of coin losses, that the fort was occupied by a legionary garrison (*see* also Shotter 2008). The Roman road known as King Street, on which Middlewich lies, has been suggested as the principal route used by the Roman army in their advance into the north-west in AD 69–71 (Rogers 1996, 365–8; Rogers & Garner 2007, 19). However, this has been disputed by Wild on the basis of the dating of samian ware from sites along the route (2002). These strategic considerations, combined with the numismatic evidence, have led to the further suggestion that the first military presence at Middlewich was a campaign camp (Shotter *ibid.*, followed by Strickland 2001, 20–3). However, no archaeological evidence for any military installation other than the fort has yet been recognised. The latter could have been built in the AD 70s: certainly, pottery recovered from the extramural area during the extensive excavation to the west of modern King Street (Site 31) indicates considerable activity during the Flavian period (Leary 2008a; Ward 2008a). Garrisoning until Hadrianic times may be supported by the evidence from Site 27, immediately to the south of the fort, where occupation (an oven, pits and a strip building) lasted until around AD 130 (Gifford 1999b).

The size of the fort argues for its garrison having been the smallest Roman army unit, a *cohors quingenaria peditata* of around 480 auxiliary infantrymen. *Pace* Strickland (2001, 26–33), it therefore seems unlikely that it was the base of the *Ala Classiana* attested on the discharge diploma of AD 105, as a 500-strong cavalry unit would probably have required a larger fort, with an area of *c.*2.4ha (on fort sizes *see* Hassall 1983, also the recent review in Burnham & Davies 2010, 70).

The chronology, initial form and function of military installations at Middlewich all therefore remain unclear, and further fieldwork would be needed to address these questions. Given the scheduled status of the site, such work could therefore only be justified within a well argued and resourced research programme, and with the support of English Heritage.

The form of the town

The size of the settlement

An associated *vicus* was founded to the south of the fort. In common with other military *vici*, its presence was presumably planned from the outset on land allocated for the purpose. The distribution of structural features dating to the late first century indicates that the settlement was about 650m long. It was delimited to the north and west by the rivers Dane and Croco respectively. To the east and south of the built-up area, a network of ditched enclosures was established, defining fields and plots of land containing occasional buildings (III.III.3). The change between the two areas appears gradual, and may indeed have been so in antiquity. The overall extent of Roman activity largely agrees with the area of ‘settlement’ shown in the archaeological assessment of Middlewich undertaken by Shaw and Clark (2003, fig 2).

At Site 24, east of the railway line, a sizeable ditch, orientated north-west–south-east, was traced for 30m. It measured 3m wide and 1.7m deep and had been recut on several occasions. Some of the ditch fills were waterlogged and contained Roman leatherwork, together with pottery of the late first and early second centuries (Dodd 1997). This ditch probably functioned as a major boundary, perhaps demarcating the eastern limit of the late first to early second century settlement; an alternative explanation is that it was a defensive earthwork delimiting the side of a military compound. However, it is noteworthy that the best evidence for cultivation comes from Site 37, west of this boundary, and that a burial has also been found on that site: these discoveries militate against the ditch having functioned as the boundary of the built-up area, in practice if not in theory. It is also unlikely that a conventional military annexe would have extended so far south of the fort.

In addition to this substantial earthwork, two large ditches were found by Bestwick, at Sites 14 and 16, close to where the ground falls fairly steeply away to the south. The ditch at Site 14 was orientated east–west and contained late first or early second century pottery. Its southern edge was revetted with horizontal and vertical timbers set in turf (Bestwick 1973, 4). Bestwick regarded this feature as a possible drain as it filled with water, which flowed westwards towards the Croco (*ibid*), but it could also have functioned as an early boundary defining the southern extent of the settlement. At Site 16 a sizeable ditch, dated to the third or fourth centuries, cut across the area of excavation (Bestwick 1975a, 11). Its orientation is not recorded, but it also probably ran from east to west. If so, this ditch may again have served to define the southern limit of the settlement in the late Roman period.

Excavations and observations of *in situ* Roman stratigraphy to the west of the railway line indicate that the settlement covered an area of about 12ha and possibly up to 15ha (III.III.3). If however, the ditch at Site 24 did mark the boundary of the intensively built-up area, then its full extent may have been over 20ha. It is important to emphasise that these figures do not include the spread of artefactual material recorded by Watkin (1886) south of the Holmes Chapel Road and to the north of the Allum Brook (III.III.4).

The road network and the layout of properties

The road network provided the framework around which the Roman settlement was formed. It also contributed to the layout of the rural hinterland (III.III.1 and III.III.3). Investigations within and around the modern town have identified a converging Roman road network, although there is much uncertainty about the exact course of these roads as they entered and ran through the settlement.

It has long been known that the Roman settlement existed close to the intersection of two major roads coming from the south: the ancient King Street, from Holditch and Chesterton, continuing northwards to Wilderspool (Margary 1973, Route 70a) and that from Whitchurch, Route 700 (Margary 1973, 302–4 and fig 12). These roads would have met a short distance to the south of the settlement, but the precise point of intersection is uncertain. Only a section of the Chesterton road has been firmly identified in the immediate vicinity, at Site 34. It consisted of a layer of rammed cobbles and pebbles, 0.15m thick and 5.1m wide, overlain by spreads of clay and gravel with a roadside ditch to the west. Beneath the road lay the remains of a buried soil (Gifford 2003). A possible junction with the Whitchurch road was recorded in 1989 at Site 17 during building work (Frere 1990, 330–1), but this has to be confirmed; projection of the line of the Whitchurch road from its last known point would put the junction further north (*see* III.III.3).

An initial consideration in the establishment of the road network would have been access to the fort in Harbutt's Field, but direct evidence for this thoroughfare is far from clear. At Site 36, about 10m to the west of modern King Street, a short section of a Roman road was exposed. It consisted of an *agger* formed of sand, up to 0.15m high, bounded by two parallel ditches 5m apart. A late first to early second century construction date has been given to the road on the basis that one of the roadside ditches cut a deposit dated to the late first century. A metalled surface of unknown function, attributed to the reorganisation of the land holdings in that area in the mid-second century, overlay the *agger* and the ditches. A true assessment of the road's orientation was not possible from the section exposed, but it seemed to be heading for the fort (Hayes *forthcoming*). At Site 20 to the south of the fort, gravel spreads originally thought to be natural in origin (Gifford 1994, 8) may also be the remains of this road. How this southern approach road to the fort joined the Whitchurch and Chesterton roads is again uncertain. However, Watkin (1886, 246) reports a 'stratum of gravel, often containing ... stones smoothed and flattened on one side' in a field north of the Allum Brook. These remains are marked with a cross in Field 77 on his map of Roman Middlewich (III.III.4) and are close both to his projection (shown by a dashed line) of the line of the Roman road shown on the contemporary Ordnance Survey map and to the projected line of the Whitchurch road shown on III.III.3. If Watkin's report is reliable, it is therefore possible that the Whitchurch road continued its north-north-easterly course until it had crossed the present confluence of the Allum Brook with the River Croco, and then turned north-north-west to head for the fort at Harbutt's Field.

In addition to the uncertainties regarding the position of the road to the south of the fort, it is also unclear where the road crossed the River Dane, whether it was directly to the north of the fort or a short distance to the north-east. The river has cut a fairly deep and steep-sided gorge to the north of the fort, but to the east the cutting is wider and less

pronounced. On this basis it seems likely that the road crossed the river to the east of the fort, perhaps *via* a short spur road bypassing the fort (Strickland 2001, 22–3, 32–3).

It is apparent from the excavated evidence that this route, as it ran through the settlement, was realigned, possibly after the fort was abandoned. Excavations to the south-east and east of the fort (Sites 27 and 29) revealed well preserved metalling, up to 0.4m thick, bounded by a ditch to the west. These features ran in a north-west–south-east direction and sealed earlier occupation levels, the latest of which contained Trajanic–Hadrianic pottery (Gifford 1999b). At Site 6, a short distance to the south, probable road metalling, delimited by a ditch to the east, was recorded under the present line of King Street (Thompson 1965, 92–3). In addition, an extensive layer of compacted gravel representing the near-complete width of a road was unearthed further south (Site 38), close to the present-day junction of King Street and New King Street (Reid 2011, 2.2.3–2.2.4 and figs 1–4). These sightings suggest that the course of Roman King Street was straight as it ran through the settlement. The road would presumably have diverted to the north-east, perhaps beyond the River Dane, before it took on the alignment now represented by the modern highway, the B5309.

At Site 31 an extensive excavation exposed the substantial remains of a Roman road, orientated east-north-east–west-south-west, lying to the west of, and perpendicular to, King Street. The road had an average thickness of 0.5m and consisted of sands and silts containing varying amounts of stone, which increased towards the top of its profile. The width of the top of the road ranged from 4.9m to 6m. Beneath the road was a soil that contained samian dated to *c.*AD 70–90, while the deposits forming the road produced pottery of AD 120–160. The road was defined by a ditch on either side, both of which showed signs of having been recut on several occasions. Pottery in these ditches included wares extending to the late fourth century, and a Constantinian coin was found on the surface of the road next to the northern ditch (Williams & Reid 2008, 7). It has been suggested that this road might have led to Chester (Garner 2004–5, 19–20). Recent archaeological work indicates that a probable ancient road ran from Kelsall, where it would have branched from the Chester to Northwich road (Margary Route 7a), to Middlewich, following the route suggested by Petch (1987, 186) (III.III.1). However, the western part of the road found on Site 31 seemed to tail off as it approached the River Croco (Williams & Reid 2008, 177). Consequently, it is unclear whether the road actually crossed the river. However, its form and location, leading to the heart of the settlement, plus its apparent longevity, would suggest that it was a major thoroughfare that did lead ultimately to Chester.

Excavation to the north of Holmes Chapel Road in 1999 (Site 30) uncovered a large section of a Roman road orientated north-north-west–south-south-east, which is believed to be the southern part of the route from Middlewich to Manchester (Margary 1973, 303–4 and fig 12, Route 700). Its remains consisted of a stony layer up to 0.2m thick, containing second century pottery, overlying a soil which formed an *agger*. Both sides of the road were defined by ditches, set about 6m apart, which had been recut; one contained the remains of a third century urned cremation (Gifford excavation archive for Kinderton Hall Farm, B2645A; Burnham *et al* 2001, 348).

It has also been suggested that a Roman road led from Middlewich to Buxton (Petch 1987, 186). No firm indications have yet been found of a road directly connecting these two places, but the supplies of lead from the Peak District, needed for making brine evaporation pans, may have prompted such a link.

Immediately north of the supposed Chester road on Site 31, west of King Street, extensive excavation provided the first comprehensive view of property layout anywhere in the main part of the settlement. Part of the area had been subdivided by shallow ditches, representing property divisions. These boundaries shared the same orientation as the supposed Chester road and delimited the ‘backlands’ of properties facing onto King Street. In the late first century there were just two plots, defined by a ditch near the southern edge of the site. One building (Building B) was found in the northern plot. In Hadrianic–Antonine times the northern part of the site was subdivided into another two plots and the site was now occupied by a possible total of five buildings, A, C, D, E and ?F, A and D being of the conventional ‘strip’ type. Building E may have continued in use until the fourth century. In the third and fourth centuries the site was once again divided into just two plots and may have been occupied by three buildings, H, I and G, Building G having a hearth (Williams & Reid 2008, 30–5). A brine hearth lay just to the south of the Chester road (Site 5/31). Similarly aligned property divisions and associated building remains, dating to the early to mid-second century, were also discovered at Site 36 further south (Hayes *forthcoming*). Further evidence of plots, demarcated by ditches 40m long and 1m wide, was found at Site 15, immediately adjacent to Site 36 (Petch 1987, 206).

On Site 8 the first Roman activity was represented by two large brine pits, of which one began to be filled by the early second century. An east–west strip building was erected in the southern part of the site in the Trajanic–Hadrianic period, with a ditch just to its north. In the Antonine period another strip building was erected further north on a slightly converging alignment; two brine hearths were situated in the yard between the two buildings (Bestwick 1975b, 67; the chronology adopted here follows Nevell 1991, 7 fig 2). These were followed by domestic buildings in the third and fourth centuries. It has been suggested that the change in building alignment seen on the site in the Antonine period reflects the repositioning of the through road (Garner 2004–5, 18–21). However, in the absence of a larger number of well dated buildings this suggestion must be treated with caution, as different alignments can be seen among supposedly contemporary buildings on Site 31 (Williams & Reid 2008, 34, fig 36). Finally, Bestwick (1975b, 68) reported finding several strip buildings dating to the second century on Site 16, at the posited southern end of the settlement.

Beyond the built-up area, a system of rectangular enclosures defined by ditches was found at Site 33, south of Holmes Chapel Road (Dodd 2006). Here, a ditch orientated south-west–north-east ran roughly parallel to the possible boundary ditches found on Sites 14 and 16. To the north of this boundary, on the eastern part of the site, the land was initially divided into three enclosures; two buildings lay in the westernmost enclosure, and a pottery kiln in the easternmost. These features belong to the late first–early second century. Later, possibly in the second half of the second century, the east–west boundary was moved south and now, if not before, the three initial enclosures were reduced to two. Further enclosures were found in the western part of the site. It is possible that the Manchester road found on

Site 30 continued across this site but the evidence is unclear on this point. Dating this system relies on artefacts (most commonly pottery) from the fills of the ditches and on stratigraphic associations. Given limited excavation of these features and imprecisely dated pottery assemblages from their fills (including the likelihood of residual material), the relative dating based on stratigraphy is probably the more reliable. More rectangular enclosures, on a similar alignment, were found further north on Site 35 (Dodd 2004), where they were accessed by a lane or drove road, and on Site 37, inside the posited eastern boundary of the built-up area (Oxford Archaeology North 2008). The ditches defining these enclosures had a steep or gently sloping profile, and were typically between 0.5m and 1.5m wide and between 0.3m and 0.5m deep. Some of these enclosures may likewise have been laid out in the late first–early second century. However, on Site 37 a pre-Roman date has been suggested for some ditches because they were sealed by a soil containing Roman pottery (Oxford Archaeology North 2008). How, and exactly when, this soil was formed is not certain, and it is conceivable that these ditches are also of Roman origin.

From an excavation undertaken immediately to the south of the fort (Site 27), it would seem that agricultural land was not limited to the east and south of the settlement. Here, a system of land divisions was found, formed by shallow ditches averaging 0.6m wide. The ditches were closely aligned on the fort and, from the sample exposed, seem to have formed a rectangular pattern. They contained pottery of mid-second to early third century date and were stratigraphically later than the strip building of Flavian to Hadrianic date mentioned above (Gifford 1999b, 7–8, figs 13–14). While these ditches were similar to the plot boundaries to the south, their rectangular arrangement is more like the pattern of boundaries discovered to the east and south of the settlement.

The orderly subdivision of these areas into a series of rectangular plots and fields and the apparent order in the siting of structures and land divisions represented by shallow ditches found on other sites, seems to imply a high degree of planning in the initial layout and subsequent development of the settlement and the mainly agricultural land to the south and east. Roman land division and metrology has been explored in relation to other roadside settlements in Britain, and it has been suggested that standardisation of plot widths was achieved by pacing rather than with the aid of surveying equipment (Finch Smith 1987, 43). Pacing was an accepted way of measuring, where a double-pace or *passus*, equating to five Roman feet (about 1.48m), was the standard unit of distance. In relation to the ordered appearance of the plots at Sites 15, 31, 33 and 36 it is tempting to suggest the distances involved in their creation. Reid would resist this temptation because of the problems concerning the dating of individual plot boundaries. By contrast, Garner and Carrington tentatively suggest that plots with nominal widths of 45 *pedes Monetales* (pM) /13.25m and 105pM /40.0m can be detected on Site 31 in the Hadrianic–Antonine period. On Site 33 two of the original field widths may nominally have been 90pM /26.5m and 75pM /22.1m. Later fields may have measured 90pM and 150pM /44.25m, succeeded by another two, possibly of nominal width 135pM/39.82m and 105pM. Thus the later fields have a total width of *c.* 240pM, ie 2 *actus*. However, the problem of reliably reconstructing the boundaries of field systems is conceded. A further problem is that the ditches rarely run exactly straight or parallel to one another, with the result that precise measurement is impossible. As is often the case, a larger sample might clarify matters.

Building remains

The limited size of many of the investigations at Middlewich has meant that only a few plans of buildings in a complete, or relatively complete, state have been recorded, and of these a very small sample has been published. Despite this situation, the recorded information indicates that virtually all were rectangular timber-framed structures, mostly long and narrow in plan, and hence comparable to the so called 'strip buildings' found in military *vici* and small towns throughout Roman Britain (Burnham 1988; Sommer 2006). Despite their frequency in the north-west provinces, it may be that the design of these buildings has a Mediterranean origin, as it can be discerned in houses of Augustan date at Pompeii (Sommer 1999, 89, citing research by A Wallace-Hadrill at Pompeii).

One of the largest and most complete examples of a strip building was discovered immediately adjacent to the fort (Site 27), parallel to its southern defences and respecting the gateway. The position of the building in relation to the fort suggests that the two were contemporary. The full length of the structure was revealed and measured 28m; it was over 4m wide (Ill.III.6(a)). Its foundation trenches averaged 0.4m wide and 0.2m deep. Room divisions and doorways were also evident, although no remains of flooring survived. Pits nearby, considered to be associated with this structure, contained Flavian–Trajanic pottery. The building underwent several alterations, and one construction trench produced Hadrianic pottery. Similar buildings at Sites 8 and 31 to the south (Bestwick 1975b, 67–8; Nevell 1991, 6–7; Garner 2004–5, 18; Williams & Reid 2008, 23–6) were represented by foundation trenches, with evidence of room divisions and entrances. In some examples structural alterations, including changes to the room layout, could be discerned.

At Site 8 strip buildings were superseded in the late third or fourth century by a timber-built corridor house. This structure measured 13.1m across, with a 2.7m wide corridor to the north (Wilson 1969, 210–11). This is the only positively identified example of such a building to have been found within the settlement.

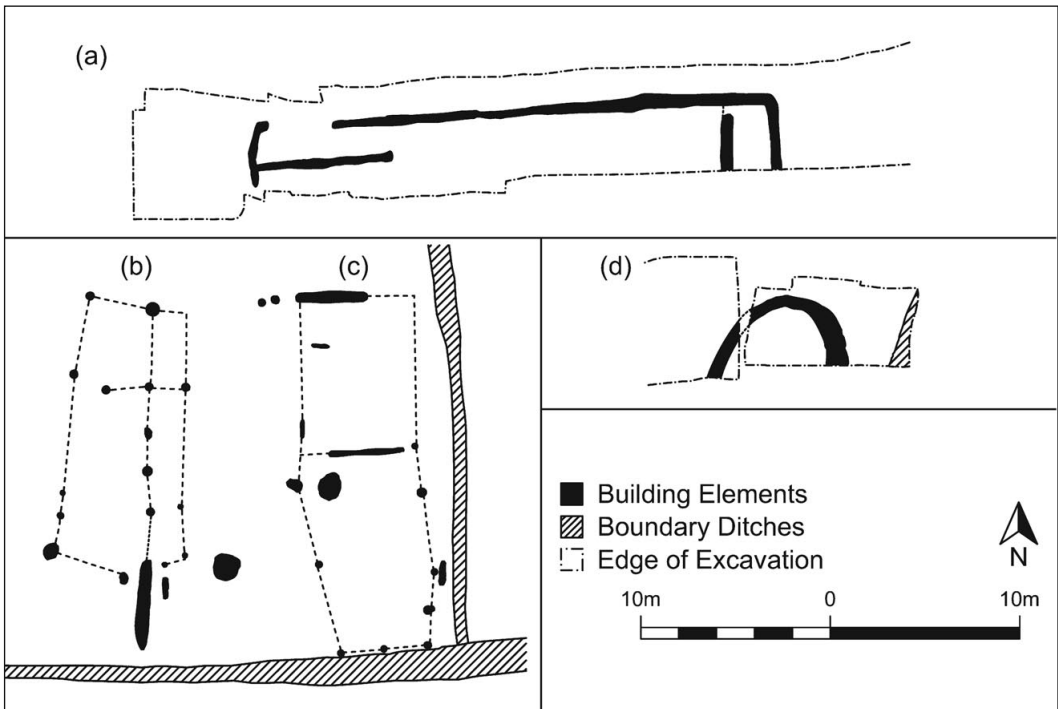
It is apparent from all the investigations that have taken place at Middlewich that the principal form of building foundation was the construction trench. Structural features within these trenches have often not survived, making it difficult to distinguish and characterise methods of building. In two examples of probable second century date, posts were positioned within foundation trenches, and in one case the posts had been separated by stones (Williams & Reid 2008, 24–6). In examples where stones were used to separate and consolidate posts in foundation trenches, this evidence may easily have been destroyed when the buildings were demolished, giving the impression that the foundation trenches had contained sill beams.

Buildings using individual earth-fast posts as the main form of foundation are also likely to have been common. However, differential survival of post holes, and consequent difficulties of discerning patterns in their arrangement, and in some cases the limited extent of excavations, have made the identification of the plans of such buildings difficult. The best preserved, and most clearly identifiable, buildings of this construction type to have been examined existed side by side in a plot to the south-east of the main area of settlement (Site 33) (Dodd 2006, 7–8, 32–3). The building to the west measured 7m x

15–18m and was marked by post holes, while the other measured 7m x 19m and combined earth-fast posts with foundation trenches (III.III.6(b) and 6(c)). Both are dated to the early second century. The form and size of the latter building is comparable to that of Structure 2, dated to the mid-second century, at Stockton Heath to the south of Wilderspool (Dodd *et al* 2006, 15–16, 21–2).

In addition to the repertoire of rectilinear structural forms, a possible oval building was found outside the southern defences of the fort (Site 27). It measured about 7m across and was represented by a portion of a curving, flat-bottomed gully, up to 0.8m wide and 0.2m deep (Gifford 1999b, 7, fig 13) (III.III.6(d)). It is dated to the Antonine period and was associated with land divisions that post-dated the large strip building discussed above. Other oval buildings have been discovered at several rural settlement sites on Merseyside (Cowell & Philpott 2000, 122–4; Philpott 2006, 73, fig 3.16; Philpott & Adams 2010, 44–8) and at the industrial settlement at Wilderspool (Hinchliffe *et al* 1992, 114).

Investigations at Middlewich have found thin layers of clay or crushed briquetage from saltmaking that have been interpreted as the floors of buildings. Only in one case has the virtually complete extent of the flooring of a building been exposed (Building E, Site 31) (Williams & Reid 2008, 26–7). The two flooring deposits measured 14.3m x 23m in total. The lack of post holes or foundation trenches around these deposits strongly suggests that the walls were constructed directly on the floor. They are likely to have been of timber



III.III.6: Building plans. (a) Site 27 after G Reaney; (b) and (c) Site 33 after Dodd 2006; (d) Site 27 after G Reaney. (Scale 1/400)

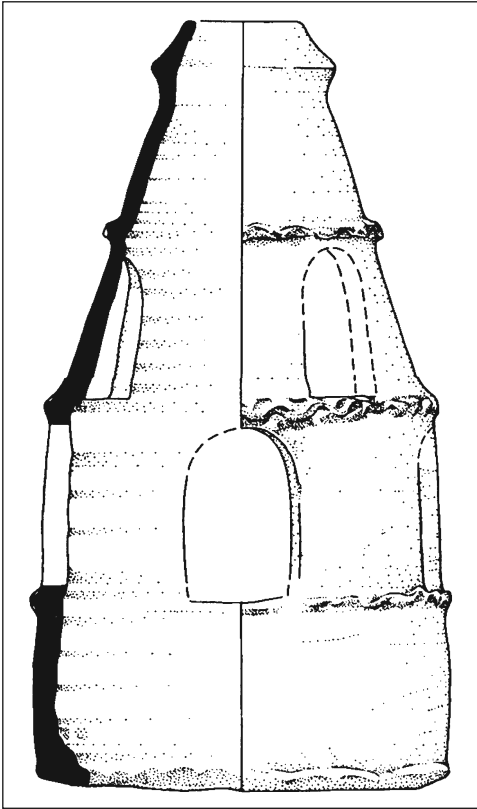
construction utilising a sill beam, but the possibility that the timbers were founded on a low masonry wall cannot be dismissed. Pottery from the flooring suggests that this structure was built in the mid-second century, but the presence of a short cobbled path next to the building crossing an infilled boundary ditch containing third and fourth century pottery seems to imply that the building continued in use into the fourth century.

There are difficulties in ascribing a function or functions to buildings where only a part of the plan survives or has been examined. Several pieces of lead waste were found embedded in the clay and briquetage floor of Building E (Site 31), perhaps indicating that it was used for the manufacture of lead objects (*ibid*, 177). Other industrial uses of buildings have been noted, such as the two adjacent buildings separated by a yard used in the production of salt in the second century at Site 8 (Bestwick 1975b, 66–8; Nevell 1991), and at Site 36, where a significant quantity of slag was found associated with an early second century building (Hayes *forthcoming*). Bestwick claimed that at Site 8 he had found evidence of third and fourth century workshops with living quarters at the rear (Wilson 1969, 210–11). As the excavation records appear to have been lost this claim cannot be verified. At Site 31 the end of a building of late first or early second century date had been partitioned to form a small room with a hearth. The hearth pit contained the remains of a cauldron and a suspension chain, together with part of a tankard. The deliberate burial of these high-status feasting items suggests that the structure, or at least part of it, was used for domestic purposes (Williams & Reid 2008, 177).

Only one possible Roman stone building has so far been found at Middlewich. At Bestwick's Site C (Site 8) a stone wall footing was found (only referred to in the artefact records). At the same site box flue tile, cast window glass and glass unguent bottles were discovered, suggesting the existence of a bath house or *mansio* close by (Cool 2004, 1). Window glass was often made close to where it was used (Worrell 2008, 64), and at Site 8 evidence for its manufacture was recorded in third and fourth century levels (Wilson ed 1969, 211). Box flue tiles and window glass (mainly cast, but also some blown panes) have been found at various other sites (Watkin 1886, 247; Thompson 1965, 92; Gifford 2003, 16; Cool 2004; Gifford 2005, 34–5; Worrell 2008, 61, 64). These discoveries, together with a second century lamp chimney (Gifford 1999b, 4, fig 19) (III.III.7), clearly indicate that several buildings of some pretension existed within the settlement.

Evidence of roofing is provided by fragments of ceramic tiles found throughout the settlement and at the site of the fort at Harbutt's Field (Site 25) (Gifford 1997), as well as by micaceous sandstone roofing slates recovered from Sites 31 and 36 (Constable 2004; Gifford 2005, 23–6). At Site 36 the use of these slates did not occur until the late third or fourth century (Gifford 2005, 26). Environmental analysis of waterlogged deposits at these two sites also found evidence of straw and heather (Carter 2008; Gifford 2005, 28–32), both of which could have been used as roof coverings. Metal objects from investigations in the area include large iron nails used for building, some of which were probably made at Middlewich, and copper alloy and iron slide keys.

The overall impression is one of a period of sustained building activity in the late first and second centuries. Buildings that can be dated with certainty to the third and fourth centuries



III.III.7: Lamp chimney from Site 27 after T Morgan. (Scale $\frac{1}{4}$)

are noticeably fewer in comparison, although throughout the settlement there are indications that occupation continued into the fourth century. Whether this reflects a declining population or is a product of stratigraphic survival exacerbated by the problems of dating, linked to reductions in the later pottery assemblage and artefact residuality, is not clear.

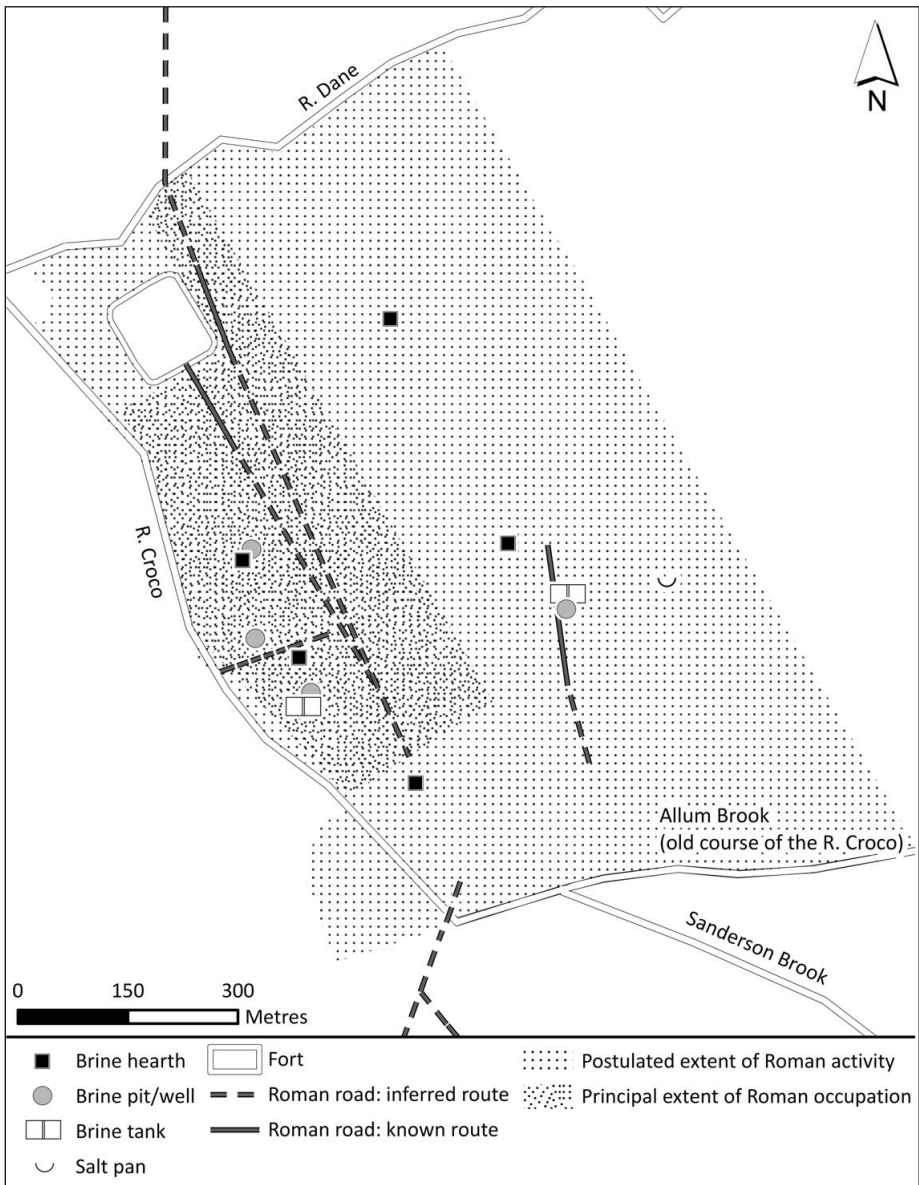
Salt production

The first academic attempt to characterise Roman salt production at Middlewich appeared as a short paper by Bestwick in the proceedings of a conference held in September 1974 (1975b, 66–70). This provided an interim statement on the excavation of a Roman salt workshop (Site 8), as well as an attempt to classify what was termed ‘Middlewich briquetage’ and the range of Roman brine hearth forms. A review of the stratigraphic and

chronological sequences at this site (Nevell 1991) subsequently revealed that the evidence represented several phases of timber building and that the original interpretation as a single-phase salt-works could no longer be seen as valid. The evidence for Roman salt production at Middlewich as a whole was reviewed in the light of excavations during the 1990s and early 2000s at a conference held by the CBA North West Regional Group at the Northwich Salt Museum in October 2002 (Nevell & Fielding 2004–5). In spite of two recent area excavations, to the west of King Street, on Site 31 in 2000 (Williams & Reid 2008) and Site 36 in 2005 (Hayes *forthcoming*), the precise organisational and spatial arrangement of Roman salt production at Middlewich is still far from clear (III.III.8).

Brine wells

Excavations at King Street (Site 31) identified a timber-lined brine well for which dated timbers suggest a construction date of *c.*AD 96. The lining consisted of a square frame of wooden planks laid on edge and connected by lap joints at the corners to a height of six courses (Williams & Reid 2008, 16–19). This form of timber lining is not unusual for Roman freshwater wells of the first and second centuries in Britain; however, it has been argued that the King Street well is located on a saline spring line and as such would not have produced water suitable for drinking (Williams & Reid 2008, 176). The only other Roman structures of this type to have been identified at Middlewich were noted in a field to the north of the Allum Brook, in the vicinity of the railway cutting, during the nineteenth



III.III.8: Map showing recorded salt-production sites

century. Watkin described these discoveries as ‘a Roman liminary shaft’ about 14 feet deep and lined with timber planks and ‘a somewhat similar shaft ... about one hundred yards further north ...’ (1886, 248; III.III.4, Field 77); these features may also have been situated along the postulated saline spring line.

Brine extraction pits should also be considered in this aspect of the salting industry, as they were in effect wells without internal structural support. Bestwick identified two

large brine pits at Site 8, both of which contained deposits of hazel branches at their base (perhaps evidence for a wicker lining); backfilling of the first pit had already begun by c.AD 80–110 (Bestwick 1975b, 67). A possible rectangular ‘brine pit’ was identified at Site 30 (Burnham *et al* 2001, 348), the most easterly example so far identified at Middlewich. Recent excavations at Site 31 identified thirteen features that were classified as ‘deep pits’, four of which contained the remains of wicker or wattle linings. These pits were thought to have been initially sunk to extract brine as they followed the alignment of the postulated saline spring line; however, they had later been used for the disposal of rubbish. In most cases the pottery from these pits indicated that backfilling had either been completed or begun by the early to mid-second century (Williams & Reid 2008, 19–23). More recently another pit was excavated on Site 36 that was dated to the early second century, with backfilling completed by the late second century (Hayes *forthcoming*).

Possible brine tanks and storage vessels

A number of brine tanks have been identified at other Roman salt production sites in Britain (the distinction between a tank and a well or pit being that a tank was used for holding brine after its initial extraction). Features of this type discovered in the Lincolnshire Fens consisted of clay-lined pits that were fed by a network of man-made ditches and acted as holding or settling tanks for the brine (Lane 2004–5, 53). At Droitwich, Worcestershire, brine tanks dating from the late Iron Age to the second century AD have been found. Most were oval or sub-rectangular in plan, clay lined and revetted with wattle or wooden stakes (Woodiwiss 1992, 8–19). In addition, a large post and plank structure set into the ground may also have functioned as a brine tank in the second century (Hurst & Hemingway 1997, 9–16).

An excavation measuring 3.2m x 2.3m x 0.85m deep was recorded at Middlewich Site 30, containing the remains of what appeared to be a timber tank constructed of planks and measuring approximately 2.4m x 1.6m x 0.7m deep. The clay lining of the tank contained part of a briquetage vessel of possible late Iron Age form, although a small sherd of samian ware was found at the base of the timber lining (Burnham *et al* 2001, 348; Strickland 2001, 36). Given the longevity of the tanks found at Droitwich and the lack of dating evidence from the Site 30 example, it is possible that this feature spans the pre-Roman Iron Age and early Roman occupation at Middlewich.

Recent excavations at Kingsley Fields, Nantwich, revealed two large Roman timber-lined features that have been interpreted as brine tanks (Arrowsmith *et al* 2012, 18–31 and 34). The scale of these features has no parallel in the Lincolnshire Fens, but appears to be similar to a probable tank of post and plank construction at Droitwich (Hurst & Hemingway 1997, 9–16). At Middlewich, a possible parallel has recently been suggested on Site 36. Here, part of a large rectangular pit dating to the early second century was uncovered in Trench 4, measuring 5m x 15m x 0.3m deep; no timber preservation was noted, nor was the feature fully excavated, and its interpretation as a brine tank remains tentative (Hayes *forthcoming*).

Two *in situ* amphorae, and depressions in the ground probably left by three others, were discovered between the two buildings on Site 8. The two remaining vessels had been

buried so that only their tops remained visible. One had the graffito AMVRCA cut into the upper surface. *Amurca* normally refers to the bitter, watery lees left over from the pressing of olive oil (Peacock & Williams 1986, 33); this, nevertheless, had its uses, for example in washes on granary walls and floors (White 1970, 189). However, it was thought unlikely that such a product would have reached Britain, and so the word was taken to indicate that the vessel had been used for collecting waste from salt-boiling or for brine storage (Wright 1970, 313, no 37; cf RIB 2 (8), 2503.464; Bestwick 1975b, 67–8). On the other hand, decanting anything from these vessels whilst buried in the ground would have been extremely problematical. Furthermore, the Site 8 artefact records refer to an ‘infant burial’ in one of these containers, suggesting that some of them, at least, may have had a funerary function.

Brine hearths and ovens

Bestwick (1975b, 70) identified three classes of what he termed ‘brine kiln’ at Middlewich: trough kilns, rectangular open hearths, and circular kilns often occurring in pairs. However, recently Fielding and Nevell (2004–5, 65) have stressed that the term ‘kiln’ is misleading and that ‘hearth’ or ‘oven’ should be used instead. The distinction is that in a hearth there was direct contact between the fire and the container, whereas in an oven only the hot gases reached the container *via* a stoke hole; these terms have been adopted for this paper. Three complete trough-type hearths have so far been identified from Middlewich, at Sites 5/31, 8 and 32/35 (Dodd 2004–5, 27–30; Ill.III.9(a) and (c)). All three were found to be associated with fire bars, tapering bricks and wedges, suggesting they were used with flat-bottomed pans (Lane 2004–5, 50). Dating of this hearth type has proved to be difficult. In the cases of those at Sites 5 and 32/35 an early or even pre-Roman date has been suggested (Dodd 2004–5, 29; Williams & Reid 2008, 15). However, the third hearth, from Site 8, lies at the heart of Bestwick’s postulated salt-works and on the basis of alignment would appear to be contemporary with a strip building dated to the Antonine period (Bestwick 1975b, 67; Nevell 1991; Garner 2004–5, 20, fig 5a). In all three cases the trough-type hearths would have provided a direct heat source for the salt pans. This basic technology clearly had a long life in the west midlands, as hearths of this type have been found in Droitwich dating from the fifth to seventh centuries AD (Hurst & Hemingway 1997, 17–25). In the Lincolnshire Fens, however, it has been suggested that the move from a direct to an indirect heat source in the brine evaporation process was a technological development already in evidence in the late Iron Age (Lane 2004–5, 53).

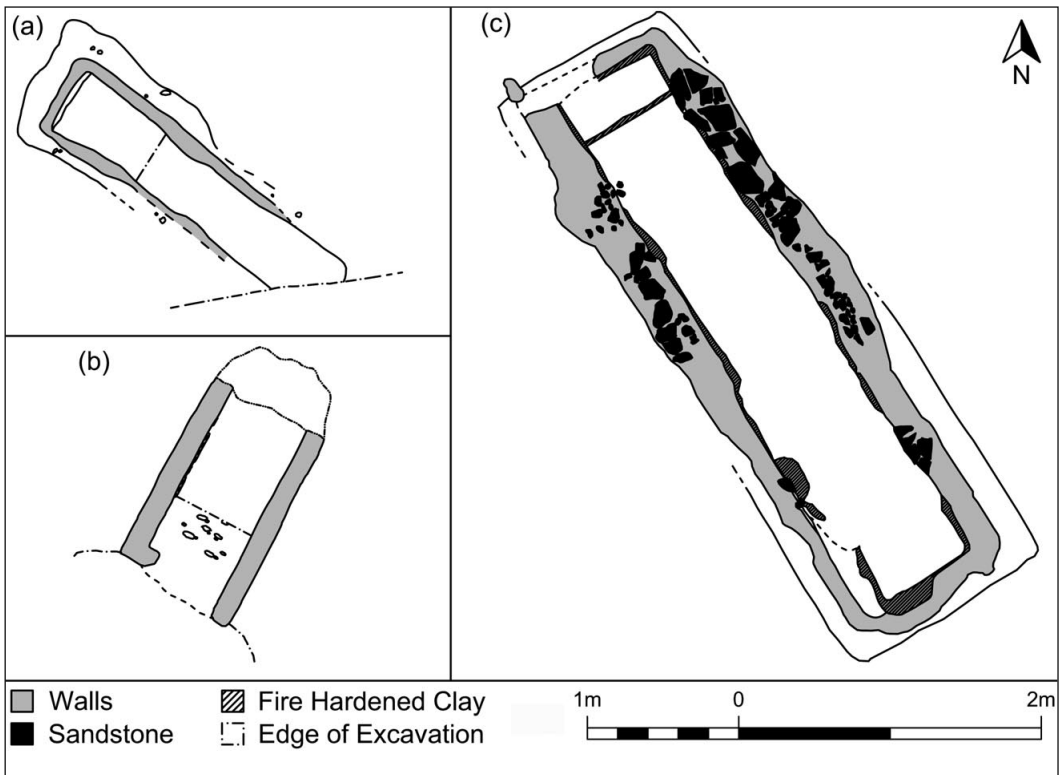
Only one example of Bestwick’s ‘rectangular open-type hearth’ was identified at Site 8 (Garner 2004–5, 20, fig 5b); it was suggested that it was used for drying salt already recovered from the evaporation process (Bestwick 1975b, 70). The structure employed an indirect heat source and should therefore be classed as an oven. Dating is difficult, but on the basis of alignment it could be contemporary with the trough-type hearth discussed above and therefore possibly of Antonine date. A second oven of this type was identified at Site 24 (Dodd 1997, 11 and 16; Ill.III.9(b)); again no finds were associated with the oven, but adjacent to it were two linear features backfilled with soils rich in organic-tempered briquetage. A second-century timber building lay nearby.

The ‘circular kilns’ in Bestwick’s final category are the most difficult to attribute to salt production with any level of confidence; here again the employment of a flue means that

they should be classed as ovens. Bestwick (1975b, 70) suggested that he had identified five examples of this oven type at Site 14, describing them as circular in plan and occurring in pairs (Garner 2004–5, 20, fig 5c). So far no other sites in Middlewich have produced brine ovens of this class; although, back-to-back ovens of this type are fairly common at other Roman settlements in the north-west such as Wilderspool (Hinchliffe *et al* 1992, 24) and Walton-le-Dale (Gibbons & Howard-Davis *forthcoming*), and they are not necessarily linked to salt production.

Briquetage

The subject of briquetage at Middlewich almost calls for a paper in its own right. There is a lot of generalisation surrounding the subject, and this is perhaps best summed up by the sentence in Williams’ report on the briquetage from Site 31 which states that: ‘In this report the term briquetage is used to describe any ceramic fragment associated with the salt industry’ (Williams & Reid 2008, 159). In fact, the problem is partly the result of previous attempts to classify Middlewich briquetage by comparing it with evidence from other Roman saltings such as those at Droitwich and in the Lincolnshire Fens.



III.III.9: Plans of brine hearths: (a) trough-type hearth from Site 32/35 after Dodd 2004; (b) open-type hearth from Site 24 after Dodd 1997; (c) trough-type hearth from Site 5/31 after Williams & Reid 2008. (Scale 1/50)

The first issue in need of clarification is the chronology of the material. Bestwick (1975b, 6) was of the view that there was no evidence of Iron Age saltworking at the Middlewich springs and thus there was no local technological tradition to be adopted by the Roman salt-workers. By contrast, at Droitwich several different briquetage fabrics have been identified, and on the basis of controlled stratigraphic excavation it has been possible to demonstrate that the ceramic evolved from a pre-Roman Iron Age tradition (Woodiwiss 1992). In the Lincolnshire Fens ceramic material in a 'briquetage fabric' occurs on salting sites in both the Iron Age and Roman periods (Lane 2004–5, 50).

In Cheshire the key evidence for pre-Roman salt production is the fabric commonly referred to as Very Coarse Pottery (VCP). The fabric now known as Cheshire Stony VCP was first identified during the study of the briquetage fabrics recovered from Droitwich during the 1980s, when the fabric was scientifically proven to have been manufactured from clays in the Middlewich/Nantwich area (Morris 1985, 357–64; *cf* most recently Morris 2010). The fabric is distinctive because of the presence of large angular fragments of igneous and sedimentary rocks. It was fired at a low temperature and is consequently fragile, making full vessel reconstructions rarely possible. A full synopsis of Cheshire Stony VCP has recently been compiled by Nevell (2004–5, 9–14). It is now generally accepted as an Iron Age form of saltmaking briquetage and has been identified on a number of Iron Age settlement sites in the Cheshire area (for examples *see* Fairburn *et al* 2002; Nevell 2004–5; Garner 2007) and indeed much further afield (*see* the recent review by Philpott in Philpott & Adams 2010, 180–3). The fabric has now been identified in very small quantities at three sites in Middlewich spread widely over the area of Roman occupation (Sites 8, 33 and 35). This implies that, contrary to Bestwick's assumptions, there was certainly a pre-Roman Iron Age tradition of saltmaking somewhere in Cheshire, and quite probably at Middlewich.

At Middlewich previous reports on Roman briquetage usually refer to a ceramic fabric, which can be described as being organic-tempered (for a full description see Williams in Williams & Reid 2008, 159). This has close similarities in appearance to the briquetage of the Lincolnshire Fens and the organic briquetage fabric from Droitwich. Both occur on sites of the Iron Age and Roman periods, but at Droitwich archaeological features and deposits at the bottom of a stratigraphic sequence which only produce briquetage are generally interpreted as belonging to the pre-Roman Iron Age (Lentowicz 1997, 70–1).

In terms of the function of objects made from organic-tempered briquetage, Bestwick (1975b, 68–70) proposed twelve categories based on shape and size. This framework, together with the work undertaken by Gurney (1999) and Crosby (2001), was used by Williams in analysing the material from Site 31 (Williams & Reid 2008, 159). However, in essence, the material can be simply subdivided along the lines of containers, supports and structural material, as was done in a recent review of the Fenland briquetage (Lane 2004–5, 50–2). In this scheme Bestwick's categories A–D, F and G can be described as supports, categories H and I as structural material, and category K as containers. Objects in Bestwick's category E (described as 'plates') may represent either supports or containers, as they are often incomplete, whilst category J, 'miscellaneous', must be directly associated with the brine hearths themselves as they are often glazed with salt.

No excavation at Middlewich has yet recovered enough of an organic-tempered briquetage container to confirm its size or shape. However, Bestwick (1975b, 70) argued that the vessel fragments suggested roughly rectangular, flat-based containers with walls that were on average 8mm thick. A substantial fragment of a briquetage vessel was exposed during the excavation of a brine tank at Kinderton Hall Farm (Site 30), but it had been incorporated into the clay lining of the tank and disintegrated when an attempt was made to remove it. Photographs of the tank and container fragment were published by Strickland (2001, 36) where the container appeared to have been part of a rounded, trough-like pan. It therefore seems possible that the organic-tempered briquetage containers from Middlewich were similar to those from the Lincolnshire Fens (Lane 2004–5, 50–1), the Kinderton Hall Farm example being of Fenland type B, of late Iron Age date, and those visualised by Bestwick being of type C, of early Roman date. Interestingly, no vessel forms of the type reported from Droitwich (Hurst 1997, 70–1) have yet been recognised amongst the Middlewich material.

Amongst the objects included in the ‘support’ function there is again something to be gained from comparison with material from the Lincolnshire Fens, where a tentative chronology has been suggested. Bestwick’s types F and G are cylindrical hand-squeezed supports and are comparable to the Fenland hand-squeezed pedestals (Lane 2004–5, 51–2). However, no objects of Middle Iron Age type with hollow or ‘two-horn’ tops have yet been identified in the Middlewich assemblages. The fire bars and tapering bricks or wedges that have been recovered from the Fens are still poorly understood, but it is suggested that they may be associated with the introduction of flat-bottomed pans (Morris 2001, 372). At Middlewich the fire bars and tapering bricks (Bestwick types A–D) can in some cases (particularly at Site 35) be associated with the trough-type hearths as discussed above.

Organic-tempered briquetage occurs widely across the settlement at Middlewich, with most archaeological interventions recovering a quantity of this material; however, it clearly occurs in greater quantities on sites to the west of King Street. Its most southerly occurrence may be indicated by an antiquarian reference to ‘a dump of pottery sherds of the coarsest kind’ in a field to the north of the Allum Brook, in the vicinity of the railway cutting (Watkin 1886, 248; Ill.III.4, Field 77). Unfortunately, a lot of the briquetage has been recovered from unstratified contexts or the brown homogeneous soils that are found over much of the Roman Middlewich area (Williams & Reid 2008, 159). Furthermore, as noted in the section on buildings, organic-tempered briquetage was clearly being recycled for other uses, such as the construction of internal floor surfaces; as a consequence, when found, it cannot be assumed to be in context chronologically or spatially.

Lead salt pans

It is generally assumed that at some time during the Roman period there was a technological development in brine evaporation that prompted a move from ceramic to lead containers. It has been noted that to date over twenty Roman lead salt pans have been found in Cheshire, while only three have been found in the rest of north-west Europe (Fielding & Fielding 2006, 8). This would suggest that the innovation actually stemmed from Cheshire rather than having been introduced from the continent; however, the

fundamental question is the date of the innovation. If we exclude antiquarian reports of two lead pans being found near the River Croco (Petch 1987, 203), only one example, bearing the Latin name LVTAMI or CLVTAMI, 'property of (C?)Lutamus' (Tomlin & Hassall 2005, 486), has so far been recovered from Middlewich (Site 21); this had been cut up and buried in antiquity, perhaps for recycling at a later date.

The chronology of lead salt pans in Cheshire has been the subject of a recent review by Shotter (2004–5). Although the pans discovered in recent years in Middlewich, Nantwich, Northwich and Shavington have Latin inscriptions on them that betray a Roman date, the inscriptions on those from Nantwich and Shavington perhaps indicate associations with the Christian church and have been argued to date to the fourth or fifth century. In this light it seems possible that lead pans are an innovation of the late or even sub-Roman period — a period for which we have no other direct evidence for salt production at Middlewich. This issue will be returned to in the section dealing with the end of Roman Middlewich.

Artefacts and industry

Coinage

A study of three main Roman coin groups (ninety-seven coins in total) recovered from Middlewich up to 1999 was published by Shotter (1998–9). This suggested a pre- or early Flavian start to Roman occupation, with a break in the middle Flavian period and a resumption or reoccupation in the late Flavian period of a military character. This was followed by a fall under Hadrian and Antoninus Pius and then a rise from *c.*AD 160, with continued activity until the mid-third century before a gradual decline in activity, ending with two coins dating to the period AD 330–346.

Subsequently, an additional twenty-one coins recovered from Site 31 were also analysed by Shotter (2008). These coins suggested that significant occupation on Site 31 did not begin until the late Flavian period (possibly after the decision to withdraw from much of Scotland *c.*AD 87) and that this had a non-military character, in keeping with sites such as Wilderspool and Walton-le-Dale. Only one coin in the group was dated to the mid-second to mid-third centuries. Losses beyond *c.*AD 260 appeared to point again to a gradual decline in activity, with the latest coin dated AD 335–41. This group thus began to raise the issue of different chronological trends in the assemblages from different sites. Finally, a further eight Roman coins were recovered from Site 36 in 2004, bringing the total number of Roman coins identified from Middlewich to 126. These coins were again analysed by Shotter (2005), who felt that the appearance of a coin of Nero and three Flavian coins strengthened his original argument for military activity in the Middlewich area beginning early in the Flavian period. The site also produced the latest coin yet recorded from Middlewich, dated AD 351–3.

These varying chronological trends in turn support and conflict with those presented by other artefact types. It seems clear that analysing the coins from Middlewich as a single group can result in a simplistic picture that cannot easily be reconciled with those gained from other classes of material, particularly the samian and coarse pottery, from individual sites (*see below*).

Finally, a hoard of thirty silver *denarii* was discovered at Site 27 in 1998 (Shotter 2000, 167). The hoard closed at some time in the AD 120s and is plausibly interpreted as a soldier's savings or the results of a military transaction.

Samian

Despite the recovery of samian ware from nearly every archaeological intervention at Middlewich, the first specialist analysis was not undertaken until the assemblage from Site 31 was studied by Ward (2008a). The results were presented in a number of chronological groups (1–9), essentially the same as for the coarse pottery from the site. A number of trends were noted, the most important of which involved the dating and status of the occupation. Ward suggested that the proportion of pre-Flavian samian ware was low (less than 1% of the South Gaulish ware), with three certain and seven possible vessels attributable to the Claudio-Neronian period (AD 55–69), and that much of the South Gaulish samian ware appeared to have been produced in the earlier Flavian period, specifically before AD 85–90. However, it was noted that apparently conflicting interpretations regarding trends in proportions of specific forms of the early samian ware assemblage leave the proposed start of activity at Site 31 ranging between the 70s and 90s and, consequently, a broad, later first century date was proposed (Ward 2008a, 135–7). There was evidence for a diminution of activity in the Trajanic period (AD 97–117) with an upsurge in the early Hadrianic to early Antonine period followed by a period of abandonment or inactivity from slightly before *c.*AD 160. There was slight evidence for renewed activity in the third century, with the latest samian vessel identified dating to AD 200–240.

A more recent unpublished study by Ward (2008b) of the samian ware from the Community Dig (Site 36) seems to broadly support her conclusions from Site 31 regarding chronology, with the noticeable exception of the 'Trajanic gap'. Pre-Flavian material (dated AD 55–70) again made up a small component of the South Gaulish samian (between 1% and 4%). In general, occupation of Site 36 seems to have begun slightly later than at Site 31, but still in the late first century (perhaps after AD 90), with considerable activity in the Trajanic to early Hadrianic period; this was followed by a period of abandonment or inactivity shortly after *c.*AD 150, and then a lower level of renewed activity in the early third century.

In terms of status, the samian assemblage was thought to reflect the military presence in Middlewich as a whole, whether or not there was specific military involvement on the sites in question. In particular, the proportions of moulded bowls, cups and dishes on Sites 31 and 36 were thought to be much closer to those recorded from the extramural areas of military sites than to those from purely civilian settlements (Ward 2008a, 146; 2008b). On Site 31 it was noted that the occurrence of graffiti on samian ware was low, suggesting a low level of literacy amongst the average samian owner; however, there was a higher occurrence of graffiti on Site 36, perhaps suggesting a varying level of literacy in Roman Middlewich generally (Ward 2008b). The percentage of moulded bowls in the East Gaulish assemblage was considered unusually high and suggested that during the early third century the residents of Middlewich still had access to a range of samian ware from the late East Gaulish industries.

Coarse pottery

Again, the only full, published analysis of Roman coarse pottery from Middlewich to date is that by Leary (2008a) on the material from the King Street excavations (Site 31). This assemblage spanned the late first to late fourth centuries. Because of the lack of vertical stratigraphy the pottery was divided into chronological groups. These suggested that the development of the site fell in two main phases: Flavian (AD 69–97) (Group 1) and Hadrianic–early Antonine (AD 117–161) (Group 2). The remaining material (Groups 3 and 4) was thought to belong to episodic activity spanning the later Roman period (Leary 2008a, 71).

Leary used the samian evidence to support the hypothesis that the intensity of occupation indicated a concentration of activity in the late first century, with a decrease in activity in the Trajanic period (AD 96–117), then rising in the Hadrianic–early Antonine period (AD 117–161) and tailing off in the later second century. The evidence for activity in the third and fourth centuries was very restricted, and she suggested that this possibly indicated that the focus of activity had moved elsewhere.

The Group 1 assemblage was dominated by local grey wares with small quantities of mica-dusted orange wares possibly derived from Manchester, Holt or Wilderspool; non-local wares comprised small quantities of Lyon/Köln ware and Verulamium white ware. By contrast the Group 2 assemblage was marked by the appearance of roughcast beakers of Wilderspool type, local orange ring-necked flagons, flanged and hemispherical bowls and bowls imitating samian forms Dr 37 and Dr 44; non-local wares were dominated by the arrival of black-burnished 1 in Hadrianic to early Antonine forms and a range of Severn Valley ware fabrics. The diagnostic coarse pottery types in Groups 3 and 4 comprised late black-burnished 1 forms with obtuse lattice decoration, Trier and late Nene Valley colour-coated type wares and late shell-tempered jars.

A few of the mortaria, from the Rhone Valley and Verulamium region, belonged to Group 1, but the majority belonged to Group 2. From the late second century onwards the quantity dropped considerably, with only two vessels dating to the late second–early third century, five to the third century and four to the third to fourth centuries (Leary 2008a, 94–98). The amphora assemblage was considered to be comparable to Roman fort sites in the region and was dominated by the Spanish Dressel 20 type, which is thought to have contained olive oil.

Leary argued that compared with national patterns the ceramic assemblage from Site 31 suggested a high-status military character, with high levels of amphorae and samian up to the mid-second century (Leary 2008a, 92). Subsequent work by Leary (2008b) on the coarse pottery from Site 36 suggested a lower social status than Site 31, more in keeping with a higher-status rural site and perhaps indicating that it lay on the edge of the town. This indicates the complexity of the data from Middlewich and the problems of extrapolating trends from single sites to the whole settlement.

Large assemblages of coarse pottery remain unanalysed and unpublished in the archives of Bestwick's excavations of the 1960s and 1970s (Sites 7–16), as well as the material

from many of the watching briefs undertaken in the 1990s (Sites 17–30). A rapid quantification of this material was undertaken in 2000, from which it appears that in general terms the range of fabrics and forms as well as the chronological weighting compare closely with the assemblages from Sites 31 and 36.

Pottery production

Excavation at Site 33 revealed a small pottery kiln of simple updraught type (III.III.10 and III.III.11), probably associated with a clay extraction pit nearby. The kiln contained the *in situ* remains of plain and decorated jars and flagons from its last firing (III.III.12); the forms were dated to the late first or early second centuries (Clarke & Frost 2001). Interestingly, a dump of pottery wasters recovered from a feature described as a ‘large post hole’ on Site 12 during a watching brief in 1969 (Bestwick 1972, 5) included very similar forms to the kiln group from Site 33 and was probably broadly contemporary. Furthermore, two possible pottery wasters of probable local manufacture were identified in the assemblage from Site 31; both vessels were mortaria dated AD 130–160 (Leary 2008a, 95). More recently, at Site 36, kiln wasters were suggested by an assemblage of distorted rim sherds from everted rim jars typical of the late first to early second century and campanulate bowls from a backfilled pit dating to the Hadrianic period (Leary 2008b).

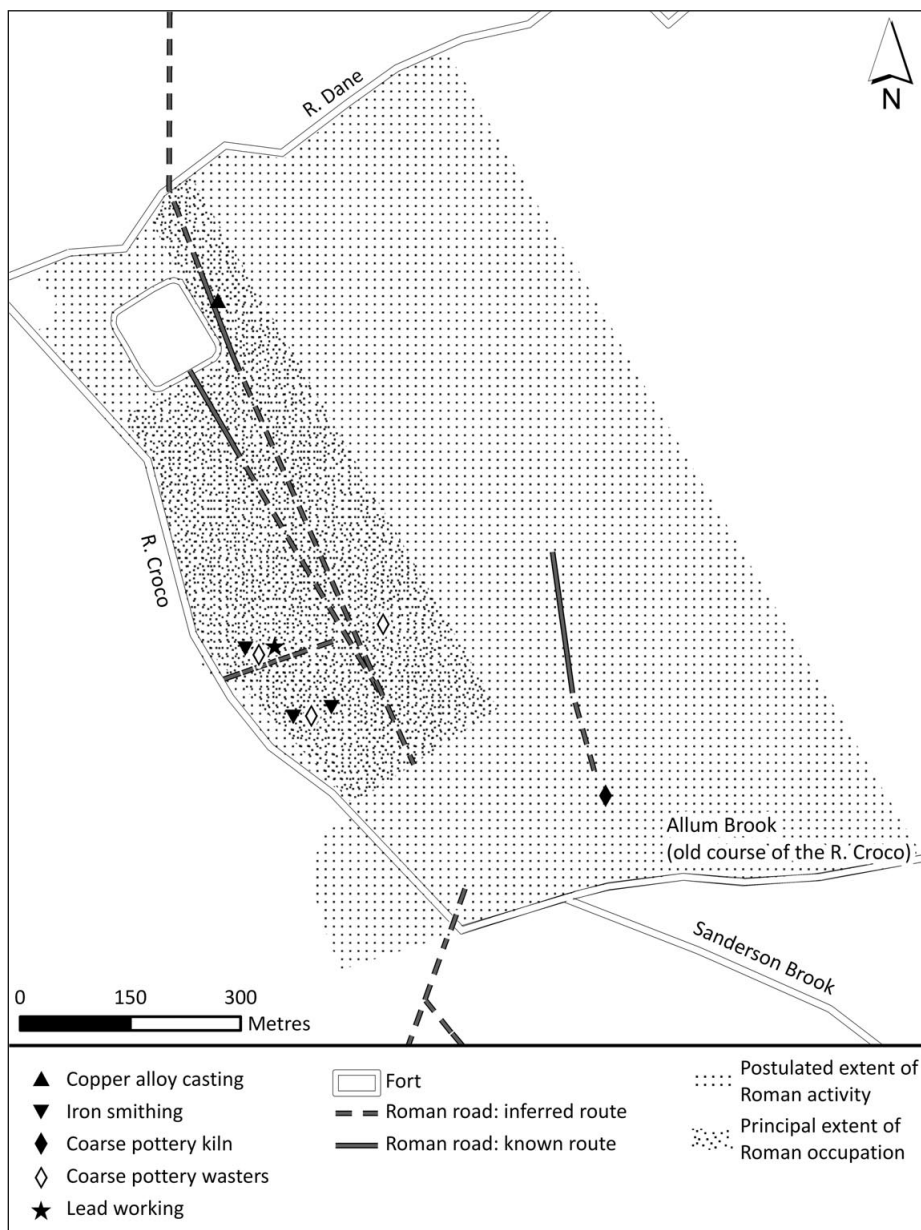
The evidence would seem to suggest that both oxidised and reduced coarse pottery production was being undertaken at Middlewich from the late first century until perhaps AD 160. Production does not appear to have been on the scale of sites like Wilderspool (Hartley & Webster 1973), and the Middlewich products were probably only ever intended for a local market. In many respects this is comparable to the evidence for the broadly contemporary pottery manufacture at Northwich (Jones 1972).

Vessel glass

The glass recovered from excavations undertaken by Bestwick and sites dug in the 1990s was rapidly assessed by Cool (2004) and some broad trends suggested. The vessel glass appeared to range in date between *c.* AD 80 and 150 and was dominated by bottle forms, as is normal in a settlement with a military presence, although Site 8 also produced fragments of small unguent bottles. Along with the window glass that was prolific on this site and the box flue tiles, these suggest the presence of a bath house nearby (see above).

Since the 2004 assessment, two significant assemblages of Roman vessel glass have been recovered, the first from Site 31 and the second from Site 36. The assemblage from Site 31 produced fragments with a date range of the second half of the first century to the late second or early third century and was dominated by flask and bottle forms, with bowls, jugs and jars making up another large component of the group (Worrell 2008, 61–4). The vessel glass from Site 36 has a date range of the second to third century, with storage jars/bottles and cups/beakers amongst the identifiable forms (Gifford 2005).

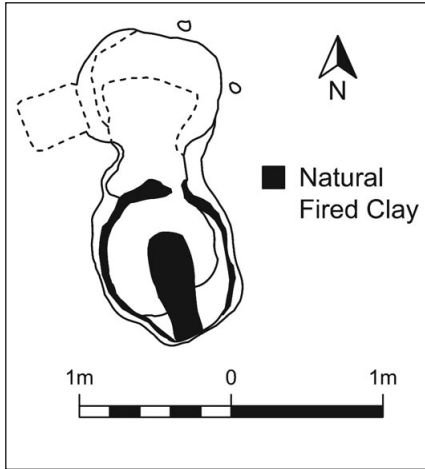
Unfortunately, to date, no detailed specialist synthesis has been attempted on the Roman glass assemblages from Middlewich and it is therefore impossible to indicate how this material compares with other contemporary centres of population.



III.III.10: Map showing other manufacturing activity

Dress and household items

A range of personal and household items has been recovered during excavations or has come to light as chance finds by metal-detecting. Items with a military flavour are few, the most noteworthy being the discharge diploma found near to Site 8 (RIB 2 (1) 2401.3; comprehensively illustrated in Strickland 2001, 30–1). It is dated to AD 105 and records the grant of citizenship to an unknown, time-expired trooper of the *Ala Classiana* (more



III.III.11: Plan of pottery kiln found on Site 33 (after Dodd 2006). (Scale 1/50)

fully, the *Ala Gallorum et Thracum Classiana Invicta bis Torquata Civium Romanorum*) and his wife Amabilis. This unit was a 500-strong wing of cavalrymen stationed somewhere in the ‘Chester command’ (ie in north-west England and north and mid-Wales). Unfortunately, precisely where it was based during its stay in Britain (c.AD 70–178+) is unknown: as explained above, the fort at Middlewich seems to have been too small to accommodate a cavalry unit. (For more on this unit, see Holder 1982, 108; Jarrett 1994, 42).

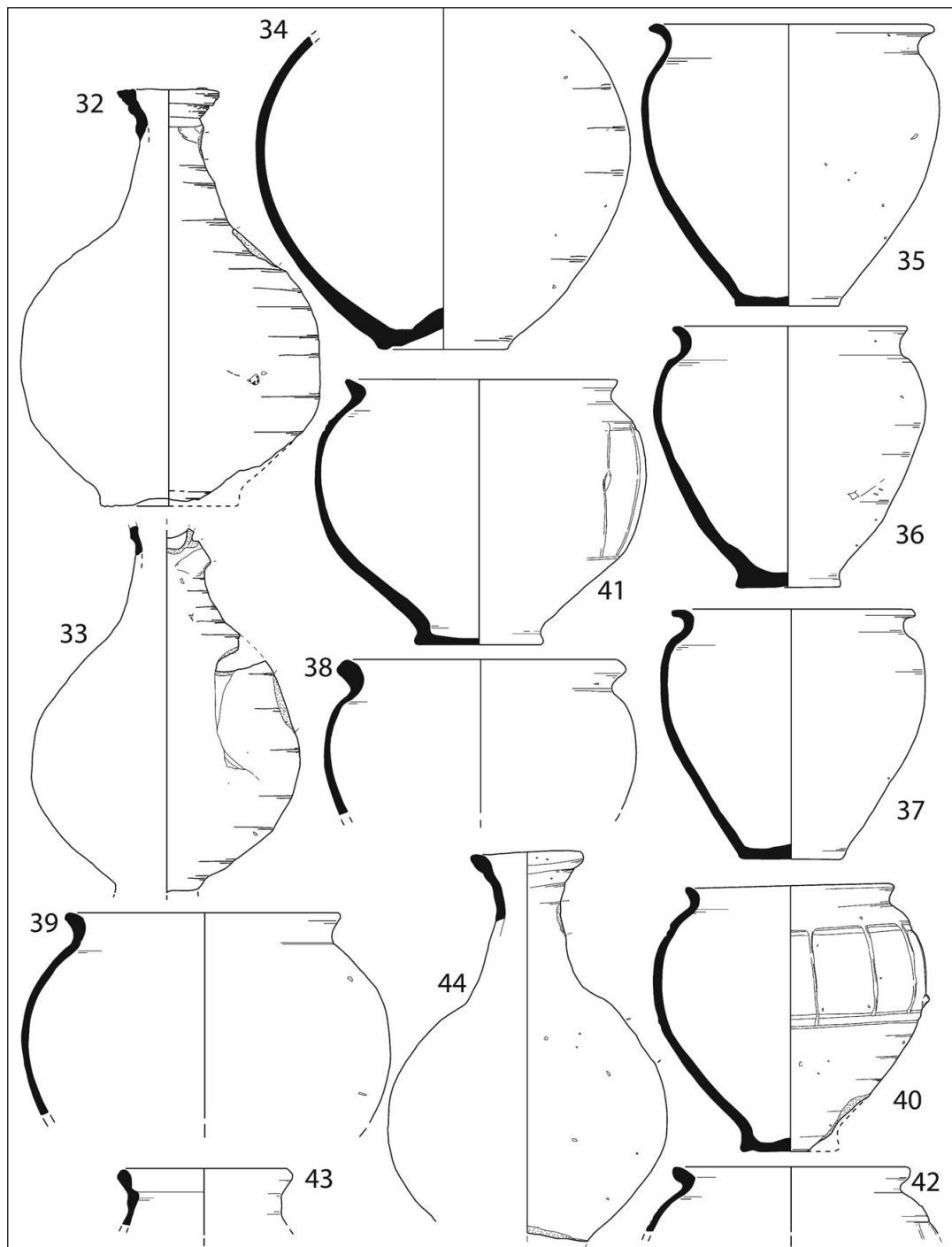
In addition to the discharge diploma, a possible fitting from a set of Roman armour (*lorica segmentata*) was identified on Site 33, but other than this the only possible piece of Roman arms or armour yet reported from Middlewich is an iron spearhead found on King Street by Isaac Wood in 1849 (Strickland 2001, 8). The pieces of a folding camp stool that were recovered from a second century context at Site 8 might be argued to represent a military item, but this is far from conclusive (see Strickland 2001, 25 for a reconstruction of this item). There are also a number of items associated with horse gear that may have a military association, including an iron snaffle bit from Site 30.

Given the detailed record-keeping practised by the Roman army (Bowman 1994; 2006), the copper alloy seal box lid from Site 29 and the two samian inkwells and wooden writing tablet from Site 31 may also have a military connection; they may alternatively simply provide further evidence for literacy amongst the population of the *vicus*.

In terms of personal adornment the bulk of the evidence comes from brooches, with at least thirty examples having been recovered in the last decade or so. The majority of these items were made of copper alloy and are of ‘bow’ or ‘trumpet’ type spanning the late first and second century. A single second century iron penannular brooch was recently recovered from Site 36; however, to date, no third or fourth century brooches have been identified from Middlewich.

To this group of dress accessories can be added an ornate gold ring of second century date that was recovered from Site 8 in 1964 (for a colour illustration see Strickland 2001, 37, pl 70), a gilded copper alloy finger ring from Site 27, and copper alloy hair pins from Sites 29 and 36. Although the bulk of the items are potentially unisex, the objects identified as hair pins are usually considered to be female items and provide some evidence for the presence of women in the settlement during the second century.

As well as the spindle whorls discussed below from Sites 31 and 35, large perforated lead weights have been recovered from Sites 14 and 29. These may have served as plumb-line



III.III.12 Pottery kiln products from Site 33 after Dodd 2006. (Scale 1/4).
 (Nos refer to the catalogue in Dodd 2006)

weights for surveying purposes. There are also two lead lamp holders from Sites 8 and 29, although as yet no evidence for ceramic lamps has been recovered from Middlewich.

Finally, in addition to the cauldron, together with its hanging chain and the remains of a tankard, all of which seem to have been the subject of a ritual deposit, a copper alloy *patera* (cooking pan) was recovered from Site 31 (Dunn 2008).

Metalworking

Despite the fact that numerous personal items manufactured from copper alloy have been recovered, there is nothing to suggest that they were made at Middlewich. In fact, the evidence for bronzeworking is limited to one half of a small two-piece clay mould recovered from a Roman road surface during a watching brief at Site 29 (adjacent to Harbutt's Field) (III.III.10). It appears to have been used for the manufacture of three identical studs or rivets (Gifford 1999b).

Ironworking waste has been noted on many of the Middlewich sites investigated to date. However, the material recovered from Site 31 is the first assemblage to be subject to analysis (III.III.10). Unfortunately, much of it was recovered from a homogeneous soil horizon that proved difficult to date more precisely than to the Roman period. It was interpreted as the byproduct of smithing and in fact could have been generated by a single smithy. Charcoal was the main type of fuel, although two examples of waste were characteristic of forging using coal (Cowgill 2008b, 56).

An interim report on Site 15 stated that a number of hearths had been identified in association with rectilinear ditches thought to represent property boundaries. These hearths were dated to the second or third century and contained an abundance of ironworking waste thought to be indicative of smithing (Bestwick 1973; 1974a). This site lay in the same area as the more recent Middlewich Community Dig (Site 36), which identified a timber 'outbuilding' furnished with a clay floor dating to the early second century. Associated with the building was a concentration of metalworking 'slag' (Hayes *forthcoming*). There was also a pottery sherd from a carinated beaker with an applied hammer motif, thought to be associated with the Roman smith god Vulcan; this may be linked to the evidence for ironworking (Leary 2008b) (III.III.10).

In general the evidence indicates that ironworking at Middlewich was restricted to small-scale smithing and the production of objects from iron that had already been smelted elsewhere, broadly in the second to third centuries.

It has been suggested that many of the fragments of leadworking waste and offcuts of sheet recovered during metal-detecting in the 1990s are indicative of the manufacture and repair of salt pans (George Twigg *pers comm*). The collection of lead objects and scrap from Site 31 was thought to be unusually large and had possibly been assembled for recycling (III.III.10). Most of the casting waste and offcuts were associated with the working and use of sheet lead. However, it was not possible to establish with any confidence how much of this waste material was actually Roman, nor was it possible to suggest what was being manufactured apart possibly from spindle whorls (Cowgill 2008a, 52–3).

Possible leatherworking and tanning

The waterlogged nature of many of the deeper pits at Middlewich has led to the survival of Roman leatherwork. This phenomenon was first encountered on Site 8, where the earliest 'brine pit' had subsequently been partially filled with a dump of 'cobbler's waste' comprising hundreds of fragments of leather sandals (Bestwick 1975b, 67). The substantial ditch encountered at Kinderton Hall Farm (Site 24) contained fragments of Roman sandals, although it was not possible to establish whether this actually represented manufacturing waste (Dodd 1997). During excavations at Site 31 a quantity of leatherworking waste and offcuts was recovered from the backfilling of a timber-lined brine well (discussed above under saltmaking). The waste included fragments from shoe manufacture that dated to the first half of the second century; amongst the offcuts was a piece with a possible tanner's mark (Mould 2008, 169). To the south of this on Site 36 the backfilling of a large pit, thought to date to the later second century, included a thick 'peaty' deposit that contained leather offcuts.

In addition to this evidence for the manufacture of leather goods, there are hints that tanning may have been carried out as well. On Site 31 the majority of the animal bones came from domestic cattle, predominantly from the lower leg and skull, and bore evidence for butchery indicative of skinning (Viner 2008). These elements were often left attached to hides during their transportation from butchery sites to processing sites. The evidence for hornworking on Site 31 in the form of horn cores and a horn sheath (Viner 2008, 172) is a further indicator, as it is an activity that is often to be found in close proximity to tanneries. Thus it is possible that raw cattle hides were being processed at Middlewich in order to provide tanned leather for the production of footwear and possibly other items, and it may be that many of the 'brine extraction pits' identified in the settlement were put to a secondary use or were in fact created for tanning. Indeed, leatherworking may have replaced salt production as the primary activity in the King Street area of Middlewich during the second century, although because of the general paucity of evidence for later Roman activity it is uncertain how long it continued. A shift from salt production to leather production has previously been suggested at the Kingsley Fields excavation in Nantwich (Connelly & Power 2004–5), but this now seems less likely (Arrowsmith *et al* 2012, 35). On the other hand, while it is clear that leather articles, especially shoes, were being made at Middlewich, it is possible that hides were merely being temporarily preserved there, using the locally available salt or brine (Q Mould *pers comm*), before being sent elsewhere for tanning. If the cattle were slaughtered at Middlewich, we may also speculate that meat from the carcasses was brined there (*cf* Dobney 2001, 40–1). Finally, it is possible that the leather found on Sites 8, 31 and 24 was derived from the occupation of the fort and was dumped on its evacuation rather than attesting an ongoing industry (*cf* van Driel-Murray 2002, 113).

Textile manufacture

There is some evidence for activities related to textile production. This was first suggested by the discovery of a large pair of iron shears on Site 14, possibly used for shearing sheep (Bestwick 1973). It has been argued that at Site 27 a linear alignment of pits connected by a shallow channel may have been used in the fulling process (Gifford 1999b). Another firmer indication is the occurrence of lead spindle whorls, used in the spinning of yarn, on Sites 31 and 35 (Cowgill 2008a, 52–3; Dodd 2004). However, no direct evidence for weaving has yet been identified.

Agriculture and the local environment

As described above, extensive but discontinuous remains of Roman land division have been found to the east and south of the settlement at Sites 35, 37 and 33. The land so enclosed was used both for agricultural and non-agricultural purposes, notably the pottery kiln on Site 33 (Ill.III.3 and Ill.III.10). The combined evidence from the excavations suggests that some of the enclosures were probably laid out in the late first and early second centuries AD, although those on Site 33 were modified later.

It is apparent from field ditches producing medieval and post-medieval pottery that the same orientation of boundaries continued to be maintained until comparatively recent times (Dodd 2006; Gifford 1995; Gifford 1998; Oxford Archaeology North 2008). The shape and sizes of these ditches are similar to the Roman examples, often making it difficult to tell them apart in the absence of dating evidence. The alignments of the earthworks forming the medieval moated site and associated garden remains at Kinderton Hall (Scheduled Monument No 13492) (Ill.III.2) provide further evidence of the influence of Roman land management in shaping the medieval and early post-medieval landscape in this area. However, agricultural land was not limited to the east and south of the settlement. On Site 27, immediately to the south of the fort, land divisions were laid out, probably forming a series of rectangular enclosures. Their boundary ditches were stratigraphically later than the strip building of Flavian to Hadrianic date and contained pottery of mid-second to early third century, but were closely aligned on the fort.

Evidence from charred and waterlogged plant remains recovered from the enclosure ditches and contemporary features to the east and south of the settlement has indicated that some of these enclosures were used as arable fields. Plant remains include evidence of *Triticum spelta* (spelt wheat), *Avena* (oats) and *Hordeum vulgare* (barley), crop-processing waste, such as glume bases and rachis fragments, and arable weeds (eg pale persicaria and knot grass) (Site 37: Oxford Archaeology North 2008, 39–43). Remains of the same types of cereals were also found in features at the back of properties fronting onto King Street, where crop-processing waste was perhaps used as fodder (Site 31) (Carter 2008), while small amounts of hulled barley and spelt wheat were recovered from Site 36 (Gifford 2005, 31; Schmidl *et al* 2008). In addition, analysis of a sample from Site 14 produced evidence of oats and both spelt and emmer wheat (*Triticum dicoccum*) (Pearson 2001). It was noted (*ibid*, 5) that the concentrated deposit of charred cereal crop-processing waste found at this site indicates large-scale production rather than day-to-day domestic activities. Assemblages of cereals recovered from these sites bear some comparison to those from Wilderspool (Hillman 1992).

Grain-processing is further attested by the numerous rotary quern stones found in the area of the Roman settlement since the nineteenth century, together with a large segment of a millstone (more than 1.5m in diameter), reused in a late second or third century ironworking hearth at Site 15 (Bestwick 1974a, 30; Wilson 1974, 419). The former were made both from Mayen lava imported from Germany and from millstone grit, and would have been used by individual households. By contrast, the millstone indicates the production of flour on a larger scale and thus a sizeable and economically specialised population, either military or civilian.

Agricultural production was probably supplemented by the cultivation of small areas at the backs of properties fronting onto King Street. At Site 15 evidence was discovered for late Roman or post-Roman cultivation consisting of lines of slots, each 0.3m long, 0.15m wide and 0.1m deep, cut by a mattock. The slots were spaced 0.1m apart and a mattock blade was found in one of them (Goodburn 1976, 321). Seeds from a ditch deposit at Site 14 included evidence of coriander (*Coriandrum sativum*), possibly grown in a garden nearby, and hemlock (*Conium maculatum*) (Pearson 2001, 4). Coriander was also found in a ditch at Site 24 (Carruthers 1997). Hemlock may have been used as a medicinal herb, and coriander, introduced by the Romans, was widely cultivated for medicinal and culinary use (Pearson 2001, 5). Seeds of elderberry (*Sambucus nigra*) and raspberry/dewberry/blackberry (*Rubus idaeus/caesius/fruticosus*) found at Site 14, together with those of hemlock, are indicative of plants growing on neglected areas such as woodland, heathland or in hedge-rows (*ibid*, 4). An examination of the botanical remains from Site 31, also located to the west of King Street by the River Croco, produced evidence of wild taxa indicative of waste and cultivated ground, together with species favouring marshy and grassland/meadow habitats (Carter 2008). The presence of wild taxa from the adjacent site, 36, indicates the likelihood of hedges nearby and to a lesser degree areas of disturbed waste ground (Schmidl *et al* 2008). Remains of plants recovered from the agricultural land to the east of the settlement, at Site 37, include broom, hazel, blackberries and cherry (*Prunus* sp) (Oxford Archaeology North 2008, 39–43), while at Site 36 remains of heather were found (Gifford 2005, 31; Schmidl *et al* 2008), presumably cut from a nearby heath or bog.

In addition to the evidence of ‘backland’ horticultural activity, possible indications of cultivation were found close to King Street at Site 38. Here, Roman deposits overlay remnants of a buried soil, which in turn sealed a series of indentations in the natural subsoil. These small, shallow depressions, averaging 0.5m wide and 0.15m deep, may have been created by ploughing or by the use of hand tools (Reid 2011, 2.4–2.5.2, figs 9, 10, 12,13).

Waterlogged conditions, aided by the drift geology and high water table, have helped to preserve structural timbers, whether surviving *in situ*, such as timber-lined and wattle/wicker pit linings (Williams & Reid 2008, 16–23), or the discarded offcuts found in pits (Tyers 2001; Gifford 2005, 32–3). The trees utilised included oak, willow, poplar, birch and alder, with the likely addition of hazel. All these species probably grew locally, and the use of wattle and the need for posts and stakes for construction would have required carefully managed woodlands where coppicing or pollarding was practised.

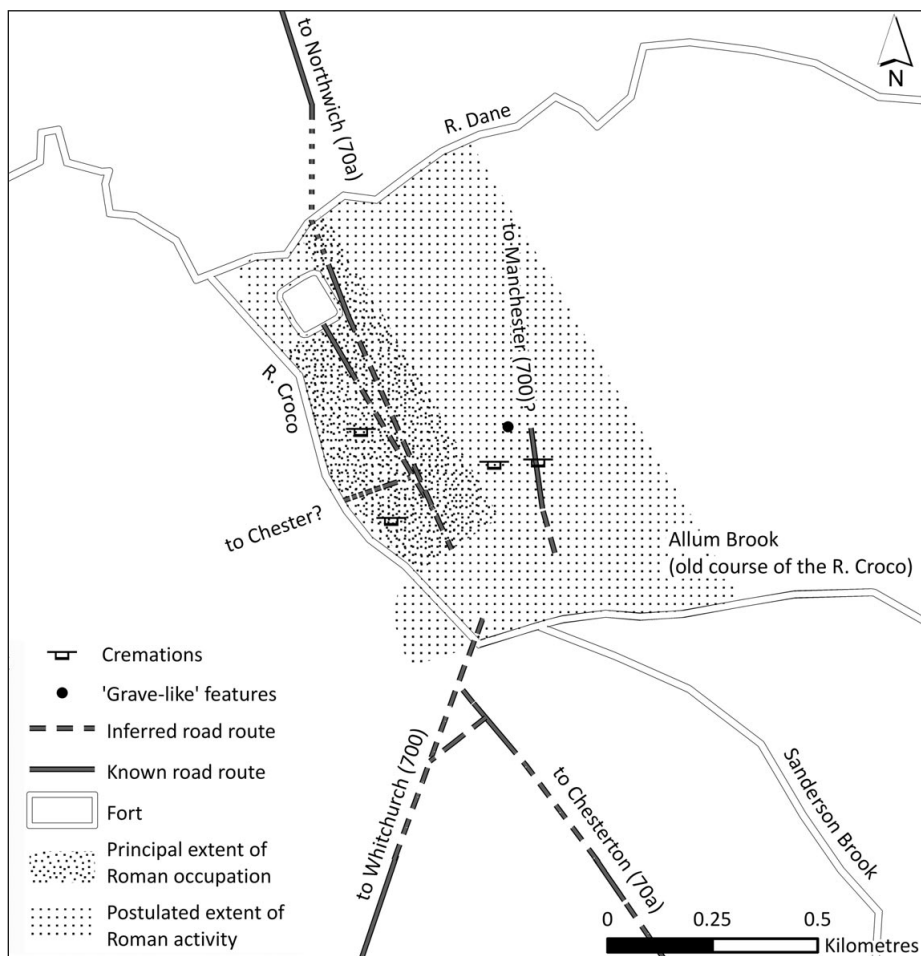
Bone assemblages from Roman Middlewich tend to be pitifully small and poorly preserved. Only at Sites 31 and 36 have reasonably sized groups been recovered and studied in detail (Viner 2008; Gifford 2005, 33–4, appendix B), although a ‘large heap of fragmentary cattle bones’ was reported by Bestwick as coming from Site 15 (1974a, 30). The assemblage at Site 31 was dominated by the remains of domestic cattle, with bones from sheep/goat, pig, horse, dog and wild birds also present. The dominance of cattle suggests that they played an important role in the economy of the settlement and accords with the pattern found on many other sites in Roman Britain (Viner 2008, 171). However, as mentioned above, the skeletal evidence suggests that it was actually hides that were being brought to this site, with heads and lower legs attached (*ibid*, 172). In contrast, the

provisional assessment of the assemblage from Site 36 (Gifford 2005, 33–4) provides a different picture, with bones of sheep/goat being prevalent instead of cattle. This assemblage is thought to be the byproduct of domestic meat consumption, rather than leatherworking or related processing activities. In terms of the contemporary rural environment, it seems extremely likely that a significant proportion of nearby fields were kept under pasture to provide grazing for livestock. The presence of chaff, a possible indication of animal fodder (Pearson 2001; Carter 2008), and probable remains of stable manure (Gifford 2005, 31; Schmidl *et al* 2008) in features within the backlands of properties to the west of King Street, also appear to indicate that livestock were routinely housed in the settlement. Apart from the stabling for horses, facilities for livestock rearing or the over-wintering of cattle may have been needed.

Burials and other ritual practices

Cemeteries of Roman date have not been discovered at Middlewich, and positive evidence of human burial is currently known at only four locations (III.III.13). Within the enclosures on Site 37, a pit probably containing two urned cremations of late first or early second century date was found in close proximity to several other features that may have had a funerary connection (Oxford Archaeology North 2008, 24–6, fig 7). At Site 30 a third century urned cremation was discovered in a roadside ditch (Gifford excavation archive for Kinderton Hall Farm, B2645A; Burnham *et al* 2001, 348). Although burial along the approach roads to settlements was normal in the Roman world, the fact that this cremation was placed in a ditch by the side of a road that seems to have run almost parallel to (and thus possibly defined) the eastern side of the settlement suggests a double liminal significance: it was placed both on the boundary of the settlement and of the world of the living and the underworld (*cf* Esmonde Cleary 2000). Two burials have been found within the settlement: an infant burial in an amphora of probable second century date at Site 8 (noted in the artefact record); and an urned cremation of third century date at Site 36 (Hayes *forthcoming*). A further possible urned cremation was found in a field north of the Allum Brook in the nineteenth century (Watkin 1886, 248; not shown on III.III.13). These dispersed urned burials, occurring singly or in small groups, are comparable to those from Nantwich (Petch 1987, 211; Connelly & Power 2004–5, 35; Arrowsmith *et al* 2012, 11–12) and the small group from Stockton Heath (Dodd *et al* 2006, 17, 19, 21).

To this list may be added three small rectangular ‘grave-like’ features located in a line near the corner of a Roman enclosure ditch at Site 24. Two of these features contained late first and second century pottery vessels, which had been deliberately placed (Dodd 1997, 10, 17, fig 17). The excavators suspected that these features were graves in which the skeletal material had dissolved. However, an acidity test carried out on the fills of one of these features indicated a neutral value, suggesting that human remains had not been buried here (*ibid*, 10). If these were not graves in a formal sense, they still represent a form of deliberate deposition, perhaps to honour the memory of an individual or individuals, or to commemorate an event. Again their liminal position, near the posited major boundary ditch, may be significant. A group of samian vessels, found about 0.5km to the south-west of the settlement, apparently stacked inside a clay oven, may also have been deliberately buried (Thompson 1965, 92, fig 25, 97; Petch 1987, 207).



III.III.13: Map showing roads, burials and 'grave-like' features

Other forms of structured deposition/deliberate burial have been noted in the investigations carried out within the settlement. At Site 8 an almost complete mortarium, plus coins and brooches, together with a thick deposit of hazel branches, was found at the base of one of the 'brine pits'. It was suggested that these objects, which all dated to the late first and early second centuries, 'were thrown in as offerings to the spirits of the springs' (Bestwick 1975b, 67). Similar explanations have been proposed for the contemporary placement of cattle skulls in a timber-lined well and a brine extraction pit at Site 31 (Viner 2008, 172), and to explain the deposition of personal items in the brine-producing area of Snow Hill in Nantwich during the second century (Reid *et al* 2004, 33–4). Analysis of the animal bones from the large Roman brine tanks at Kingsley Fields, Nantwich, suggests that the heads and upper forelimbs of cattle were deliberately selected for burial. These actions may be associated with the cult of Mithras (Gidney 2012, 159–64, 168–9).

One other curious, but seemingly meaningful, act of deposition has been noted at Middlewich. A bronze cauldron, its iron hanging chain and the remains of a tankard, all high-status feasting items, were placed in a hearth pit in a small room of a late first or early second century building at Site 31 (Dunn 2008, 43–5).

The post-Roman evidence

As noted above, the latest Roman objects so far recovered from Middlewich are a coin dated AD 351–3 and a small collection of imported shell-tempered pottery likely to date to c. AD 360+ (Wallace 1993). Little can be said about the nature of the Roman settlement by the later fourth century beyond the fact that domestic debris continued to accumulate in the top of earlier backfilled features such as the large pits and roadside ditches. However, there is some evidence to suggest that the *mansio* or bath house was still in existence somewhere near King Street during the fourth century. *A priori* the only Roman features that are likely to have stayed in use beyond the Roman period are the roads and more specifically King Street and the putative road to Chester.

When reviewing the area in the post-Roman period, it may be useful to look first at the evidence from Site 31. A leached horizon of homogeneous soil sealed the Roman features and was in turn covered by two linear spreads of stone containing sherds of medieval pottery; these features have been interpreted as the vestiges of a medieval ridge-and-furrow cultivation system (Williams & Reid 2008, 32). To the south, on Site 36, another homogeneous soil 0.5m thick had developed above the surviving Roman features and was believed to have formed over a considerable length of time (Hayes *forthcoming*). Similar soils have been encountered at other sites along King Street, including Sites 19, 27 and 29 and have been discussed elsewhere (Garner 2004–5, 15–17). Further evidence for medieval and post-medieval arable farming is represented by field boundary ditches associated with ridge-and-furrow cultivation on Sites 21, 23, 24, 33, 35 and 37.

It has been suggested above that the Roman lead salt pans found in Cheshire may date to the fourth or perhaps even the fifth century. If the pan from Middlewich Site 21, inscribed [C?]LVTAMI, shares this date range, then it shows the continuation of salt-production there until the end of the Roman period. It is interesting to note that this pan was found to the east of the other recorded evidence for salt-production.

The earliest post-Roman artefacts recovered from the area are late Saxon copper alloy objects, including two strap ends from Sites 27 and 29, a stirrup from Site 27, a dress pin from Site 23 and a silver penny of Aethelred II from Site 30 (Strickland 2001, 68). These objects may date to the period when the place names of Croxton and Kinderton were becoming established. Thus it is possible that there was a break in settlement of more than 500 years. Absence of evidence is certainly not evidence of absence, but at the moment it is impossible to say anything meaningful about what might have been happening at Middlewich in the period between the fourth and ninth centuries. Future research work at the medieval moated site of Kinderton Hall may provide new insights into this poorly understood period.

A possible settlement chronology

Having reviewed the evidence of Roman Middlewich thematically it is perhaps useful to summarise the chronology of the settlement, in so far as it can be determined at present.

The military occupation (Flavian–Hadrianic)

At the moment the 1.4ha fort in Harbutt's Field represents the earliest structural evidence for Roman occupation at Middlewich; any distinct 'campaign camp' remains hypothetical. In the absence of large groups of datable material from excavations inside the fort, the latter can only be dated in general terms by finds from the extramural settlement. The coins and samian agree in suggesting a Flavian (AD 69–97) start for occupation, but whilst the coins argue for an early Flavian presence, a mid-Flavian break, and renewed occupation in the late Flavian period, the samian is ambiguous. Minimal excavation on the site of the fort also means that virtually nothing is known about its internal layout and any changes made during its occupation. The existence of a contemporary approach road to the southern entrance of the fort is demonstrated by the presence of at least one strip building, independently dated to this period, immediately outside the entrance and aligned parallel to the southern arm of the defensive circuit (Site 27). This would have fronted onto the approach road. This road was also identified further to the south (Sites 36 and possibly 20). No roads have yet been identified leading from the other gates of the fort, and precisely how the crossing of the River Dane was approached at this early date is unknown. The survival of the strip building on Site 27, just outside the south gate, until *c.*AD 130 provides the only — circumstantial and weak — structural evidence for the end of the fort. The evacuation may also be reflected in the marked decline in the value of average coin loss across the whole settlement after AD 138 and in the temporary fall in the rate of coin loss under Antoninus Pius.

Possible boundary ditches delimiting the extramural settlement have been found on Sites 14, 16 and 24. Those on Sites 14 and 24 had late first to early second century material in their fills; the ditch on Site 14 had a timber revetment. The ditch on Site 16, which continues the line of that on Site 14, has been dated to the third or fourth century and may thus show that these boundaries endured through the life of the settlement.

Few buildings have yet been found that can be firmly assigned to this period. Apart from that already mentioned on Site 27, immediately outside the south gate of the fort, there was one on Site 31 and another on Site 36; on both sites there were ditches delimiting plots. However, the second phase on Site 31 (Hadrianic–Antonine) saw an increased number of buildings, and these may overlap with the life of the fort, as may the southern strip building on Site 8. It would not be surprising if the posited *mansio* or bath house on Site 8 was also constructed in this period, but evidence is lacking.

Fields defined by ditches dated to the late first to early second century were laid out on Sites 33, 35 and 37. On the first site there were also two buildings and a pottery kiln.

The main activity in the extramural settlement at this time appears to have been salt production. Brine wells or pits have been found on Sites 8, 31 and 36. A possible brine tank has also been found on Site 36 and a more certain example to the east on Site 30, although the

latter could be late Iron Age. Brine hearths have been found on Sites 5 and 32/35; again it is conceivable that these features are late Iron Age. Many of the brine pits on Sites 8 and 31 seem to have gone out of use and were being filled with rubbish by the early second century.

Pottery production is attested in the late first–early second century by the kiln mentioned above and, in the Hadrianic period, by wasters found on Site 36. There is also evidence for a little secondary ironworking on that site, and it has been suggested that the pits adjacent to the early strip building on Site 27, just outside the fort, were used for fulling.

Two urned cremations dating to the late first–early second century came from Site 37.

Among the noteworthy artefacts datable to this period are the discharge diploma, one of the samian inkwells and the writing tablet, and the Hadrianic coin hoard. All are items that one might expect to have been used in a military *vicus* or to have found their way there from the fort. Also certainly or possibly military, but not precisely datable, are the horse gear, spear head, possible *lorica segmentata* fitting, folding stool, and seal box lid. The samian assemblage is likewise typical of a high-status site with military connections.

Both structures and finds agree in painting a picture of a fort surrounded by a regularly organised *vicus* with the inhabitants (including immigrants such as the veteran attested on the discharge diploma) living in Italian-style, albeit relatively simple, buildings and using a range of typically ‘Roman’ artefacts. With local variations, such intrusive communities could be found across northern Britain and the frontiers of the north-western provinces of the empire at this time. However, the burial of a cauldron and tankard in a hearth pit hint at high-status native traditions and remind us of the cultural, as well as the demographic, complexity of the newly created centres of Roman imperial power.

Post-fort occupation (Antonine – 4th century)

It was probably after the end of military occupation that Roman King Street was realigned to bypass the fort to the east rather than to run to the south gate. Traces of this road have been recognised on Sites 29, 27, 6 and 38. In the mid-second century the *agger* and ditch of the former southern approach road were overlain by a metallised surface attributed to a reorganisation of land holdings on Site 36. The road heading in the direction of Chester, found on Site 31, may also be later than the fort. The Manchester road can only be dated very approximately to the second century; how this road joined the rest of the network is at the moment unclear.

On Site 27, immediately outside the southern defences of the former fort, the strip building that had stood there since Flavian times was replaced in the Antonine period by a possible oval building associated with a new system of field ditches, aligned on the fort.

It may have been in the Antonine period that the northern strip building was erected on Site 8, and it has been suggested that its alignment deliberately corresponds to that of the bypass road rather than that of the old fort approach road. Site 31 was now divided into three plots, bounded to the south by the supposed Chester road, and contained five buildings. Building E may have survived until the fourth century.

To the south-east of the main built-up area, on Site 33, the east–west boundary ditch was moved south, possibly in the second half of the second century. On the eastern part of the site, there were now only two enclosures to the north of the boundary ditch as opposed to the original three. No buildings or signs of industrial activity were found.

The continuation of salt-production is shown by the existence of a brine hearth on Site 8, contemporary with the Antonine building mentioned above, and two brine ovens, on Sites 8 and 24. However, the possible brine pit on Site 36 was backfilled in the late second century.

Two mortarium wasters dated *c.* AD 130–60 show continued or renewed pottery production. Unfortunately they were found in isolation on Site 31 and the kiln where they were fired is unknown. Late second to early third century hearths and iron-smithing slag have been found on Site 15.

Leatherworking is attested by manufacturing waste found in the backfill of brine pits on Sites 31 and possibly 8. However, whether this activity took place during the occupation of the fort or continued after its evacuation is unclear. Bias in the skeletal elements of cattle found on Site 31 suggests that hides were being brought to that site, possibly for tanning.

Notable items of personal adornment that may belong to this period, although they are not dated precisely, are two finger rings, one of gold and one of gilded copper alloy, plus gilded copper alloy hair pins, the latter being associated with women.

Judging by the intensification of building on Site 31, Middlewich seems to have continued to flourish in the Hadrianic and Antonine periods, despite the decline in the number of brine pits. However, there is the obvious proviso that this is the only site that has been published in detail. The impact of the evacuation of the fort on its *vicus* cannot yet be discerned clearly, but that is partly because that evacuation is as yet only tentatively and indirectly dated. The decline in the value of average coin loss after AD 138 and the fall in the rate of coin loss under Antoninus Pius have been noted above. However, the rate of loss soon recovered, and, rather than impoverishment, the decline in the average value of losses could suggest a change in the way money was used, as the average value earlier was so high that it is unlikely to reflect everyday transactions. On Site 31 the quantity of samian fell sharply after AD 145: whether that was the direct, if possibly delayed, result of the withdrawal of the garrison or part of a wider and more gradual process consequent on the advance of the frontier to the Antonine Wall is not clear, as the same fall can be seen on a site at Stockton Heath, on the outskirts of Wilderspool (Ward 2006, 34).

Developments post-dating the later second century are hard to distinguish because of a lack of the relevant stratigraphy. The earlier roads through the settlement continued in use. The number of plots on Site 31 was reduced to two and contained three buildings, H, I and G. Workshops and a corridor house are reported on Site 8, dated to the third and fourth centuries.

There is some evidence to suggest that the posited bath house or *mansio* in the vicinity of Site 8 was refurbished during the life of the settlement. Both knife-scored and combed box

tile fragments occur. The latter are considered to represent a technological advance and may indicate rebuilding. Rebuilding is also suggested by the evidence for the manufacture of window glass on the site in third and fourth century levels.

Late second to early third century ironworking hearths are reported from Site 15, but otherwise there is no longer any sign of industry. No features related to salt production could be firmly dated after the Antonine period. The quantity of samian on Site 31 fell again sharply after *c.*AD 160, as did the quantity of coarse pottery. This trend is perhaps mirrored at other settlements along King Street, including Holditch to the south, which virtually ceased to exist after *c.*AD 160 (Rogers & Garner 2007, 138), and to some extent at Wilderspool to the north (Dodd *et al* 2006). However, contradicting these hints of decline, cumulative coin losses across Middlewich rose above the British mean until *c.*AD 260, even avoiding the widespread stagnation found under Marcus Aurelius and Commodus (AD 160–192). At the very least this indicates a continuing, positive engagement in the wider monetary economy. The most plausible traded products remain salt, cattle and cattle products. Again setting aside the possibility of different parts of the settlement having different histories, the reduction in the quantity of pottery on Site 31 from the later second century may simply reflect the gradual extinction of the pottery industries of the Cheshire Plain and the consequent need to import vessels from further afield, rather than a more general decline. A few late samian bowls on Sites 31 and 36 also contradict the generally negative picture.

Nevertheless, Hartshill-Mancetter mortaria, which are most commonly found in Cheshire in the third and fourth centuries, are only found west of King Street, as is the late fourth century shell-tempered ware from the south and east midlands, and even there they represent a light scatter of debris over a relatively large area. On the other hand, we should remember that the lead salt pan, which could be fourth century, came from Site 21 on the extreme eastern edge of Roman Middlewich. All of this hints at a contraction and fragmentation of the settlement. The marginal location of the Middlewich salt pan is reminiscent of that of the Shavington pans, found approximately 5km from Nantwich, suggesting that late Roman salt production became dispersed over the south Cheshire brine field in much the same way as it was in the Lincolnshire Fens. This would lend weight to the idea that salt production was concentrated in the centre of Middlewich during the first and earlier second centuries because of its status as a military *vicus* and not because it was a particularly rich brine source.

Three burials date from this phase: an infant burial in a second century amphora at Site 8; and two third century urned cremations, one from a roadside ditch on Site 30 and one on Site 36. That from Site 36 again suggests some fragmentation of settlement or a relaxation of previous restrictions on burial within built-up areas.

Concluding remarks

Summary

The issuing of PPG 16 in 1990 has resulted in a significant body of evidence about Roman Cheshire. With the exception of the work carried out at Chester, much of this archaeological activity has been focused on the five Roman ‘small towns’ known to have existed in the

county. Of these, Middlewich has received the most attention and has provided information about its urban form and the nature of its rural environs. This has added considerably to the large amount of information collected about the settlement since the middle of the eighteenth century.

Whilst it is apparent that there was some late Iron Age activity at Middlewich, exploiting the brine springs to make salt, the main impetus for the establishment of the Roman settlement was the construction of a fort about AD 70, probably to accommodate a small auxiliary infantry unit. Whether the choice of site was influenced by the presence of brine springs is uncertain. The known fort may have been preceded by some form of campaign camp, but clarification of this will require further investigation.

In earlier literature Middlewich has been classified as both a roadside settlement (Finch Smith 1987) and a small town 'specialised site' (Burnham & Wachter 1990, 225–8). However, since then the site of the fort in Harbutt's Field has been confirmed by geophysical survey, and in this light Middlewich must now be considered as a military *vicus*. Recent work on military *vici* in Britain has concluded that most were of the 'street-type', where the buildings of the *vicus* were concentrated on either side of the main road approaching the *portae principales* of the fort. There are also less common examples of the 'tangent-type' *vicus*, where the major road bypassed the fort for topographical reasons such as the fort being sited on a promontory. At Middlewich the orientation of the fort has not been established, so which gates lay adjacent to the ancient King Street are unknown.

Although recent work has helped to discern the framework of roads entering and running through the settlement, questions remain about their chronology and their exact course. Investigations have shown that Roman King Street was partially realigned, probably in the second quarter of the second century, bypassing the fort (possibly after it had been abandoned) after the manner of the 'tangent-type' *vici* referred to above. The well preserved remains of a road running west from King Street represent another significant discovery, and in all probability formed part of a direct link between Middlewich and Chester. Taking a wider view, it is clear that Middlewich came to be a 'hub' in the increasingly dense road network that grew up in Cheshire, although at the moment this appears to be the result of its geographical position rather than its intrinsic importance.

There is great uncertainty about the actual size of the continuously built-up area, in particular whether it extended to the east of the railway line. The spread of occupation deposits and structural features revealed by the investigations to the west of the railway line suggest an area of between 12 and 15ha. However, it remains possible that its full extent was over 20ha. To the east and south a network of ditched enclosures, mostly defining fields, was established. Pottery from the ditches suggests that the laying out of this system began in the late first to early second century and was subject to modification and addition throughout the life of the settlement. Confirming the limits of this wider area of activity is also difficult, but from the excavations undertaken to the east and south of the town an area in excess of 100ha seems likely, defined by the River Dane in the north and the Allum Brook in the south.

Whether all of the extramural settlement should be classed as a *vicus* (in the sense of a civilian settlement adjacent to a fort and under military supervision) or whether part of it formed a separate, strictly military, annexe to the fort (eg Burnham & Davies 2010, 75), is unclear. *Vicus* and annexe are usually found on different sides of a fort (Sommer 2006, 118–23), but at Manchester the *vicus* seems to have been attached to the annexe (Gregory 2007, 181–3). If the same were the case at Middlewich, one would expect to find an east–west ditch dividing the two. However, no such feature has been found during the extensive excavations south of the fort. If an annexe did exist at Middlewich, the topography suggests that it would have lain on the east or, less probably, north side of the fort. The function of the ditch on Site 24 remains obscure.

The ordered arrangement of roads, property boundaries and buildings seems to imply a high degree of planning in the initial layout of the settlement and during its subsequent development. However, little can yet be said about property size and chronology, or the patterns of residence and building density, because of the limited extent of most excavations and the problems of accurately dating occupational sequences, together with the lack of detailed reports on Bestwick’s investigations. While in allocating land around a fort the army may have allowed room for an attendant *vicus* from the outset, they may not have been responsible for the detailed parcelling out of land within. Rather this may have been done by the inhabitants themselves under the leadership of their *magistri* or similar (Sommer 1991, 475; 1999, 87–9). The status of Middlewich after the departure of the garrison is unclear: it would presumably have retained its own magistrates with limited administrative powers, but it may have been placed under the supervision of a *centurio regionarius* (centurion in charge of a region that was under military control) (see, for example, Burnham & Davies 2010, 127) or become part of the self-governing tribe of the Cornovii (for ‘civilian’ *vici*, see, for example, Mattingly 2006, 171).

Remains of numerous timber structures have been found throughout the settlement. The majority appear to have been strip buildings, with timbers set in trenches or placed directly in post holes. Discussion about structural function is hampered by the scarcity of complete building plans and the effects of post-depositional processes, which have often resulted in the removal of floor levels and any shallow inset features that may have existed. Although no *in situ* stone buildings of Roman date have been positively identified, circumstantial evidence points to the site of a bath house or *mansio* close to the centre of the settlement.

There are noticeably fewer buildings of third and fourth century date in comparison with the earlier phases of occupation, together with a markedly reduced pottery assemblage, although this is partly because the later stratigraphy is so elusive. However, this picture is reflected at other *vici* and urban centres in north-west England and may indicate a declining population and/or economic changes brought about by progressive changes in military support arrangements which started as early as the construction of the Antonine Wall in AD 140 (Peter Carrington *pers comm*; Millett 2005, 10).

In a recent study Sommer suggested that the *vici* of the Welsh forts declined in size more or less at the same time as the removal of the garrisons; at the latest the *vici* were abandoned one or two generations after the withdrawal of the garrison. He argues that,

unlike the *vici* of the British lowlands, which continued as civilian settlements, few of the Welsh *vici* developed an independent existence. On rare occasions the maintenance of a *mansio* may have led to limited activity within the otherwise mostly abandoned *vici* (Sommer 2006, 131; *cf* Burnham & Davies 2010, 127, 131–4). It could be argued that the pattern of development at the Welsh *vici* is also applicable to Middlewich. However, the latter was probably more deeply enmeshed in networks of specialised exchange, doubtless in part the result of its central position in the local road network. In the third century the settlement may have contracted towards the west side of King Street, with a focus possibly forming around the ‘T’ junction between Roman King Street and the ‘Chester’ road identified on Site 31. This makes it more tempting to argue that the stone building near Site 8 was indeed a *mansio*. The continued presence of such a building could have provided a focus for continued occupation at Middlewich on a small scale through to the later fourth century.

Despite growing evidence for other manufacturing activities in the settlement, it still appears that the evaporation of brine to make salt was the dominant undertaking. Whilst evidence is lacking for ‘industrial’ scale saltworking in the form of massive brine tanks such as have been found at Nantwich, the widespread distribution and frequency of features and material associated with salt production at Middlewich indicates intensive production, at least in the late first to early second century. What is less clear is how widespread salt production was in the surrounding countryside: certainly, chance finds such as the probable brine hearth discovered at Tetton in 1838 (Watkin 1886, 313) and lead salt pans from Shavington (Shotter 2004–5) suggest that our current picture is far from complete. Given the lack of distinctive containers, such as the VCP used in the Iron Age, it is also unclear whether salt as such was being distributed far from Middlewich in the Roman period (although it could certainly have been transported in wooden barrels that have not survived), or whether it was used locally in meat-curing, hide preservation, and cheese and butter production (*cf* Gerrard 2008).

The town was sustained by a mixed agricultural economy. Environmental evidence and the recovery of a millstone and numerous quern stones indicate the importance of grain production and processing at Middlewich. In relation to what is known about the size of the settlement, all the grain is likely to have been consumed by the local population (Peter Carrington *pers comm*). It is also noted that cereals found at Site 31 and at Kingsley Fields, Nantwich, are similar to the assemblages found on local rural sites (Stallibrass 2011, 117). Although the botanical remains recovered from Middlewich present a sketchy picture, they are very significant as they add to the meagre body of macrofossil plant remains recovered from Roman period sites in north-west England, with the notable exceptions of Carlisle and Ribchester (Hall & Huntley 2007) and Kingsley Fields, Nantwich (O’Brien 2012).

Quantifying the relative importance of livestock farming at Middlewich is difficult because of the poor survival of animal bone. Only two excavations have produced reasonably sized bone assemblages, which indicate the prevalence of cattle and sheep/goat.

The evidence relating to the agricultural economy allows us to characterise at least some of the inhabitants of Roman Middlewich as ‘town-dwelling farmers’. This was, in fact,

probably the norm across much of the Roman world, but it is an important antidote to the caricature of the settlement as an ‘industrial town’ (Peter Carrington *pers comm*; Carrington 2011, 107).

Evidence concerning human burials is also poor. No formal cemeteries have been identified. Instead dispersed cremations, dating from the late first–early second century to the third century, have been recovered extending from the heart of the settlement to the rural area to the east. Given the paucity of the evidence, we do not know whether inhumation, found at Chester from the middle of the second century at the Infirmary Field cemetery, was practised at Middlewich. However, even if it was practised, there is no sign that it replaced cremation. Other acts of structured deposition have been recognised, adding to our knowledge of Romano-British ritual practices.

Future work

The *National Planning Policy Framework* (DCLG 2012) provides the framework for planning and the environment, including the protection and investigation of sites of archaeological significance. It is essential, as far as Roman Middlewich is concerned, that where development proposals threaten both the urban area and the immediate hinterland, there is an appropriate level of archaeological mitigation to preserve and/or adequately record the remains that survive, or are thought likely to survive.

Opportunities should be sought to undertake small-scale, problem-orientated (research) excavations, with the involvement of the local community where this is practicable, as exemplified by the recent Community Dig. A major objective of such investigations should be to improve our understanding of the urban area. The excavations undertaken by Bestwick, the investigations carried out by Gifford immediately to the south and east of the fort (Sites 27 and 29), the Community Dig and the investigation undertaken in response to the laying of gas mains (Reid 2011) have clearly demonstrated the survival of small complex areas of stratigraphy within the main body of the Roman settlement. Whilst the core of the Roman settlement is now largely covered in housing, with few vacant plots available for future excavation, there may still be high potential for archaeological survival in the gardens of properties, in particular those of the older houses that front onto King Street and New King Street, and beneath the roads, pavements and verges.

The confirmation of the existence of a fort in Harbutt’s Field by resistivity survey in 1993 marked a major step forward in our understanding of Roman Middlewich. However, geophysical techniques were then in their infancy, and it is possible that a magnetic survey might reveal more detail about the internal plan that would allow us to improve on the present conjectures about its garrison. In order to help achieve a more comprehensive insight into the Roman agricultural economy of the region, future investigations at Middlewich should place particular emphasis on retrieving faunal and floral remains where waterlogged conditions exist, where charred remains of plants are likely to be preserved and more generally, through programmes of sediment sampling using flotation methods (Van der Veen *et al* 2007; Stallibrass 2011, 119–21).

The attempts in this paper to draw together the evidence for the chronological development of the Roman settlement have largely been guided by the ceramic and numismatic evidence that has been fully analysed and published. Attention has been drawn to the conflicts between the coins and pottery, to the varying patterns discerned at different sites, and also to the elusive nature of the later Roman stratigraphy. In spite of these caveats, the broad picture is inevitably dominated by the sequence detected on Site 31. Future work both on unpublished archive material and new excavation sites should attempt to understand these contradictions and produce a more balanced model.

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Notes

- 1 This paper was commissioned by the Cheshire Archaeology Planning Advisory Service (APAS). The introductory sections, history of investigation, summaries of excavated structures and stratigraphy, agriculture and burial and ritual practices were initially compiled by MR; the summaries of artefacts, production and manufacturing, the post-Roman evidence and chronology separately by DG. The concluding remarks were compiled jointly. The separate contributions were amalgamated by Jill Collens of APAS. Peter Carrington made additional contributions to the text and edited it for publication.
- 2 This paper was written before the excavation in 2012 of a large area extending north to south on Site 37, which was previously evaluated in 2007. Ditches across much of the northern part of the site appear to represent two phases of Roman land division on different alignments. Industrial activity at the southern end is likely to represent further evidence of salt production. Key excavated features included clay extraction pits, wells and a large timber-lined tank associated with the remains of a boiling hearth. The high water table ensured that preservation conditions were excellent.

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Note: To aid retrieval, the Cheshire Historic Environment Record reference number is given for 'grey literature'.

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