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# SALT

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# ROMANO-BRITISH INLAND SALTING AT MIDDLEWICH (SALINAE), CHESHIRE

*J.D. Bestwick*

The Cheshire salt fields were formed under semi-desert conditions of the Permian and Triassic periods, and the resulting salt beds are several hundred feet thick and cover an area of over 350 square miles (90,650 hectares). Northwich, Nantwich and Middlewich have been the centres of salt production since the 11th century, but only from Middlewich has come certain evidence of Roman salt working. Brine springs on the surface are mentioned by John Leland in 1540 and Camden in 1607, but no evidence of the Roman salt springs has been found.

The earliest reference to Roman salt kilns and briquetage in the Middlewich area was made in a letter to the Society of Antiquaries of London in 1858, (*Vawdrey 354*) which described the discovery of a probable Roman salt kiln. This structure was found at Tetton, 3 miles (4.8km) south of the Roman settlement, and consisted of a brick construction about 8 feet (2.44m) long and probably 3 feet (0.92m) deep. The clue to its date is provided by the detailed description of the bricks of which it was made. They were described as 'mixed with straw, variously and oddly shaped'; one example measured 13.5 inches (0.34m) long and 3.5 inches (89mm) wide and tapered towards one end. Later a rough sketch of this brick was published (*Watkin 363*). Many similar bricks have since been found, by the writer, associated with Roman saltings within the Roman settlement, and it seems likely that the Tetton kiln represents isolated saltings following natural brine springs, away from the main centre of Roman activity. Vawdrey also described the discovery of seven similar bricks found at Middlewich in 1854 in an area close to the site of medieval brine springs. Vawdrey did not realise the significance of these finds, but Watkin, in 1886 drew direct comparisons with the Lincolnshire briquetage and suggested their connection with Roman saltings, albeit with some caution (*Watkin 363*).

In 1921 the finding of some small lead pans in Middlewich was reported (*Lawrence 191*). Although Lawrence did not give dimensions he did mention that they were marked with the letters SVT, but they have since been lost. No other Roman or medieval salting evidence was recorded until 1960 when D.W. Harding and I. Blake undertook a short excavation near the centre of the Roman settlement (Fig. 41a, Site A).

Harding found traces of timber buildings, but the most significant feature was a brine kiln lying over 90m to the west and isolated from the structures. The kiln measured 3.05m long and 0.61m wide, the clay lined trough being 0.5m deep. (*Thompson 341*) ① A ledge ran along both sides 0.31m above the kiln floor. The interior of the kiln was filled with a layer of charcoal and layers of clay and fragments of briquetage. In the upper fill a complete fire bar, 0.627m long with supporting lugs at each end, was found (Fig. 42a). This bar fitted across the body of the kiln with the lugs resting on the ledge. Fragments of a second and even larger bar without end lugs, were also found and the surface and interior indicated that they had been fired to high temperatures. Both bars showed a convex upper surface which is of significance when we consider the possible reconstructions and stability of the kilns when in use. Other items of briquetage found within the kiln included eight wedge shaped bricks with an average length of 0.132m, nine hand squeezed cylindrical supports ranging in length from 43mm to 107mm, and the remains of at least five clay rectangular plates all over 10mm thick. One elongated plate, less than 10mm in thickness, was also found within the kiln with a single cylindrical clay support 100mm in diameter and 40mm in thickness. ②

The importance of this kiln and briquetage group, is that it is reasonable to suppose that the items represent a major part, if not all, of the kiln furniture. In view of the numbers of briquetage types from this settlement alone, found by the writer during the last ten seasons of excavation, it is likely that several different types of kilns or hearths were in use in the 300 years of Roman salt working. The Site A kiln isolates certain items of briquetage to one specific type of kiln. In addition, a study of the oxidation and reduction patterns on many of the items of the Site A briquetage, makes it possible to reconstruct the position of bricks, hand squeezed supports and plates in relation to the fire and draught; and in some cases their proximity to each other, by positive and negative shapes. It must be stressed, however, that such conclusions must be subject to some caution, as numerous random patterns can be created on the surfaces of kiln furniture due to internal chemical action, and air movements within the firing area. ③

Spills of brine had formed a salt glaze on several items from Site A including the upper convex surface of the large fire bar. Experiments undertaken by the writer on this briquetage, indicate that the kiln reached temperatures in the region of 800°C to 1100°C or even higher. All items of briquetage, examined for firing temperatures, have indicated figures in excess of 500°C. ④

A layer of charcoal 50mm in thickness was noted in the base of the Site A kiln. The fuel used in these kilns together with the numerous iron smithing hearths excavated since 1964, must have come from the surrounding countryside. It could then have been used in the green state or dried, or even reduced to charcoal. The absence of thick charcoal deposits in and around the kilns and furnaces has led to a study of the clay, which has shown much entrapped ash. This ash probably resulted from charcoal being used as the main fuel, as indicated on Site A and by the high temperatures reached by the kilns. More work is required on this aspect of several industries including salt and iron working.

The excavators of Site A also described a dark fibrous layer which covered the kiln. This has been described as a layer of brushwood laid across to retain heat, but in the writer's opinion this would defeat the object of this type of kiln. It is possible that this layer represented the collapsed cover which may have protected evaporation kilns from the rain.

Excavation of Site C (1964-69) revealed part of the yard and timber buildings of a salt working group of the 2nd A.D. (Fig. 41b) First century occupation was also found including evidence of salt working as early as A.D. 80. The 2nd century salting had remained in a comparatively undisturbed state and was sealed by a series of buildings of the 3rd and

① Site A briquetage made available by Mr. D.A. Stubbs, Surveyor and Engineer to the Middlewich U.D.C.

② For full details of briquetage see J.D. Bestwick, Ph.D. thesis, University of Manchester.

③ I am indebted to Mr. T.S. Smith, British Ceramic Research Association for advice on this subject.

④ T.S. Smith, op. cit.

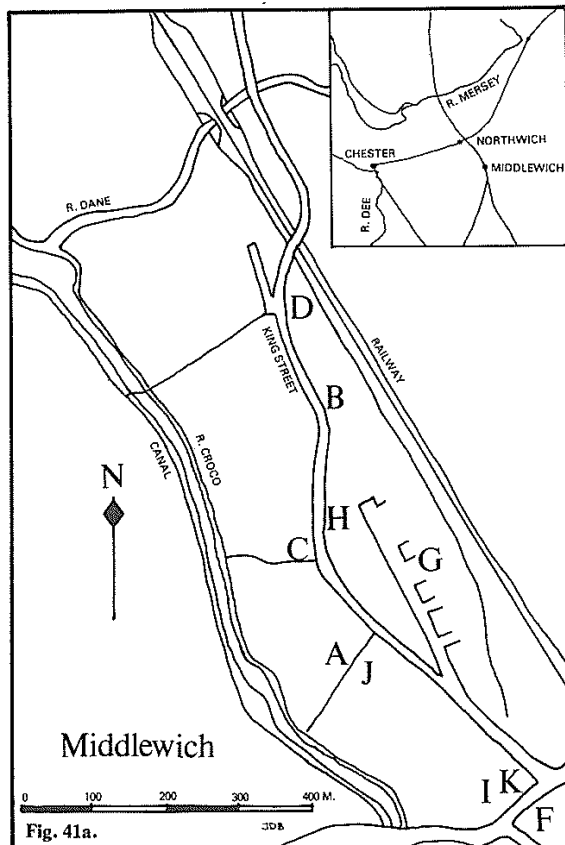


Fig. 41a.

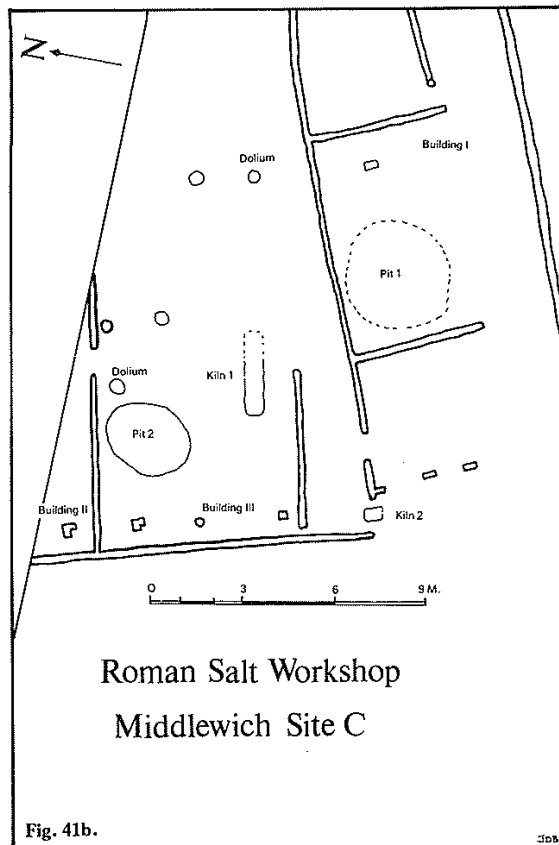


Fig. 41b.

4th centuries of a domestic type. The complete salting could not be excavated due to the proximity of houses and partial destruction by a road.

The earliest salt working on Site C was a brine pit (Pit 1) 3.66m in diameter and 2.75m deep. Coins and brooches and an almost complete mortarium stamped by the maker ALBINVS (A.D. 80 - 110) dated the early use of the pit to the late 1st to early 2nd century. A thick deposit of hazel branches in good condition was also found. The metal objects together with the hazel suggest that they were thrown in as offerings to the spirits of the springs, as in other wells and springs in Roman Britain. The pit later became a rubbish dump, and hundreds of fragments of leather sandals, complete soles and thongs were discarded by a cobbler perhaps working in the near vicinity. By the middle of the 2nd century the pit had been filled and a timber strip building covered the area. Subsidence of the pit caused later owners much trouble and numerous clay patches were laid down to level the floor.

The area immediately to the north of pit 1 was divided by ditches in the first phase of industrial activity, a feature found on other sites at Middlewich, and perhaps denoting plots under individual ownership. After A.D. 130 the ditches were filled in and a strip building, Building I, covered the southern portion of Site C (See Fig. 41b). On the north side of Site C, the southern wall and doorway of a second timber building was found (Building II). The space between Buildings I and II contained a brine pit (Pit 2), two brine kilns or hearths, two dolia or spherical amphorae (Dressel Form 20) (Callender 47) and the holes for three other similar amphorae, probably used as brine containers for storage on the spot during the boiling process. All five vessels had been buried in the yard floor and had been packed in position with clay and stones.

Pit 2 was 2.75m in diameter and 1.55m deep. Like Pit 1 it had vertical sides cut into the natural sand of the site. A deposit of hazel branches covered the bottom and a large timber board was propped against the side. The timber did not appear to be part of a pit lining, as found in medieval brine pits, but it may have been part of a cover over the top which could be removed when required. Both pits held water to a depth of 1m when excavated, but due to a considerable drop in the water table because of modern brine pumping, this level bears no relationship to the Roman level, which was no doubt much higher.

A damaged brine kiln, of the type found by Harding, lay 3.05m to the north of Building I (Fig. 44a). The external length of the kiln was 2.44m and the internal length of the hearth was 1.83m. The east end was badly damaged by later Roman activity. The walls of the kiln were 0.15m thick and the external width was 0.76m. This kiln had been demolished and only remained to a depth of 0.18m. The floor of the firing area showed that it had been at temperatures over 500°C and the foundation clay rested on large stones. The floor was covered by a layer of charcoal 30mm thick and pottery associated with this layer indicated that the kiln was abandoned in the mid-second century. No briquetage was found within this kiln but fragments were scattered over the surrounding working area. Below the kiln lay a circular hearth 1m in diameter, and made of large stones, set in clay. This hearth also showed signs of having been fired to a high temperature but it was not certain that it was used in the boiling or stoving of brine.

A second hearth was located 4.88m to the south-west of the first (Figs. 41b, 44b). This was an oblong area of fired clay with a raised edge around the north and west sides. The other two sides had been completely destroyed together with the south-east corner. The original dimensions of the hearth were probably around 0.60m by 0.90m and the remaining edge indicated a depth of 80mm. The floor of the hearth sloped upwards towards the destroyed portion and the structure showed some resemblance to the Ingoldmells hearth (Swinerton 332). No briquetage was found on the hearth, but the proximity to the springs and the presence of salt glazing strongly suggest its connection with the industry.

Two of the amphorae described above still remained in the yard and were in an almost complete state, although cracked by pressure. One of these had a large graffito, cut into the upper surface, which read AMVRCA (Fig. 43d). This has been translated as meaning 'waste from brine'. (*Britannia* 33) In Roman farming, *amurca* was a product of freshly crushed olives, and when separated from the oil, was used in a variety of ways including the killing of insects, weeds, protecting grain from mice, and soaking hides. (*Cato* 5) (*Columella* 63) (*Varro* 352) It is unlikely that the Middlewich dolium was imported into Britain containing *amurca*, or that it could have been used for the importation of any other product once it had contained *amurca*, so the graffito could refer to the storage of brine or the liquid left over or skimmed off during the salt boiling process. It is also possible that its presence in a salt workshop is coincidental. The letter C is quite distinctive and there is no question of reading the graffito as MVRIA 'brine'. The second dolium was unmarked.

An important feature of the yard was the timber structure which joined Buildings I and II (Fig. 41b). This consisted of a beam slot forming the western boundary of the salt yard and a second slot at right angles to the first, forming an open-sided shelter, and partially covering kiln 1 and pit 2. This structure seems to have been added towards the middle of the 2nd century, and may have served the purpose of a wind break and rain shelter from the prevailing north-westerly wind. Much of the working area had been covered by a layer of clay, in places gravelled and laid with broken roof tiles and briquetage, forming a hard packed surface.

The area of Roman salt working at Middlewich was quite extensive. Site I, situated 600m to the south of Site C, was excavated by the writer from 1969 to 1972 (see Fig. 41a). An adjacent site, excavated under rescue conditions during 1973-4 (Site K) has revealed an extensive deposit of briquetage covering an area 100m by 150m and varying in depth from 0.10m to 0.60m. Several timber strip buildings of the 2nd century had been built over this briquetage deposit, the early phases having briquetage floors. Early pits on both Sites I and K contained briquetage and pottery dating to c. A.D. 80 or even earlier, and the volume of salt working evidence prior to the Antonine period suggests considerable industrial activity in the late 1st and early 2nd centuries.

Site I contained five circular furnaces with an average diameter of 0.91m. These were quite different from the domestic cooking hearths of the Roman period found at Middlewich, and they were made in two pairs giving a figure of eight plan (Fig. 44c). The fifth furnace was located within 1m of the other four and the entire area, including the infill of the furnaces, was covered with large pieces of briquetage including many firebars. All five furnaces on Site I were reinforced with small stones and the clay contained reused fired clay fragments. Furnace 5 had large firebars set on end as part of its foundation. It was not possible to establish with certainty their use as salt evaporation or stoving furnaces, but no trace of any other industrial process was detected. The presence of the large quantities of briquetage suggests that they were used for the final stoving or drying of the salt at temperatures below 500°C.

The briquetage from Middlewich falls into twelve categories depending on shape, size and possible function (Figs. 42a—43c). A provisional classification can thus be drawn up, but such a classification can only be applied to the Middlewich site, due to the marked differences when compared to coastal briquetage. There are two possible reasons for this difference. Firstly, there is as yet no evidence of Iron Age salt working at the Middlewich springs, and thus there was no local technological tradition which determined the shape and function of individual items of kiln furniture, which we seem to see in the coastal industries in south-eastern Britain. The Middlewich salt industry may have been introduced by the Roman army and the local peculiarities perhaps reflect the simple functional requirements of building salt kilns without local craft traditions. The basic similarities of firebars, and hand squeezed supports, found on all salt sites of the period, represents the fundamental requirements. The Middlewich briquetage does not contain the triangular wedges and firebars of Essex (*Reader* 274) or the well made salt cake moulds of Halle (*Riehm* 286). Secondly, the construction of any kiln or furnace in antiquity was a personal affair. The individual craftsman using his own ideas and trying to improve on those made by his father or his neighbours. Differences are apparent within the Middlewich site itself, so we must expect differences regionally and nationally.

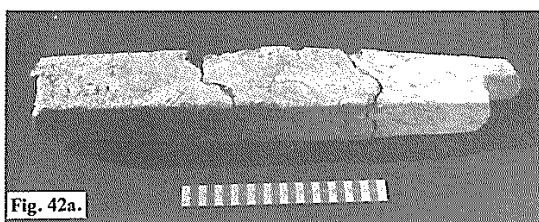


Fig. 42a.

Scale in cm.

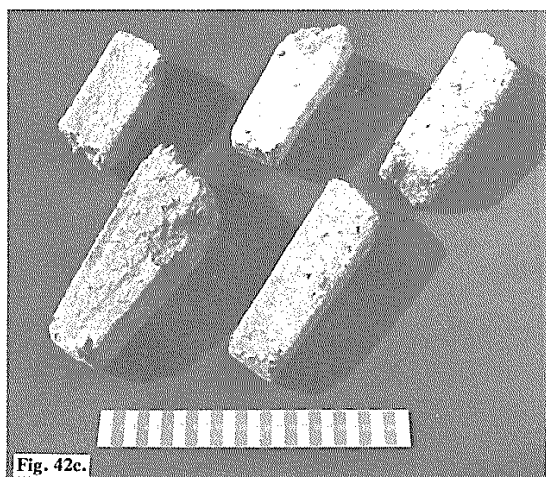


Fig. 42c.

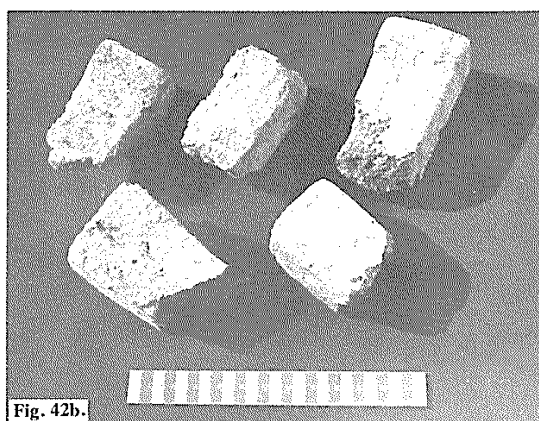


Fig. 42b.

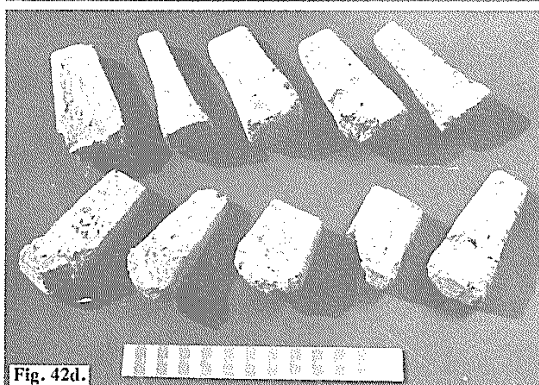


Fig. 42d.

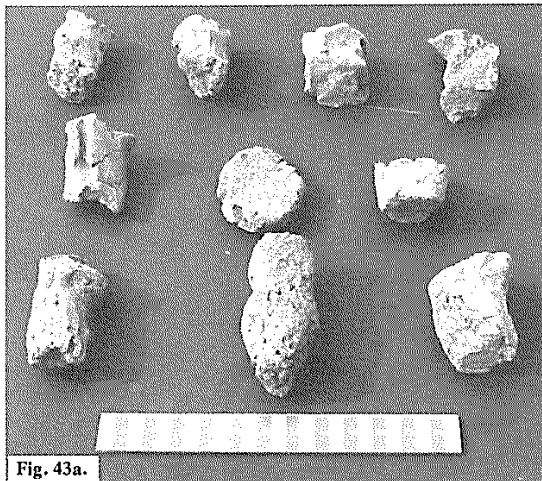


Fig. 43a.

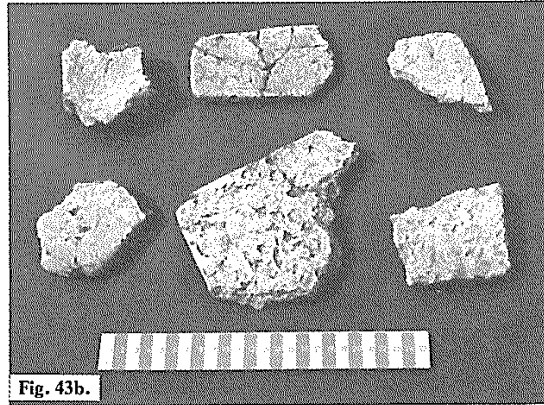


Fig. 43b.

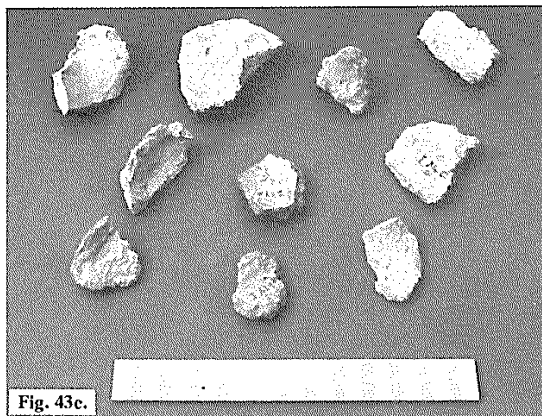


Fig. 43c.

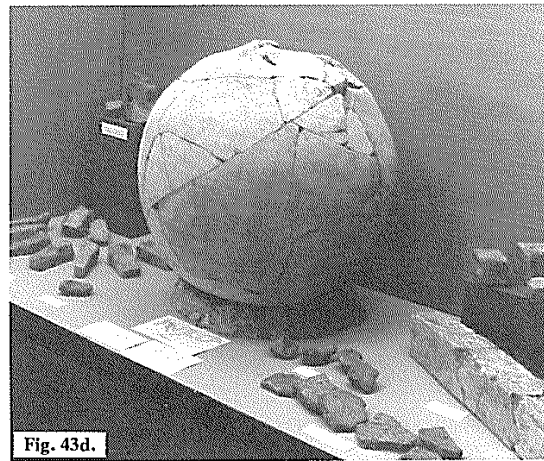


Fig. 43d.

## INTERIM CLASSIFICATION OF BRIQUETAGE FROM MIDDLEWICH

### Class A. (Fig. 42a)

Large fire bars, over 0.60m long with protruding end lugs to aid seating on kiln ledges. The bars have maximum centre sections of at least 80mm by 90mm and their upper surfaces are convex. Brine splashes causing salt glaze occur on the upper convex surfaces.

### Class B. (Fig. 42b)

Fire bars tapering. All specimens so far excavated are broken. The maximum end sections are on average 71mm by 75mm. The breaks always occur within 0.17m of the wide end of the bar. The sides and ends show signs of distortion under pressure before firing. Many bars have areas of red oxidation up to 20mm from their large ends. This class is perhaps identical with Class C.

### Class C. (Fig. 42c)

Narrow bars with tapering or parallel sides. These bars may be the smaller ends of Class B, as no specimens have been found in a complete state. Some bars are 'decorated' by longitudinal incised lines. No such lines occur on Class B bars. The maximum length so far excavated is 0.19m with average complete end sections of 40mm by 45mm. If the bars are restored to sizes similar to the complete examples described by Vawdrey, the complete large ends of Class B do match up with the complete small ends of Class C in some cases.

### Class D. (Fig. 42d)

These are small bars or wedge shaped bricks sometimes called voiseau bricks. They vary in length from 77mm to 136mm.

### Class E. (Fig. 43b)

E1. Fired clay plates containing grass or straw impressions from material mixed with the clay, to enable it to stand frequent variations in temperature, which pure clay plates would not have stood. ☉ The average thickness of the plates was 16mm and all examples in this group were rectangular and at least 0.16m by 0.12m. The corners were rounded and the edges nearly always bevelled. A 12mm border strip on one side of the plate may have resulted from pressure by wooden boards during manufacture causing distortion of the edges. Oxidation and reduction patterns show shapes of other items of briquetage.

E2. Plates as in Class E1. Plates in this group are elongated so that the length is at least three times the width. Some examples may have been triangular. Distinct zones of oxidation and reduction are often present.

### Class F. (Fig. 43a)

Cylindrical clay supports or hand squeezed bricks, where the length was greater than the maximum diameter. Lengths varied from 40mm to 110mm. Many examples showed oxidation patterns along their lengths, and impressions at each end giving clues to their position when in use.

### Class G. (Fig. 43a) (centre)

Cylindrical clay supports as above but the length less than the maximum diameter.

☉ T. S. Smith, *op. cit.*

### Class H.

Clay packing bearing the shapes of the ends of firebars.

### Class I.

Fragments of briquetage bearing finger impressions after use as seals around the top and sides of brine kilns.

### Class J.

Miscellaneous shaped briquetage including salt glazed fragments.

### Class K. (Fig. 43c)

Very coarse highly fired clay vessels on average 8mm thick. The fabric is porous and mixed with straw, but all the fragments indicate flat bases and that they were roughly rectangular. These are rare items of briquetage at Middlewich. If the vessels were used in the boiling or stoving processes, other forms of containers perhaps of lead, may have been in use.

This classification of briquetage is probably incomplete, and excavations still proceeding in various parts of the settlement, will no doubt reveal other variations.

From the excavations of D.W. Harding on Site A, and those of the writer on Sites B to K, it is possible to propose a provisional classification of salt boiling kilns and hearths at Middlewich (Fig. 44).

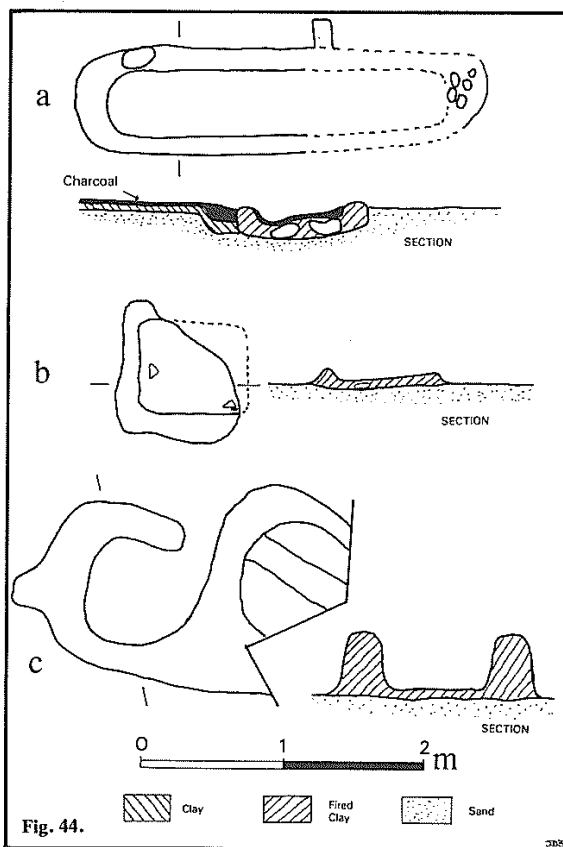


Fig. 44.

## CLASSIFICATION OF BRINE KILNS AT MIDDLEWICH

### Class I.

Trough kilns (Fig. 44a). Two examples have been excavated as described above. Probably used for boiling the brine by filling rectangular clay or lead pans, supported on Class A and B bars, over a charcoal fire along the length of the trough. The pans would be supported by Class D bricks and Class F and G supports. Class E plates probably used to seal up gaps and to conserve heat.

### Class II.

Rectangular open hearths (Fig. 44b). One example excavated on Site C. Salt glazing found on its floor suggests its use as a brine hearth. Possibly used for drying the salt in small clay containers on Class F and G supports.

### Class III.

Circular kilns found in pairs with an average diameter of 0.91m (Fig. 44c). Five examples excavated by the writer on Site I, and others reported by Donald Atkinson (not published).

The workshop, salt kilns and briquetage described above, form the main industrial activity of the Roman settlement from A.D. 80 until after A.D. 350. The occupation and industry cover an area which may be as much as 30 hectares and other small scale industries include iron smelting and smithing, and glass, lead and bronze working. The economy of such a settlement was inevitably directed to the countryside and the farming community, and much evidence of this link has been found. The saltings may have first been exploited by the army, and local Romano-British participation encouraged. With the permanent location of the XXth Legion at Chester and the auxiliary units under the command of the Legate, the supply of food was of prime importance. Salted meat may have been a product of the Middlewich settlement under military contracts. In the 2nd century the industry may have continued under small scale family groups or perhaps under direct control of the Imperial administration as at Hermopolis. (Frank 117)

The Roman name of the settlement was almost certainly SALINAE 'salt works' and mentioned in the Ravenna Cosmography as SALINIS. (Richmond and Crawford 283) The material excavated since 1960 indicates that the description was justified. ⑥

The principle of getting raw material as well as of manufacturing and evaporating the salt did not change at that time. As in previous periods the brine was brought to the saltern through timbered ditches 0.35m wide and 0.20—0.30m deep. In the middle part of one of the ditches there was a rectangular storage tank 2.40 x 1.40m and 0.50m deep where the brine got rid of impurities (clay etc.) and flowed to the reservoir as a pure raw material. Then it was poured out to clay vessels, put on hearths and evaporated. The whole installation — apart from hearths — was covered with a roof propped on poles which left numerous traces all over the area. Their lay-out, however, does not indicate the form, the size or the number of the buildings.

The hearths for salt evaporating from the Late La Tène Period were of 0.80—1.20m diameter. One big hearth from the Early Roman Period was of 7m diameter made of big stones lined with clay and placed on the surface of the ground and is worthy of notice. In the Late La Tène Period brine was boiled in small graphite pots, and at the beginning of the Roman Period big clay vessels of the shoulder diameter of 0.80m and about 1.00m high (Fig. 50e) were used for this purpose. The second stage of salt manufacturing process: evaporating and portioning is the most poorly represented of the archaeological material found. Numerous tumbler-shaped cups occurring in Kraków-Kurdwanów and single specimens in Wieliczka (site XI) prove it was analogous to Halstatt Period.

The oven for salt manufacturing from Late La Tène Period discovered at Otloczyn (Kujawy) (Fig. 50f) is of a completely different character. It is situated where the Vistula terrace bends about 150m away from the brine springs, which is situated below within the river valley. It is circular, of 2.90m diameter and its vertical section consists of two parts, lower and upper. Its lower part is made up of an oven with two chambers with a hearth of stone sunk 0.70m into the ground, while a large circular clay basin with side walls 0.08—0.10m thick was used to boil the brine brought from the neighbouring spring forming its upper part. No briquetage connected with evaporating and portioning the salt was found there. So it may be assumed that in the Late La Tène Period the salt manufacturing process was not carried on in the same way, at least not in the same vessels, everywhere in Poland. Some differences existed between Little Poland and Kujawy. Further excavation which should be carried on, especially in Great Poland and Kujawy, may elucidate the problem.



## Summary of the Proceedings by the Chairman

I think we are all left with the impression of the high quality of the contributions made. These have been one of the finest features of the Conference which has been one of the more successful of any we have attended. Conferences are made up of various parts; this one I see as a combination of good quality papers, an exhibition of material, a visit this afternoon on which I hope the sun will shine, and then eventually, the publication of the Proceedings themselves. That should achieve a complete and wholly successful conference and let us hope that that is how it will work out.

The papers themselves have made their appeal to all those who attended. To the professional who is interested in salt production they have shed a great deal of light, I am sure, on areas other than those with which they are dealing; while for those who are more generally interested in archaeology and the position of the salt industry within man's general activities, they have yielded a considerable body of information. One of the nice things is the way in which both professional and amateur have been represented here this weekend. I am not a great believer in professionalism in archaeology and I am delighted that we have had contributions from those engaged full time in other work and yet can offer so much. (*Hear, hear!*) We have heard of these interesting similarities over such a wide area, in this basic human need and the processes and means of satisfying it and its problems. Professor Kondo's contribution was the most striking. We saw briquetage which had such remarkable affinities with what we are looking at from Europe itself. Then, one's thoughts immediately spring to ideas of diffusion or parallel development; I do not think there is any necessity to argue one way or another, though the point could be seized upon by protagonists of either point of view.

A general impression of my own is of a basic process of salt preparation, but within that, the utmost diversity depending on the initial quality of the raw material. Clearly, as with Frau Kleinmann's description of Saale, one has a high quality brine which gives the economic edge and so evaporation and crystallization processes are correspondingly speeded up. Elsewhere we have seen the difficulties of achieving a concentrated brine from sea water or from the ashes of roots or plants or from salt impregnated soil and so there is a great deal of diversity in the original sources of the brine. Then the evaporation and crystallization process and finally the conversion of the 'slush' — I suppose the best term one can think of — into the dried cake which could then be transported. There is a great deal for us to discuss, the briquetage still remains a problem, the mounds still remain a problem to some extent, although Dr. Gouletquer has clearly shown the growth of debris into a miniature Monte Testaccio in his West African sites. But whether this was the same in Essex perhaps we have still to learn.



# BIBLIOGRAPHY

## Abbreviations

AB	Annales de Bretagne	LMARG	Lower Medway Archaeological Research Group
ACACS	Annales du Cercle archéologique du Canton de Soignies	LNQ	Lincolnshire Notes & Queries
ACamb	Archaeologia Cambrensis	LRs	Lincoln Record Society
ACant	Archaeologia Cantiana	NA	Norfolk Archaeology
AJ	Antiquaries Journal	NAH	Nationale Arqueologia Hispanica
An	Antiquity	PANSA	Polska Akademia Nauk Sprawozdania Archeologiczne
ANL	Archaeological News Letter	PCNFC	Proceedings of the Cotteswold Nature Field Club
AP	Archeologia Polski	PDNHAS	Proceedings of the Dorset Natural History & Archaeological Society
Arch	Archeologia	PGA	Proceedings of the Geologists Association
ArchJ	Archaeological Journal	PHFC	Proceedings of the Hampshire Field Club
Antiq	The Antiquary	PPS	Proceedings of the Prehistoric Society
ASAB	Annales de la Société d'Archéologie de Bruxelles	PPSEA	Proceedings of the Prehistoric Society of East Anglia
ASEB	Annales de la Société d'Emulation de Bruges	PRAI	Proceedings of the Royal Archaeological Institute
BMAH	Bulletin des Musées Royaux d'Art et d'Histoire	PRS	Pipe Roll Society
BMSAB	Bulletins et Mémoires de la Société d'Anthropologie de Bruxelles	PSAL	Proceedings of the Society of Antiquaries of London
Brit	Britannia	PSANHs	Proceedings of the Somerset Archaeological & Natural History Society
BROB	Berichten van de Rijksdienst voor het Oudheidkundig Bodemonderzoek	PSIANH	Proceedings of the Suffolk Institute of Archaeology & Natural History
BSAN	Bulletin de la Société des Antiquaires de Normandie	PTRS	Philological Transactions of the Royal Society
BSPF	Bulletin de la Société préhistorique Française	PUBSS	Proceedings of the University of Bristol Speleological Society
BSPM	Bulletin de la Société polymathique du Morbihan	RA(Hants)	Rescue Archaeology (Hants)
BSSLAP	Bulletin de la Société des Sciences, Lettres et Arts de Pau	RB-P	Revue du Bas-Poitou et des Provinces de l'Ouest
CA	Cornish Archaeology	RCHM(E)	Royal Commission on Historical Monuments (England)
CAGAB	Colchester Archaeological Group Annual Bulletin	RGR 5	Royal Geographical Society Research Series No. 5
CBA RR 10	Council for British Archaeology. Research Report 10	SA	Staffordshire Archaeology
CH	Cheshire Historian	SAJS	South African Journal of Science
CL	Country Life	SAN	Société des Antiquaires de Normandie
CNSSS	Congrès National des Sociétés Savantes	SNQ	Sussex Notes & Queries
CPF	Congrès Préhistorique de France	TBAS	Transactions of the Birmingham Archaeological Society
DAG	Dissertationes Archaeologicae Gandenses	TCWAAS	Transactions of the Cumberland & Westmorland Antiquarian & Archaeological Society
EA	The East Anglian	TEAS	Transactions of the Essex Archaeological Society
EDR	Ely Diocesan Records	TGAS	Transactions of the Glasgow Archaeological Society
EJ	Essex Journal	TLCAS	Transactions of the Lancashire & Cheshire Antiquarian Society
EN	Essex Naturalist	TLCHS	Transactions of the Lancashire & Cheshire Historic Society
ER	Essex Review	TWNFC	Transactions of the Woolhope Naturalists Field Club
Germ	Germania	VCH	Victoria County History
Inst Arch	Institute of Archaeology, London	WA	World Archaeology
JAH	Journal of African History	WAM	Wiltshire Archaeological Magazine
JE	Journal of Ecology	WHS	Worcestershire Historical Society
JEPNS	Journal English Place Name Society.	WPZ	Wiener Prähistorische Zeitschrift
JIA	Journal of Industrial Archaeology	WZUH(G-S)	Wissenschaftliche Zeitschrift d Univ. Halle (ges.-sprachwiss. Reihe)
JMV	Jahresschrift für Mitteldeutsche Vorgeschichte		
LAASRP	Lincolnshire Architectural & Archaeological Society Reports & Papers		
LAO	Lincoln Archives Office		
LDAS	Lincolnshire Diocesan Architectural Society		

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