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INFORMATION 31

EDITORIAL

If this editorial were to be given a title, an appropriate one might be 'The Return of the Prodigal'. As many members will know, the British Brick Society began as an informal grouping of interested people, with Lawrence Harley and Geoffrey Hines taking a central position. It was these two who invited me to join a more formal grouping, under the name of the British Brick Society, in about 1969. I therefore count as a founder member, at least of the more formal group. I was appointed to office with the rather exalted title of Academic Secretary, my principal rôle being the compilation of the Society's Bibliography on Bricks and Brickwork. After some years I passed this over, and I am ashamed to admit that from that time I allowed my membership to lapse, although keeping up my interest in bricks and brickwork. It is for this reason that I approach my new task as editor of Information as something of a returned prodigal son. Whether the editorship can be regarded as in any sense a fatted calf is, of course, more questionable!

However, I hope that I can continue the work carried out by Ann Los so masterfully (if the feminists will allow the word!). In leaving and rejoining the Society I have been able to note the considerably improved standard - both in presentation and in content - of the Information over the years. This is due in no small measure to the fine editor-

ship of Ann Los as well as to the happy relationship with the Brick Development Association through Michael Hammett. If I can maintain something of this standard I shall indeed be pleased.

The Information plays a valuable rôle in providing members with knowledge and in allowing them to exchange ideas, and that value is enhanced by the relative frequency with which the publication appears. This can only continue, of course, so long as members submit articles and notes for inclusion. In Information 28 (November 1982) Ann Los had to appeal for material for the subsequent issue; judging from the size and quality of Information 29 (February 1983), that appeal brought a good response. I should therefore like to repeat it here, and ask members to submit material as soon as possible for issue 32 and for subsequent issues. I know of a county archaeological journal of which the complaint has occasionally been voiced that the same names appear in volume after volume. But, of course, an editor can only include material which he or she receives. May I, then, look forward to receiving articles or notes from many members?

I hope too that we can continue the wide variety of articles that Information has contained in the past. In the present issue we range from the thirteenth century B.C. to very recent times and from the Middle East to the Isle of Anglesey. Contributions will be welcome on any aspect of bricks, brickmaking, or brick building, whether in Britain or elsewhere.

As Gerard Manley Hopkins wrote (though, in paraphrasing the Book of Exodus, he was using the word 'tale' in a different sense):

'Give us the tale of bricks as heretofore.' !

Terence Paul Smith
Editor

It's a Thought! From Bleak House by Charles Dickens, 1853 (Penguin edition, Harmondsworth, 1971, pp.485, 488):

'The [brick]kilns were burning, and stifling vapour set towards us with a pale-blue glare;...

"I don't want no shelter," he said; "I can lay amongst the warm bricks."

"But don't you know that people die there?" replied Charley.

"They dies everywheres," said the boy.'

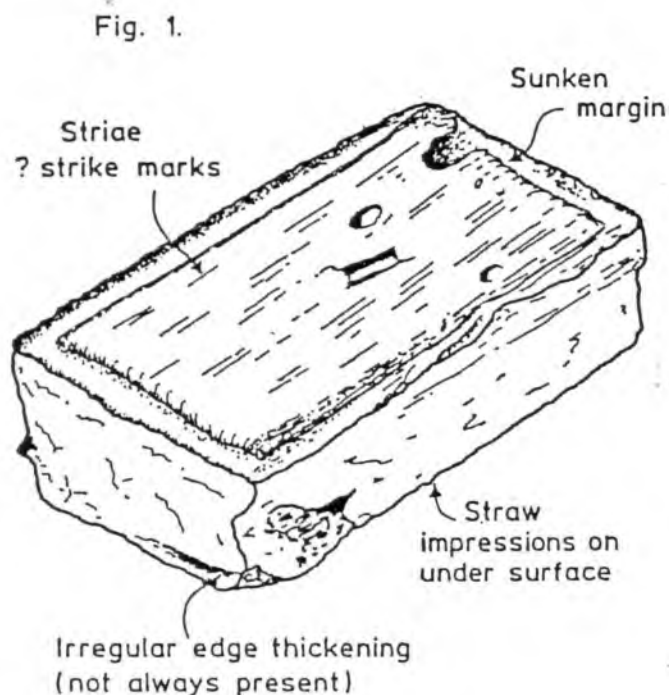
BRICKS WITH SUNKEN MARGINS

R.J. and P.E. Firman

We welcome the suggestion by M.G. Reeder¹ that some medieval bricks may have been made by pressing a frame over dollops of clay resting on straw. Not only is this a more practical and plausible technique than the 'pastry' method invoked by several writers^{2,3,4} to explain straw-face bricks, it also provides a ready explanation of a type of brick whose structure and surface markings have puzzled us for almost twenty years - namely, bricks with sunken margins.

Nathaniel Lloyd suggested that these bricks were made on a stock whose worn margins had been 'repaired by a strip of leather or otherwise, the immediate effect of which was to form a raised

margin round the face of the stock, which became a sunken margin round the bricks'.⁵ Our dissatisfaction with this hypothesis arises from the fact that all bricks of this type which we have examined have striae on the face which has the sunken margins (fig.1). Such striae are parallel with the long axis of the brick and are consistent with the marks made when surplus clay was struck off the top of a mould (or frame). Therefore, if these are strike-marks, the face with sunken margins cannot have been resting on a stock when the clay was struck off. Nor is there any conceivable reason that we can envisage for this surface to have been striated after it was removed from a stock. The logical explanation is, therefore, that the sunken margins were caused



by something pressed down on to the clay. Deep straw impressions on the opposite face and adjacent edge thickening, which could have been formed by clay oozing out from under a frame, strongly suggest that the clay was resting on a bed of straw when it was moulded into a green brick. All the surface marking can be satisfactorily explained if it is postulated that these bricks were made in situ, as suggested by Reeder, and that the frame was reinforced by beading or strips of leather around its upper inside margins (fig.2). This reinforcement would help to ensure that the clay was firmly compressed around the edges of the brick. Probably, after the frame had been placed over the dollop of clay and the clay firmly rammed down, the frame may have been lifted slightly and then pushed down again so as to produce firm edges before the excess clay was struck off. Evidence of such secondary adjustments of the frame is shown by the steps in

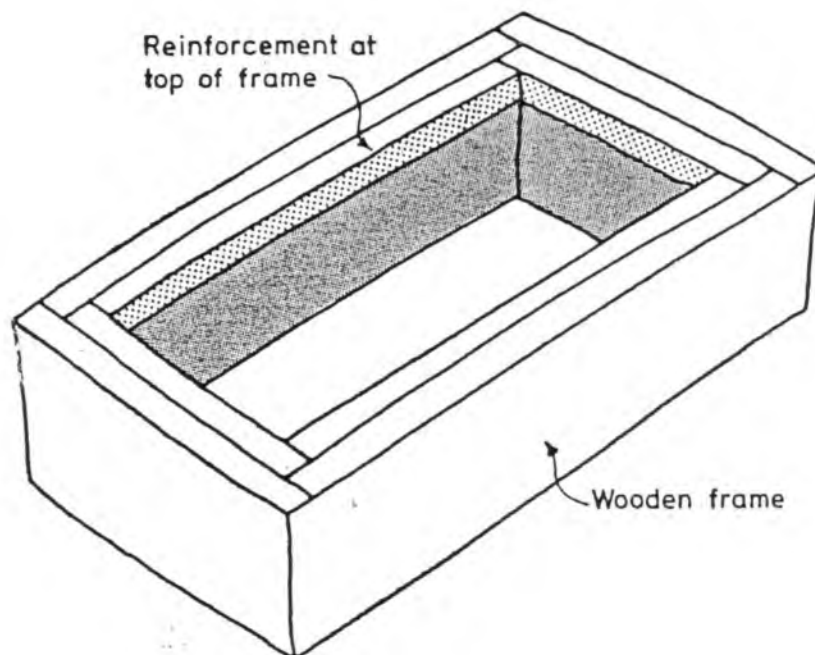
the sunken margin of a brick in our collection from Wallington Hall, Norfolk, c.1525.

Although we are reasonably certain that the bricks with sunken margins in our collection were made as outlined above, it would be rash to conclude that all bricks with sunken margins were frame-made in situ on straw-strewn ground. The critical evidence in favour of this method is the presence of strike-marks on the face which has the sunken margins and straw-marks on the opposite face. We would be particularly pleased to have these observations confirmed or falsified by members who have bricks with sunken margins in their collections.

Whilst welcoming Reeder's suggestion we should like to caution against the too hasty assumption that before the seventeenth century most bricks were made in this manner. The illumination from the Utrecht Nederlandische Bijbel⁶ implies, if Wight's interpretation is correct,⁷ that by 1425 in the

Netherlands the practice of moulding bricks on a bench and placing them directly into a hack to dry was common where the physical properties of the clay permitted such procedures. Such bricks would have strike-marks and no straw-marks on their surfaces unless they were interleaved with straw in the hack. Similar bricks lacking or with very few shallow straw-marks dominate English brickwork after 1440. As we have commented elsewhere,^{8,9} these more sandy red-burning brickearths required less drying. They were almost certainly made on a bench and placed directly in a hack to dry rather than being made in situ. Furthermore, the occasional record of straw impressions superimposed on strike lines suggests that at least some of the more plastic clays were bench-moulded and subsequently tipped out of the mould (or frame) on to straw. There is, therefore, a need to establish unambiguous criteria for distinguishing bench-moulded bricks from in situ frame-made bricks. Unfortunately, only the presence of straw impressions superimposed on strike-marks couples with the absence of straw impressions on other faces is sufficient to identify bench-moulded bricks. Similarly, only sunken margins with strike-marks on the raised portion of the same face unequivocally indicate in situ frame-made bricks. Deep straw impressions on an uneven surface accompanied by edge thickening around the straw-marked face favour, but do not prove, in situ moulding on

Fig. 2.



straw, since similar structures might be formed when a brick is tipped out of a mould (or frame) on to straw. Similarly, straw impressions on the base, stretchers, and headers but not on the top surface might arise in situ where the clay - pushed down to fill the frame - expanded laterally, incorporating some of the underlying straw. Alternatively, the same arrangement of markings could form during bench-moulding if, as suggested by Harley,² the mould had been lined with chopped straw. Internal structures are also unhelpful since both methods involve compression of the clay and consequent flow into the corners of the mould or frame. There is therefore a need for the establishment of other criteria as unambiguous as sunken margins with adjacent strike-marks before we can estimate the relative proportion of in situ-frame-made bricks and bench-moulded brick made before the seventeenth century.

Readers comments would be most welcome.

References

1. M.G.Reeder, 'The Size of a Brick', BBS Information, 29, February 1983.
2. L.S.Harley, 'A Typology of Brick: with Numerical Coding of Brick Characteristics', Journal of the British Archaeological Association, 3rd series, 38, 1974, 63-87.
3. Appendix by S.E.Glendenning to H.D.Barnes and W.D.Simpson, 'Caister Castle', Antiquaries Journal, 32, 1952, 35-51.
4. A.Clifton-Taylor, The Pattern of English Building, new ed., London, 1972, p.213.
5. N.Lloyd, A History of English Brickwork ... from Medieval Times to the End of the Georgian Period, London, 1923, p.33.
6. Nederlandische Bijbel, B.M. Add.MS 38122 f.78v.; illustrated in op.cit. in nn.5, 7.
7. J.A.Wight, Brick Building in England from the Middle Ages to 1550, London, 1972, p.42.
8. R.J. and P.E.Firman, 'A Geological Approach to the Study of Medieval Bricks', Mercian Geologist, 2, 3, 1967, 299-318.
9. 'The Story of the Brick - 1', in Harrison Mayer Ltd, Monthly Bulletin, 430, October 1975.

A NOTE ON 'SAMEL BRICKS'

Terence Paul Smith

Medieval building accounts sometimes refer to 'samel' bricks (the word being variously spelled) as bricks which were of inferior quality in that they were insufficiently burned.¹ Amongst later

builders and brickmakers the word continued in use, and in 1663 it was stated that '....most sammel bricks are noe better than dust'.² The meaning of the term is clear from a demand of 1505 that bricks for use at Little Saxham Hall should be 'wele and sufficiently brent and no semel nor broken breke be told...'.³ In the recent literature the word has been taken to refer to the light pinkish colour that such bricks would typically show. Thus, L.S.Harley supposes that the word 'is presumably a corruption of "salmony" from the salmon-pink or yellow-pink colour of the rough-textured body, due to lack of sintering of the clay particles.'⁴ J.A.Wight is even more definite: 'The contemporary term for less well-baked [sic] bricks was "samel", meaning salmon-coloured - or pinkish, instead of "well and sufficiently burned" red.'⁵

This derivation of the term is almost certainly incorrect, although apparently supported by C.T.Davis' reference in 1895 to 'salmon stock' as opposed to 'hard-burned bricks'.⁶ This is a variation of the East Anglian dialectal term 'sammen-bricks', explained, hesitantly, by Robert Forby in the early nineteenth century as 'commonly understood to be salmon bricks, and to be so called, because ... they ... assume a reddish hue, supposed to be something like the flesh of the salmon.'⁷ Forby is rightly suspicious, and O.E.D. correctly explains 'sammen' as an etymologizing alteration of the older 'samel'.⁸

It seems much more likely that the word 'samel' is a compound of M.E. sām (from O.E. sām-, and ultimately from Gk ἡμι- through Lat. sēmi- - meaning 'half')⁹ and of M.E. ēlden (the verb-form of the substantive ēld, from O.E. æled - meaning 'to light a fire', hence 'to burn')(cf. Mod.E. 'to fire', as of pottery, bricks, etc.).¹⁰ Sām is not uncommonly used to form such compounds in M.E., for example in Langland's 'Chiboles and chiruylls and chiries sām-rede', or, in some MSS, '... sām-ripe',¹¹ and in either case meaning 'half-ripe'. Similarly, the Hatton MS of St Luke's Gospel contains 'sām-cweoc' for 'half-alive' in the story of the Good Samaritan (Lk 10.30).¹² Such a compound as *sām-ēld, giving 'samel' with the meaning 'half-burned', 'incompletely fired', is therefore entirely plausible.¹³ To be sure, nothing of any moment turns on this more adequate understanding of the connotation of 'samel', since its denotation is in any case entirely clear. Still, it is as well to get the matter right: if one may be permitted to finish on a whimsical note, reference to 'salmon' is a red herring and a more convincing explanation is provided by the 'sām ēld' story.

Notes and References

1. A number of references are gathered together in L.F.Salzman, Building in England down to 1540, 2nd ed., Oxford, 1967, p.144 (NB, not as index).
2. B.Gerbier, Counsel and Advise to All Builders, London, 1663, p.53, quoted in L.S.Harley, 'A Typology of Brick: with Numerical Coding of Brick Characteristics', Journal of the British Archaeological Association, 3rd series, 38, 1974, 79n.
3. Salzman, op.cit., p.144.
4. Harley, op.cit., 79.
5. J.A.Wight, Brick Building in England from the Middle Ages to 1550,

- London, 1972, p.36; cf. N.Lloyd, A History of English Brickwork..., London, 1925, re-issued Woodbridge, Suffolk, 1983, pp.32-3.
6. C.T.Davis, A Practical Treatise on the Manufacture of Bricks..., 2nd ed., 1895, p.47.
 7. R.Forby, The Vocabulary of East Anglia, 1825, quoted in O.E.D., s.v. 'Sammen'.
 8. Loc.cit.
 9. H.Bradley, ed., A Middle-English Dictionary (by F.H.Stratmann), Oxford, 1891, p.519, s.v. 'sām'.
 10. Ibid., p.192, s.v. 'ēld' and 'ēlden'.
 11. W.W.Skeat, ed., The Vision of William concerning Piers the Plowman... Text C, Early English Text Society, 54, 1873, passus ix, l.311 and n.
 12. W.W.Skeat, ed., The Gospel According to Saint Luke (Hatton MS), Cambridge, 1874, 10.30. The Gk actually has, interestingly, ἡμιθανῆ, meaning 'half-dead' and so translated in AV, RSV, NEB, JB, etc.
 13. Cf. the obsolescent term in leather manufacture 'sam' = 'half dry': O.E.D., s.v. 'Sam₃'. There is no regularity of spelling of 'samel', the known uses coming from a time when English spelling was in a very fluid state: D.G.Scragg, A History of English Spelling, Manchester, 1974, pp.15 sqq.

BRICKS WITHOUT STRAW

Abstract of an article by Dr Henry Stern

It is likely that many of our members will not have come across a short but interesting article by Dr Henry Stern in the issue of the Jewish Chronicle published during this year's Pesach/Passover.¹ Dr Stern, a professional chemist, is concerned with the story of the Hebrew slaves making bricks in Egypt (Exodus 5.1 sqq.), and in particular with the punishment laid upon them after Moses' request to Pharaoh to let the people go into the wilderness to worship; although making bricks without straw is not mentioned in the Haggadah,² this episode plays an important part in the Exodus story which is recalled at Pesach/Passover: 'The same day Pharaoh commanded ..., "You shall no longer give the people straw to make bricks, as heretofore; let them go and gather straw for themselves..."'. (Exod. 5.6a,7). After pointing out that what was involved here was stubble (Heb. kash) rather than straw (teben) proper, Dr Stern asks the question: How was the straw used and what purpose did it fulfil in the brickmaking?

Dr Stern locates four main theories: (a) straw was embedded in the clay (with or without sand) to prevent cracking whilst drying (A.J.Spencer of the British Museum);³ (b) the straw served as a reinforcing agent, like hair in mortar at one time; (c) the straw worked as an anti-sticking agent whilst the bricks were being handled, etc. (Sir Flinders Petrie); and (d) the action of the vegetable matter from the straw on the clay facilitated brickmaking (Charles Nims).

Dr Stern then briefly describes his own experiments using two sets of paste made up of clay and equal amounts of liquid. In one case tap water was used; in the other, an aqueous extract from straw was used. Dr Stern is fully aware that 'clay of the kind used by sculptors is not the same as the mud of the Nile, and English straw may not be the same as that of Egypt,' but his results were nonetheless interesting. Using a Rotovisco viscometer he measured the viscosity of the two samples at different rates of shear. In all cases, but particularly at low rates of shear, 'the viscosity of the paste made with the straw extract was greater by some 50 per cent than when water alone was used'. As Dr Stern observes, this would result in 'a more solid brick, less liable to be deformed during handling and drying'.

This is an interesting comment on the use of straw by the Hebrew slaves, and members interested in this period of the history of brickmaking are urged to read Dr Stern's article in full.

(TPS)

Notes and References

1. H.Stern, 'Bricks without Straw', Jewish Chronicle, 5945, 18 Nisan 5743/ 1 April 1983, 15.
2. The Haggadah (Heb. 'narration') is the service book used during the Seder service/meal on the first night of Pesach/Passover in the Jewish faith. Numerous modern editions, with English translation, are easily available. Amongst other things it includes an account of the slavery in Egypt. The Seder itself involves a number of symbolic foods, including haroset, a (basically) nut and apple paste intended to resemble the material from which the bricks were made. (Ed.)
3. The bricks, of course, were sun-dried, not burned. (Ed.)

ANGLESEY AND CLAY: Part II

Brigadier Arthur Trevor

1. Anglesey Kiln-Tiles. As a result of visiting old windmill and watermill sites, fragments of various types of kiln-tile have come to light: at present about twelve patterns have been found. Two sources have been definitely identified from impressed marks on fragments: (1) Sealy & Sons, Bridgwater, Somerset, and (2) Ewloe Firebrick Co., Buckley, Flintshire (Clwyd). A third impressed mark has been tentatively identified as Catherall, also of Buckley. The kilns (Welsh 'crasdy') were primarily for corn-drying, but were possibly also used in the production of malt. All the recently found tiles have square 'honey-combing' on the lower face, and the norm appears to have been either five or nine perforations per 'cell' in the 'honey-comb'. One very primitive specimen, from a

C

watermill originally built c.1450, had only four perforations per 'cell'. (Samples of all types found to date have been lodged with the Gwynedd Archives Service, Council Offices, Llangefni.)

2. Anglesey Brickworks. (a). The brickworks at Pentraeth have been mentioned in Part I of this article. The site of the claypit is identifiable and at least one building survives.

(b). As a result of a severe storm, a large number of 'waste' bricks were exposed near the supposed site of the brickworks at Aber Lleiniog (NGR: SH620790). Here the claypit is identifiable, but the original buildings (if any) cannot be identified with any certainty. There are two difficulties: a 'leisure' cottage existed nearby until quite recently and remains of it can be found; erosion in the area has been, and continues to be, considerable - it seems possible that the areas of stone, many yards below high water mark, are the remains of the old buildings. The clay, of which the low sea-cliffs are largely composed, is very fine and is found in conjunction with glacial gravel and with layers of coal. The clay has been taken for lining ponds, and the coal for burning, within living memory. A geologist friend suggests that the coal was carried, by the ice, from Cumbria - not from the Anglesey, nor from the Flintshire, seams. I found it interesting that the clay in the low cliffs gradually slips down onto the beach: here it is picked up by the sea and rolled into handy-sized 'packages' with an outer covering of gravel. The larger 'packages' are about the size and shape of a Rugby ball, the smallest about hen's egg size. Is this why we read of 'Dorset ball-clay' being collected by the returning Penrhyn slate-ships?

(c). Not far distant is another claypit, of large extent, about which I have found nothing recorded. It is on the edge of a farm called Llanfaes Farm on the old 1:25,000 map and is marked by a suitable conventional sign at NGR: SH607790. I have little doubt that it does represent the site of a brickworks, although I have failed to find any evidence beyond the facts that it is marked as such on some large-scale maps and that it looks like a claypit. Unfortunately, much dumping has gone on, making the site difficult to interpret with certainty.

(d). I found from old estate maps that the estate at Henllys Hall Hotel used to have its own brickworks. The site is now the triangular wood at NGR: SH605773; a comparatively new road makes an 80° turn to avoid passing through it. The only signs are that the wood is below the general 'lie of the land' and is a sort of soak-pit for the fields to the north and west - drainage is southeastwards to the sea. I estimate that the wood is at least a hundred years old, possibly older. The Hamptons were prominent in Beaumaris long before they married into Lewis of Bodior. So one might guess that they opened the brickworks at Henllys first and later transferred it to Bodior, where, it seems, brick and tile making continued at least until the early years of the present century.

(e). I might also mention that the Bulkeleys had their own brickworks on the edge of Beaumaris. The exact site seems to have been lost when the new school was built of Cae brics. 'Cae bric[k]s' is problematic because, although it means 'field bricks', I am not sure that it does not refer to the field from which the clay was obtained rather than to the place where the bricks were actually made. At any rate, there seems no doubt that there was a very efficient brickworks in Beaumaris (NGR: SH598763) when Samuel Wyatt was building his version of Baron Hill for Viscount Bulkeley, c.1785,

roughly contemporary with Plas Gwyn (see Part I).

3. Brickmaking on the Penrhyn Estate, Bangor, Caernarvonshire. There is documentary evidence available in the Department of Manuscripts, University College of North Wales, Bangor, of brickworks operating on the Penrhyn Estate c.1800. The sites, which appear on an estate map, have not, as far as I know, been inspected. The land is owned by Lady Janet Douglas-Pennant and the sites now appear to be under timber. It may be significant that Samuel Wyatt also worked for Lord Penrhyn (cf. 2 (e), above), re-modelling the old house c.1795 and building extensively on the estate. It seems probable that he used large quantities of locally made bricks.

TWO MAPS SHOWING THE DISTRIBUTION OF BRICK-TILES (Mathematical Tiles)

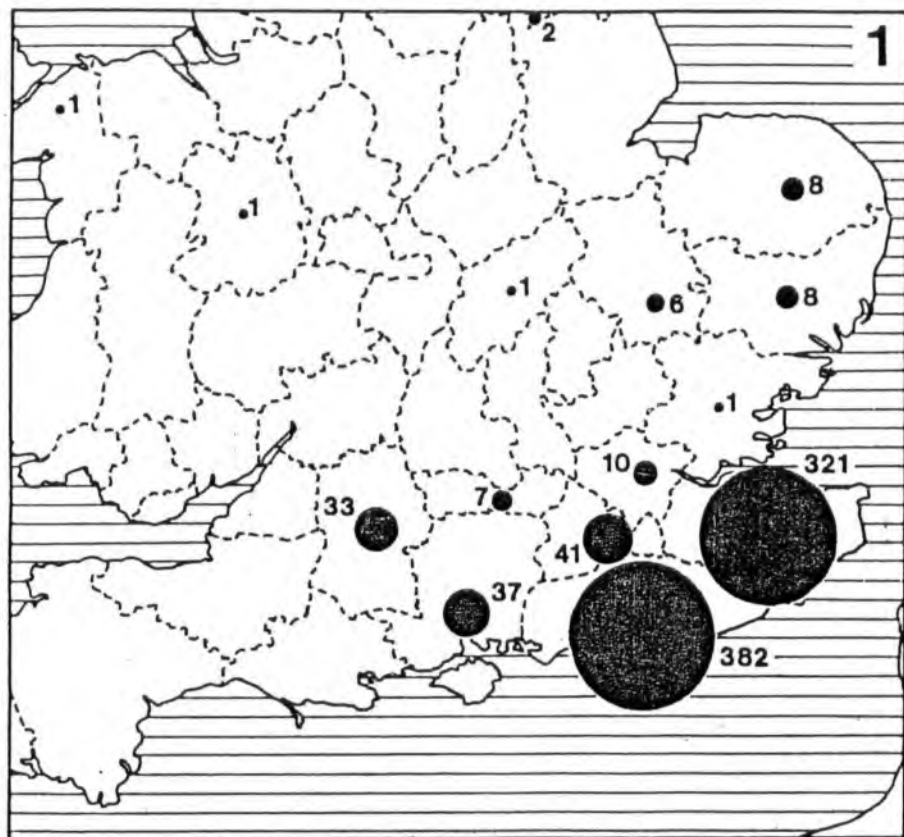
Terence Paul Smith

At a symposium held in Ewell, Surrey, 14 November 1981 county figures for the distribution of brick-tiles (mathematical tiles) were presented and subsequently published.¹ Since that time more examples have come to light and revised county figures have been published in the third edition of the notes issuing from the symposium.² These latest figures have been used in the compilation of the accompanying maps.³ Map 1 shows the distribution in absolute figures per county; map 2, however, is more truly representative in that it adjusts these figures according to the areas of the counties. Thus, for example, the total of 41 recorded for Surrey emerges as a larger contribution to the national distribution when the relatively small size of the county is taken into account; so too for Berkshire.

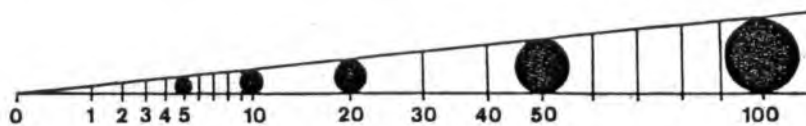
Doubtless other examples will be found as research continues. Yet it is unlikely now that the overall distribution pattern will be substantially altered. It is not to my purpose here to attempt an interpretation of the pattern, but simply to present the raw data in cartographic form. Suffice to say that the distribution as known at present continues to underline the fact, already noted,⁴ that the area of common use is virtually coterminous with that of ordinary tile-hanging.⁵ This correspondence in itself, of course, explains nothing, except perhaps by pointing to the availability of builders experienced in hanging tiles onto walls.⁶ Further discussion of the distribution is certainly required.

Notes and References

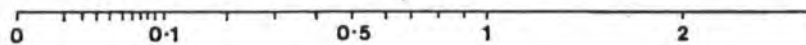
1. M.Exwood, ed., Mathematical Tiles: Notes of Ewell Symposium, 14 November 1981, Ewell, Surrey, 1981, p.7.
2. 3rd edition, 1983, of op.cit. in n.1, p.7.
3. In addition, some further examples from Kent have been added, giving a total of 321 for the county.

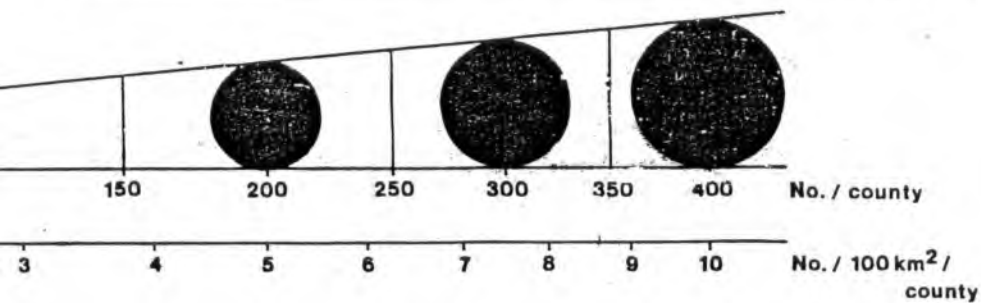
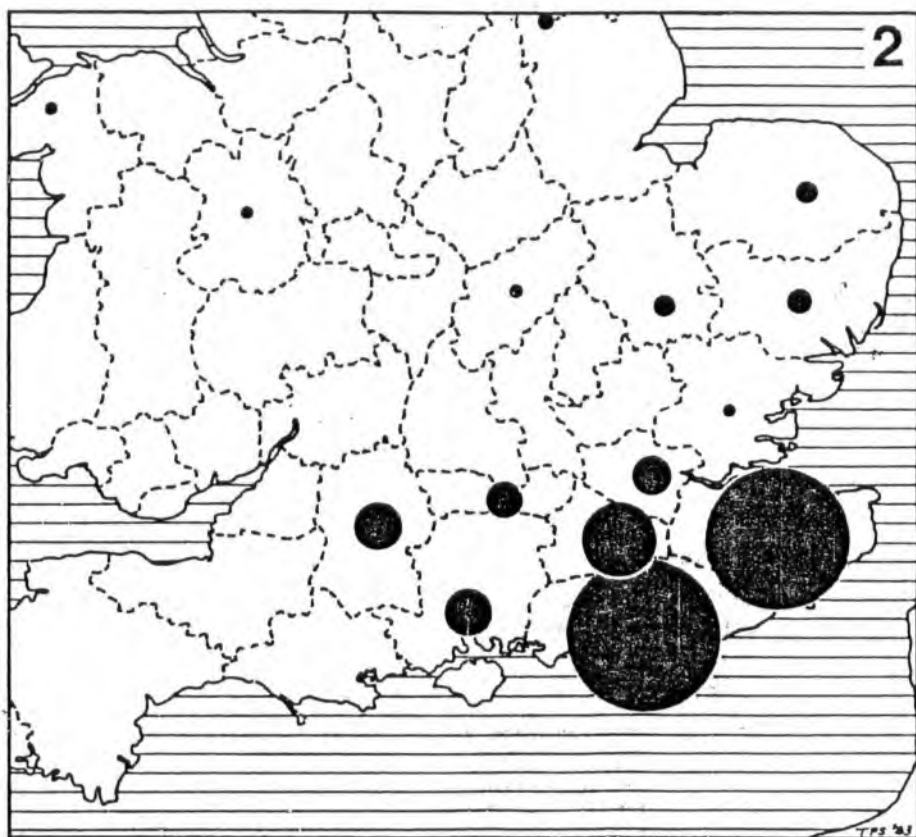


Map 1



Map 2





4. T.P.Smith, 'Refacing with Brick-Tiles', Vernacular Architecture, 10, 1979, 34.
5. Map conveniently available in R.W.Brunskill, Illustrated Handbook of Vernacular Architecture, London, 1971, p.179.
6. The usual method of fixing brick-tiles was by embedding in thick mortar, although nailing or pegging over laths was very occasionally done: cf. E.W.O'Shea, 'Mathematical Tiles in Lewes', in Exwood, ed., op.cit. in n.1, p.14; fixing over laths is definite in at least one example at Canterbury (D.Duckham, Mathematical Tiles, unpublished thesis, Architectural Association School, London, 1979) and at Boy Court, Headcorn, Kent (ex inf. D.Easton). I am grateful to Mr Duckham for letting me see a copy of his thesis and to Mr Easton for information on, and photographs of, his house. Fixing in solid mortar was the normal method for ordinary hung tiles: cf. W.Galsworthy Davie and E.Guy Dawber, Old Cottages and Farmhouses in Kent and Sussex, London, 1900, re-issued Rochester, 1981, p.23.

A Carpet of Bricks. Buckley, Flints. (Clwyd), mentioned as a source of firebricks in Brigadier Trevor's article (above, p.8), has recently come into the news. According to a Guardian report (by Tony Heath, 23 May 1983, p.32) the Butterley Company of Ripley, Derbys. have just won a contract, worth £2 million, for a driveway 2½ miles long by 15 feet wide in the Gulf state of Qatar. The driveway, which is due to be opened in November 1983, will carry Arab leaders from the airport at Qatar to the Sheraton Hotel and will be in the form of a colourful mosaic of red, brown, and white bricks arranged in a traditional Islamic pattern, like a large carpet. It should be especially striking from the air. Buckley will be the source of clay for the white bricks - they turn out dazzlingly bright - and will help the local industry in Clwyd, which has suffered from the decline of the steel industry and consequent falling off in the demand for firebricks for lining the furnaces.

(TPS)

THE SIZE OF A BRICK - HOLLAND

Terence Paul Smith

M.G.Reeder's recent articles in these pages¹ have given careful thought to the question of just why bricks are the sizes that they are. His valuable discussion is concerned mainly with English bricks, although the Dutch 'clinkers' imported into this country in the seventeenth century are also mentioned. Reeder notes various sizes of these, in general agreement with measurements given by Lloyd.² A point of some interest is that, in contradistinction to the situation in England, in Holland bricks have tended to become slightly smaller over the centuries. Thus, some bricks of fourteenth-century date

measured by the writer at the Buurkerk in Utrecht are 27-30 by 13-14 by 6.5-7 cm., whilst those in the fifteenth-century Muiderslot, Muiden are 22 by 10-10.5 cm. and those in the fifteenth-century Amsterdamse Poort at Haarlem 21.5-24 by 9.5-10 by 4-5 cm. Those used by Michel de Klerk in his Eigen Haard housing scheme in the north-west of Amsterdam in 1913-19 are only 19.5-19.75 by 9-11 by 4.5-4.75 cm. More important, the depth of the bricks has remained more or less constant since about the fifteenth century at around 4.5 cm.³ This gives a characteristic look to Dutch buildings, especially when not painted: the mortar joints give a much closer 'mesh' over the surface of a building. This is not, indeed, the only respect in which the brickwork of that country differs from that of England - for example, there was no general changeover to 'Flemish' Bond with the onset of classical influence in architecture, 'English' (!) Bond remaining in virtual sole use until the beginning of the present century, when Monk Bond also became quite popular, at least for buildings of some consequence. I can think of no adequate explanation for either of these facts about Dutch bricks and brickwork, but they do at least serve as a warning against parochialism in study of the subject.

Readers comments would be welcome.

Notes and References

1. M.G.Reeder, 'The Size of a Brick', BBS Information, 29, February 1983, 1-4; 30, May 1983, 1-3.
2. N.Lloyd, A History of English Brickwork ... from Medieval Times to the End of the Georgian Period, London, 1925, re-issued Woodbridge, Suffolk, 1983, pp.14-15.
3. These remarks are based on observations largely in Amsterdam, Haarlem, Hilversum, and Utrecht. Study of photographs suggests that a similar situation obtains elsewhere in the country.

BIBLIOGRAPHY

ALISON ROPER

My thanks go to Mrs Molly Beswick, who has recently presented to the BBS a copy of Sussex Industrial History, 13, 1983, which includes her article on 'Brick and Tile-making on the Dicker in East Sussex'.

Mrs Beswick has also kindly sent a copy of an annotated bibliography on brickmaking in Sussex, compiled by the Sussex Industrial Archaeology Society's Brick Study Group. Entries include references in the Victoria County History of Sussex and relevant articles in Sussex Notes and Queries (Sussex Archaeological Society), Sussex County Magazine, Recollege Papers (Robertsbridge and District Archaeological Society), Lewes Archaeological Society Newsletter, Bulletin of the East Grinstead Society, Sussex Genealogist and Local Historian, Warbleton and District History Group, Great Bush Telegraph, and Sussex Industrial History. Also included are those issues of the Sussex Industrial Archaeological Society's Newsletter which contain reports on work done by members of the Brick Study Group.

This list has provided some most useful additions to the BBS bibliography. If you have any references for inclusion, please

send details to me, including: the information essential to tracking down a publication (author, title, publisher or journal, etc., place and date of publication or number, date, and page references of journal); where relevant (e.g. a local or unpublished item) the place where it may be obtained or consulted; and if at all possible comments on the contents of an item and any helpful criticisms.

These should be sent to me: Mrs A.M.S.Roper, Group Archivist, Lucas Industries plc, Great King Street, Birmingham, B19 2XF.

A New Nathaniel Lloyd. For many years now I have been using library copies of Nathaniel Lloyd's A History of English Brickwork...*, most conveniently at the Society of Antiquaries, where it is readily available on open shelf. It is therefore pleasing to see that The Antique Collectors' Club of Woodbridge, Suffolk have now re-issued this standard work. We have come to expect from these publishers a high standard of presentation, and the re-issue of Lloyd is no exception. The book is photographically reproduced, clearly printed on good quality paper, and well bound. The excellence of the plates is a tribute both to the new publisher and to Lloyd's skill as an architectural photographer - most of the photographs are his own work. There are no pull-out drawings at the back, as in the original, but the reduction which has enabled these to be placed on normal pages has enhanced rather than diminished their appearance. Indeed, one is struck by the fact that in many ways this new book is a pleasanter product than the original, though the remark will not appeal to those who value old books for their own sake!

It might have been useful to have a short additional essay at the beginning to summarise what has happened - quite a lot, in fact - since 1925. Such an essay could also have noted losses since Lloyd's time, such as Bradfield Hall, Essex.

No matter. The Antique Collectors' Club has rendered fine service to all of us interested in bricks and brickwork by making available once more this pioneer, yet in many ways still standard, work in our subject. Nathaniel Lloyd, along with J.Kestell Floyer, A.Hamilton Thompson, and H.Avray Tipping, did much to get our subject under way. And none more than Lloyd: in 'brick circles' the simple mention of his surname is sufficient for people to know what work is being referred to.

The book is beautifully produced (even the jacket is enticing!), and at £25 remarkably good value. A must, I should think, for all members who do not possess the original.

*Publication details: Nathaniel Lloyd, A History of English Brickwork, with Examples and Notes of the Architectural Use and Manipulation of Brick from Mediaeval Times to the End of the Georgian Period, London: H.Greville Montgomery, 1925; re-issued: Woodbridge, Suffolk: Antique Collectors' Club, 1983: ISBN 0 907462 36 7; price £25.

(TPS)

Brickworks for Sale - £8.39! Seen in the window of a model railway shop in Poole, Dorset: a Polish-made model of an 'old brickworks' to enhance the scenery of your layout. Typical continental appearance, comprising two 2-storey rectangular sheds, one with an incline up to the first-floor level (brick production), the other with a tall chimney in the middle, and enclosing a Hoffmann kiln with drying floors over. Incidentally,

two years ago £220,000 was asked for a country brickyard in Sussex, including a Berry machine, drying sheds, and a covered clamp ground. 7 acres, with 18 feet of proven clay reserves.

(M.D.P.Hammond)

Moth Bricks. Mr A.H.Stamp has already mentioned 'perfume bricks' (Information, 20), and I was recently shown a Moth Brick of similar dimensions, 48 by 25 by 22 mm. It would have been impregnated with camphor rather than perfume and placed in a drawer or wardrobe. The colour is light red, and the brick has a shallow frog in both sides; it is stamped 'MOTH BRICK'.

I am told that perfume bricks were once made at the Crossroads Pottery, Verwood, Dorset and sent to the lavender factory at Broadstone, Dorset for impregnation with perfume.

(M.D.P.Hammond)

Congratulations! (The information contained in the following note has been supplied by one of our members who wishes to remain anonymous. I add my own congratulations to those of my source, and I am sure that members will want the good wishes to be given on their behalf. TPS.)

Many members will know Jack Tye, M.B.E., who, as Secretary of the Brick Development Association, extended so encouraging a welcome to this Society and showed such interest in its work. It is therefore a particular pleasure to note the award of the same honour, Membership of the Order of the British Empire, on the occasion of the 1983 Queen's Birthday Honours, to Mr E.R.L.Edwards, M.B.E., Senior Executive of the Brick Development Association.

A New Kiln at Swanage. On 29 June 1983 I visited the Swanage Brick and Tile Company's works to see the first firing of their new kiln. It is a rectangular draught of 50,000 bricks capacity, built to replace an earlier draught built c.1935. It was the largest capable of being built off the foundations of the old kiln, and measures 31 by 15 by 12 feet high internally. There are six fireholes each side, fired with light fuel oil. The walls generally are 2ft 3in thick, lined with insulating firebricks and faced externally with reject facing bricks made at the works. The core is of hard common bricks from Steetley Brick's Wellington, Somerset works. The arch is 9-inch insulating firebricks with reject facings brushed with cement slurry externally. The firebricks, also from Steetley's, cost £750 per thousand. There is a small wicket in the end wall facing the drying shed, as the setting is done by hand. The opposite end wall can be removed completely, and consists of six refractory concrete blocks 18 inches thick, placed by a fork-lift. The fires were lit at 10 a.m. on 27 June and the temperature increased very slowly. At the time of my visit the setting was still black in the middle and steam was still coming from the chimney. The kiln was designed by Mr Erik Bjorkstrand, the works manager.

(M.D.P.Hammond)

Horne's Place Chapel, Kent. This building, a few miles north of Appledore, Kent (NGR: TQ957308) is open

to visitors on Wednesday afternoons only, being in the garden of a private house. The owner is co-operative but, naturally, welcomes visitors 'out of hours' no more than would any of us in our homes. The brickwork is in the undercroft and its main interest is that it would appear to be a true example of Flemish imports, as suggested by the late Mr S.E.Rigold, cited in J.A.Wight, Brick Building in England from the Middle Ages to 1550, London, 1972, pp.22, 44, 282. A good little guide may be bought which has fuller details.

(Geoffrey Hines)

SCOTTISH BRICKS

M. D. P. Hammond

In response to my appeal for information on the list of bricks published in Information 29, February 1983, 11-12, I have had a number of letters, from which I have compiled the following notes. Authors' surnames appear in parentheses and are given more fully at the end of the paper.

KELVINSIDE: Works at Kelvinside, Glasgow (NGR: NS 557688), 1873-1930s. Site now built over. Common brick, at least $3\frac{1}{4}$ - $3\frac{1}{2}$ in thick (Douglas), frog $7\frac{1}{2}$ by $2\frac{1}{4}$ by $\frac{5}{16}$ in deep. Yellow-brown, granular texture, true sides, black core, 9 by $4\frac{1}{8}$ by 3in. Deep concave frog on bed face, with marks of vents in diameter, $3\frac{1}{4}$ in apart. Lettering $\frac{7}{8}$ in high. (Ramsay) 230 by 105 by 98 mm. (Hammond).

BROADLIE: Works at Dalry, Ayrshire (NS 287497), built 1937-8, producing common bricks. Taken over by Scottish Brick Company in 1978 as Works No. 20. Still in production but bricks now stamped 'S B C' (Douglas).

U.F.P.: United Fireclay Products, Etna Works, Armadale, Bathgate, West Lothian, EH48 2JU, a member of the Gibbons Dudley Group producing firebricks and shapes, high-alumina bricks made of carbonaceous shale by stiff-plastic pressing. Fireclays are obtained from mines near the plant, crushed by rollers and ground in 11ft-diameter pan mills, screened and pressed in stiff-plastic toggle, impact, or hydraulic presses. They are fired in either the tunnel kiln or the shuttle kiln, both natural-gas-fired. The building-brick works (Etna Works, Bathville, NS 944679) was formerly a large fireclay works and has two 10-chamber, one 16-chamber, and one 28-chamber continuous kilns. As with Flettons, no additional fuel is needed after the bricks have been brought to red heat because of the natural fuel content of the clay. In 1976 a 90-ft-high shaft kiln was installed to produce pre-fired clay granules for refractory concrete and for blending with the raw fireclay. It is the largest of its kind in the United Kingdom. I have an 'Etna' firebrick in my collection, found at Baiter, Poole. I seem to remember, in c.1965, passing an 'Etna Works' producing firebricks on the north-east side of the Stoke-on-Trent to Uttoxeter railway somewhere near Longton. The name was in large letters on the parapet of a continuous kiln which stood at right-angles to the track. Can any members enlighten me on this?

Brownhill Brickworks, Newarthill, Wishaw, Lanarkshire. NS 800597; started 1938, taken over by UFP in mid-1960s, closed 1980 and demolished. Common bricks only. (Brick and Clay Record, December, 1976)

BLANTYRE: Blantyrefermie Brickworks and Colliery, Blantyre, Glasgow (NS 683607); started c.1920, taken over by Scottish Brick Company in late 1960s. Closed 1979 and now demolished. Common bricks only (Douglas). Disused brickworks near Hamilton, Lanarkshire; common bricks only (Ramsay). 1904 reference to Blantyre Colliery Siding at High Blantyre, Lanark. (Los).

DOCKEN: Bonnyside Fireclay Works, Bonnybridge, Falkirk, Stirlingshire (NS 833792). Docken is the name of a grade of fireclay. 1880s to present, now part of the Dougall Group, making pressed firebricks and handmade special shapes (Douglas). Fireclay and engineering brick works in Lanarkshire, near Glasgow (Ramsay). Firebrick 9 by 4½ by 3 inches found in a floor of the now demolished Eye Station, near Peterborough (Marsh).

S B C: Scottish Brick Corporation. Head office in Glasgow and at one time fifteen works in central Scotland producing pressed common bricks. Took over the National Coal Board's Scottish brick-making interests in the 1960s (Douglas). The new Centurion plant at Bishopbriggs, producing 72 million facing bricks a year, was opened in 1976. Facing bricks were rarely made in Scotland, the traditional material being stone of roughcast (harling). Caronaceous shale is mined near the works, crushed, ground, and extruded. The bricks are cut by wires, twenty at a time. There are three kilns each with 28 chambers of 25,000 bricks capacity. (They are of a Dutch design, known as vlamoven, similar to a transverse-arch Staffordshire kiln.) In a normal cycle 4 chambers are drying, 6 preheating, 5 firing at over 800°C, 5 cooling, one has the top of the wicket open, one has the wicket fully open, and 6 chambers drawing and setting. (Brick and Clay Record, December, 1976)

COLTNESS: Common bricks made by Coltness Iron Company. Four works in Lanarkshire, operating c.1885 to early 1960s. Taken over by National Coal Board in 1948 (Douglas; Ramsay). Clayworker, March 1970, carries an advertisement for a General Manager to run three brickworks producing over one million common bricks a week. The works have been modernised, with new stiff-plastic machinery, conveyor handling systems, and Hoffmann kilns.

Coltness Brickworks Ltd, Church Avenue, Newmains, Wishaw, Lanarkshire (Los): are these three ex-Coltness Iron Company works, reopened and refurbished after several years' closure during which they missed being taken over as N.C.B. property by the S.B.C.? Many Coltness bricks were sent by rail to Beattock (Ramsay).

... TERENOS P: Seen on a brickbat. Lettering indistinct as die was very worn.

P. & M. HURLL LTD GLASGOW: Common bricks from Drumchapel Works, West Glasgow, c.1920; closed by 1940. Site built over after Second World War. The 'S' in Glasgow is back-to-front (Douglas). 8⅞ by 4¼ by 2⅞ in; frog 6½ by 2½ by ⅞ in; lettering lin. high. Reverse frog 6⅞ by 2½ by ⅞ in, with three vent marks. Dark red (Ramsay). P. and M. Hurll also owned the Birkhill fireclay mines at NS 565790 (Cl8), NS 964791 (1913), and NS 963789, sunk by them in 1951 at a cost of £25,000. Processing plant at NS 965789. Address: Avonbank, Polmont. Firm went into liquidation in July 1980. The mines were left to flood, and there are no plans for further activity (Sanderson).

CALENDAR: Callendar Brick and Fireclay Company, Glen Works, Glen Village, Falkirk (NS 886778). Established sometime between

1820 and 1868, Callendar Brick Company, Callendar Coal Company, Callendar Brickworks, Callendar Firebrick and Tile Works, Glen Brickworks. 1868-99 partnership of James Dougall, James Potter, and William Hamilton, with Dougall as managing director. He persuaded the partnership to pay an annual rent of £2,000 to the owner of the Callendar Estate in order to maintain and expand the brickworks. In 1899 a company was formed to take over the business and property of the partnership. Ownership of the coal mine and brickworks passed to the National Coal Board upon nationalisation in 1948. In 1960 tile production ceased, but the works manager, Mr Stewart, continued brickmaking until 1980 with a workforce reduced from 170 to 15. By then, oil prices had made the old kilns expensive to run, and the decline in housebuilding forced the works to close in October of that year. (Sanderson)

DEWAR: Dewar and Findlay Ltd, Drumpark Brickworks, Bargeddie, Glasgow (NR 705641). Operated from 1895 to 1977, producing high quality pressed red facings, either red or blue. Used widely throughout Scotland (Douglas; Ramsay).

SOUTHHOOK KILMARNOCK: Made at one of several works operated by the Southhook Potteries Company in the Kilmarnock area (Crosshouse was one), c.1900-75. The company also made sanitary ware and had an interest in coal mining (Douglas).

SYMINGTON: Kipps Quarries and Brickworks, Coatbridge, c.1870-1910, produced high quality pressed red facings. Exact site of works not known.

For information on the above I am indebted to: Graham J. Douglas of the Scottish Industrial Archaeology Survey, Department of History, University of Strathclyde; the Rev. Ian G. Ramsay, Beattock; J.M. Sanderson, Curator, Falkirk Museums; Mrs W.A.Los, Beverley; and Mr E.Marsh, Peterborough.

A DUNNACHIE GAS-FIRED CONTINUOUS KILN, POOLE

Martin D. P. Hammond

A watch was kept on the Poole Commerce Centre (ex Bourne Valley Pottery) site while ground works were proceeding earlier this year. The existence of a kiln of this type was suspected from old maps and photographs, and proven when drainage trenches were dug in both directions across the kiln site.

Sharp, Jones and Company started the Bourne Valley Pottery on this site in 1853, making salt-glazed stoneware drainpipes and fittings, chimney pots, bricks, and tiles. The works was modernised in the 1880s, the original Staffordshire-type 'bottle ovens' being converted to downdraught operation, and a new brickmaking plant with a Dunnachie gas-fired continuous kiln built. The kiln was patented in 1881 by James Dunnachie, managing director of the world-famous fireclay works at Glenboig near Coatbridge in Scotland. It was the first successful gas-fired kiln. Dunnachie did not encourage the use of his patent in Britain for fear of competition, but must have made an exception in this case, provided that his firebricks were used in

its construction. Each of the handmade bricks is stamped 'GLENBOIG' and with the star trade-mark. The kiln was completed by 1886 and was fuelled with 'producer-gas' made on site by blowing air and steam through a thick bed of coke in a closed vessel. The firing was hotter and cleaner than was possible with coal. The remains of the heating flues under the brickworks' drying floor were found nearby. The old works was completely demolished in 1952 when the modern salt-glaze pipe works was completed. That in turn was demolished last year to make way for the Commerce Centre.

L.B.1 WORKS, FLETTON

M. D.P. Hammond

In mid-May I arranged with Peterborough Museums and London Brick works engineers to survey the three kilns at L.B.1 works at Fletton, Peterborough. It was one of London Brick's oldest works, part of the original Fletton Lodge estate. I was assisted by the museum's Curator, Martin Howe, and the job took three days. Demolition was imminent and preparations to fell the chimneys were being made even as we were surveying.

Information on the kilns may be summarised as follows:

Kiln 1: 69 chambers; side chambers, 50,000 bricks capacity; chambers opposite the chimneys, 45,000 bricks; end chambers, 69,000. 4 fire cycles. 2 chimneys, North and South, 225ft from kiln floor. Lit up 8 April 1967; closed down February 1982.

Kiln 2: 16 chambers; side chambers, east, 20,000 bricks; side chambers, west, 17,000 bricks; end chambers, 30,000. Chimney 150ft from kiln top. In use 1892-1977. One fire.

Kiln 3: 16 chambers; side chambers, east, 17,000 bricks; side chambers, west, 20,000 bricks; end chambers, 30,000. Chimney 130ft from kiln top. In use 1883-1978.

All the kilns are based on Adam Adams' patent of 1882(?), transverse-arch Hoffmann kilns adapted for burning the Oxford Clay. Searle calls them 'English Kilns' (Modern Brickmaking, p.434).

The chambers of kilns 2 and 3 had been extended outwards on one side and the wickets opened up to the full width of the chambers. The end walls and chimney of kiln 3 were built of wirecut bricks.

Kiln 1 was originally a 40-chamber semi-continuous kiln, the 'Napoleon' kiln of 1896. The fire was started at one end and travelled to the other before being put out. It was converted to continuous operation by building extra chambers along one side, and finally completely rebuilt in 1966-7. The carved brick panel reading 'This kiln was lit up by Mr V.Hackney Sat 8th April 1967' is now in the care of Peterborough Museums. Each chamber had a cast iron number plate over the wicket. That from no.66 is now on Mr J.P.Bristow's front gate. The kiln had 34 chambers on the west side and 35 on the east side. I am told that the odd number of chambers was to make easier the setting-out of the flues where they enter the main smoke

chamber in the centre of the kiln. There were four firing cycles of 17 chambers each, proceeding simultaneously. The kiln was built entirely of Fletton bricks in loam or cement mortar. The overall length of both sides was made equal by building the walls between the chambers half a brick thicker on the west side.

On the morning of Sunday 15 May I joined the large crowd gathered to see the chimneys blown up. Holes had been blasted in the base of each chimney above the kiln top, and between 10 and 10.45 a.m. chimneys 1 (north), 2, 3, and 1 (south), in that order, were felled. The older chimneys, of hollow construction in lime mortar, crumbled and fell quickly. The kiln 1 chimneys, of solid brickwork 4ft thick at the base, in cement mortar, toppled gently and broke in two halfway down, and shattered on impact.

Thanks are due to Messrs Bryn Cross, works engineer; J.P.Bristow; and E.F.Marsh, for additional information.

BULL'S TRENCH KILN

M.D.P.Hammond

I recently bought the cut-out brick kiln from Oxfam mentioned in Information, 30, May 1983, 5. It is a Bull's Kiln, a type used widely throughout the Indian subcontinent. It was patented on 31 May 1875 by William Bull, engineer, of Portswood, Southampton, and is derived from the climbing kilns used for pottery firing in the Far East. The patent describes how it is constructed, set, and fired. A trench about 9ft deep, and any length and any width, depending on the site and capacity required, is dug into a hillside, the floor sloping at about 1:8. Fireholes at 2ft 6in centres are formed at the lower end, and fires burn in these for the first 36 hours of the firing. Slack coal is packed in between the bricks, and additional coal can be fed in through feed-holes in the top of the kiln during firing. The slope of the kiln is enough to provide the draught. The kiln may be constructed on or in level ground, in which case sheet-metal chimneys are used, as is the case with the cut-out model. The top of the setting is covered with an air-tight covering of sand and clay, in which the feed-hole pots are placed. It is in fact a semi-continuous kiln, and is probably the most efficient low-technology kiln. J.P.M.Parry, in his Brickmaking in Developing Countries, recommends its widespread adoption in the Third World, and research into the use of fuels other than coal.

One English example of which I have details was the temporary kiln erected in the early 1880s at Pluckley Station Brickworks, Kent (now owned by Redland Brick) to provide bricks for the construction of a Hoffmann kiln and works buildings. It was built free-standing on level ground, 200 by 16 by 10 ft. There were two movable iron chimneys mounted on a 'traveller' spanning across the kiln. Sheet-iron dampers were used to prevent backdraughts from the setting ahead of the chimneys. The kiln walls were built of green bricks. Fuel consumption was 5cwt of coal per 1000 bricks.

ACCOUNTS FROM ARCHIVES: EAST YORSHIRE

W. Ann Loss

A recent article in these pages illustrated how items in a local record office, in this case a probate inventory, could be used to supply details of brickmaking.¹ Although I have not, as yet, found a probate inventory in the local record office in East Yorkshire, I have found records of accounts and agreements which are very interesting to me and, I hope, to others.²

The accounts date from 1727 to 1746 and vary in length from long wordy agreements between the 'gent' and the brickmakers to short notes between the brickmakers and the local schoolteacher who supplied the straw. The 'gent' in the accounts is John Shaw of the City of York, who made agreements with local brickmakers for various quantities of bricks:

- 4 November 1727: Thomas Plaxton, Robert Harrah of York to make 100,000 bricks;
- 7 September 1729: Robert Harrah of York to make 100,000 bricks;
- 26 September 1730: Richard Gregson of York to make 200,000 bricks;
- 26 October 1730: Matthew Motte of Lund to make 120,000 bricks;
- 16 October 1746: Christopher Morfoot of Lund to make 90,000 bricks.

All the bricks were to be made at Bainton.

The agreements specify items needed to make the bricks and exactly which items are to be supplied by each party. John Shaw seems to own the clay at Bainton and usually supplies the coal to the nearest landing on the River Hull. The brickmakers 'will supply all manner of tools, straw, sand, whins, and every other thing saving coals and clay...'. The cost of these items is also to be found:

20 May 1736:	Straw for making bricks	15s	0d.
19 May 1738:	Half cauldron of sea coal	13s	0d.
	3 cauldrons of best land coal		
	and 16 bushells of land coal	£3 10s	0d.
	Wains for carriage	2s	0d.
		£4	5s 0d.
17 July 1739:	4 clay shovels	2s	0d.
	Deals	10s	8d.
	3 moulds	3s	0d.
	3 wheelbarrows	£1 1s	0d.
	Brick table and tub stool	6s	0d.
	1 tub		6d.
		£2	3s 2d.
	2 clay shovels and more	1s	9d.
		£2	4s 11d.

The size of the mould is always specified in the agreement, the measurements being given in words. Thus 10½ inches is '... the said mould to be ten inches and half an inch and half a quarter inch long ...'. The depth of the brick is allowed to vary in some cases: '... and

two inches and an half to a quarter deep or thick':

7 September 1729: 10 $\frac{1}{2}$ by 5 $\frac{1}{4}$ by 2 $\frac{1}{2}$ inches;
 2 September 1730: 10 $\frac{5}{8}$ by 5 $\frac{1}{2}$ by 2 $\frac{5}{8}$ inches;
 27 October 1735: 10 $\frac{5}{8}$ by 5 $\frac{1}{4}$ by 2 $\frac{5}{8}$ inches;
 26 October 1730: 10 $\frac{1}{4}$ by 5 by 2 $\frac{1}{2}$ inches.

One agreement specifies that 'the said moulds to be lined at every 30,000...' and another at every 50,000. I understand from this that the moulds would increase in size with use and thus needed lining to produce bricks of a more uniform size.

The accounts are detailed enough to illustrate the cycle of brickmaking, beginning with the agreements being made in September or October. The clay was dug in October or November to let frost break it up, and was turned in January and March. The bricks appear to have been made in April and May with one agreement stating that May Day was the beginning of bricks to be made in moulds and Midsummer Day for bricks to be burnt in the kiln. In other agreements August seems to be the kiln month, with one agreement stating that the bricks had to be out of the kiln by 5 September. The importance of the weather was not ignored, for one agreement states 'or as soon as the season will permit'.

Details of the kilns are few and as some agreements do not mention a kiln one may assume that the bricks were clamp burnt: 7 September 1729: '... and will betwixt midsummer next and so soon after as the season of the year permits make burn and deliver to the said John Shaw 100,000 of hard well burnt saleable bricks...'; 26 September 1730: '... betwixt midsummer next or as soon after as the season permits make burn and care for the kiln...'; 27 October 1735: '... and set them in the kiln or kilns and dawb the same and will light the fire or fires and duly attend the well burning through...'; 26 October 1730: '... Matthew Motte to make a kiln and floor for £1 11s 6d...'; 16 October: '... hard well burnt bricks to be sold out of the kiln betwixt next August or however before 5 September next...'; 1747: '... George Culburn also £1 4s 0d for making the kiln...'.

The payments for making the bricks are nearly always given in two ways. The agreement specifies the price per 1000 that has been agreed for the good well burnt bricks from the kiln. The agreement also specifies what is to be paid when the clay is dug and when the clay is turned, but payments for making the bricks in moulds, setting the kiln, firing the kiln, and delivering the bricks vary. Numerous little pieces of paper show the record of actual payments that were made during the year that the agreement was being executed. It is not possible here quote them all, but I provide one set to illustrate this point: Agreement 26 September 1730 '... to make 200,000 haed well burnt saleable good bricks at 4s 8d per 1000... John Shaw to pay Richard Gregson £6 for digging £6 for several times turning and the rest when the bricks are well burnt and delivered on penalty of £20.' (Several agreements have this penalty clause.)

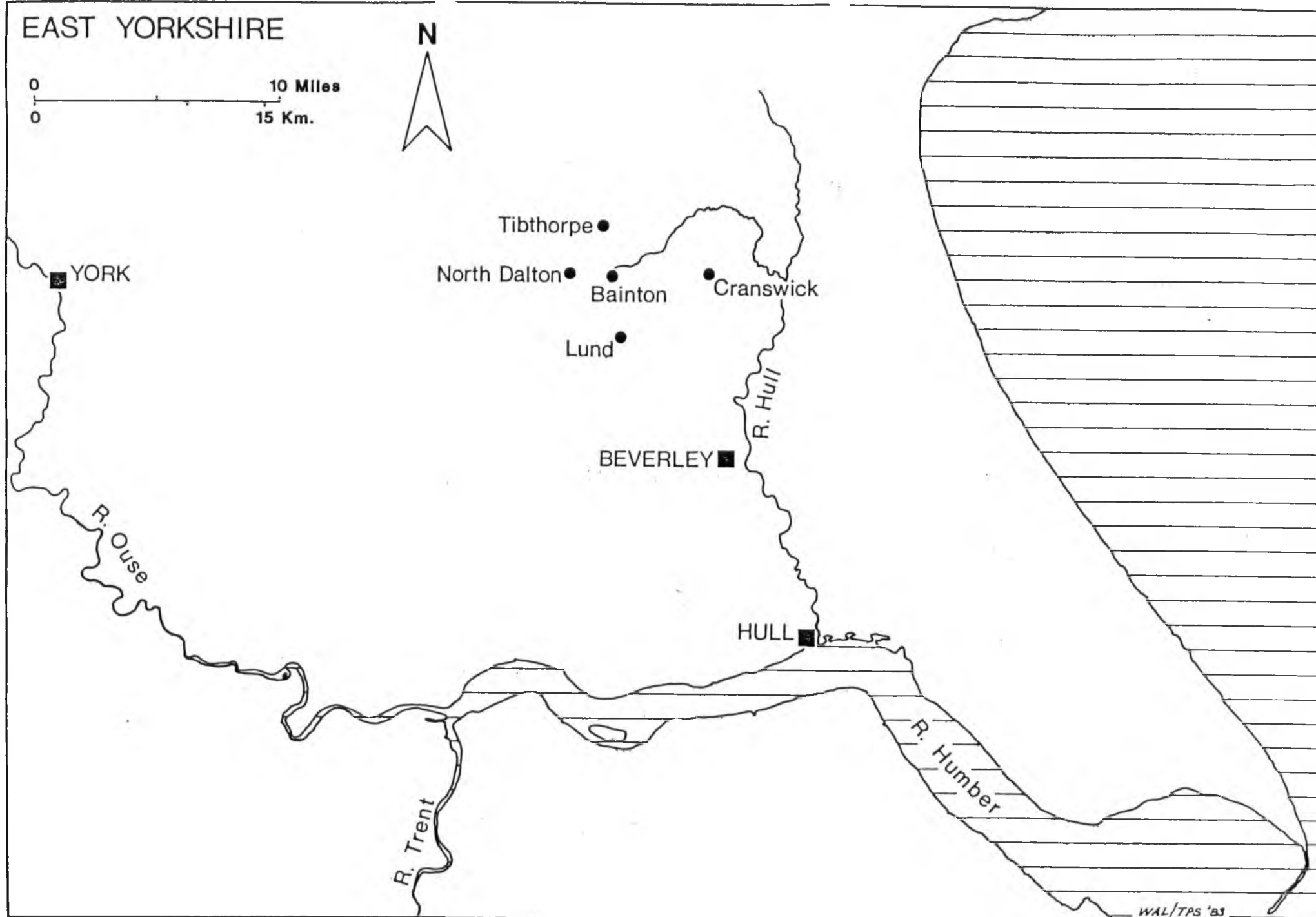
RECEIPTS

3 October 1730	Received of John Shaw	£1 10s 0d	upon account Richard Gregson
30 October 1730	"	£3 3s 0d	"
4 November 1730	"	£1 10s 0d	"
21 November 1730	"	£2 2s 0d	"
26 December 1730	"	£2 15s 0d	"
7 January 1731	"	£2 2s 0d	"
9 February 1731	"	£1 1s 0d	"
13 February 1731	"	£1 1s 0d	"
10 April 1731	"	£1 1s 0d	"
3 July 1731	"	10s 0d	"
29 August 1731	"	£2 10s 0d	"
5 June 1731	"	£6 0s 0d	"

£25 5s 0d

EAST YORKSHIRE

0 10 Miles
0 15 Km.



The problem of transporting bricks in the early eighteenth century must have been considerable. Thus I was fascinated to find a list of the sales of the bricks from the kiln. On 4 November 1727 Thomas Plaxton agreed to make 100,000 bricks at Bainton for 8s 6d per 1000. The bricks made were sold to the following people at the stated places:

Mr Barenet of North Dalton	12,500	£8	2s	6d.
Mr Hochenon of Bainton	11,000	£7	5s	0d.
Robert Bengton of Bainton	22,500	£14	10s	0d.
Mr Gavit of Beverley	8,000	£5	4s	0d.
M.D.Jameson of Bainton	2,000	£1	6s	0d.
John Bengton of Bainton	1,100		14s	4d.
John Smith of Bainton	1,500		19s	6d.
George Cobon of Bainton	2,000	£1	6s	0d.
John George of Bainton	500		6s	6d.
Hew Heperson of Bainton	4,000	£2	12s	0d.
John Hotson of North Dalton	1,500		19s	6d.
Mr Hotson of Cranswick	1,500		19s	6d.
Mr Thompson of Tibthorpe	2,000	£1	6s	0d.
John Rorgers of Bainton	600		8s	0d.
William Gray of Bainton	5,000	£3	5s	0d.
John Marshall of Bainton	800		10s	0d.
William Dickeson of North Dalton	1,000		13s	0d.
..... etc. ³				

Notes

1. M.Beswick, 'The Country Brickmakers of the Weald', BBS Information, 30, May 1983, 9-10.
2. The accompanying map shows the locations of all places mentioned in the accounts.
3. (This works out at a normal price of 13s per 1000 at the kiln, although the full range is from 12s 6d per 1000 to 13s 4d per 1000. This compares with bricks supplied in the same years to various official bodies such as the Office of Works and Greenwich Hospital; these cost rather more but included carriage, which is not the case with the bricks mentioned by Mrs Los in her article. TPS.)

A Change of Name. Those who have pursued work on old brickmaking sites will be aware of 'rationalising' name-changes, as when (e.g.) Brick Kilns (or, in an older form, Brick Kills) becomes Brick Hills. An interesting example is given in W.Minet, Hadham Hall..., Colchester, 1914: a site in Little Hadham, Hertfordshire where there had been brick clamps in 1844 had, by the early years of the present century, become Brick Lambs. I am not sure that this would really have made the name any easier to understand! But it is at least easy to appreciate how the change came about. In the local speech, the 'ck' of 'brick' and the 'c' of 'clamp' would be assimilated whilst the 'p' between 'm' and 's' would become a glottal stop; the result, in phonetic transcription, would be 'briklam?s ; a further slight change would give the pronunciation 'Brick Lambs' ['briklamz].

(T.P.Smith)

BRICKS FROM THE 'MARY ROSE'

(The following information and request has been received from the Mary Rose Trust. Members may be able to help and should contact the Trust direct. TPS)

Approximately 4,152 bricks and brick fragments, many still in situ in brick structures, were found in the galley and adjacent area of the 'Mary Rose' when she was raised last year.

Many of the bricks have been categorised according to shape, and a rough typology has been established, based on previously recorded shapes (e.g. king and queen closers). The most unusual brick found, came from the floor course. It is shaped like a modern squint brick, and has the initials 'P' and 'I' rubbed on its upper face. A pebble was found in situ preserving the centre of the letter 'P'. Many other bricks contained imprints which appear to be straw markings and several have incised borders. The complete bricks range from the standard 9 by 4 by 2 inches to slightly shorter and narrower dimensions.

Few tiles were recovered, and most of them were incomplete. Of the thirty found, four were slate and twenty-six were ceramic. The latter showed scoring on some pieces, and one contained a paw print.

Generally, the 'galley' was composed of two fireboxes in an area 4.15 by 1.98 by 1.15 metres and symmetrically spanned the keelson. Each 'firebox' would have had fifteen courses, and each course measured .0765 metres (3 inches) in height including mortar, the same as modern brick courses. One firebox remained in situ, complete with a large copper cauldron. The other firebox had collapsed and its cauldron was found on the orlop deck immediately above the galley. One theory is that the fire was maintained from the hold and that the actual cooking and food preparation may have been done on the orlop deck above.

A preliminary study has been begun in an attempt to trace the sources of the bricks. It is assumed that they were made locally to Portsmouth, but direct references linking them to a known site have not been found.

The Mary Rose Trust has requested assistance from knowledgeable sources. Mr Martin Hammond has been asked to make a visit to view the finds, but the Hon. Secretary would like to hear from other members who feel that they might be able to assist in any way with the investigation.

Marx on Brickmaking. In Information 19, November 1979, 1-2 A.H. Stamp provided a salutary reminder, to those of us who are enthusiastic about brick, that the conditions of manufacture in the nineteenth century were often appalling, particularly when small children were employed. In Das Kapital, volume I (Penguin edition, trans. B.Fowkes, Harmondsworth, 1976, pp.593-4) Karl Marx writes of brickmaking as a 'classic example of over-work, of hard and unsuitable labour, and of its brutalizing effects on the worker from his childhood upwards...'. Whatever one's estimation of Marx's solution to these problems, his protest was both timely and moving and deserves to be read in full.

(TPS)

QUERIES



the Public Library), a curved block in Clifton Terrace, and the long block in St Peter Street. All the honey-coloured bricks are used for facing, the rears being in red brick, so presumably they were quite expensive. Some very similar bricks which have recently been examined in a terrace of houses in North Walls are stamped 'Cally Hill' or possibly 'Gally Hill', but attempts to trace their origin have so far been unsuccessful. It is possible that they came up the Itchen Navigation from Southampton, before the opening of the London and South Western Railway in 1839/40. Any information on the origin of these bricks will be gratefully received. Replies to: C.J.Webb, Chernocke Place, 35 Southgate Street, Winchester, Hants.

6

From W.J.Harris. Information on the following fire-bricks is requested. They are all found in New Zealand, and some at least of them may be British-made.

1. HURLL	9 by 4½ by 2½ inches	Pale brown speckled.
2. FORTH	9 by 4½ by 3 inches	Reddish brown speckled; rough.
3. ? HARRIS & PEARSON STOWRIDGE	9 by 4 by 2½ inches	Reddish cream; brand poorly impressed.
4. CUMBERNAULD	8¾ by 4½ by 2½ inches	Cream.
5. O SONS LEEDS WORTLEY	8½ by 3½ by 2½ inches	Black rough finish; brand partly visible
6. GARTCOSH	9 by 4½ by 2½ inches	Speckled red, brown, and black finish.
7. VULCAN F 19 (with Star)	9 by 4½ by 3 inches	Cream with dark speckles.

The majority of bricks imported into New Zealand from Britain would have been shipped in the period 1840-1880, prior to the mechanisation of the industry in New Zealand itself. (There are no publications available for reference in New Zealand, and so help is sought from the British end.) Replies to: W.J.Harris, 4A Cannon Hill Crescent, Christchurch 8, New Zealand.

7

From T.P.Smith. A recent publication (T.P.Smith, 'An Early Dated Example of Cavity-Wall Construction in the City of Canterbury', *Archaeologia Cantiana*, 98, 1982, 247-52) has drawn attention to an example of cavity-wall construction firmly dated by a date-plaque to as early as 1884. Since the record was made the building - Alexandra Terrace, Station Road East, Canterbury - has been demolished. I should be glad to hear of any other examples of firmly dated - or even approximately dated - examples of cavity-wall construction from such an early date. Dr Ronald Brunskill has already supplied an early example from Alderley Edge, Cheshire, and there may be many more. The use of stretcher bond in many late nineteenth-century houses in places like Portsmouth and Southampton is certainly suggestive, and there are similar examples (though fewer) in Canterbury and its environs too. Replies to: T.P.Smith, The School Flat, Dartford Grammar School for Boys, West Hill, Dartford, Kent, DA1 2HW.

HELP WANTED AT BEAMISH MUSEUM

Mr Roy Beech, the Industrial Cataloguer at the Beamish Museum has asked for help in dating a nineteenth-century brick colliery ventilating furnace cupola at the closed East Hetton Colliery near Kelloe, Co. Durham.

There is strong evidence that the upcast shaft was sunk in the mid-1830s. So far there is no contradictory evidence to show that brickwork in the shaft and the cupola are not of similar date.

Can any member give information (or a lead) which would enable dating the bricks of the cupola?

The bricks are of fireclay. They are brownish cream with a coarse grog and have an unusual face dimension of $15\frac{1}{2}$ by 4 inches. They were used in the cupola with a lime/ash mortar to give 'on average' 3 feet in height for every 8 courses.

A feature of the cupola is two flat faces from the bank out level (see accompanying drawing). These flat faces use profiled bricks at the corners as shown in the drawing.

In the late 1850s there were a number of colliery brickworks in the Durham area and some may have produced fire-clay bricks.

The Museum is keen to establish whether or not a date of 1836 is acceptable for this use of firebrick. There is circumstantial evidence to suggest this date, and definite evidence that the cupola was in existence by the 1880s.

URGENT!!!

A quick response to this inquiry would be appreciated since there is a possibility that the structure will be required for the Beam collection. Any members with helpful comments should contact Mr Beech direct: Mr Roy Beech, Beamish Open Air Museum, Stanley, Co. Durham, DH9 0RG.

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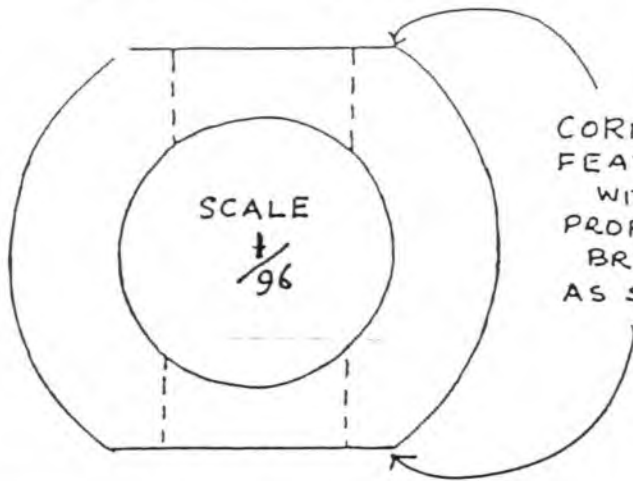
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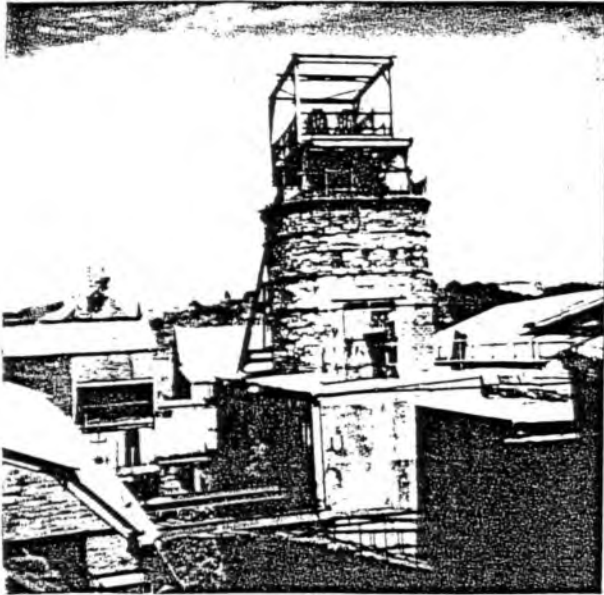
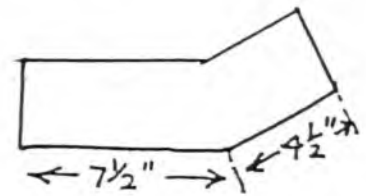
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BANK OUT LEVEL

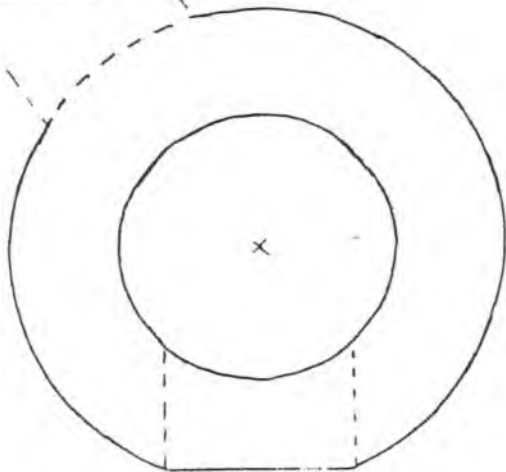


CORNER
FEATURE
WITH
PROFILED
BRICKS
AS SHOWN

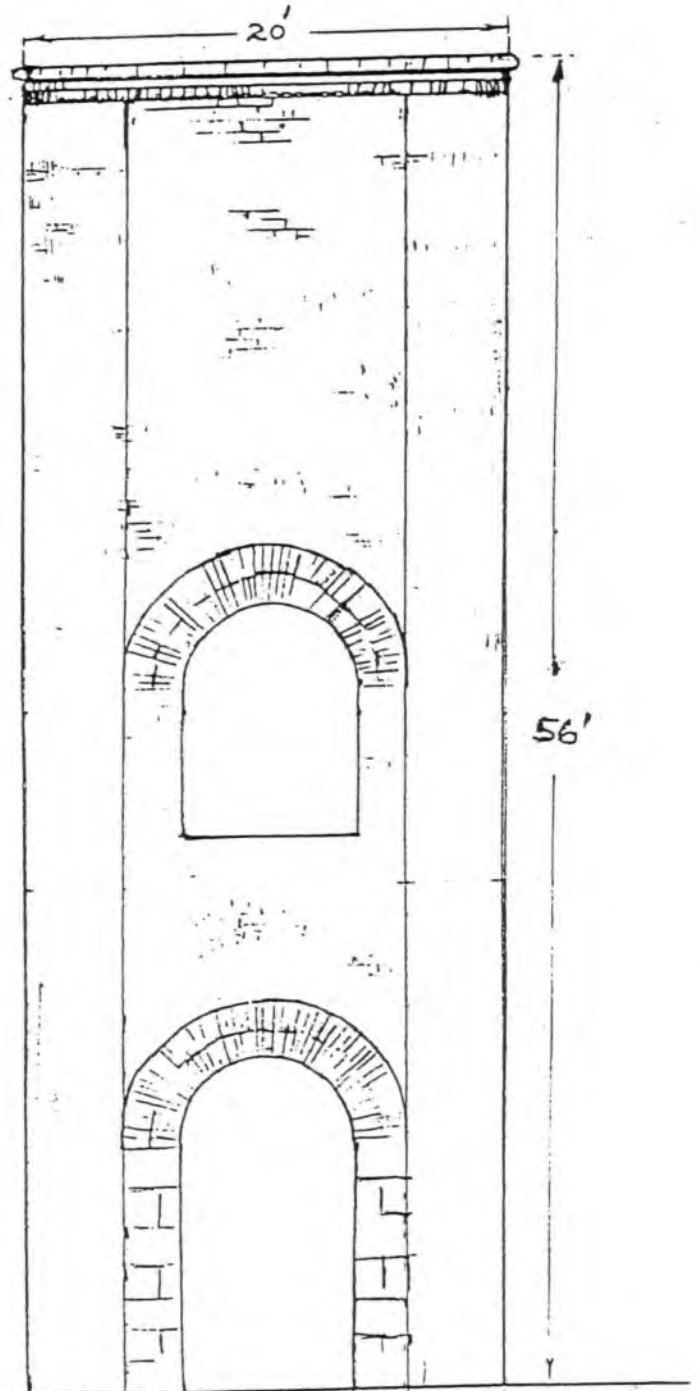
CORNER BRICKS
(PLAN)



LATER
FAN
DRIFT



GROUND LEVEL



SCALE 1/96

1" 8 FEET

CUPOLA - East Hetton Colliery