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COVER ILLUSTRATION: The Old Palace at Hatfield, Hertfordshire, built for John Morton, Bishop of Ely, in the 1480s and 1490s, from a print of 1832. The illustration shows the extensive and elaborate diaper patterning formed in darker bricks against the red brick background. The buttresses (except for those diagonally set against the angles of the porch) are later additions. Most of Morton's courtyard house was demolished when Hatfield House was built (1607-12); this wing survived and was used as a stable-block down to the early 20th century! This fine brick building was visited by members of the British Brick Society during its Autumn Meeting at Hatfield on 27 September 1997.

Editorial:

Wren's Hidden Masterpiece

This year has seen the celebration of the tercentenary of the consecration of St Paul's Cathedral. Started in 1675, the cathedral was furnished and ready for use by 1697, although not actually finished until 1711. It is pleasant to reflect that Sir Christopher Wren, its architect, lived long enough to see its completion, for he did not die until 1723, at the age of 91 - rare enough in the early 18th century. St Paul's, of course, is known and admired for its work in *stone*, although it also contains much structural brickwork, hidden away behind the stone facings. Also hidden from view, though visible to those who climb from the Whispering Gallery to the Lantern, is Wren's great masterpiece of engineering in brick.

Established as a scientist and mathematician even before he turned to architecture, Sir Christopher was regarded in his own day as a genius, and even when a young man he had been referred to by John Evelyn, in 1654, as 'that miracle of a youth, Mr Christopher Wren'. To his task at St Paul's he brought all his experience and knowledge as well as his fine-tuned artistic sense. That task involved both technical and aesthetic problems.

The technical problem was to place a dome over the large circular space at the centre of the cathedral. He solved it by providing *two* domes: high on its colonnaded drum is the tall outer dome, of lead-sheathed timber-work; inside is a shallow saucer-dome with a central oculus to let in the light. Between the two, and performing the actual structural work of supporting the Lantern and the outer dome, is a vast truncated cone of brickwork, its wall tapering in thickness from bottom to top.

This approach also solved the aesthetic problem, which arose from the fact that a dome as high as the outer dome of St Paul's, if viewed from within, would appear rather like a huge chimney: something shallower was required inside, and Wren provided this with his saucer-dome.

As a builder in brick, Wren is best known for his work at Fountain Court at Hampton Court Palace (1689-1702) and in some of the City churches, most tellingly perhaps at St Benet, Paul's Wharf (1677-83). St Paul's Cathedral will continue to be appreciated, and rightly so, for its stonework. But it is worth recalling too, in this tercentenary year, Wren's skilful and inspired engineering project in brick. By all accounts, Sir Christopher was not only a kindly but also a modest and reticent man, sparing of speech. It is appropriate, therefore, that this, his greatest work of structural engineering, should be masked from view - Wren's hidden masterpiece.

* * *

Once again, our regular editor, David Kennett, has been on the move. I was therefore asked to edit this issue of *Information* and it has been a pleasure to do so once again. I am sure that we all wish David well as his life takes a new direction.

TERENCE PAUL SMITH
 Chairman, British Brick Society
 Guest Editor

BRICKMAKING TERMS

A Collated List, mainly from South-East England

M.J.Crute

Introduction

In common with most people, I had very little knowledge of bricks or brickmaking when I became concerned with the history of a now defunct local brickworks. In an effort to understand the language of the industry, I started to list the various terms, where I was not familiar with them, as a reference guide. It soon became clear that this would not be a straightforward task, since many terms vary in usage from one area to another; other terms involve a corruption of or a change to the meaning of everyday words.

I was very pleased by the response to my query in *Information 62* and am most grateful. This encouraged me to produce a more comprehensive list, which began with just a few terms but soon lengthened as I consulted various works of reference. The resulting list of definitions, which sometimes collate those given in the sources, may perhaps be of use to others. Any comments or corrections will be gratefully received, as I hope to add to and correct the list as necessary.

The list is divided into: (i) general terms used in the manufacture of bricks, including their firing, and (ii) terms specifically connected with the clamp- or kiln-firing of bricks. Numbers in square brackets refer to the list of sources printed on p.11.

(i) Brickmaking Terms

<i>Ashes</i>	Incombustible residue from burning wood, coal, etc [13]
<i>Bat</i>	Deliberately snapped brick, either a half or a three-quarter bat (fig.1), for particular purposes in building [16]; broken, distorted, or otherwise unsaleable brick, used as <i>grog</i> (q.v.) or crushed for paths, etc [13]
<i>Berth</i>	Brickmaking shed or bench [6]
<i>Breeze</i>	Domestic ashes used as fuel [2]; cinders, etc which have passed through a 1-1½ inch mesh [6], the finer particles being known as <i>dust</i> (q.v.)
<i>Brickearth</i>	Clay used for brickmaking; soft surface deposits from which bricks are made - applies to Pleistocene clays of south-east England [3].
<i>Brickie</i>	Person who makes bricks; see also: <i>Crowder</i> , <i>Flattie</i> , <i>Moulder</i> , <i>Offbearer</i> ; a member of a brickmaking <i>gang</i> (q.v.)
<i>Birdsmouth</i>	Brick type - fig.1
<i>Bullnose</i>	Brick type - fig.1

Bullhead	Brick type, also called <i>cownose</i> - fig.2
Brindle	Brick made with red sand [14], discoloured with blue, brown, or grey spots or streaks
Burnover	Brick which has not burnt properly during firing and with unburnt fuel still in the brick [1,6]
Burr	Brick fused with another through serious overfiring, sometimes used for garden walls and rockeries; see also: <i>clinker</i> [1,5,6,9]
Callow	Soil covering the clay used for brickmaking; also called <i>overburden</i>
Cap	<i>Hack</i> (q.v.) cover [11]
Chalk	Natural calcium carbonate sometimes added to clay to reduce contraction before burning to improve chemical reaction [2]
Chuff	See <i>shuff</i>
Clay	A very fine-grained sedimentary rock, produced by the weathering and deposition of geologically older material [3]
Claypit	Pit formed when clay is dug from a site
Clinker	Partly melted brick [1] or fused material caused by serious overfiring [13]; see also: <i>burr</i>
Clot	Kneaded clay shaped roughly to the size of a brick, prior to being thrown into the mould [1,13]; also called a <i>warp</i> or <i>clod</i>
Coal	Fuel used in firing bricks
Common	Ordinary cheap brick [10]; underfired and soft red brick used for internal walls, where appearance is not important [5, 6, 8]; sometimes called <i>Third Stock</i>
Cownose	Brick type - fig 2 (also called <i>bullhead</i> - q.v.)
Cowl	Stack of bricks ready for firing [14]
Crowding	Stacking and arranging bricks in a clamp or kiln [6]
Cuckle	Tool used for handling pugged clay [3,13]; also called a <i>cuckhold</i> or <i>cuckold</i>
Curf	See <i>kerf</i>
Cutter	Soft brick used in gauged brickwork [1]
Dirt	Brickearth (q.v.) [11]
Dust	Domestic refuse added to some types of bricks [11]

- Earth - strong** The top 2-3 ft of clay - for red bricks
- mild** The lower 2-10 ft of clay with chalk in it - for stock bricks [6]; NB these terms vary from area to area

- Engineering Brick** Dense, uniform brick, impervious to water; has a high structural strength [8]

- Facing Brick** Brick with finished surface of uniform texture and colour, for use where good appearance is important [8]

- First Hard Stock** Well-fired brick with good shape and colour [6]; best stock brick

- Fire Hole** One of a series of small openings along the bottom of a kiln through which pass hot gases from the fire [3]

- Flash Off** Final stage of burning process to 'colour' the brick [6]

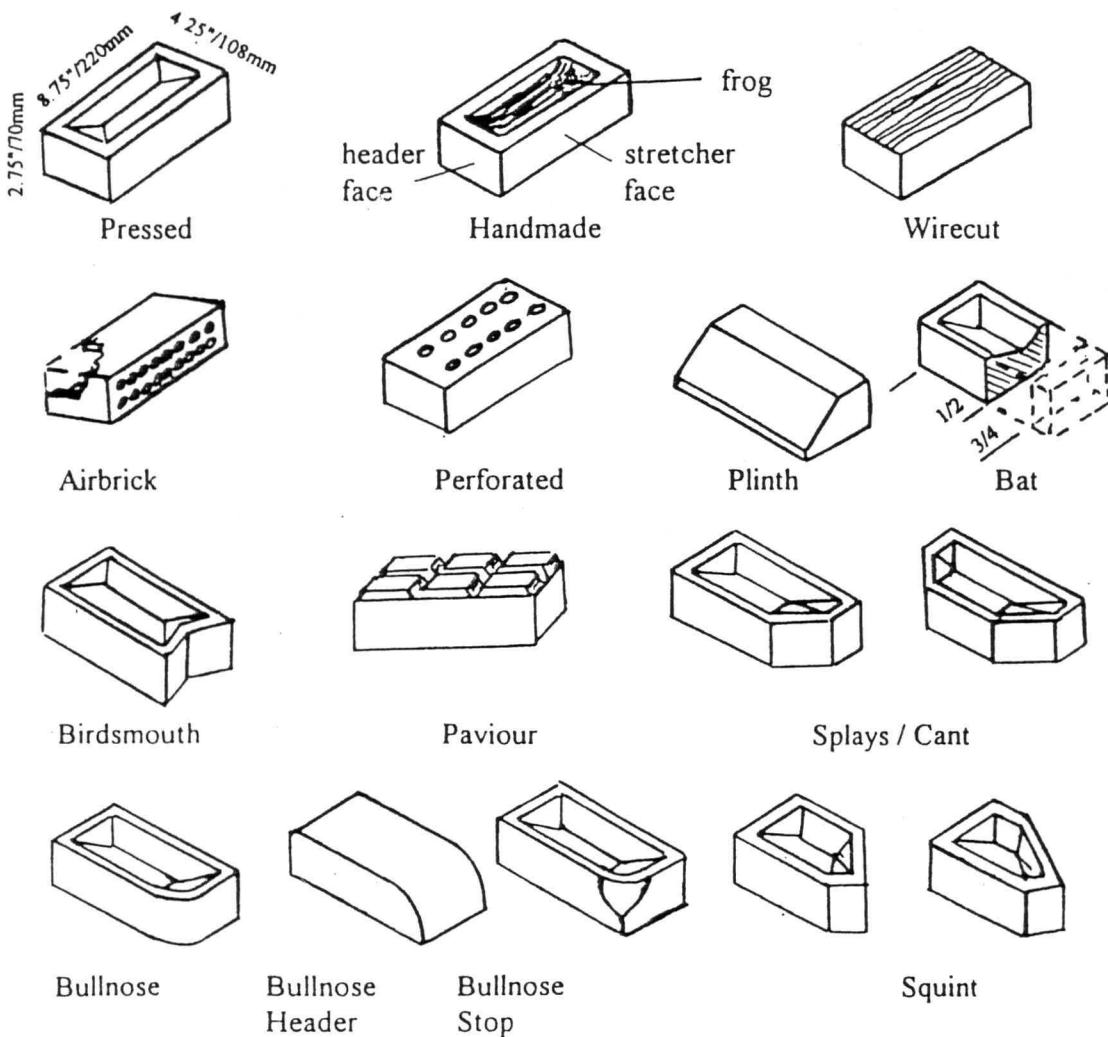


Fig.1

<i>Flattie</i>	Moulder's assistant who prepares the clay/clot (q.v.)[14]; a brick-moulder [6]
<i>Frog</i>	Indent in the upper bedface of a brick; the purpose is disputed but may be to reduce weight or to provide mortar keying [4,10,13]; occasionally in both bedfaces; not always provided
<i>Frost Action</i>	Repeated action of freezing and thawing of the clay, breaking it down into finer particles [3]
<i>Gang</i>	A team of (often six) brickmakers [14]
<i>Gauge Box</i>	Wooden tool used to shape softer bricks for gauged brickwork [7]
<i>Glazed Brick</i>	Brick with glassy surface, usually on one stretcher face and one header face, formed by application of salt glaze [10]
<i>Green Brick</i>	Unfired brick [3]
<i>Grey Stock</i>	Good quality brick, but of an irregular colour [1]
<i>Grizzle</i>	Tender brick with grey colour, used for inside work [2,11,13]
<i>Grog</i>	Fired clay used as an additive to reduce shrinkage [13]
<i>Hack</i>	A drying shed with long, low, open sides in which <i>green bricks</i> (q.v.) are dried; the roof protects the bricks from rain whilst the open sides permit circulation of air to aid in the drying process; the bricks are stacked eight courses high [3]
<i>Hack Barrow</i>	A long flat barrow with a single front wheel, used for carrying bricks from the moulder's bench to the drying <i>hack</i> (q.v.)[3,4]; holds 50-60 bricks [14]
<i>Handmade</i>	Applied to any brick moulded by hand, using a <i>stockboard</i> (q.v.)[10]
<i>Kerf</i>	Pile of clay c.3 ft high and 15 ft square, dug in winter [6]
<i>King Closer</i>	Brick type - fig.2
<i>Kiss</i>	Surface discoloration on the stretcher face of a brick caused by differential surface-firing resulting from the method of stacking in the kiln [10]
<i>Lee Board</i>	Protection boards for <i>hacks</i> (q.v.), laid along their sides; also called <i>lew</i> or <i>loo board</i> [5,6]
<i>Lime</i>	Sometimes used as an alkali in the water added to the clay
<i>Loam</i>	A mild, light, sandy type of clay [12]
<i>Machine-made</i>	<i>Pressed</i> - the clay is prepared (pugged), then fed into a mould and pressed to shape by machine, resulting in an accurate, uniform size and shape [8]

Wire-cut - the pugged clay is extruded through a die (oversize on the $9 \times 4\frac{1}{2}$ dimensions) as a slab, then cut into bricks, 3 inches thick, by wires, usually about five at a time; there is no frog unless the bricks are repressed to form one [8]

Marl

A mixture of clay and chalk or limestone [13]

Marm/Malm

An almost perfect stock brick (yellow in colour)[1,6] produced from a natural mixture of clay and chalk, which is ideal for brickmaking without the addition of any other material [1,2]

Mild Stock

Slightly underburnt brick, but with a good colour [6]

Moulder

The person who makes the bricks and is responsible for building and firing the kiln; also called a *setter* [6]

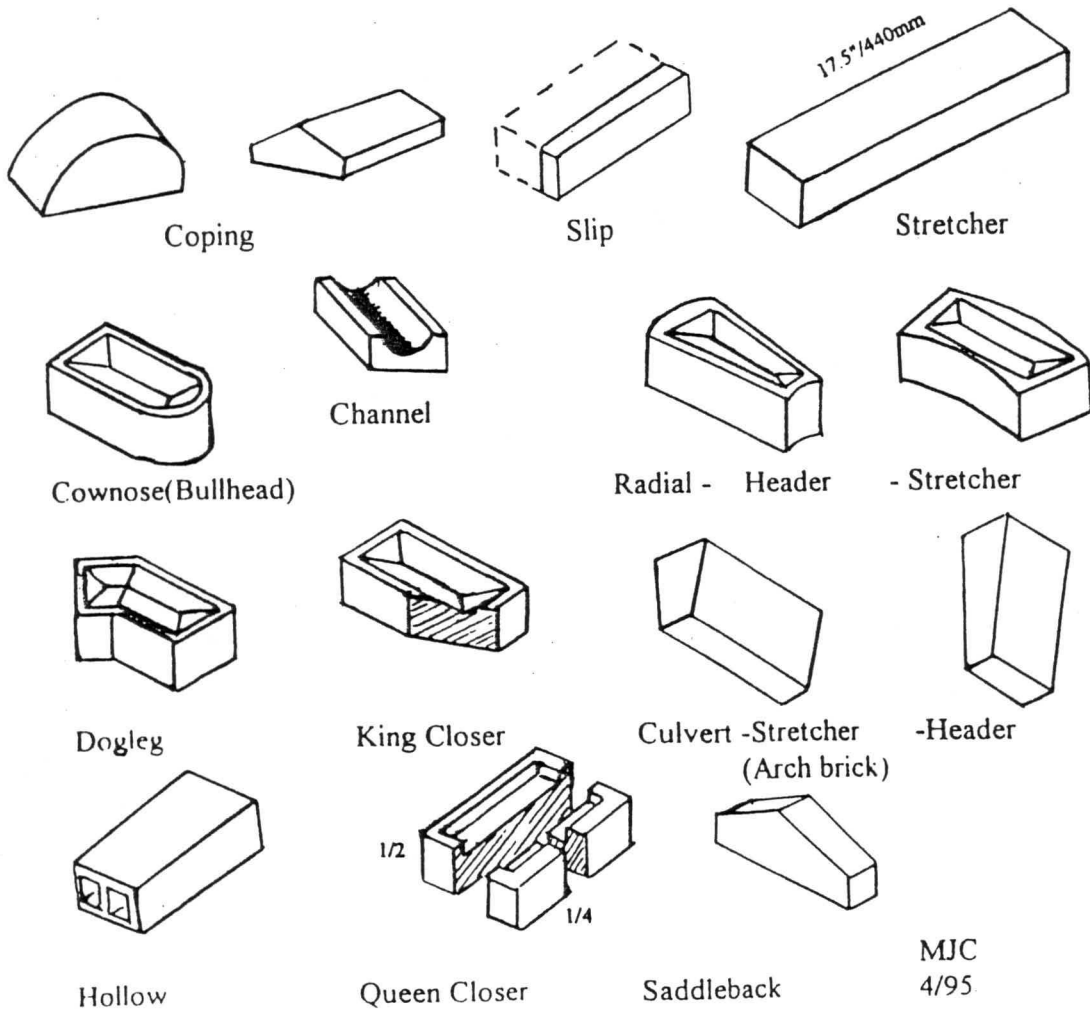


Fig.2

<i>Mould</i>	Frame/pattern used to shape bricks [2]
<i>Offbearer</i>	Person (often a woman or child in traditional brickmaking) who takes the newly moulded bricks from the moulder's bench to the <i>hack</i> (q.v.) [6] using an offbearing or <i>hack barrow</i> (q.v.); also known as a <i>pusher-out</i> or <i>bearer-off</i> [14]
<i>Pallet Board</i>	Wooden board on which the newly moulded brick is placed after demoulding [4]; sometimes called simply the <i>pallet</i>
<i>Paviour</i>	An excellent brick in shape, colour, and strength [1], used for paving - fig.1
<i>Paving Brick</i>	A high quality brick, hard and with low water absorption, used for paving, paths, and steps
<i>Picking</i>	Good quality brick but soft and inferior to the best sort of paviour, underburnt from the clamp [1,13]
<i>Place Brick</i>	Slightly underburnt brick from the clamp, used for inside work; the brick is often 'soft' inside; a low-grade brick [1,13]
<i>Platter</i>	Household waste used as <i>roughstuff</i> (q.v.), consisting principally of broken crockery and glass
<i>Plinth brick</i>	Brick type - fig.1
<i>Pressed Brick</i>	See <i>Machine-made</i>
<i>Pugged Clay</i>	Worked (wet) clay, prepared ready to make bricks; sometimes called simply <i>pug</i> [3]
<i>Pug Mill</i>	Cylindrical mixing machine (c.6 ft long × 3 ft wide) set horizontally or vertically, with rotating blades to churn the clay and any additives (such as chalk or ash) until the correct consistency for brickmaking is achieved [3]
<i>Queen Closer</i>	Brick type - fig.2
<i>Range</i>	A line of brickmaking <i>berths</i> (q.v.) [14]
<i>Red Brick</i>	Fired clay brick, red colour derived from iron oxide in the clay, without additives
<i>Rough Stock</i>	Brick of a rough shape and colour, overburnt, and hard; also called a <i>Third Stock</i> (q.v.) [1,13]
<i>Roughstuff</i>	Domestic refuse used as fuel after sieving and grading [6]
<i>Rubber</i>	Soft brick specially made to be cut and rubbed to shape in gauged brickwork [7]
<i>Rubble</i>	Rough broken pieces of brick
<i>Saddleback</i>	Brick type, used for coping - fig.2
<i>Sand</i>	Natural silica material used to coat the mould to prevent the

clay sticking to it; also to stop the bricks from sticking to each other [7]; also used to reduce the plasticity of the clay [12]

<i>Sand-faced</i>	Brick made with one stretcher and one header face as rough textured finish [10]
<i>Sand-lime Brick</i>	Brick made using sand and slaked lime, not clay, [10]; also called a <i>calcium silicate brick</i>
<i>Setter</i>	See <i>moulder</i>
<i>Setting</i>	Arranging the bricks in the kiln for firing
<i>Second Stock</i>	Second quality stock brick - a good quality brick, probably the most common [1,6]
<i>Shale</i>	A hard layer of compacted clay formed like rock [3]
<i>Shipper</i>	Perfect stock brick [6]
<i>Shuff</i>	An unsound brick of low strength [1,13]
<i>Skintling</i>	The herringbone placing of bricks for drying, arranged when the bricks are half dry; the spacing allows air to pass freely between the bricks; also spelled <i>scintling</i> [6,9,15]
<i>Smoking</i>	Preheating of bricks prior to firing [6]
<i>Soil</i>	Finest breeze or roughstuff (q.v.) which is mixed with the clay for making stock bricks; material which has passed through a $\frac{3}{8}$ -inch mesh [2,6]
<i>Special</i>	Non-standard shaped brick made for special purpose [3]; specially selected or picked brick [14]
<i>Splay</i>	Brick type - fig.1
<i>Squint</i>	Brick type - fig.1
<i>Stock board</i>	Board with a negative (the <i>kick</i>) of the <i>frog</i> (q.v.), fixed to the moulding bench to locate the mould [4]
<i>Stock Brick</i>	Clay brick containing combustible material which enables it to burn in the kiln without added fuel, or average quality, made using a <i>stock board</i> (q.v.) and <i>mould</i> (q.v.) [6,13]
<i>Stretcher</i>	Brick type - fig.2
<i>Strike</i>	Wooden blade used to scrape the surface of the newly moulded brick whilst still in the mould in order to remove excess clay [3]
<i>Stripping</i>	Dismantling a clamp or emptying a kiln [14]
<i>Tempering</i>	Process used to work the clay to an even consistency by adding water and working by hand [1]

<i>Third Stock</i>	See <i>common</i>
<i>Trimmers</i>	<i>Breeze</i> or <i>roughstuff</i> (q.v.) which has passed through a $\frac{1}{2}$ -inch mesh [6]
<i>Warp</i>	See <i>clot</i> [3]
<i>Wire-cut</i>	See <i>machine-made</i>
<i>Washback</i>	A clay reservoir [14]
<i>Washed Stock</i>	Most commonly used <i>stock brick</i> (q.v.), hand moulded, usually yellow and of low quality [1,13]
<i>Yellow Brick</i>	<i>Stock brick</i> (q.v.), the colour caused by the presence of chalk in the clay mixture [13]

(ii) Brick Firing

<i>Clamp</i>	A method of firing bricks without a permanent structure (<i>kiln</i> - q.v.), the unfired bricks being stacked on top of the fuel, with additional fuel placed between them as the clamp is built. The construction is then surrounded and covered by burnt bricks and the clamp is lit from both ends. It takes several weeks for the complete firing of the bricks. Approximate size = 30 ft (10 m) square \times 10 ft (3 m) high.
<i>Kiln</i>	A chamber or series of chambers in which bricks are fired by furnace heat; a permanent structure.
<i>Intermittent types</i>	Kilns in which the fire is lit only when the chamber is full of bricks.
<i>Updraught type</i>	Usually a rectangular structure. A kiln in which the fire gases enter at the bottom of the chamber and rise up through the contents and out through the top. Approximate size = 26 ft (8 m) long \times 15 ft (5 m) wide \times 12 ft (4 m) high. Approximate firing time = 8 days.
<i>Downdraught type</i>	Rectangular or, more usually, circular structure. Fireholes in the sidewalls feed the gases up to the roof of the kiln; they then flow down through the contents, leaving the kiln via flues in the floor, which connect with a chimney. Approximate firing time = 10 days. Approximate size = 36 ft (12 m) long \times 28 ft (9 m) wide or 36 ft (12 m) diameter; 12 ft (4 m) high.
<i>Scotch Kiln</i>	(Updraught) A permanent structure with holes at each side which become tunnels as the kiln is filled with bricks; this allows the fire to build up in intensity. The top of the kiln is covered with bricks or boards as weather protection. Approximate firing time = 3-5 days. Approximate size = 30 ft (10 m) long \times 10 ft (3 m) wide \times 12 ft (4 m) high.

- Continuous types* Kilns in which the fire is kept permanently alight.
- Hoffmann Kiln* Two rows of chambers, parallel and connected together by openings; the firing is moved from one chamber to the next in sequence. Fuel is fed through holes in the roof, with chambers filled with and emptied of bricks as the fire passes, thus making the process continuous. (Early examples were circular.) Approximate chamber size = 20 ft (6 m) long × 12 ft (4 m) wide × 12 ft (4 m) high; usually eight chambers per side, making a kiln of 40 ft (13 m) × 96 ft (32 m). There is a ten-day cycle of heating and cooling.

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FOLLOWING THE YELLOW BRICK ROAD: The Bricks from Whippingham, I.O.W.

Terence Paul Smith

Information 71 contained a query from Mrs J.Reilly concerning some small buff-yellow bricks found in the churchyard wall at Whippingham, I.O.W., and measuring $6 \times 3 \times 1\frac{1}{2}$ - $1\frac{3}{8}$ inches (= $152 \times 76 \times 38$ - 41 mm).¹ Included in the query was advice that Mrs Reilly had been given that the bricks were of the period 1200-1250. This is really rather surprising counsel. Quite apart from the fact that her description suggests something entirely different, it would be hard to find parallels for such bricks in 13th-century England. There are indeed *some* early yellow bricks in England, although they are larger than those mentioned in the query. Those in the Beauchamp Tower at the Tower of London (completed in 1281), for example, measure $250 \times 120 \times 60$ mm and are dull pink to greenish yellow in colour.² The 14th-century yellow bricks at Horne's Place Chapel, Appledore, Kent measure $200 \times 100 \times 50$ mm; those at Grench Manor, Gillingham, also in Kent and probably of late 14th-century date, measure 215×90 - 102×50 mm in the chapel and 203 - 215×95 - 102×45 - 50 mm in the other building.

Through the kindness of Mrs Reilly, I have now been able to examine samples of the Whippingham bricks and the following observations may be of some value, if only in preventing others from being misled into thinking that early 13th-century bricks have been discovered on the Isle of Wight - which indeed would be an intriguing, though a most unexpected, discovery.

The bricks, as I suspected from Mrs Reilly's accurate description, are, in fact, small Dutch bricks of the sort sometimes mistakenly called 'clinkers', a transliteration of the Dutch *klinkers* (or *klinkaerts* and other variations of the word). *Klinker* actually refers to something different, and these small bricks are more properly termed IJssel-bricks or Gouda-bricks (Dutch *IJsselstenen*, *Goudse-stenen*), the names reflecting the area in which they were first made in the Netherlands - viz. along the River IJssel, and especially in the area of Gouda, in the province of Holland - although later they were also made elsewhere, for example around Dordrecht.³ They were first made in the middle of the 15th century, although it was not until the early to mid-17th century that they became part of fairly regular trade to England, probably for reasons internal to the Dutch economy at that time but which need not be gone into here. Sometimes spoken of as 'ballast',⁴ they were normally, in fact, proper cargoes exported and sold in order to realise a profit.

They were also exported to Scandinavia, to the Channel Islands (members who attended the 1997 AGM will recall a display of some from Jersey), and even to America - the houses of Rip Van Winkle's Catskill Mountains village, built in the time of Pieter Stuyvesant (governor of New Netherland 1647-64), were 'of small yellow bricks brought from Holland ...'.⁵ They continued to be imported into eastern and southern England down to the late 18th or early 19th century. They were quite often used in London and are a fairly common find in archaeological excavations there.⁶

They were manufactured from dredged-up river mud, and it is

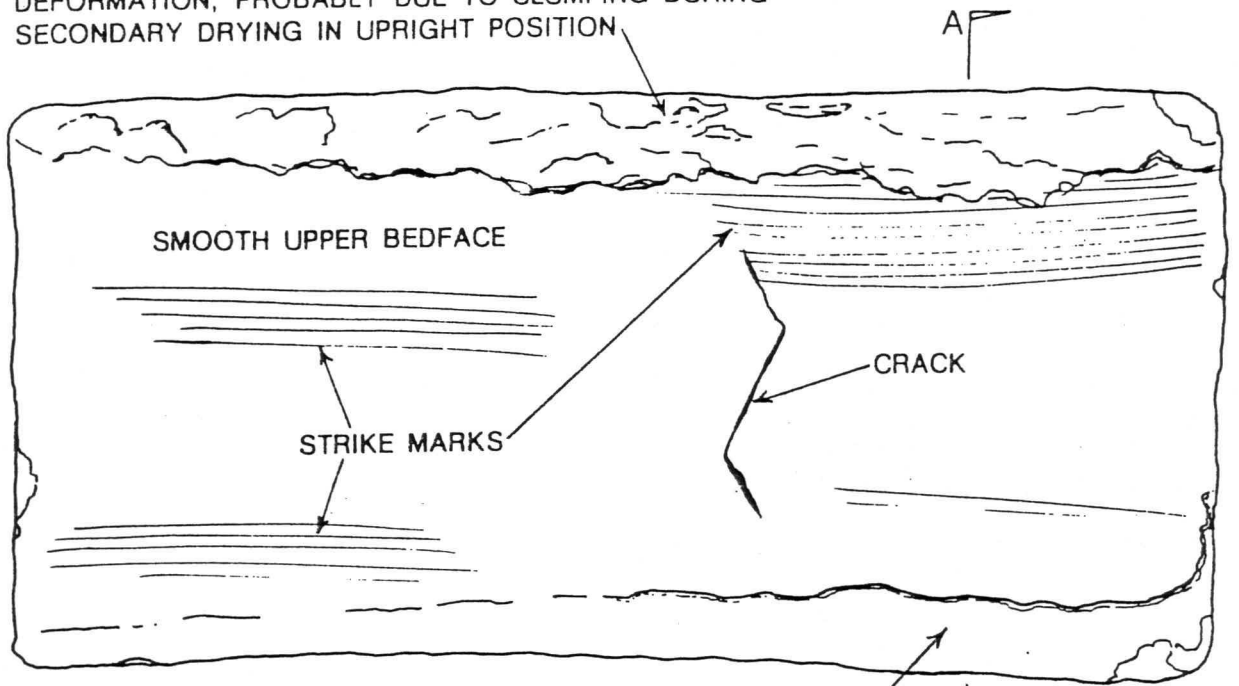
this that determines their particular characteristics (fig.1). The yellow-buff colour comes from the presence of tiny organisms in the river mud, providing a high lime content, and indeed in some bricks, including at least one of the samples sent me by Mrs Reilly, small fragments of crushed shell are present. There are some colour variations: bricks placed at the top of the clamp (the 'top-bricks'; Dutch *bovenstenen*) were underfired and had a reddish hue, and some of those from Whippingham were fairly soft and pale orange in colour; those which were overfired, on the other hand, became grey or green, and some of the bricks from Whippingham showed this, although in most cases the green coloration was due to lichen on the surface! The use of river mud also accounts for the hard, dense texture, free of inclusions. The nature of the raw material meant that bricks of normal size would slump under their own weight during drying, so that bricks of small format were made. The soft raw material also necessitated laying the bricks flat for initial drying; even so, they sometimes slumped somewhat, resulting in bricks which are slightly deformed in shape, as were several from Whippingham. The bricks would have been carried to the drying-ground (the 'place'; Dutch uses the equivalent word: *plaats*) still in the mould by the 'bearer-off' (Dutch *afdrager*), usually a woman or child.⁷ Irregularities, including grass or straw marks, on the lower bedface arise from this initial flat laying-out. Only later, after a period of initial drying, were the bricks firm enough to be turned on edge for further drying; one of the samples sent me by Mrs Reilly was deformed in such a way as to suggest that it had been turned on edge too soon (see fig.1). Sometimes too the bricks deformed, cracked, or even vitrified during firing.

Sunken margins are common, and have been observed on some of the bricks from Whippingham. There have been several suggested explanations for sunken margins, but there can now be no reasonable doubt that that proposed by Ian Betts is the correct one: when the bricks were demoulded, small 'lips' were pulled up along one or more edges of the upper bedfaces, and these were simply pushed down using the bottom edges of the wooden mould itself, thus unintentionally forming the sunken margins,⁸ although this would have been done by the bearer-off at the 'place', not by the moulder at his bench.

In the Netherlands, the dense nature of these bricks made them especially suitable for paving, and they were much used for that purpose, sometimes combined with red bricks to create patterns.⁹ On a visit to Amsterdam in 1641, John Evelyn was impressed by such paving, although, curiously, he misunderstood the nature of the bricks and described them as 'a kind of White sun-bak'd brick'.¹⁰ They were also used in the Netherlands for chimneys and flues and, because of their light weight, for vaulting.

In England too their principal use was for paving, for which purpose they were normally laid on edge, often in a herringbone arrangement. Their hardness and resistance to water and frost made them especially suitable for stableyards,¹¹ although some considered them to be 'too hot for the horses' feet!'¹² 'They are also used,' wrote Joseph Moxon at the very end of the 17th century, 'in Soap-boilers Fats [sc. vats], and in making of Cisterns'.¹³ Occasionally, though not often, they were used for the walls of buildings.¹⁴ It is interesting to find them used (in English Bond) in the churchyard wall at Whippingham.

DEFORMATION, PROBABLY DUE TO SLUMPING DURING SECONDARY DRYING IN UPRIGHT POSITION



SUNKEN MARGIN

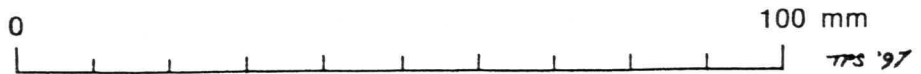
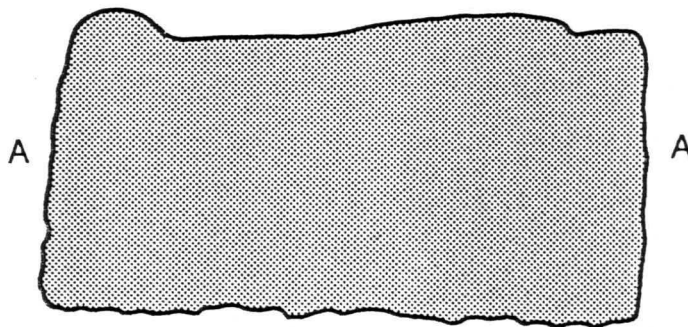
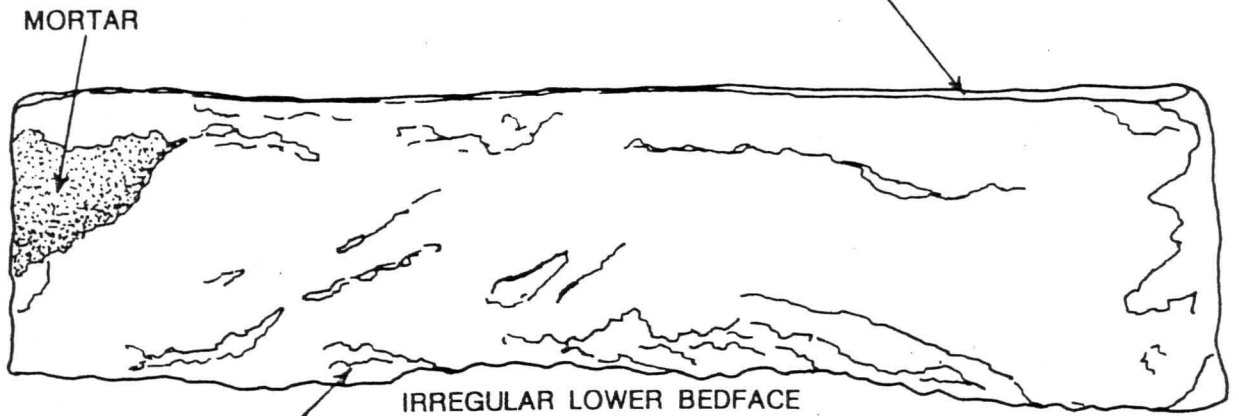


Fig.1: One of the Dutch bricks from Whippingham, I.O.W., showing its various features

Notes and References

1. J.Reilly, 'Bricks from Whippingham, Isle of Wight', *BBS Information*, 71, June 1997, 18; other details come from Jill Reilly, pers.comm., and from my own examination, including microscopic examination (×10), of samples sent me by Mrs Reilly.
2. D.F.Renn, 'Early Brickwork in the Tower of London', *BBS Information*, 29, February 1983, 7; for other medieval yellow bricks, all of the larger size: P.Ryan, *Brick in Essex from the Roman Conquest to the Reformation*, Chelmsford, 1996, pp.31-6; details of the Kentish bricks mentioned in my text are based on personal observation.
3. Historical and other details of the Dutch bricks are taken from J.Hollestelle, *De steenbakkerij in de Nederlanden tot omstreeks 1560*, 2nd edn, Arnhem, 1976, pp.121-4; see also P. van Balen, 'Steenbakkerijen van de Hollandsche IJssel', *Bijdragen van de Oudheidkundige Kring 'Die Goude'*, 6, 1949, 13-17; T.P.Smith, 'On "... small yellow bricks ... from Holland"', in preparation.
4. E.g. A.Clifton-Taylor, *The Pattern of English Building*, 4th edition, ed. J.Simmons, London, 1987, p.235.
5. W. Irving, *Rip Van Winkle and Other Stories*, Puffin edition, Harmondsworth, 1994, p.4.
6. Personal observation as part of my duties with the Museum of London Archaeology Service and discussion with Ian M. Betts.
7. A drawing by A.G.A. van Rappard in the Rijksmuseum at Amsterdam shows a young girl returning from the *plaats* with an empty brickmould (of normal size): G.B.Janssen, *Baksteenfabricage in Nederland 1850-1920*, Arnhem and Zutphen, 1987, p.56, fig.5.
8. I.M.Betts, 'New Thoughts on Bricks with Sunken Margins', *BBS Information*, 68, July 1996, 6-10; the small Dutch bricks are specifically mentioned at 7; after the 1997 AGM Martin Hammond gave a convincing practical demonstration of Betts' method.
9. See, e.g., A.F.E.Kip, 'Kromme Nieuwe Gracht 43', *Archeologische en Bouwhistorische Kroniek van de Gemeente Utrecht 1985*, 1986, 171-2.
10. J.Bowle, ed., *The Diary of John Evelyn*, Oxford, 1983, pp.22-3.
11. J.Moxon, *Mechanick Exercises: or the Doctrine of Handy-Works*, London, 1700, p.2; cf. *OED*, sub 'clinker 1'.
12. J.Gwilt, *An Encyclopaedia of Architecture...*, new edition, ed. W.Papworth, London, 1867, p.526, §1828.
13. Moxon, 1700, p.2; repeated without acknowledgement in R.Neve, *The City and County Purchaser and Builder's Dictionary*, 2nd edn, London, 1726, re-issued Newton Abbot, 1969, p.40.
14. N.Lloyd, *A History of English Brickwork...*, London, 1925, re-issued Woodbridge, 1983, pp.14-15, gives examples.

BOOK NOTICE

Ian Betts, Ernest W. Black, and John Gower, *A Corpus of Relief-Patterned Tiles in Roman Britain*, *Journal of Roman Pottery Studies*, 7, 1994 [1997], x + 167 pp., numerous illustrations, paperbound, ISBN: 1 900188 25 2, [£15-00]

In devoting a whole issue to this single important work, the *Journal of Roman Pottery Studies* has done good service to archaeologists working in the area of Romano-British building ceramics. Developing the pioneer work of the late A.W.G.Lowther, this is a collaborative venture: as well as the three principal authors, others are mentioned on the title-page as having made contributions or having helped with the illustrations. The main feature of the work is its catalogue, in which every known die-pattern is illustrated at a standard scale of 1:2 and using consistent drawing conventions. Information relevant to each die is given in a uniform manner. The main catalogue covers all material known to the authors down to the end of 1990, whilst an appendix gives additional data down to the end of 1993.

The relief patterns were applied using a wooden roller with the design carved into it in negative. This enabled a continuous repeating pattern to be applied without breaks and also avoided possible problems of suction which might have been encountered with a flat stamp; practical experiment has shown that this is certainly the case with patterns applied to walls of wattle-and-daub.

It was to such walling that roller dies were first applied, but the method was then taken over for ceramic building materials, as an alternative to forming mortar- or plaster-keying by scoring or combing. The dies were most frequently (though not exclusively) applied to building units intended for heating-systems: flue-tiles of various sorts, voussoir-tiles used in the vaults over bath-houses, and flat wall-tiles.

The most common patterns are, as is to be expected, fairly simple designs of squares, herringbone arrangements, and lozenges, although some are more elaborate (such as the hunting scene on die 6) and some too incorporate lettering (e.g. die 31) - somewhat surprisingly in view of the fact that they were intended to be covered with mortar or plaster.

In their introductory sections, the authors deal with various issues, such as provenance, dating, and distribution, establishing a number of conclusions, but always with a healthy caution. Fabric types are also dealt with, for the value of microscopic examination of these is becoming more and more apparent. Outstanding problems, which future research will doubtless help to solve, are also considered. But already this publication has added greatly to our knowledge of manufacturing methods and to our understanding of the quite complex organisation of the Romano-British ceramic building materials industry. There is a comprehensive bibliography.

The authors are to be congratulated on, and indeed thanked for, their efforts in preparing and presenting this excellent study and catalogue. Copies may be obtained from: Oxbow Books, Park End Place, Oxford OX1 1HN (telephone: 01865 241249); or: The David Brown Book Company, PO Box 511, Oakville, CT 06779, USA (telephone: 860 945 9329).

T.P.SMITH

BOOK NOTICE

Terry Knight, *Creative Brickwork*, London: Arnold, 1997, x + 117 pp., numerous illustrations, many in colour, paperbound, ISBN: 0 340 67643 4, no price stated

R.W.Brunskill, *Brick Building in Britain*, London: Victor Gollancz, 1997, 208 pp., numerous illustrations, paperbound, ISBN: 0 575 06535 4, £16-99

It was a great pleasure earlier this year to receive a copy of *Creative Brickwork*, written by BBS member Terry Knight on behalf of the Brick Development Association. He begins with a succinct historical outline of brickwork in Britain and ends with chapters on site practice, weathering of brickwork, and brick manufacture. These are all of interest, but the most valuable part of the book, and certainly the most stimulating, is its central section, in which Terry Knight discusses the various characteristics of individual bricks - size, colour, texture, shape, and so forth - and of brickwork - bonding, use of coloured and shaped bricks, combination with other materials, and so on. Brick sculpture and the use of brick for paving are also considered. What most strikingly emerges from this study is the great versatility of the material and the rich repertoire available to those who use it. Terry Knight's affection for the material is evident throughout, and to the task of writing this book he has brought a long practical experience and a wide knowledge.

The illustrations are of a high quality, whether photographs or line drawings in characteristic BDA style. Best of all is the series of 73 colour photographs, some of historical buildings, others of very recent structures. All again are of the finest quality, and admirably complement the text.

There is a useful glossary, a short bibliography, and an index. Primarily aimed at those directly involved with brick buildings, whether as architects, builders, or clients, this clearly written and attractively produced book will be of value to anyone interested in the subject of brickwork in Britain.

The hardback edition of BBS member Ron Brunskill's book was published in 1990, and was reviewed in these pages (*Information*, 50, October 1990, 17-19). For this paperback edition a few corrections have been made to the text and the bibliography has been augmented with items mainly published since 1990; it is gratifying to see a number of articles from *Information* once again included. In order, presumably, to save on costs, the colour plates of the hardback edition have been omitted. It is pleasing to welcome this paperback edition of what must now be regarded as the standard introduction to the history of English brickwork.

We can readily concur with the view expressed by Ron Brunskill at the end of his introductory chapter: 'No excuse ... seems necessary for a book which is designed to aid the observation of good brick buildings of every period and to stimulate, it is hoped, an even greater appreciation of them.' The comment applies to both the books noticed in this section.

T.P.SMITH

BRICK QUERIES

?????

1. Gerry Kelsey, Head Gardener at Arundel Castle, is looking for sources of secondhand bricks to match those of a brick greenhouse at the castle. The bricks are yellow and of imperial dimensions, and are quite large. The building is about 200 years old. He has contemplated using new bricks, but they would look too new, so he is looking for secondhand bricks already weathered: *Gerry Kelsey, Screenings Cottage, 4 Chichester Road, Arundel, West Sussex, BN18 0AG; telephone: 01903 883774 (evenings).*

2. Alan Hatfield of Australia is looking for ideas on how to display his collection of bricks and would be grateful for any suggestions: *Alan Hatfield, 47 Eddy Crescent, Florey 2615, Australia; telephone: 02 6258 7663; fax: 02 6258 7680; e-mail: alanhat@ozemail.com.au.* Alternatively, suggestions may be sent to Sandra Garside-Neville, who will collect suggestions and e-mail them at a later date: *Sandra Garside-Neville, Brick and Tile Services, 63 Wilton Rise, York, YO2 4BT; telephone: 01904 433955; fax: 01904 433939; home telephone: 01904 621339.*

3. Restoration work has begun on the late medieval timber-framed house at Manor Farm, Stockton, Norfolk, which was extended and cased in brick in the 18th and 19th centuries. One wall was rebuilt using bricks which showed that they had been skintled, for drying, in a parallel rather than in a diagonal arrangement. In a Norfolk context, this implies that they date from the 1780s or later: see Elizabeth James' note in K.Faithfull and E.James, 'Brick Terminology', *BBS Information*, 64, February 1995, 4-6. The bricks have frogs in the form of a latter, in some cases G, in others P, and in others H. These have not been noted hitherto in Norfolk buildings examined by Norfolk Landscape Archaeology, and any information on them would be welcome: *Edwin J. Rose, Norfolk Landscape Archaeology, Union House, Gressenhall, Dereham, Norfolk, NR20 4DR; telephone: 01362 861187; fax: 01362 860951.*

4. Marilyn Shaw-Guisset of Canada is attempting to research material on a master brickmaker by the name of Francis William Stoner, who was born in 1837 and died in 1885, and was described as a master brickmaker in 1865. His professional career took him to the counties of Surrey (Lambeth) and Middlesex (Hillingdon and Mayfair). His father was a carpenter and his son an architect and engineer. These professions/trades may have been handed down from one generation to another. Any information concerning the location of material on this matter would be gratefully received: *Marilyn Shaw-Guisset, BComm,, FIIC, 28 John Street, Moncton, New Brunswick, Canada, E1C 2GB; e-mail: guissem@umoncton.ca.*

Responses to queries may be sent direct to the inquirer or, where appropriate, may be submitted as items or articles for future issues of *Information*.

BRICK BATS!

In this section are included a number of shorter items, not long enough to constitute full articles. Such items are always welcome for inclusion in these pages: *Information is for information!*

HIGH HOUSE, WEST ACRE, NORFOLK

The earliest phase of the present magnificent and important mansion dates from around 1726-56. Survey of the park by Brian Cushion as part of the Norfolk Earthworks Survey identified what appeared to be the remains of two brick kilns set in hollows, one of which has a rectangular extension. The actual kiln sites are represented by hollow, oval earthworks. Low and narrow parallel ridges nearby may represent drying racks. A lease in the Birkbeck Papers of 1763 for part of the park mentions land 'except the brick and lime kilns', which seems to refer to this site. The kilns have been damaged by grazing animals but will now be fenced to prevent this. No funds are at present available for excavation.

EDWIN J. ROSE

SOUTHWICK HALL BRICK COLLECTION, NORTHAMPTONSHIRE

I was visiting Southwick Hall, near Oundle in Northamptonshire recently and saw in their 'Bygones' museum a quite large collection (perhaps 200-300) of bricks. They were mostly local Fletton types, including many from the obsolete brickworks of the area; but other local bricks were also included, with some said to have been made for 'one-off' jobs. Other members of BBS may be interested in this collection.

WILFRED COURT

SKINTLED LONDON STOCKS AT LEVER STREET, ISLINGTON, LONDON

M.J.Crute's article in this issue includes the term 'skintling' (or 'scintling'), referring to the arrangement of the green bricks for drying; the matter is also referred to in Edwin J. Rose's query (number 3, above). If the bricks were too soft then one would press into another, leaving distinctive pressure marks in stretcher faces. These may take various forms. In Norfolk, as Edwin Rose mentions, the changeover from diagonal pressure marks to 'horizontal' pressure marks occurs around 1780: see also Elizabeth James' note in K.Faithfull and E.James, 'Brick Terminology', *BBS Information*, 64, February 1995, 5-6. In Essex, Pat Ryan has observed that diagonal pressure marks are more common on 17th- and 18th-century bricks and 'horizontal' pressure marks are more common on 19th-century bricks: P.Ryan, *Brick in Essex from the Roman Conquest to the Reformation*, Chelmsford, 1996, p.92. In London, diagonal pressure marks are sometimes seen in earlier bricks, for example on some of those in Wren's church of St Benet, Paul's Wharf (1677-83); later, transverse or parallel pressure marks are more common; the period of changeover was probably during the 18th century. Some London Stocks (mostly manufactured in north Kent and south Essex), however, show *both* forms of pressure mark, indicating that the bricks were stacked first in one arrangement and then in another. In favourable

circumstances it will be possible to deduce the correct sequence since one impression will have partly obliterated another. Some of the London Stocks in the Ironmonger Row wall of a warehouse site at 115 Lever Street, Islington, London EC1, for example, show clearly that they were first arranged in a lengthwise setting and subsequently re-arranged in a diagonal setting. This agrees with accounts of brickmaking in which the bricks were skintled (that is, re-arranged) after a period of initial drying; the re-arrangement was always in a more open setting - not possible before the bricks had hardened to a certain degree - and allowed more air to reach the bricks (see, e.g., R-H.Perks, *George Bargebrick Esquire*, Rainham [Kent], 1981, p.29).

TERENCE PAUL SMITH

BRITISH BRICK SOCIETY IN 1998

Preliminary and provisional details of the Society's 1998 programme of meetings are:

Spring Meeting

Provisionally Saturday 9 May 1998, but date to be confirmed. Visit Williamson Cliff Ltd brickworks at Little Casterton, near Stamford, Lincs. This brickworks is responsible for bricks used in new and restoration work at Oxford and Cambridge colleges.

Northern Spring Meeting

Provisional date: Saturday 28 March 1998. Edgar Wood and his use of brickwork in Middleton, Lancs, with brickworks in Chadderton, Lancs and possibly the Oldham Geology Trail.

ANNUAL GENERAL MEETING

Saturday 13 June 1998 at Cambridge (precise venue to be arranged). After the AGM there will be a visit to various brick buildings in Cambridge, including Jesus College, which was not included in the Society's visit some years ago.

July Meeting

Saturday 25 July 1998. Visit to New Hall, Boreham, near Chelmsford, Essex. This is a major house built by Henry VIII and modified by the third Earl of Sussex in 1573. It has seven half-hexagonal bays. It is now a Roman Catholic convent and girls school and is not normally open to the public.

Autumn Meeting

Probably Saturday 26 September 1998 (date to be confirmed). Dorset brickwork.

Full details of meetings will be included in the next mailing to members.

DAVID H. KENNETT