

Anglo-Saxon and Later Medieval Glass in Britain: Some Recent Developments

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TWENTY-ONE YEARS ago, when I surveyed the story of glass vessels in the British Isles from 400 to 1000,¹ it would not have been useful to attempt a similar account of their successors up to 1500, since the available examples, except during the last half-century or so of that period, were rare and fragmentary. Indeed to some it seemed that glass vessels hardly existed then in these islands, except for urinals, lamps, a few other rare shapes of forest glass, and one or two eastern imports.

This paper reveals how much our knowledge of Anglo-Saxon glass has been extended during the past two decades, especially that of mid and late Anglo-Saxon times, and how very considerably the void from 1000 onwards has been filled by many new discoveries.

GLASS OF THE ANGLO-SAXON PERIOD

Although in 1956 I recognized that there was no break in continuity of usage, I believed that there was a distinct break in types and styles between the latest Roman and the earliest Anglo-Saxon glasses, accepting Rademacher's view² that there was about then a change from urban glasshouses to forest glass-houses, and from soda to potash as the alkali in the glass batch. But, however it may have been in regard to town and country workshops, the view that a change of alkali occurred at that time was incorrect, for it failed to take account of the analyses cited by Arbman in 1937,³ which suggested that the alkali change did not happen until c.1000 and that all early and most late Anglo-Saxon and Viking glasses were soda glasses. This explains why they are normally no more weathered than Roman glasses, and are in great contrast to their later medieval successors, which have often acquired a thick coat of brown or black surface weathering.

ANGLO-SAXON CEMETERIES

In 1956, in dealing with the glass from Anglo-Saxon graves, I tried to differentiate Roman survivals and border-line glasses of the late 4th or earlier 5th century from fully fledged Germanic pieces. In general my division was, I believe, fairly correct, although I made at least one mistake (p. 4). In 1961 the early 5th-century stage was greatly clarified when eleven glasses were found by the late C. Green in a cache of that date in the Saxon-shore fort at Burgh Castle, Suffolk (PL. I, A).⁴ Two short cone-beakers in the group have knocked-off and ground rims of Roman type. Three taller cone-beakers have the characteristically Anglo-Saxon rounded rim, and the stemmed beakers are also an Anglo-Saxon, not a Roman type. The handled flasks, however, which resemble three found in the late Roman cemetery at Lankhills, Winchester,⁵ and the bowls on base-rings are Roman, not Anglo-Saxon. Thus this cache, found on a Romano-British site, is late enough to provide illustrations of the changes in shape that the 5th century brought, and forms a clear connecting link between the two cultures.

The main outlines of the early Anglo-Saxon series, as sketched in 1956, are, I believe, still valid. There have been numerous new finds, coming mainly, as before, from Kentish cemeteries, but with good ones elsewhere also, notably at Mucking in Essex.⁶ The new finds are mostly normal forms (FIG. 1), with cone-beakers, claw-beakers and palm-cups well represented and, in at least one example each, the bell-beaker, bag-beaker, squat jar, and bowl. These normal varieties mostly need no special comment, but one or two do require notice here, along with a few new shapes unknown hitherto either in Britain or on the continent.

First there is the fine olive green cone-beaker, H. 23.5 cm., of Kempston type, found at Acklam, North Yorkshire, as long ago as 1892 (PL. IV, A), but appropriately included here, since it was unknown to scholars until it and another vessel, said to be from the same grave, were sold at auction in 1966.⁷ Both vessels are now in the Corning Museum of Glass, New York, and have been described and illustrated in Miss V. I. Evison's new assessment of Kempston-type cone-beakers from Britain and the continent.⁸ The second vessel is a sack-shaped green cup with flattened, concave bottom (PL. IV, B), H. 9 cm., with a single horizontal trail near the lip — a very common 3rd-century type in Cyprus, which occurs less frequently in Egypt and the Levant, but never, it seems, in western areas.⁹ It is almost impossible, therefore, that it could have been present in an Anglo-Saxon grave, and it must be counted as eastern — no doubt Cypriote — and as having had no connexion with the Acklam cone-beaker.

The bag-beaker to which I have referred, found by Mrs S. C. Hawkes at Finglesham, Kent (see note 6), brings up to eight the number of bag-beakers from England (all from Kent) and allows me to draw attention to J. Ypey's publication of an example from Bergeijk, North Brabant, in which he could cite only one other continental example (from Sweden) and wholly supported my suggestion that the type was a Kentish product.¹⁰

The resurrection of one of the two dark blue squat jars with trails from Cuddesdon, lost since the 1870s, although it took place as long ago as 1959,

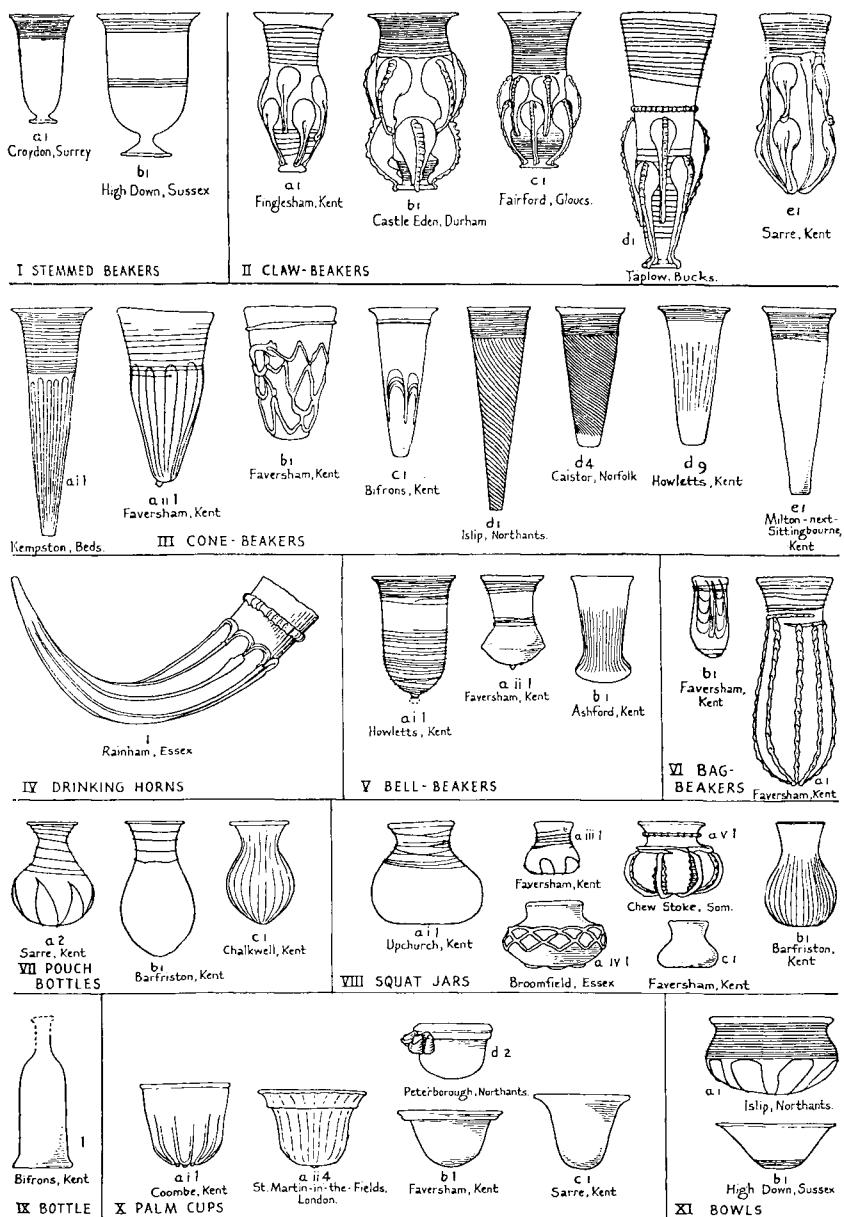


FIG. I

TYPE-SERIES OF ANGLO-SAXON GLASSES

5th to 7th century. Sc. 1:8. Drawing by Mrs M. E. Cox; after Harden (1956), fig. 25

when the vessel was recognized by Miss J. M. Morris, Curator of the Warwickshire County Museum, in Mrs Ward-Boughton-Leigh's house in Warwickshire, did not attain widespread attention until 1977, when the jar (PL. I, B) was sold at auction in London. It has since been acquired by the Ashmolean Museum, Oxford. This jar and its still-missing Cuddesdon twin¹¹ belong to a 7th-century group of dark blue trailed jars, on most of which (though not on this one, which has vertical loops) the body is decorated with a horizontal lattice trail.¹² The type is rare enough for us to take passing notice of the almost complete example with lattice trails (a little of the rim is missing) recently acquired by the British Museum, which was found at Deal, Kent, in 1970.¹³

There remain four very remarkable glasses which are either new types, or distinct sub-types, absent from my 1956 classification. Of two green claw-beakers from Mucking, Essex, the first (PL. II, A)¹⁴ is certainly the earliest claw-beaker from an Anglo-Saxon grave; yet the grave (no. 843) in which it was found contained brooches of the early to mid 6th century, and the glass must, therefore, as its excavators believe, have been an heirloom, made up to 100 or more years before burial. Some of its characteristics are in the Roman tradition: e.g. the sharp knocked-off rim, smoothed by grinding; the trailed zigzag fillet round the shoulder; the high foot-stand with rounded edge added from a second paraison, which differs completely from the normal Anglo-Saxon foot with tubular, pushed-in base-ring; and the claws set one above the other instead of being interleaved in zigzag, as on every other Anglo-Saxon claw-beaker except a totally abnormal vessel from Sarre which, though bearing claws, is, in shape, a bag-beaker, not a claw-beaker.¹⁵ There are, indeed, late Roman claw-beakers, such as one found near the church of St Severin, Cologne,¹⁶ that resemble this Mucking example in the position of the claws and the knocked-off rim. This Mucking vessel is a striking piece, highly developed in its own right, even if not yet in the style of the main Saxon series.

The second Mucking claw-beaker (PL. II, B), clearly much later, also presents problems. I know no close parallel for it.¹⁷ It was found in grave 92 with brooches of the early to mid 6th century, but may be even later than that, since it seems to stand typologically between the Fairford type, with well-inflated claws on the lower half of the body below a high, trailed neck, and the very tall Taplow examples of the 7th century, with flattish claws clinging to the body.¹⁸ It is probably nearer to 600 than 550 in date, and, if so, the brooches may have belonged to the deceased's mother or grandmother.

Besides these claw-beakers the Mucking cemetery has produced two cone-beakers¹⁹ and a greenish bowl of s-profile²⁰ which has regular spiral trailing of the finest and thinnest variety outside, just below the lip, the discovery of which at Mucking shows that it was surely an error in 1956 (p. 2) to place similar bowls from Alfriston and Howletts in the 'Roman survival' group.²¹ In doing so I was, perhaps, misled by the vertical ribbing, with its Roman look, on the Alfriston example; but since all three have at the rim the kind of opaque white spiral trailing which is so characteristic of the earliest Teutonic glasses, I now accept them as being of the late 5th or early 6th century. Nor need the ribbing cause us

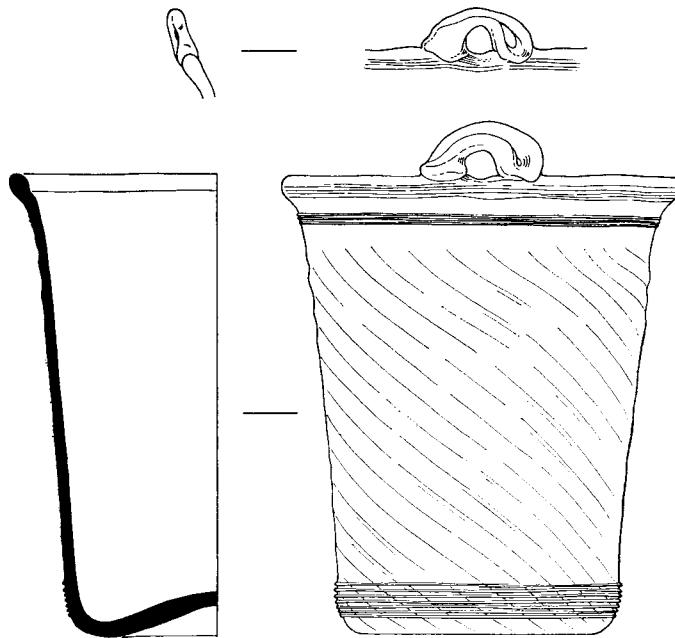


FIG. 2
BUCKET-SHAPED VESSEL

of green glass with opaque white trails, late 5th or early 6th century, from grave 62, Westgarth Gardens, Bury St Edmunds. Sc. 1: 2. After drawing by S. E. West

to hesitate, for sloping or vertical corrugations occur on several Anglo-Saxon shapes, including cone-beakers, domed bell-beakers, squat jars and palm-cups, as well as on my next example.

The third remarkable new find is a roughly cylindrical, bucket-shaped vessel with slightly flaring rim — a totally unexpected shape for an Anglo-Saxon glass (PL. III, A; FIG. 2). On the rim are two semicircular loops of drawn glass for holding a 'bucket-handle', almost certainly also of glass, like those which exist or existed on more than one glass vessel of Roman date.²² This piece, found by S. E. West in grave 62 in the Westgarth Gardens cemetery, Bury St Edmunds (a male grave with knife, spear and shield-boss), is green, with bands of opaque white, partially marvered, spiral trailing at the rim and at the bottom of the sides, linked by faint wrythen corrugations. Its walls are thick and the vessel, H. 12 cm. (to rim), is wholly functional. After being on loan to Bury St Edmunds Museum for some years it was withdrawn by its owner in 1977 and sold at auction.²³ Its new owner has replaced it on loan in the museum at Bury St Edmunds.

The nearest parallels for the shape are not in Teutonic, but in late metropolitan Roman glass. I have in mind particularly the two bucket-shaped vessels in the Treasury of St Mark, Venice, one a *diatretum* or cage-cup, greenish, H. 26.5 cm., carved in open-work with, above, a frieze of two riders each with a

hound pursuing a wild animal, and, below, a cage-design (PL. III, B). This vessel has a bronze 'bucket-handle' which appears to be contemporary.²⁴ The second, deep purplish-blue with a gilt-bronze 'bucket-handle', again apparently contemporary, is decorated with a facet-cut Dionysiac frieze.²⁵ Both are late Roman or early Byzantine, between the 4th and the 7th century. The lost bronze bucket from the Cuddesdon Saxon cemetery,²⁶ also comparable, is unlikely to be earlier than the 6th century, being doubtless an export from Egypt, one of the well-known group of Coptic metal vessels which reached central and western Europe in the 6th and 7th centuries.²⁷ Although all these four vessels are closely similar in general shape, they are not necessarily contemporary, nor need they be inter-dependent types. I suspect that the Venice cage-cup and the Cuddesdon bronze bucket are mutually connected, but I doubt whether the Westgarth Gardens and the Venice Dionysiac vessels had any connexion with these or with each other. It might, indeed, be suggested that the Westgarth Gardens example, which, unlike the other three, almost certainly had a glass and not a metal handle, is more likely to be a descendant of the Roman types with glass handles already cited (see note 22).

The fine opaque white trailing on the Westgarth Gardens vessel is in favour of a date in the late 5th or early 6th century, and since the spear (of type E 1) is probably 5th-century and the other objects in the grave are not closely datable, we are justified in using the evidence from it and the glass to suggest a date of c.500 for the interment. Such a date would be reasonable, since the cemetery began in the early 5th century and extended into the mid or late 7th.

The last find is the newest of all, discovered as recently as June 1977 during road-works on the Cambridge to Huntingdon road near the turn to Dry Drayton about four miles NW. of Cambridge. Its shape is a new one, having the general, profile of some cone-beakers, but with the slight concavity near top of body and the rather snub-nosed bottom that are so characteristic of bag-beakers (PL. IV, C).²⁸ It is intact except for a short internal crack, which is a piece of good fortune, since it was found during mechanical excavation, with no archaeologist present. The glass is bluish-green, 18.8 cm. high, with elaborate trailing in two bands of criss-crossed zigzag, also mostly bluish-green, although in the upper band a pale yellow trail overlies a bluish-green one. It must have been part of a burial-group, perhaps under a ploughed-out barrow. No other Anglo-Saxon object was found with the glass, nor in subsequent emergency excavations on the site,²⁹ although Anglo-Saxon iron objects have in the past been found in the neighbourhood. Internal evidence suggests that it must belong to the late 6th or the 7th century; zigzag trailing is found on pouch-bottles of that date³⁰ and the vessel shows no features that are recognizably earlier.³¹

EARLY SETTLEMENT-SITES

A few early settlement-sites have also yielded new evidence since 1956. B. W. Cunliffe's work in the Anglo-Saxon levels at Portchester Castle, Hants, produced six fragments of early Anglo-Saxon shapes; a fragment of a claw-beaker

turned up in the Anglo-Saxon village of West Stow, Suffolk, and fragments of vessels of the 6th to the 8th century have been found quite recently at Repton, Derbyshire, in occupation-levels belonging to a date earlier than that of the construction of the crypt of the Anglo-Saxon church of St Wystan.³²

Dinas Powys, South Glamorgan, briefly mentioned in 1956, produced in later years many more fragments of Teutonic glass of the 5th or the 6th century, much of it bearing opaque white trailing. This was imported, perhaps, as cullet for use in making beads and other small objects on this locally-important industrial site where metal and glass were being worked.³³ The roughly contemporary site, Mote of Mark, Kirkcudbrightshire, from which in 1956 I recorded an appreciable number of similar fragments, has also, recently, produced more material of the same kind.³⁴

MID AND LATE ANGLO-SAXON MONASTIC SITES

I now pass to glass of a very different kind and purpose that has recently come to light at the two mid Anglo-Saxon monastic houses of Monkwearmouth and Jarrow in Northumbria. The glass, which is predominantly window-glass, although it also includes some mosaic inlays and a few other objects, as well as some fragments of vessels, belongs to the late 7th century and onward, thus linking the early and late Saxon periods.

When I was writing my 1956 paper the only piece of Anglo-Saxon window-glass available for mention was a fragment from the Anglo-Saxon settlement at Southampton.³⁵ Five years later³⁶ I could cite some fragments from Glastonbury, Old Windsor and Thetford, as well as more from Southampton, but of these only those from Southampton, a town believed to have been founded towards the end of the 7th century,³⁷ might have been earlier than the 9th century. Thus for the bulk of the evidence for Anglo-Saxon window-glass before the 9th century we still had to rely on documentary sources³⁸ relating to Benedict Biscop (675) at Monkwearmouth, Wilfrid at York (669–78) and another Wilfrid at Worcester (714–44), all of whom were concerned in one way or another with the use of window-glass in churches, although no fragments of any of their glass had yet been recognized.

Prof. R. J. Cramp's important series of excavations at Monkwearmouth, which began in 1959, and Jarrow, which began in 1963,³⁹ have confirmed the accuracy of Bede's account of what Benedict Biscop did, and have yielded a great quantity of fragments of the glass he inserted in the windows when Monkwearmouth (in 675) and Jarrow (*c.*685) were building. Both houses were sacked by Vikings in 867, so that this glass belongs to the 180 or so years between the late 7th and the mid 9th centuries, and mostly, no doubt, to the early decades of that period. The first pieces came to light at Monkwearmouth in 1961 and at Jarrow in 1965,⁴⁰ and fragments were found at each site in most seasons thereafter, by far the largest single group (900 pieces) being discovered in association with the north wall of building D at Jarrow in 1973.⁴¹ The glass (PL. V, A; FIG. 3) is, as we would expect, cylinder-blown, and it is of various colours, mainly greens, but also

different shades of blue, yellow, and brown, with many streaky pieces too, e.g. brown or red on green.⁴² The quarries, triangular, rectangular or of various other specially-fashioned shapes, usually had all their edges grozed (i.e. pincerred), except where they retained part of the flame-rounded edge of the original sheet (FIG. 3, *a*, *A*; *b*, *A*).⁴³ They were used, doubtless, in varicoloured patterns in leaded window-panes, as is shown by fragments of H-sectioned lead cames (FIG. 3, *a*, *D*; *b*, *E*) which have been found alongside them.⁴⁴

But this glass from these two sites, prolific though it is, is no longer our only window-glass from mid Anglo-Saxon churches. Pocock and Wheeler found eight fragments of similar glass at the small church at Escomb, Co. Durham, in 1968;⁴⁵ more recently the Biddles have found some at Repton;⁴⁶ and there are fragments also from Brixworth, Northants., and Winchester.⁴⁷ Twenty years ago we could only guess: now we can be sure that from their beginning the great Anglo-Saxon monastic churches, and at times at least small churches like Escomb, were likely to be glazed, just as were their contemporary counterparts on the continent.

Miss Cramp found other interesting glass at these two sites also. There were, for example, a stump of a composite mosaic rod from Jarrow⁴⁸ and two mosaic inlay plaques from Monkwearmouth, one triangular (opaque white, dark blue and yellow), probably made by bisecting a complete plaque 2 cm. square, the second 1.2 cm. square (dark blue, opaque white, opaque red and opaque pale green).⁴⁹ The inlay plaques are complicated products, 4 mm. thick, built up from square sections of composite rods 4 mm. square. Their purpose is uncertain. Miss Cramp believes they may be displaced decorative settings from a book cover or other such object. In any case we know that similar glass-mosaic inlay was frequently used at this time, often in very small sizes, notably in jewellery.

Another noteworthy piece from Monkwearmouth is a triangle (PL. V, B), longest side 8 cm., grozed all round, of light brown glass with darker streaks, bearing three rows of opaque white marvered festoons. I would question Miss Cramp's view that this is a window-quarry. If I read her account correctly,⁵⁰ this is the only piece of its kind that was found, and if it were from a window, surely one or two other comparable fragments would have turned up. Nor is it really suitable for a window, since its design is of the wrong kind and it is too opaque.⁵¹ I would rather believe that the Monkwearmouth triangle is an inlay plaque from a box or shrine, or even from an altar, to be seen in direct, not transmitted light. But however we explain it, it is of interest, exhibiting considerable glassmaking skill.

The Jarrow and Monkwearmouth window-glass was certainly made at one, if not at both of these sites, but so far no indisputable evidence for a glass furnace has been found at either. It is different at Glastonbury Abbey in Somerset, where from 1955–9, just too late to find a place in my 1956 review, parts of a glass-workshop were recovered underneath the later medieval cloister and chapter-house during Dr C. A. Raleigh Radford's excavations.⁵² But this, of course, is later, belonging to some time in the 9th or 10th century, perhaps when Abbot Dunstan was rebuilding and restoring the abbey after he became abbot in 940. Remains of

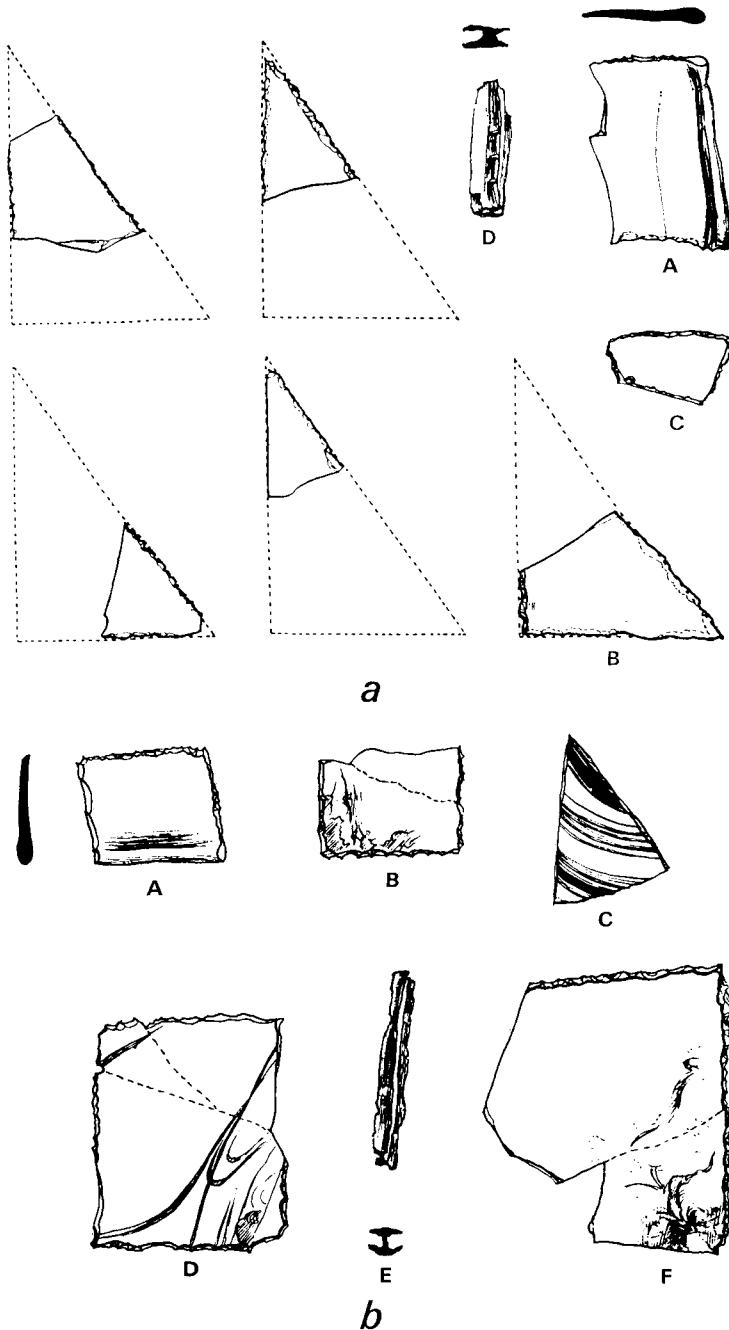


FIG. 3

ANGLO-SAXON WINDOW-GLASS AND LEAD CAMES

late 7th to mid 9th century, from the monastic sites at (a) Monkwearmouth and (b) Jarrow, Tyne and Wear. Sc. 3: 4. After Cramp (1970a), figs. 1-2

at least three furnaces were found, one of which might have been a working-furnace, although, if that was its use, it showed less depth of reddened soil beneath and around it than might have been expected. The other one (or two) could only have been useful for annealing or for some other function that needed no great heat. Fragments of glass recovered were few and small. They included both vessel-glass and window-glass, bits of bichrome rod, and at least one fragment of small mosaic cane from which inlay sections could be cut — the kind of cane used to make the Monkwearmouth plaques. There were also fragments of furnace-pots (PL. V, C) with green glass adhering both inside and out, which belonged to pots that were only about 15 cm. high and 18 cm. diameter, and, therefore, much smaller than later medieval ones (p. 18).

LATE SETTLEMENT-SITES

Several late Anglo-Saxon dwelling-sites have produced new finds. Continued excavation at Anglo-Saxon Southampton has yielded a great deal more glass of the late 7th to the late 9th century, similar to the material I briefly mentioned in 1956.⁵³ However, publication of the glass from this highly important site is still awaited, and pending that any comment upon it would be premature, other than that it is known to have important similarities with types found at contemporary continental sites such as Dorestad, Helgö and Birka and thus reveals the wide international connexions of the port of Southampton.

At York D. M. Waterman's long account of finds in the Viking town lists no vessel-fragments other than the piece of a two-colour bowl or beaker from Clifford Street, which I mentioned without citing its find-spot in 1956.⁵⁴ However, he records a Viking factory for amber and glass beads in the Clifford Street area,⁵⁵ and also the discovery of many beads, often distorted, during excavations in Pavement,⁵⁶ which the late J. Radley accepted as evidence for a similar factory.⁵⁷ Moreover, now that the York Archaeological Trust is excavating further Viking sites in York, we may hope that its work will yield glassware and thus provide a northern assemblage corresponding with the finds at Anglo-Saxon Southampton.⁵⁸

Cunliffe's excavations at Portchester have produced a few important late Anglo-Saxon fragments. An example of trailed Islamic glass, green with interrupted opaque white spiral lines, is comparable with the white-on-purple fragmentary bowl from London in the Roach Smith collection that I published in 1956 and a small white-on-brown ribbed bottle from Burpham, Sussex, and all three provide further proof that trade between the east Mediterranean and western Europe continued to exist after the Arab conquest.⁵⁹ A typical late Anglo-Saxon fragment from Porchester is blue-green with opaque yellow trailing,⁶⁰ and two others, one green, the other probably wine-coloured, are specially interesting because they bear very unusual decoration of self-coloured looped trailing in relief, across which are short strips of opaque yellow, giving the appearance of being intended to bind down the looped trail, although of course, in glassmaking no such binding would be needed.⁶¹ I know of no direct parallel, but the general effect is closely akin to late Anglo-Saxon bichrome-twist decoration.

Finally, at Waltham Abbey near London P. J. Huggins's report on his recent excavation in the supposed 11th-century hall mentions three pre-Conquest fragments of fine quality,⁶² including a piece with opaque yellow trails comparable with the blue fragment with such trails from Portchester.

Indeed, it is a great pity that so little of this glass from late Anglo-Saxon settlements has been published. We can but hope that, once more finds are made available, students may have sure foundations on which to assess the historical and commercial implications of this growing corpus of late Anglo-Saxon glass.

LATER MEDIEVAL GLASS

'BYZANTINE' AND 'SYRO-FRANKISH', 13TH-14TH CENTURY

Between the latest Anglo-Saxon and the earliest post-Conquest glass yet known in this country there is a gap of about a century. The two earliest post-Conquest finds that I can record — both small fragments — though probably

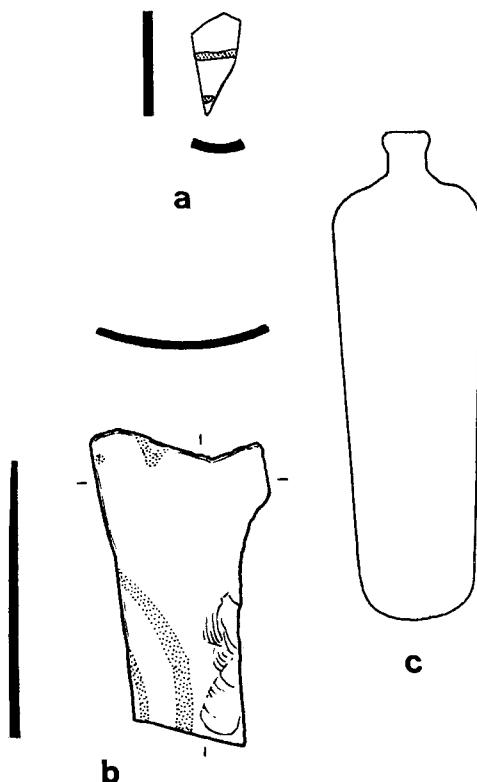


FIG. 4

FRAGMENTS OF BLUE GLASS DECORATED WITH GILDED ENAMEL

(a) from Augustinian priory, Breedon-on-the-Hill, Leics. and (b) from deserted medieval village of Seacourt, Oxon. Both from necked, cylindrical bottles of 12th century (type as c), generally believed to be of 'Byzantine' origin. Sc. a, b: 1:1; c: about 1:3.

Drawings: a, courtesy of Miss Ann Dornier; b, Ashmolean Museum, Oxford

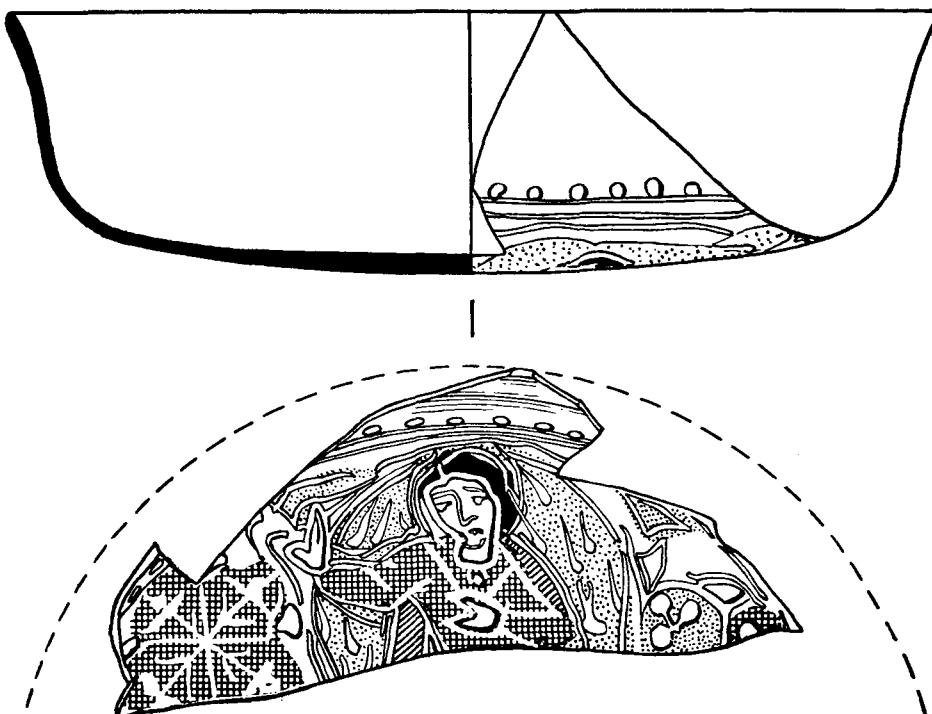


FIG. 5

FRAGMENT OF SYRO-FRANKISH ENAMELLED BOWL

late 13th century, from Cheapside, London. Museum of London. Sc. 1; 1. (Shading: criss-cross = red; diagonal = blue; dotted = green). After *Med. Archaeol.*, II, 175, fig. 43

12th-century in origin, are unlikely to have been lost in England before the 13th century. They belong to a well-recognized type of 'Byzantine' bottle of roughly cylindrical shape with short, narrow neck (FIG. 4, c) made most often in blue, but also in purple or opaque white glass with gilt and enamelled ornament. Beakers and perhaps globular flasks also occur. Discoveries mainly range from Cyprus through Greece (notably at Corinth) deep into Russia at Novogrudok, near Minsk.⁶³ The two English fragments, both blue with decoration in gilded enamel, come from the deserted medieval village of Seacourt, near Oxford (FIG. 4, b) and the priory of Augustinian canons at Breedon on the Hill, Leics. (FIG. 4, a).⁶⁴ It is likely that both bottles reached England in the baggage of a returning Crusader. That they reached here at all is a matter of great interest.

Of somewhat later origin — probably late 13th-century — are the enamelled glasses known as 'Syro-Frankish', since Lamm and others have believed they were made by Frankish workers in Syria in imitation of Islamic enamelled glass. Recently, however, the older view that they were made in Venice or at some other Italian or conceivably a central European site has been coming back into favour.⁶⁵ Fragments from Restormel Castle in Cornwall and Dale Abbey in Derbyshire

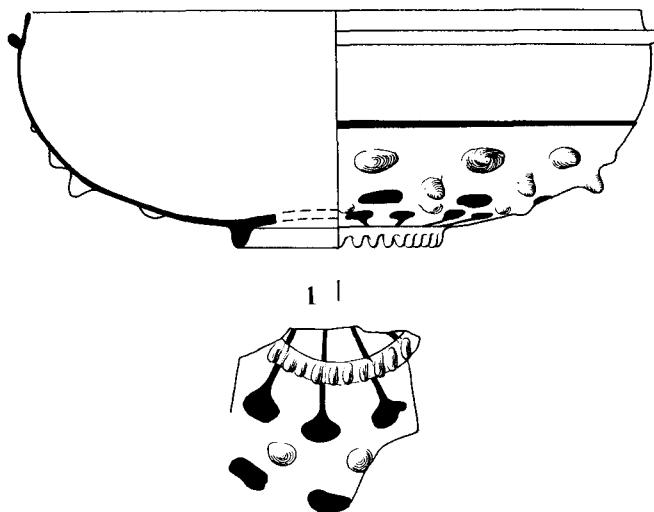


FIG. 6
FRAGMENTARY BOWL

colourless with faint green tinge, late 13th-century, with blue trails and blobs and self-coloured prunts, from Dominican friary, Boston, Lincs. Sc. 1: 2. After Charleston (1972), fig. 9, no. 1

have long been known,⁶⁶ but within the last twenty years at least four more examples have been found in England and Ireland.

The first, found during building operations in Cheapside, London, in June 1957, is part of the rim and side of a pale green shallow bowl, 12 cm. diameter (FIG. 5), with slightly concave walls and rounded bottom. The upper part of a human figure, right hand raised in blessing, is enamelled outside in red, green, blue, and (the hair only) black, and inside in white enamel for certain details, and with some pinkish-brown lines, perhaps a base for gilding.⁶⁷

The second, found some years ago by A. D. Saunders during excavations in Launceston Castle, Cornwall, is a colourless goblet (PL. VI, A), more than two-thirds extant, inscribed */RIA·GRACI/* in Lombardic letters above a frieze depicting two felines (lions or leopards) passant, and a scroll. The letters are in white enamel, the bands framing them are yellow bordered by red, the felines are in red and white, the scroll has red stems and green leaves, and the wavy line at the bottom is white. All the colours are on the outside. Since the extant letters extend over two-thirds of the circumference, there can have been no more than four or five others, perhaps *a(v)e marIA · GRACIA*. This is the best-preserved Syro-Frankish glass so far found in this country.⁶⁸ Its nearest parallel is a complete goblet in the Museum of Arts and Crafts at Frankfurt, never buried, bearing the inscription *A[V]E · MARIA · GR[A]CIA · PLEN[A]+* in similar, but smaller uncials above a main frieze depicting an eagle and a griffin passant confronting each other, and, behind and between the two creatures, a column with capital and abacus supporting a wide spandrel.⁶⁹

The third piece found its way across the Irish Sea to Dublin, where B. Ó Riordáin excavated it in 13th-century levels in Winetavern Street. It is fragmentary — parts of the rim and upper wall only — of a colourless goblet (PL. VI, B) with some gilding and red, white and yellow enamelled decoration, partly inside, partly outside. The pattern is hard to decipher, but we may note that it includes more than one column with capital and abacus supporting a spandrel resembling those on other Syro-Frankish glasses, including the Frankfurt piece.⁷⁰ Since Launceston and Frankfurt are alike in their inscription, and Frankfurt and Dublin in their columnar motif, we have here three closely connected vessels which must all be about the same date. Syro-Frankish glasses are generally ascribed to the late 13th century and this conforms with the stratification at Dublin and Launceston.

The fourth example, two fragments of a colourless enamelled goblet, was found at Southampton in the High-Street-C area, in pit 260 belonging to the first half of the 14th century. These (FIG. 7, no. 1498) bear part of a roundel painted in enamel colours on both surfaces: red inside, and yellow, green and brownish (perhaps originally white) outside.⁷¹ The roundel, so frequent on 'Byzantine' bottles, seems to be unknown on any other Syro-Frankish glass; yet there can be no doubt that this piece is of that group.

A fifth fragment, also colourless, but enamelled on the inside only, and with only purplish-brown paint with some traces of gilding, from a bowl, not a beaker, was found in the refectory of the Dominican friary, Boston, Lincs., in a context of the mid to late 14th century. It is dissimilar in many ways, including date, to these four Syro-Frankish glasses. Charleston believes⁷² that it is perhaps Venetian in later style, or from one of the other less well studied Italian centres of glass-making.

ITALIAN (MAINLY VENETIAN), 13TH-14TH CENTURY

Although one or two Syro-Frankish imports and even two fragments of an Islamic enamelled goblet had already been recorded from English sites twenty years ago, there was then no appreciation that other imports of soda glass, mainly, if not wholly from Italy, were reaching England from the 13th century onward. Even as recently as 1972 I could cite no Mediterranean imports into England earlier than c. 1400, contemporary with the first documentary records of shipments of Venetian glass to the Low Countries (1394) and England (1399).⁷³ But we now know better: and the new evidence, so far, comes mainly from the Dominican friary at Boston, Lincs., from Southampton, and from Drury Hill, Nottingham.⁷⁴ All these sites have produced colourless or nearly colourless fragments of cups or bowls of soda glass with self-coloured and blue or (at Southampton only) dark manganese-purple trailing in levels of the late 13th and the first half of the 14th century.⁷⁵

At the Dominican friary, Boston, there were, for example, several fragments providing almost a complete profile of a late 13th-century bowl with notched base-ring, decorated with self-coloured prunts and blue trails and blobs (FIG. 6);⁷⁶

at Southampton, in the High-Street-C excavation area, pit 260 yielded fragments of colourless s-curved (double-ogee) bowls of the first half of the 14th century with notched base-rings, as on the Boston bowl, but this time with manganese-purple trails (FIG. 7, nos. 1488, 1492–3);⁷⁷ and at Drury Hill, Nottingham, there were fragments of at least two similar bowls of colourless glass with blue-green trails, dated *c.* 1300–50 by associated finds.⁷⁸ Such occurrences at three widely-separated sites indicate how widespread this glass was in England at this time.

But the Nottingham site also produced fragments of various shapes in clear yellow glass with blue and self-coloured trails (PL. VII, A).⁷⁹ These closely resemble the standed yellow drinking goblet with self-coloured and green trails of *c.* 1400 from a pit at Old Sarum, Wilts. (PL. VII, B), which elsewhere, along with a similar piece from Knaresborough Castle, North Yorkshire, I have illustrated as representative of the first colourless soda glasses to reach England from Italy.⁸⁰ It is now clear, however, from these Drury Hill fragments that such glass was reaching England a century or so before *c.* 1400. Fine soda glass, both colourless and coloured, seems to have been regularly imported from the late 13th century onward.

FOREST GLASS, CONTINENTAL AND ENGLISH, 13TH–14TH CENTURY

Recent finds at Southampton, Dublin and elsewhere have revealed that forest (potash) glasses from nearer continental countries, if not also from our English glasshouses, were in more frequent use here in the late 13th and 14th centuries than had previously been thought.

At Southampton, in the same High Street pit (260) that yielded imported Italian glass, were fragments of a large jug (FIG. 7, no. 1489) of pale green glass bearing an opaque red trail in relief running from the centre of the bottom up to the rim. Charleston mentions⁸¹ a parallel from a well at Pevensey, Sussex, with similar lip and handle and with red trailing in an arcaded pattern. Five others can be added. The Dublin site that produced the Syro-Frankish glass yielded two similar but smaller jugs, one greenish (but now weathered to opaque blackish grey), the other opaque red, both decorated with self-coloured trailing;⁸² a group of fragments of opaque red glass from Northampton belong to at least two such jugs, since they include two concave bottoms;⁸³ and a fragmentary blue jug came from a garderobe in the medieval manor house of Penhallam, Cornwall, deserted in the mid 14th century.⁸⁴

Another contemporary forest-glass shape is the stemmed drinking goblet, a 14th-century example of which was found by P. V. Addyman in a latrine-pit at Ludgershall Castle, Wilts.⁸⁵ The type is well known on the continent in the late 13th and 14th centuries⁸⁶ and fragments of this kind of vessel have been found in London and elsewhere. Southampton, however, has produced two varieties of goblet of this date on high stem which are shown in FIG. 8: one (no. 1512) is greenish-colourless potash glass badly decomposed, the other (no. 1513) colourless soda glass with self-coloured raised blobs and dark blue marvered trailing. Both came from the High-Street-C area in pit 178 belonging to the first half of the

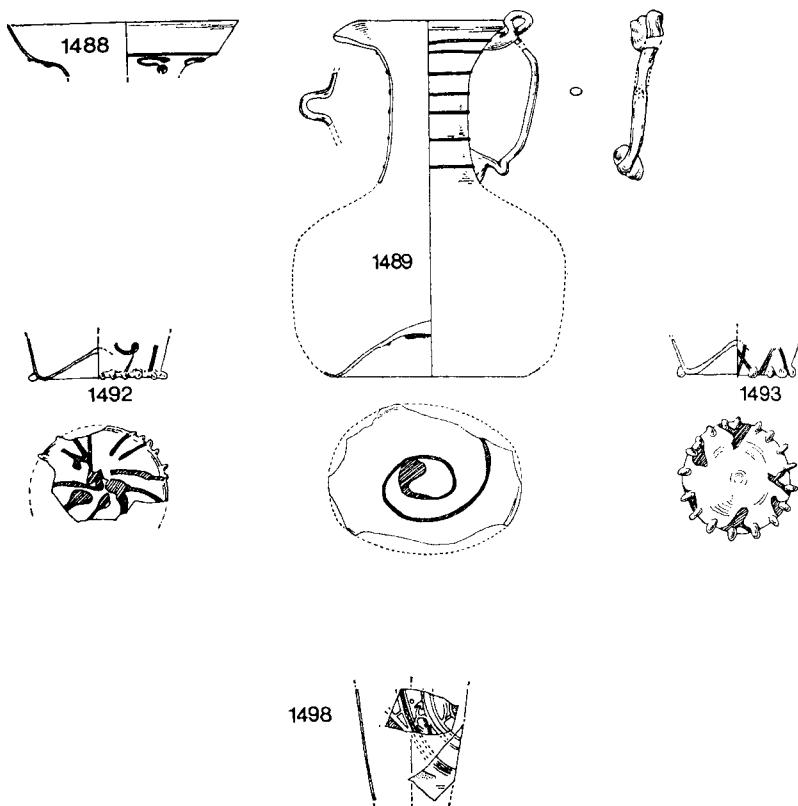


FIG. 7
FRAGMENTS OF GLASS VESSELS

first half of 14th century, found in pit 260, High-Street-C area, Southampton. 1488, 1492-3, parts of colourless bowls with manganese-purple trails; 1489, parts of a pale green jug with opaque red trailing; 1498, two fragments of colourless goblet with enamelled design. Sc. 1:4.
After Charleston (1975*a*, fig. 221)

14th century: it is instructive to see forest and soda glass in use at that date side by side.⁸⁷ The well-to-do 14th-century Englishman can have had little difficulty in acquiring glassware of either kind.

GLASS, CONTINENTAL AND ENGLISH, 15TH CENTURY

By the 15th century the home industry had become more prolific and there was also an increased flow of foreign ware, both green forest glass from the Low Countries and Germany and soda glass from Italy, where the glass industry had now reached its zenith. This was recognized long ago and the variety and frequency of the finds have not changed appreciably in the last twenty years.

One kind of 15th-century (and later) glassware, however, apparatus for distilling, has been identified and assessed for the first time within the last two

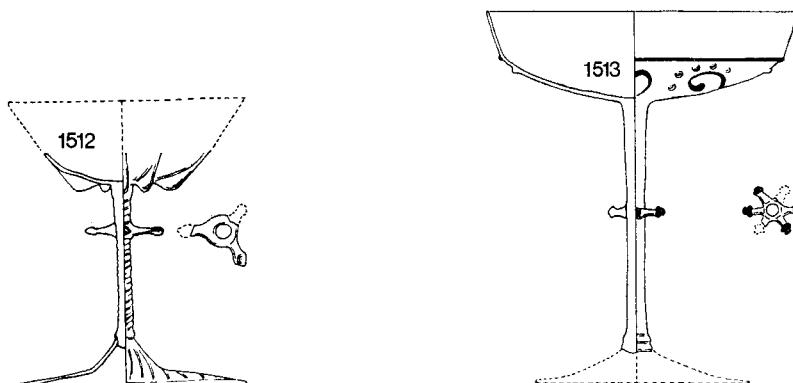


FIG. 8

TWO FRAGMENTARY STEMMED DRINKING-GOBLETS

first half of 14th century, found in pit 178, High-Street-C area, Southampton. 1512, greenish-colourless potash glass; 1513, colourless soda glass with self-coloured and dark blue decoration. Sc. 1: 4. After Charleston (1975a), fig. 222

decades. The first fragment to be recognized probably belongs to the latest years of the 15th century, since it was found in an early 16th-century midden during M. Biddle's excavations at the manor of the More, Herts., in 1958.⁸⁸ Many more fragments came from a mid 15th-century level at Selborne Priory, Hants, in 1965, and from a late 15th-century level at St John's Priory, Pontefract, West Yorkshire, in 1966. Both these groups were published, along with pottery distilling-apparatus of the same and later dates from these and other sites, in a valuable pioneering paper by S. Moorhouse and others in 1972.⁸⁹

No other examples of 15th-century glass distilling-apparatus are yet known in Britain, but from the 16th century onward the types become commoner.⁹⁰ A fine, complete alembic from Egypt is in the Victoria and Albert Museum. Its date is disputed, but the consensus of opinion would suggest that it is, broadly, medieval.⁹¹

GLASSHOUSES, 14TH-15TH CENTURY

I conclude with what many would say is the most important recent advance in post-Conquest medieval glass studies in England. Between the wars S. E. Winbolt excavated on a number of sites of medieval and later glasshouses in the Surrey and Sussex Weald⁹² and at various times since the middle of the 19th century T. Pape and others have worked on glasshouses of the later 16th and early 17th centuries in other parts of the country, notably in Staffordshire, as well as just one (Kingswood, Cheshire) which may belong to the early 15th century, although this is very doubtful.⁹³ Winbolt's account of his work was too short and too unsystematic to be of great help, and it was left to one of his helpers, G. H. Kenyon, to try to fill in the gaps in Winbolt's report and give as judicious a summary as possible of what was known about the nature and date of over forty glasshouse sites in the Weald.⁹⁴ Kenyon was fortunate in being able to utilize the

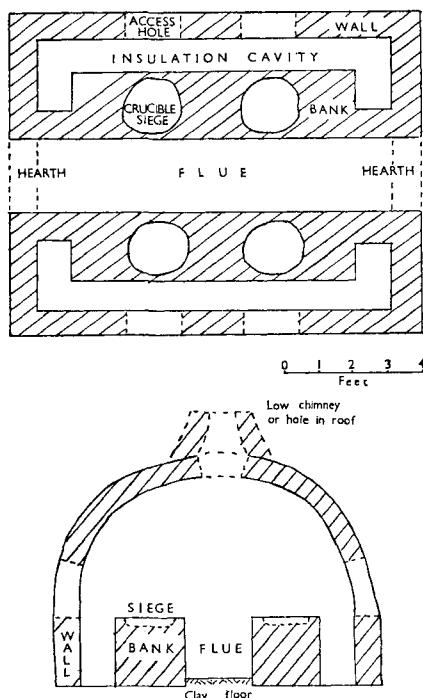


FIG. 9
WORKING-FURNACE (A) AT BLUNDEN'S WOOD GLASSHOUSE
Hambledon, Surrey, c. 1330. Reconstruction-plan and section.
After Kenyon (1967), fig. 7, courtesy E. S. Wood

results of E. S. Wood's highly important complete excavation in 1960 of a glasshouse at Blunden's Wood, Hambledon, Surrey, which belonged to the second quarter of the 14th century, perhaps *c.* 1330.⁹⁵ This dating is certain, being based on fragments of nine vessels of Cheam ware of the first half of that century and on the magnetic dating obtained from sixteen samples from the site by Dr M. J. Aitken, the results of which showed that Blunden's Wood lay midway between an early 14th-century pottery-kiln at Toynton All Saints, Lincs., and a tile-kiln of *c.* 1350 at Boston, Lincs.⁹⁶

There were three furnaces at Blunden's Wood. The main working-furnace (A; FIG. 9) had a central flue, 3.35 m. long, fired from two hearths, on either side of which was a sieve to take two crucibles or pots, each *c.* 30 cm. high and 30 cm. diam. The roof, which was not extant, is thought to have been barrel-shaped. The other two furnaces (B, C) were subsidiary, one perhaps for fritting the raw materials and annealing the finished glass, the other for preheating the pots. Between them and the main furnace was a working-floor. A reconstruction of a complete medieval glasshouse (PL. VIII),⁹⁷ based on the Blunden's Wood evidence, was made for the Pilkington Glass Museum, St Helens, Lancs. It shows the three

furnaces, A-C, with the working-floor between them and a shed or cabin behind for the general use of those who worked on the site.

Blunden's Wood is not only the earliest dated glasshouse in the Weald; it is also the only well-excavated medieval glasshouse in England, and on both these counts its importance is paramount. Its site is in the next parish to Chiddingtonfold, where a man called Laurence Vitrearius, who because of this name has traditionally been accepted as the earliest known glassmaker in England, obtained a grant of land in the 1230s; but we know nothing more about him or his activities.⁹⁸ We cannot, therefore, accept this land grant as proof that Wealden glassmaking existed by the early 13th century, and since there is no other evidence for its existence then or during the next 100 years, it appears that Blunden's Wood is not only the earliest dated Wealden glasshouse, but is the first firm evidence of glassmaking in the area. The first documentary evidence for the existence of Wealden glass is in 1351, when four entries in medieval glazing accounts record that glass from Chiddingtonfold was dispatched to the two royal chapels of St George at Windsor and St Stephen at Westminster.⁹⁹

Wood followed his work here by excavating at Knightons, Alfold, Surrey, in the later 1960s, a glasshouse which must be later than 1550, since it yielded a shilling of Edward VI of that date.¹⁰⁰ But this and a number of other recent excavations on glasshouse-sites of the 16th and 17th centuries in other parts of England, although interesting and important, are outside our present medieval purview.

CONCLUSION

I have shown, I hope, that much that is new and exciting has been discovered in the field of Anglo-Saxon and later medieval glass during the last two decades. Note, however, that most of these finds, except those at Blunden's Wood and perhaps at Monkwearmouth and Jarrow, were made by chance, since those who made them were not specially looking for glass. Formerly excavators were primarily interested in historical topography and buildings and often they paid scant attention to small finds, especially glass, which, when it turned up, they often did not recognize, or, if they did recognize it, were uncertain whether it was ancient. But now, with excavators taking a more all-embracing interest in their finds, we may hope for a far wider appreciation of the significance of glass (however weathered or fragmentary), and this should lead to a great growth in our knowledge of the use and spread of glass of all kinds in Anglo-Saxon and later medieval Britain.

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| id. (1975b) | <i>id.</i> 'Some English finds of medieval glass with Balkan analogues', <i>Verré médiéval aux Balkans, v^e-xv^es</i> (Inst. des Etudes Balkaniques, Editions spéciales, iii, Belgrade, 1975), 101-8. |

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NOTES

¹ Harden (1956). The text of this paper was finished in 1953, the only later discoveries mentioned being two vessels found at Lympinge, Kent, in 1954 (see *ibid.*, addendum, p. 165).

² Radermacher (1942), 335 ff.

³ H. Arbmam, *Schweden und das karolingische Reich* (Stockholm, 1937), 252 ff.; Harden in Charles Singer et al., *A Hist. of Technology*, II (1956), 325 ff. and table on p. 313, nos. 7-10.

⁴ Not yet fully published. Brief descriptions with illus. in *Jnl. Roman Studies*, LII (1962), pl. xxiv, 1; *Jnl. Glass Studies*, V (1963), 145, no. 16; *Archaeol. Jnl.*, CXXVI (1970), 64, pl. xi, e.

⁵ Publication forthcoming in *Winchester Studies*, III, pt. ii, *The Lankhills Cemetery*.

⁶ Many, but by no means all, find brief mention in the annual reviews of new finds in successive vols. of this journal. See e.g., I, 148, and III, 297 (Loveden Hill, Lincs., palm-cup and cone-beaker respectively); IX, 172 (Finglesham, Kent, bag-beaker); XI, 271 (Ansty, Wilts, in E.B.A. barrow, two palm-cups); XII, 157 (Mucking, Essex, claw-beaker and bowl) and 158 (Finglesham, claw-beaker); XVI, 157 (Monkton, Kent, bell-beaker); XVII, 142 (Mucking, claw-beaker), 146 (Loveden Hill, cone-beaker and frags. of three claw-beakers) and 149 (Bury St Edmunds, Suffolk, cone-beaker and bucket-shaped vessel); XVIII, 175 (Mucking, two cone-beakers and second mention of previous year's claw-beaker) and 179 (Broadstairs, Kent, Bradstow School cem., claw-beaker).

⁷ *Catal. Antiquities, Sotheby's, London*, 13 June 1966, 12 f., lots 15A and 15B with photo of cone-beaker facing p. 12; *Jnl. Glass Studies*, IX (1967), 134, no. 11 (cone-beaker only, C.M.G. no. 66.1.247). The auction-price for the two lots was £1,540.

⁸ Vera I. Evison in *Jnl. Glass Studies*, XIV (1972), 48 ff.: for the Acklam vessels see especially 54 f., 64, no. 22, figs. 4 (cone-beaker) and 5 (the companion-piecc, C.M.G. no. 66.1.246).

⁹ *Cyprus*: O. Vessberg and A. Westholm, *The Swedish Cyprus Expedition*, IV, pt. 3, *The Hellenistic and Roman Periods in Cyprus* (Stockholm, 1956), 168 f., jars type A II, figs. 45, nos. 24-27, 55, no. 7, and 56, nos. 3 and 5. Vessberg says (op. cit., 208) that this type with plain bottom and its counterpart with tubular base-ring (op. cit., 169, type B I, fig. 45, nos. 33-35) are both so abundant in Cyprus and so uniform in colour (light green) and fabric that they may have been made in Cyprus, in one workshop.

¹⁰ *Egypt*: D. B. Harden, *Roman Glass from Karanis* (Ann Arbor, Mich., 1936), 133, 143, no. 365, pls. iv, xv and *ibid.*, 320, no. Mich. 5213 (both with tubular base-rings), and *ibid.*, 134, 320, no. Mich. 5214 (with plain bottom). See also (all with plain bottoms) B.M., G.R.Dept. 78.3-11.23 'found in Egypt', and C. C. Edgar, *Graeco-Egyptian Glass* (Catal. Gén. Musée du Caire, 1905), nos. 32465 and 32468, from Mit Rahineh (Memphis).

¹¹ *Levant*: see, e.g. (all with plain bottoms) *Niessen Catal.* (1911), 64 f., 1083a, pl. xlvi and 1091-2, pl. liii, both 'Syro-Roman'; B.M., G.R.Dept. 92.3-17.39 (tomb near Nazareth) and 93.11-2.18 (Palmyra); Mariemont Mus., in group from 'tomb at Sidon', G. Faider-Feytmans, *Les Antiquités du Musée de Mariemont* (1952), 159 f., no. 95, pl. 58; and several from tombs in western Galilee at Nahariya (tomb 1, two exx., D. Barag in *Proc. 7th Int. Congr. Glass, Brussels*, 1965, paper no. 243, fig. 3), Hanita (tomb xv, 3 exx.) and Yehiam (tomb at Qala'at Jiddin, 3 exx.), all discussed in D. Barag, *Glass Vessels of the Roman and Byzantine Periods in Palestine* (Hebrew Univ., Jerusalem, unpubl. doctoral thesis, 1970), types 4.10, 4.11, 4.11-1, 4.11-2, pls. 16 (Nahariya) and 18 (Hanita) and, for the types, pl. 32.

In the *West*, on the other hand, I know no parallels for this plain-bottomed, sack-shaped cup; none of the Roman or later vessels cited by Evison in *Jnl. Glass Studies*, XIV (1972), 54 f., resembles it in shape or fabric.

¹² J. Ypey, 'Een zeldzaam laat-Merovingisch glas in het Rijengrafveld te Bergeijk, Noord-Brabant', *Ber. Rijksdienst Oudheidkundig Bodemonderzoek*, VIII (1957-8), 82-91, figs. 4-6; and cf. Harden (1956), 147. The broken bag-beaker in the Ashmolean Museum (Ypey, *ibid.*, 91), having no provenance, must be left out of the reckoning.

¹³ For both these Cuddesdon squat jars see *Archaeol. Jnl.*, IV (1847), 157-9 (with illus.); *Proc. Soc. Antiq. London*, 1 ser. II (1852), 280; Akerman (1855), 11, pl. vi; Dickinson (1974), 3 ff., espec. pp. 12-15. These two jars and other Anglo-Saxon material (including a bronze bucket, see note 26) were found in the bishop's palace grounds, Cuddesdon, Oxon., in 1847. They remained in the hands of Samuel Wilberforce (bp. of Oxford, 1845-69 and thereafter until his death in 1873 bp. of Winchester) and were sold with his effects, doubtless in Winchester, in 1873, when the present jar and the bronze bucket were bought as one lot for £1. 1s. by Mr A. Ward-Boughton-Leigh. The bronze bucket is no longer traceable, but the glass jar remained in the family's possession until recently, when it was sold at Christie's from the estate of the late A. H. C. Ward-Boughton-Leigh for £15,000 (*Catal. Fine Antiquities, Christies, London*, 16 March 1977, 40,

lot 178, with colour plate on facing page). This account differs from and in part corrects the story in Dickinson (1974), 5.

¹² See Harden (1956), 141 f., 164, type VIII *a* iii 13 (this piece) and VIII *a* iv 5 (its twin).

¹³ B.M., M.L.A. Dept. 1972.1-5.1; found by Mr F. Oliver in the front garden of his house, The Beeches, St Richard's Road, when planting a tree. The glass lay 7 ft. deep in what must have been a grave-pit sunk into the natural chalk. See Dickinson (1974), 14 (mention only); R. Bruce-Mitford, 'Note on a squat jar in blue glass from Deal' in his *Aspects of Anglo-Saxon Archaeology* (London, 1974), 346-8, pl. 112, fig. 61; and id., *The Sutton Hoo Ship Burial*, 1 (1975), 132-4 (brief discussion of this class of jar).

¹⁴ *Medieval Archaeol.*, xvii (1973), 142, and xviii (1974), 175; Rowley ed. (1974), 31, pl. iii; *Current Archaeol.*, 50 (vol. v, no. 3, May 1975), 73 ff., with fig. on p. 80 (top left); *Antiq. Jnl.*, LIV (1975), 277 f., pl. lvi.

¹⁵ Harden (1956), 139, 159, type II *e* 1. I remain of the opinion that this Sarre claw-beaker is late, contemporary with the bag-beakers which it so closely resembles in shape, even though its claws, set one above the other, might be thought to bring it into line with this early Mucking claw-beaker and its late Roman parallel (see note 16).

¹⁶ Röm.-Germ. Mus. der Stadt Köln, inv. no. N 6082: F. Fremersdorf in *Wallraf-Richartz-Jahrbuch*, n.F. II-III (1933-4), 9, fig. 2; Rademacher (1942), 288, pl. 42; F. Fremersdorf, *Die Denkmäler des röm. Köln*, vi (1961), 24 f., pls. 16-17; O. Doppelfeld, *Römisches und fränkisches Glas in Köln* (Köln, 1966), 52, pl. 100 and col. pl. II, opp. p. 32.

¹⁷ *Medieval Archaeol.*, xii (1968), 157; M. U. Jones, 'Crop-mark sites at Mucking, Essex', *Antiq. Jnl.*, XLVIII (1968), 215, pl. lii, and 217 (brief discussion by V. I. Evison); *Current Archaeol.*, loc. cit. in note 14, fig. on p. 80 (top right). Note the error above the middle claw (pl. II, B), where the maker dropped a gob higher than intended, sheared off the trail and began again lower down.

¹⁸ Harden (1956), 140, types II *c* (fig. 25, II *c* 1, pl. xvii, *A* *a*) and II *d* (fig. 25, II *d* 1, pl. xviii, *a*).

¹⁹ A Kempston-type cone-beaker, grave 924, and a small cone-beaker, grave 992, both briefly mentioned in *Medieval Archaeol.*, xviii (1974), 175. For former see also *Current Archaeol.*, loc. cit. in note 14, fig. on p. 80 (bottom left).

²⁰ Found in grave 99. *Medieval Archaeol.*, xii (1968), 157; Rowley ed. (1974), 29; *Current Archaeol.*, loc. cit. in note 14, fig. on p. 77.

²¹ Harden (1956), 136 f., 158, group A *d* iii 1 (Alfriston) and 2, pl. xv, *h* (Howletts). For a photo of Alfriston see D. B. Harden, 'Saxon glass from Sussex', *Sussex County Magazine*, xxv (1951), 260 ff., fig. 6.

²² Normally these Roman examples are cylindrical bowls on base-rings, and although all have handle-loops, only one still retains its 'bucket-handle': cf., e.g., (*a*) with snake-thread decoration, Fremersdorf (1959), 53 f., pl. 60 (found in 1939 near E. end of St Severin's Church, Cologne: destroyed in 1943), pl. 61 (= Niessen Catal. (1911), no. 127, pl. x, from Luxemburgerstr., Cologne), and, with extant handle, pl. 65 (= Niessen Catal. (1911), no. 126, pl. x, also from Luxemburgerstr.), as well as a fourth ex. from Cologne, formerly in the vom Rath collection destroyed in Berlin in 1945 (A. Kisa, *Die antike Gläser der Frau Maria vom Rath, Köln* (Bonn, 1899), pl. xi, 98, and id., *Das Glas im Altertum* (1908), 447, fig. 115c on p. 231); (*b*) with engraved design of four framed busts, F. Fremersdorf, *Die Denkmäler des röm. Köln*, viii (1967), 140 f., pl. 78, pl. xvii, 3).

²³ For brief note of excavation of Westgarth Gardens cem., with mention of this vessel, see *Medieval Archaeol.*, xvii (1973), 149. The vessel was sold at Sothebys for £16,000: see *Catal. Antiquities, Sothebys, London, 4 April 1977*, 22, lot 61, with col. pl. on facing page.

²⁴ See further, Harden, Toynbee (1959), 204, no. A 3, pl. lxv, *a-d*, and earlier refs. ad loc.; also, most recently, Volbach (1971), 10, no. 13, pl. x (4 views). Volbach, retaining an error perpetrated by A. Kisa, *Das Glas im Altertum* (1908), 609, speaks of 'two horsemen . . . hunting a panther with two dogs', failing to realize that in front of each horseman (in one instance interrupted by a tree) is a group consisting of a dog on the back of a wild animal.

²⁵ See further, Harden, Toynbee (1959), 201, pl. lxxi, *a-c*, and earlier refs. ad loc.; also, most recently, Volbach (1971), 11, no. 14, pls. xi-xii (views of vessel and of casts of decoration).

²⁶ For this bucket see Akerman (1855), 28, pl. xiii; Harden, Toynbee (1959), 192, pl. lxx, *c* (after Akerman); Dickinson (1974), 15 ff., pl. iii (after Akerman); and for its sale in 1873 with the recently rediscovered glass jar see note 11 above.

²⁷ When I cited this bronze bucket as a parallel for the glass cage-cup in Venice (Harden, Toynbee (1959), 192) I was at pains to try to resolve the discrepancy in date between it and the cage-cup, which Prof. Toynbee and I ascribed, mainly on art-historical grounds, to the 4th or early 5th century. I have since become increasingly unhappy about that date for the cage-cup, believing it to be 100 or more years later. Volbach (1971), 10 f., confirms my present opinion, ascribing both the cage-cup and the Dionysiac bucket-shaped glass vessel in the Treasury of St Mark to the 6th or the 7th century, thus bringing the cage-cup chronologically into line with the Cuddesdon bronze vessel.

²⁸ See, for example, the Faversham cone-beaker with somewhat bulging profile, Harden (1956), 159, type III *a* ii 1, pl. xviii, *b*, and the Faversham bag-beakers, ibid., 163, types VI *a* 1 and VI *b* 1, pl. xviii, *d* and *c*, respectively.

²⁹ During this subsequent work 12 skeletons of much later date, some partially disarticulated, were found in shallow graves, suggesting that there had been a medieval or later gallows at or near the site.

³⁰ See, for example, the fine pouch-bottle in the B.M. from Bungay, Suffolk, Harden (1956), 163, type VII *a* 1, pl. xviii, *f*) and the similar piece in Maidstone from Sarre, Kent (ibid., type VIII *a* 2, fig. 25).

³¹ The vessel, provisionally deposited in the Cambridge University Museum of Archaeology and Ethnology, was included by the Fitzwilliam Museum in May-June 1978 in the temporary exhibition of choice specimens of glass from both museums; cf. *Glass at the Fitzwilliam Museum* (Cambridge, 1978), 57, no. 118, fig. on p. 58. I am much indebted to the authorities of these two museums, and particularly to Miss M. D. Cra'ster, Assistant Curator of the Museum of Archaeology and Ethnology, and Mr R. V. Nicholls, Keeper of Antiquities in the Fitzwilliam, for details and photographs of this important find and for permission to publish it.

³² *Portchester*: Harden (1976), 232 ff., fig. 145, nos. 4a-c, 6, 7, 8; *West Stow*: *Medieval Archaeol.*, **xiv** (1970), 163; *Repton*: *Medieval Archaeol.*, **xx** (1976), 159.

³³ Harden in L. Alcock, *Dinas Powys, an Iron Age, Dark Age and Early Medieval Settlement in Glamorgan* (Cardiff, 1963), 178 ff., pl. ix, b.

³⁴ *Medieval Archaeol.*, **xviii** (1974), 187.

³⁵ Harden (1956), 153.

³⁶ Harden (1961), 53 f.

³⁷ Holdsworth (1976), 60.

³⁸ See Harden (1961), 52 f., notes 74, 79, 80.

³⁹ For a general account of the work at both sites up to 1967 see Cramp (1969); for a brief summary of later work at both up to 1971 see *Medieval Archaeol.*, **xvi** (1972), 148-52.

⁴⁰ *Monkwearmouth*: *Medieval Archaeol.*, **vi-vii** (1962-3), 315; *Jarrow*: *ibid.*, **x** (1966), 170.

⁴¹ Cramp (1975), 88, 90 ff., figs. 1-4.

⁴² For further discussion of the window-glass from these two sites see Cramp (1969), 34, 37, 48, 52, pl. v; id. (1970a), 16 f., figs. 1-2; id. (1970b), 327-9, pl. liv, a-d (in colour); id. (1975), 88-95, figs. 1-4, 6.

⁴³ See further Cramp (1970a), 16, figs. 1-2.

⁴⁴ See further Cramp (1969), 48 (*Jarrow*); id. (1970a), 16, figs. 1, d (Monkwearmouth) and 2, e (*Jarrow*); id. (1970b), 329 (mention only); and id. (1975), 90, 94, fig. 2, d (*Jarrow*).

⁴⁵ M. Pocock and H. Wheeler, 'Excavations at Escomb church, co. Durham, 1968', *Jnl. Brit. Archaeol. Assoc.*, 3 ser., **xxxiv** (1971), 11-29, with a note on the window-glass (pp. 26 ff.) by Rosemary Cramp.

⁴⁶ Loc. cit. in note 32.

⁴⁷ *C.V. News Letter*, no. 26 (Jan. 1978), 10, bibliog. synopsis no. 284 (paper read by J. Hunter at Corpus Vitrearum Authors' Meeting, York, July 1977).

⁴⁸ Cramp (1969), 52, pl. ix, b, and id. (1970b), 330, fig. 1, a. See also id. (1975), 96, where fragments of three other composite mosaic rods from Jarrow are also discussed (sectional drawings, p. 93, fig. 5, a-c).

⁴⁹ Cramp (1970b), 330 ff., pl. liv, g, h, i, and fig. 1, b-f.

⁵⁰ Ibid., 327 f., pl. liv, e.

⁵¹ Cramp (1970b), 328, compares its colouring with that of six 'veined yellowish' ('jaunâtre veiné') fragments found among thirty 8th or 9th-century pieces belonging to a reliquary or a window-pane found at Sérty-lès-Mézières (dep. Aisne), citing J. Pilloy and E. Socard, 'Le Vitrail carolingien de la châsse de Sérty-lès-Mézières', *Bull. Monumental*, **LXXIV** (1910), 5-23, and J. Lafond, *Le Vitrail* (Paris, 1966), 19-21. The Sérty fragments were a casualty of the 1914-18 war and had never been reproduced in an accurate drawing or in a photograph, so direct comparison of them with the Monkwearmouth piece is not possible; but it is hard to believe, from the published descriptions, that they and the triangle resembled each other.

⁵² Not yet fully published. Preliminary reports in *Somerset and Dorset N.Q.*, **xxvii**, 68 ff., 165 ff., 251 ff. See also Harden (1959), 15, fig. 9; id. (1961), 53; id. (1972), 87, pl. vii, c.

⁵³ Harden (1956), 153; for later finds cf. Holdsworth (1976), 50 f., and, previously, brief mention of 'glassware' in *Medieval Archaeol.*, **xiii**, 232; *ibid.*, **xvi**, 155; *ibid.*, **xviii**, 177.

⁵⁴ *Archaeologia*, **xcvii** (1959), 59-105; for the glass fragment see p. 96, fig. 22, no. 35.

⁵⁵ Ibid., 96; mostly not illustrated, but see fig. 22, nos. 32-4.

⁵⁶ Ibid., 104, fig. 25, nos. 11-22.

⁵⁷ See his posthumous article, 'Economic aspects of Anglo-Danish York', *Medieval Archaeol.*, **xv** (1971), 49 f., where Waterman's comments are reassessed and supplemented.

⁵⁸ Although, as P. V. Addyman, Director of the Trust, tells me, this has not, so far, happened.

⁵⁹ For these three examples see Harden (1976), 232 ff., fig. 145, no. 9 (*Portchester*); id. (1956), 155, no. 4, pl. xix, a (London); K. J. Barton in *Sussex Archaeol. Coll.*, **ciii** (1965), 84, 87 f., fig. 1, no. 10 (Burpham). See also Holdsworth (1976), 51, for a fragment from Southampton which I have not seen, but from its description (loc. cit.) may be an Islamic piece in another style, comparable with Harden (1956), 155, nos. 1-3, pl. xix, d-f.

⁶⁰ Harden (1976), 232 ff., fig. 145, no. 5.

⁶¹ Ibid., nos. 2 and 3.

⁶² P. J. Huggins, 'Excavation . . . at Waltham Abbey, Essex, 1969-71', *Medieval Archaeol.*, **xx** (1976), 89, 117.

⁶³ The literature on these bottles is extensive. For *Corinth* see Gladys R. Davidson (Weinberg) in *Amer. Jnl. Archaeol.*, **XLIV** (1940), 320, figs. 19-21, and id., *Corinth XII. The Minor Objects* (Princeton, 1952), 88, 115, pl. 58; for examples from *Cyprus* and *Russia* see A. H. S. Megaw in *Jnl. Glass Studies*, **x** (1968), 88 ff., and many other refs. ad loc. For a convenient summary of this 'Byzantine' group and their possible place(s) of manufacture see Gladys Davidson Weinberg in *Jnl. Glass Studies*, **xvii** (1975), 131-3.

⁶⁴ *Seacourt: Oxoniensis*, **xxvi-xxvii** (1961-2), 185, pl. x, d and A. H. S. Megaw in *Mission archéol. d'Alasia*, **iv**, *Alasia I* (1971), 145; *Breedon-on-the-Hill*: found during excavations in 1975 by Miss Ann Dornier (*Medieval Archaeol.*, **xx**, 178); publication forthcoming.

⁶⁵ The best general account of this class is that in Lamm (1941), 77–99. For recent summaries see Harden (1972), 106 and note 129 ad loc. (referring specially to Cook (1958), 173 ff., and Hugh Tait in D. B. Harden et al., *Masterpieces of Glass* (London, 1968), 151 f.) and Charleston (1972), 47 f.

⁶⁶ Cook (1958), 176 f.

⁶⁷ Ibid., 173–7.

⁶⁸ Hitherto unpublished. H. 10.3 cm. Deposited on loan in the Victoria and Albert Museum by the Duchy of Cornwall, to both of which bodies and to A. D. Saunders I am much indebted for permission to include it, with illustrations, in this paper.

⁶⁹ Well published in Lamm (1941), 84 f., pl. xxii (4 views).

⁷⁰ See B. Ó Riordáin in *Med. Archaeol.*, xv (1971), 76 (brief mention only). H. of largest fragment 6.2 cm.

⁷¹ Charleston (1975a), 204, 216, no. 1498, pl. 106, fig. 221.

⁷² Id. (1972), 47 f., fig. 9, no. 3.

⁷³ Harden (1972), 103, 107; and cf. also id. in *Proc. 8th Internat. Congr. on Glass, 1968* (Soc. Glass Techn., Sheffield, 1969), 107 and refs. ad loc. and id. (1975), 39, in which paper, written in 1973, my attention had not yet focused on the new evidence, first made public in 1972 (see note 74).

⁷⁴ Boston: Charleston (1972), 45–8, and id. (1975b), 101–4; Southampton: id. (1972), 45 f., id. (1975a), 204, 216–19, and id. (1975b), 102 f.; Nottingham: id. (1972), 46, id. (1975b), 103, and cf. also *Medieval Archaeol.*, xvi (1972), 189, where ‘parts of several fine vessels in clear and yellow glass with blue trails’ are recorded from the filling of a pit, 14 ft. deep, 45 ft. S. of the post office, dated c. 1300–1350 by pottery and metalwork.

⁷⁵ Fragments of colourless cylindrical beakers with trails (blue or colourless) and prunts found in the royal palace at King’s Langley, Herts. (R. J. Charleston, ap. D. S. Neal in *Hertfordshire Archaeol.*, iii (1973), 67 ff., fig. 20, no. 3; id. (1975b), 103, 105 f., 107, pl. ii, fig. 3) are probably somewhat later, since they came from a context dated 1291–1431. Charleston (1975b), 106, compares their shape with beakers of the late 14th to mid 15th century from Plzen, Bohemia.

⁷⁶ D. rim 16 cm. Charleston (1972), 45, pl. 3, fig. 9, no. 1, and id. (1975b), 102, pl. i, fig. 1, no. 1.

⁷⁷ D. rims c. 10–12 cm. D. base-rings c. 6–7 cm. Charleston (1975a), 216 f., pl. 104, fig. 221, nos. 1488, 1490–5, and id. (1975b), 102, pl. i, fig. 2.

⁷⁸ Charleston (1975b), 103, pl. iii, a, b.

⁷⁹ *Medieval Archaeol.*, loc. cit. in note 74.

⁸⁰ Harden (1972), 107, pl. xiv, c (Old Sarum only) and fig. 15 (both examples), and id. (1975), 39, fig. 13 (both exx.).

⁸¹ Charleston (1975a), 216 f., no. 1489, pl. 105, fig. 221.

⁸² Unpublished. Kindly lent for study by their excavator, B. Ó Riordáin.

⁸³ Unpublished. Kindly drawn to my attention by R. J. Charleston.

⁸⁴ G. Beresford in *Medieval Archaeol.*, xviii (1974), 188 f., fig. 42, no. 35.

⁸⁵ *Medieval Archaeol.*, xiv (1970), 177, pl. xiii, A; Harden (1975), 38, fig. 10.

⁸⁶ Harden (1975), 36, fig. 4 (Maastricht, late 13th-century group) and 38, fig. 9 (Nieuwendoorn Castle, first half 14th century).

⁸⁷ For these two goblets see Charleston (1975a), 218 f., nos. 1512 and 1513, fig. 222 (both exx.) and pl. 107 (1513 only), and id. (1975b), 102, pl. i, figs. 1–2 (both drawings back-to-front). In (1975a) 1513 is described as of ‘clear pale green’ glass: in (1975b) it is said to be colourless, which is probably more correct.

⁸⁸ M. Biddle, L. Barfield, and A. Millard, ‘The excav. of the manor of the More, Rickmansworth, Herts.’, *Archaeol. Jnl.*, cxvi (1959), 180, fig. 18, no. 17; Moorhouse et al. (1972), 102, pl. xi, c.

⁸⁹ Moorhouse et al. (1972). For the glass see pp. 89–95, 98–104, figs. 27, 30, pl. xi.

⁹⁰ Ibid., 102 f.

⁹¹ Ibid., 101, note 33, citing the various dates suggested by Lamm, Rademacher and Charleston. A similar, but later, example is in the British Museum (Dept. Oriental Antiq. no. 1934.3–16.2), from Qurna, Egypt.

⁹² S. E. Winbolt, *Wealden Glass* (Hove, Sussex, 1933).

⁹³ Kenyon (1967), 214–21. For the doubtful 15th-century dating of Kingswood see *ibid.*, 220 f.

⁹⁴ Op cit. in note 93. This major contribution to glass studies is a careful assessment of what we know of the distribution and dating of the various glasshouses and of the history and genealogy of the families who worked them.

⁹⁵ Wood (1965). See also Kenyon (1967), 60–8, for a description of the structures, reprinted from Wood’s text. More recently Wood has suggested (*Post-Medieval Archaeol.*, vii (1973), 92 ff.) that instead of the sieges standing free within the furnace-dome (as in fig. 9), the roof of the dome may have sprung from walls contiguous with the outside edges of the sieges, and that there were, besides, low outer walls, linked with the furnace-walls by shelves over the insulation cavities. This suggestion has merit, bringing the pots closer to the glory-holes and providing useful shelves, such as exist in one form or another on many engravings of glass-furnaces of the 17th and 18th centuries.

⁹⁶ Wood (1965), 76–8.

⁹⁷ Ibid., 65, pl. vii, a.

⁹⁸ Kenyon (1967), 26 f.

⁹⁹ Ibid., 27 f.

¹⁰⁰ Preliminary mention *ibid.*, 208. See also *Post-Medieval Archaeol.*, i (1967), 118 f.; ii (1968), 191; iii (1969), 204 f.; iv (1970), 186; and (final season), viii (1974), 132 f., fig. 2.