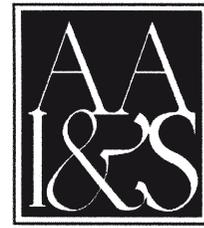




ASSOCIATION *of* ARCHAEOLOGICAL  
ILLUSTRATORS *&* SURVEYORS

**Technical Papers**



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## **AAI&S TECHNICAL PAPERS**

The Association has had requests from both individuals and organisations for a chance to obtain Technical Papers which have sold out. This folder has been compiled using photocopies of AAI&S Technical Papers 1-7 (edited by Richard Bryant). These papers are now out of print although some are presently under revision.

The reader should be aware that some of the advise is now very dated particularly as work on information technology and computer aided design has advanced at an enormous pace. However even the old information is of considerable interest in the history of archaeological illustration in general and of the Association in particular. Paper 4 was a joint publication with IFA (their Paper 10) and was assigned this number at a later date as Technical Paper 4 was never produced  
The papers are as follows:

1. **The Preparation of Archaeological Illustrations for Reproduction**  
by A.S. Maney (1980)
2. **Computers in Archaeological Illustration**  
by J.D. Wilcock (1982)
3. **Drawing Ancient Pottery for Publication**  
by C. Green (1983)
4. **Preparation of Artwork for Publication**  
by C. Philo and A. Swann (IFA Technical Paper 10 1992)
5. **The Archaeological Illustrator and the Law of Copyright**  
by M. Vitoria (1984)
6. **Photogrammetry & Rectified Photography**  
by R.W.A. Dallas (1981)
7. **Drawing for Microfiche Publication**  
by R. Bryant (1984)

Mélanie Steiner (Technical Papers Editor 1999)

*added 2006*

12. **The Survey and Recording of Historic Buildings**  
by David Andrews, Bill Blake, Mike Clowes and Kate Wilson

# Technical Paper 3 Drawing Ancient Pottery for Publication

Chris Green

This polemic is written by a professional student of Roman pottery who has also been a professional archaeological illustrator, and who still draws his own pottery and other finds whenever the chance arises. Inevitably, much of what follows is based on Roman examples, but need not have been; my point is that there should be no difference between one's illustrative approach to pottery of the Neolithic and Roman periods, nor between a medieval cooking pot and the ceramic insulators which adorn high voltage electricity pylons. In each case, we should seek to convey the maximum of archaeologically useful information in the very small available area of the printed page. Each object will appear radically different, but the same precepts can be applied.

It is only fair to give a word of warning: the substance of this paper is *not* orthodoxy amongst Romanists, and reaction can be quite strong — a sign I find encouraging.

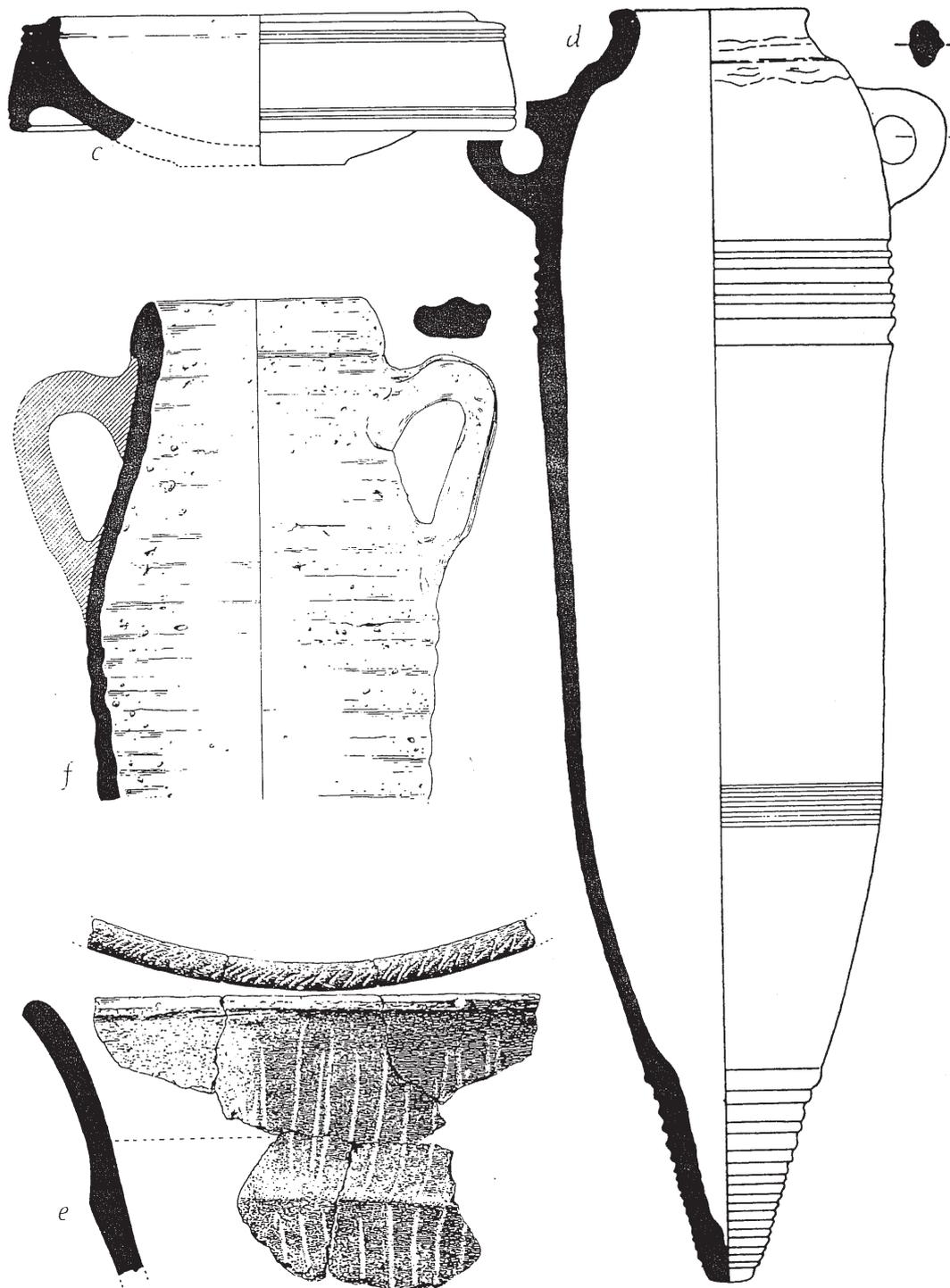
## History

Pottery illustration is as old as antiquarian pillage/research and nearly as old as the printed page. Often enough the illustrator (i.e. the engraver) has left us a recognisable image that remains archaeologically useful: the frontispiece to Sir Thomas Browne's splendid *Urne-Burial* (1658) clearly shows pagan Saxon urns, though the writer took them to be Roman. By Victorian times, 'urn' illustration was a minor industry and again the professional competence of the engraver tended to ensure an

unambiguous and useful record. Figs *a* and *b*, published in the 1870s, respectively show 2nd-3rd century Roman colour-coated beakers from various sources and 1st-2nd century finewares in what are loosely described as 'London Ware' and 'poppy-head beaker' forms. They convey more than might appear, for sleight of hand and brain — the accentuation of curve and decoration, the exaggeration of proportions that the draughtsman found interesting — has been used to characterise the vessels remarkably closely. Many Romano-British potters produced vessels in the broad style of *b*, but *only* a source in north Kent could be suggested for those shown here. Similarly I would expect fig. *a*, *centre* to be from a Rhenish rather than a British source; the features which distinguish it from close copies are subtle enough to have confused students for years, yet the engraver could capture them without conscious thought.

Clearly such illustrations have serious drawbacks for the scientific, not to say scientific, archaeologists of the 20th century. They are not *measured*, nor are they repeatable, while other examples are just third-rate hack-work. But the self-consciously scientific archaeology that developed in the late 19th and early 20th centuries often measured but failed to characterise. Pitt-Rivers, indeed, was prone to check the accuracy of his unfortunate illustrators' drawings with a micrometer, but the results are frequently dead and fail to help our recognition of specific types. Our aim today should be to make





accurate measured drawings which *do* capture specific types and convey them to the viewer. (Photography can rarely be used to illustrate pottery groups of any size, since the reproduction process allows each page to be occupied by relatively few pots, since parallax is very troublesome to correct, and above all since substantially complete vessels are required).

In the early 20th century pottery illustration achieved some degree of standardisation in Britain, and these standards and conventions remain substantially intact. I shall deal mainly with Roman examples, but it is worth noticing that different

approaches were soon adopted by specialists in each period of antiquity. Prehistorians, dealing with small quantities of material, drew their sherds warts and all to a large scale. Often the results were superb (see *e*) but standards seem to be falling fast at present. Romanists adopted the engineer's approach, and drew their pots like lathe-turned machine parts, all for  $\frac{1}{4}$  scale reproduction. Medievalists and post-Medievalists, late in the field, have copied the Romanist's approach, but usually with more flair. Students of the Saxon period have often distinguished themselves by producing the worst drawings of some of the most beautiful pots, using an inappropriately small scale and a very bald style.

Thomas May was the first serious exponent of the engineering approach to Roman pottery illustration, and indeed the first British scholar to study Roman pottery on a systematic basis. Fig. *c* shows an example of his drawings of the Colchester collections. The view is full-frontal and without perspective. The section and interior are on the left, the exterior on the right with a vertical line between the two sides. All lines other than the section and profile are ruled and the utmost economy of line is observed — only definite grooves or sharp breaks of curve are indicated. An impression of accuracy is evident. Figs. *d* and *g* demonstrate how little the convention has changed in the half-century since May's work. Fig. *g* is from probably the most widely used work on Romano-British pottery of recent years, while *d* comes from a text on the preparation of archaeological reports and is presumably seen as exemplary. Countless other examples could be used, and it seems clear that methods of illustration have become fetishistic. What purpose, for example, is served by drawing a central vertical line if the inner surface of the pot is left blank in the drawing? Far worse, however, is the fact that the pots as drawn look not like the products of a rural industry, but like so much mass-produced injection-moulded polythene. Moreover, however accurate the result is, it is boring to look at — a fundamental defect when we consider that the pottery report *ought* to be of interest to the reader of the excavation report, and not just to the few specialist readers who *have* to show an interest. For the newcomer to archaeology, the convention is initially quite difficult to 'read', and even after years of practice in reading such drawings recognition — '*that's* the pot we're after' — comes slowly. It should be immediate.

In its favour, it is urged that this plain style is a) an objective one, b) conveys the message to the readers who matter (i.e. the specialist elite), and c) is quick to produce. My contention is that a) its degree of objectivity lies solely in its measurement, which may be competent but is often patently not so; b) even for this elite audience one can do better, as we shall see; and c) if this is the result, we'd better spend longer on the drawings. Of these points, b) seems particularly important to the advancement of pottery studies and thus of archaeology as a whole.

### Recent trends in pottery studies

The approach to pottery drawing we have just examined describes only two aspects of the pot — form and decoration (or its absence). However, any ceramic object, considered purely as a physical thing, has *additional* vital characteristics:

form

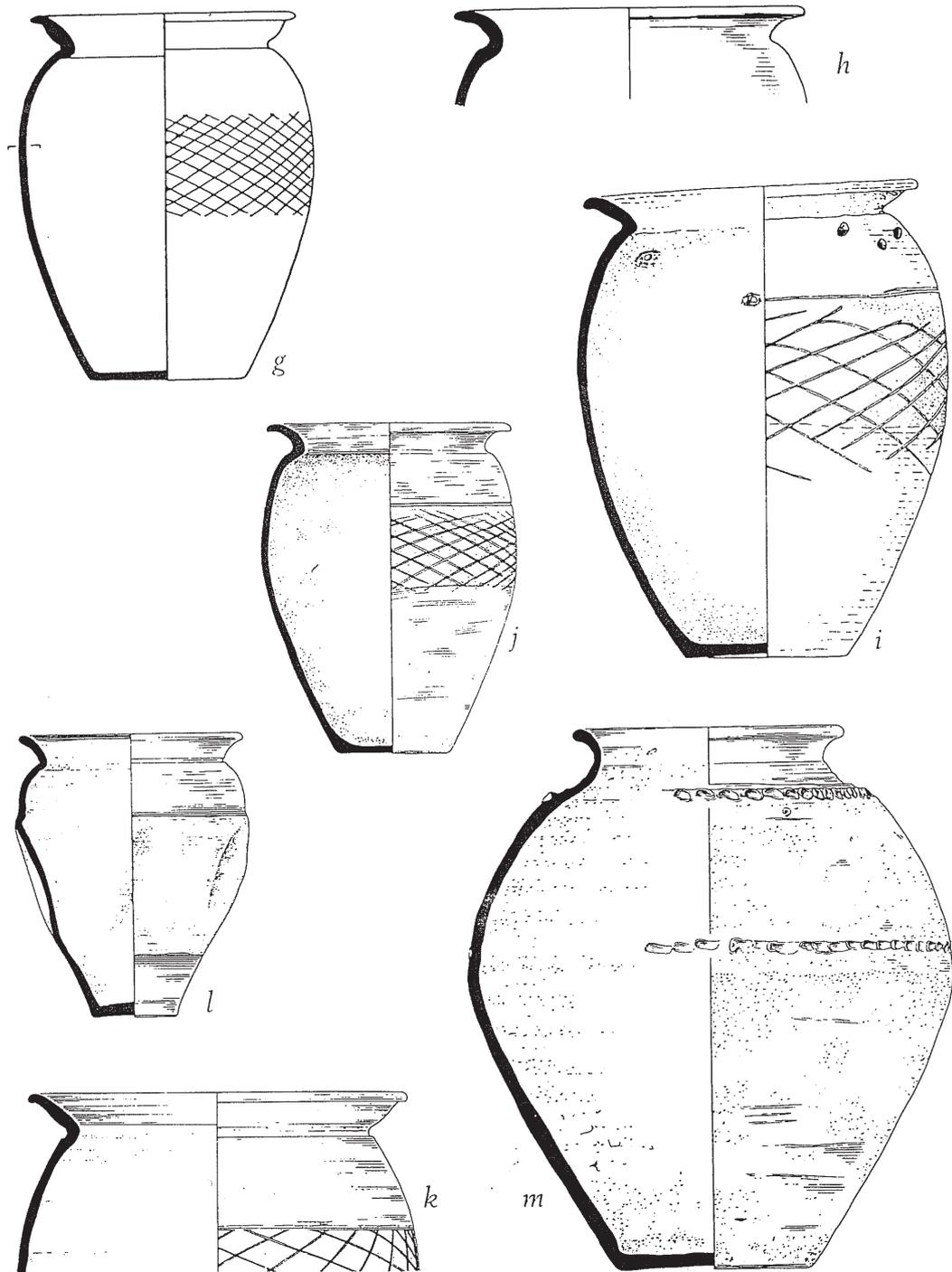
*fabric*

*construction*

*finish* and decoration

The preference for completely plain drawings of Roman pottery in the last 50 years or so is easily explained, since the basis of study remained the *form* of the vessel, allied to such superficial fabric traits as colour and 'feel' — possibly important but just as frequently not diagnostic of any particular type. Today the emphasis of study is changing fast and aims towards the identification of production centres on the basis of the fabric of the pottery. Form is clearly still important, for particular potting industries will have had their own repertoire, and this will probably have changed over the decades, allowing conclusions to be drawn on the date of archaeological deposits (in the case of Roman, Medieval and later pottery; prehistoric and Saxon examples are generally dated to much broader periods). Thus there remains a need for accurately measured pottery illustration. However, the minutiae of form and proportion need not be significant; after all these are handmade products, generally thrown without the aid of jigs or templates. Furthermore there is a stylistic unity, century to century, about much of the Roman pottery of north west Europe, and different industries often produced vessels scarcely distinguishable in form (copying of imported samian pottery was particularly prevalent). Fabric is a far more reliable guide to source, since in general the potters' clay will have been obtained fairly locally, and natural geological diversity will suggest which vessels do or do not have a common source when the fabric is studied under the microscope or hand lens. Once sources are established (and they are known for many Roman pottery types), a quantification of the fabric types in question can refine the dating evidence and give a clearer impression of the trade, local or long-distance, that the surviving pottery represents.

The best modern studies of pottery (all periods) make routine use of several fabric characteristics, normally based on the *temper* or *inclusions* which are invariably used by potters to reduce the plasticity and potential shrinkage of pure clay (as often as not the clay was selected for the natural presence of tempering matter). The type (e.g. quartz sand, shell, flint), size, roundedness, homogeneity and abundance of the inclusions are all strongly significant. Together, with such factors as the degree of clay preparation and firing temperature, they constitute the *texture* of a pottery fabric, which is thus not an incidental, but a vital matter in the characterisation of pottery from specific sources, and one which the illustrator can convey to the user of the report.



The same is true of the *construction* and *finish* of pottery. Construction methods are very important, for while a potter might use different batches of clay from week to week, and his products thus show minor fabric variations, his technique would very rarely change in a long-established industry. Contemporary handbuilt and wheel-thrown vessels are only found from the same industry in exceptional circumstances; usually such a radical change implies differences in date, source, and perhaps socio-economic 'climate'. Conversely many industries can be shown to have observed their

technological traditions to a nicety over several generations. The surface finish of a pot is a similar aspect of technique, and encompasses the style and means of decoration. The use of slip-coatings, burnishing, knife-trimming, the finishing-off of the base, painting, stamps, applied or barbotine decoration, and the zones in which any of these occur may again help to characterise a pottery industry at any given period, and should all be looked for. Illustration can indeed convey subtleties difficult to express in the limited vocabulary of the pottery reporter.

Before going on to outline some ways in which these aspects of a pot are best illustrated, a few words on the relationship of illustration and text are necessary. Apart from such matters as the obvious desirability of quick and easy cross-reference, it is clear that some aspects of a pottery type are *not* readily illustrable: hardness, feel, type of fracture, and, sadly, colour (colour printing costs being what they are). Nor is fabric readily illustrable except as a photomicrograph of thin-sections (i.e. samples ground to c. 1/1000 inch thick), a method which will grow in popularity but does necessitate the ability to 'read' them and the use of a petrological microscope for comparison. All such aspects should be given in the text of the report. Individual pottery *forms*, however, need little verbal description: a picture is worth a thousand words.

### Examples

There follow a number of examples and practical pointers. It should already be clear that I envisage a considerable degree of understanding and consultation between the writer and illustrator of the report, assuming them to be different people. If this is lacking (and it usually is), find out why and change the situation.

**i) Form.** Accurate illustration of the form means accurate measurement (see Appendix). Once basic techniques of measurement are mastered the main pitfall is simple lack of observation, for instance in missing the very faint decoration that occurs on Neolithic pots like fig. *e*, or in assuming that all Roman pots are symmetrical — if instead one happens to be lop-sided like *i* the attempt to straighten it in the drawing may cause unexpected problems. Nonetheless, some authors still apparently see nothing wrong in drawing for publication from a quick sketch, as the results all too clearly show on occasions. It is interesting to note that most would be justly horrified by the idea of drawing a site plan for publication from a sketch executed in a deck chair at the edge of the trench.

The appropriate scale for the published drawing depends largely on the amount of detail it is necessary to show, but in general  $\frac{1}{4}$  scale is adequate for most coarsewares and  $\frac{1}{2}$  scale is used for smaller finewares. Make free use of detail drawings at a larger scale wherever necessary.

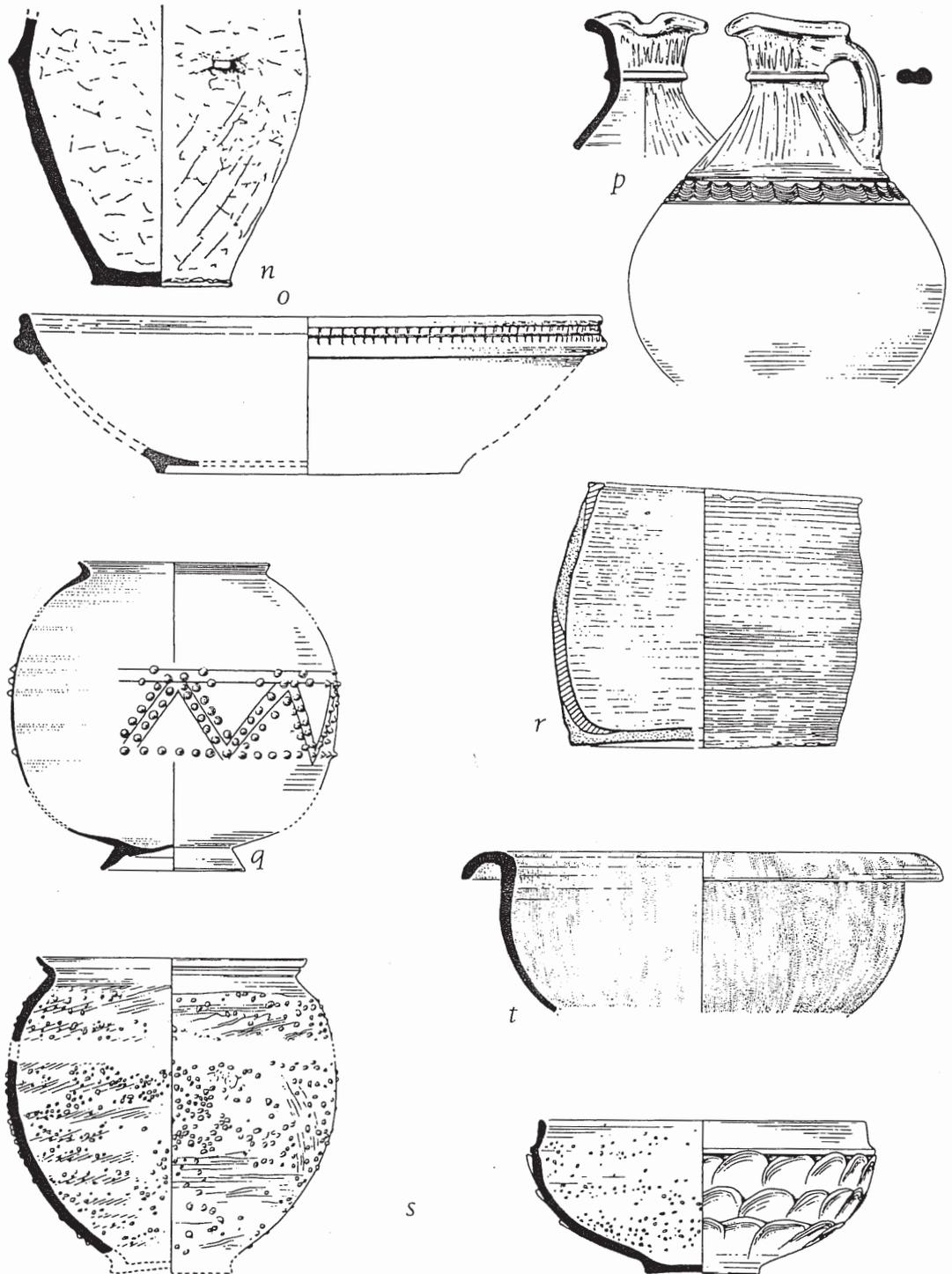
**ii) Fabric.** Fabric needs to be considered in conjunction with *finish* as finishing is, generally speaking, the smoothing of a rough surface. If the pot is left as it came from the hand or the wheel, the shrinkage of the drying clay will leave the inclusions (sand, rock fragments, etc.) more or less prominent at the surfaces, and to remove this roughness it is necessary to burnish or scrape the pot when it is 'leather-hard', although a slip may disguise the worst. However, some inclusion types may be burnt out in firing (grass, chaff, etc.) or leach out under acid soil conditions (shell, limestone). Where inclusions are large (say 1 mm or more) some (not

all!) may be shown more or less to scale in the drawing, where a changing density of marks can be used as shading instead of lines, cross hatching or stippling techniques which relate purely to form (see figs. *f*, *m*, *n*). Fabrics with included matter of moderate size (c. 0.25-1 mm) include the majority of Roman and later 'sandy' wares, and here stipple, or a string of very short dashes to indicate wheel marks, is appropriate (see *i*, *j*, *k*, *l*). Finer fabrics (inclusion size less than 0.25 mm) such as samian, many finewares and most lamps, figurines, etc., are obviously too fine to treat in this way, unless perhaps at  $\frac{1}{2}$  rather than at  $\frac{1}{4}$  scale, and linear shading or none at all seems appropriate (*q*, *y*). Note that samian, *terra rubra*, *terra nigra*, and samian allies such as African Red Slip pottery are shown without texturing or shading for a good reason: the grooves and mouldings on many forms are *consistently* present and may be diagnostic of a particular type — surface detail should not be allowed to interfere with these features. (This instance of a specialised drawing convention points to a general principle — the most informative drawings are often those made by specialists who have a clear object in mind. Conversely the use of the same type of mark to shade each and every type of pottery is uninformative and unnecessary — see fig. *h*).

Finish is really a matter of common sense and observation. Often it obscures the fabric beneath, but the drawing should record whether it does so in zones, patchily or consistently, outside and/or in, and the overall effect. Discontinuous lines are clearly appropriate for burnishing (Figs. *i*, *j*, *k*, *l*; also *p*, where the free vertical burnishing on the shoulder is very characteristic of this type of pottery). Knife trimming is seen as facets and usually plucks out some inclusions. Slip is easy to suggest if it contrasts in colour or tone with the rest of the pot. Some finishes roughen, rather than smooth the pot, notably in the case of Roman roughcast beakers and mortaria. Especially in the case of mortaria illustrators should pay close attention to the size and degree of angularity/roundedness of the grits used, as this can be diagnostic of a type. Give a detail drawing if need be.

**iii) Construction.** Pots are either wheel-thrown, handbuilt, or moulded. Combinations of these techniques do occur, for instance decorated samian (thrown in the mould) and some medieval cooking pots (handbuilt and wheel-finished), but are otherwise unusual. While the surface finish may obscure the method of construction, it is usually fairly obvious in well-preserved sherds of any size.

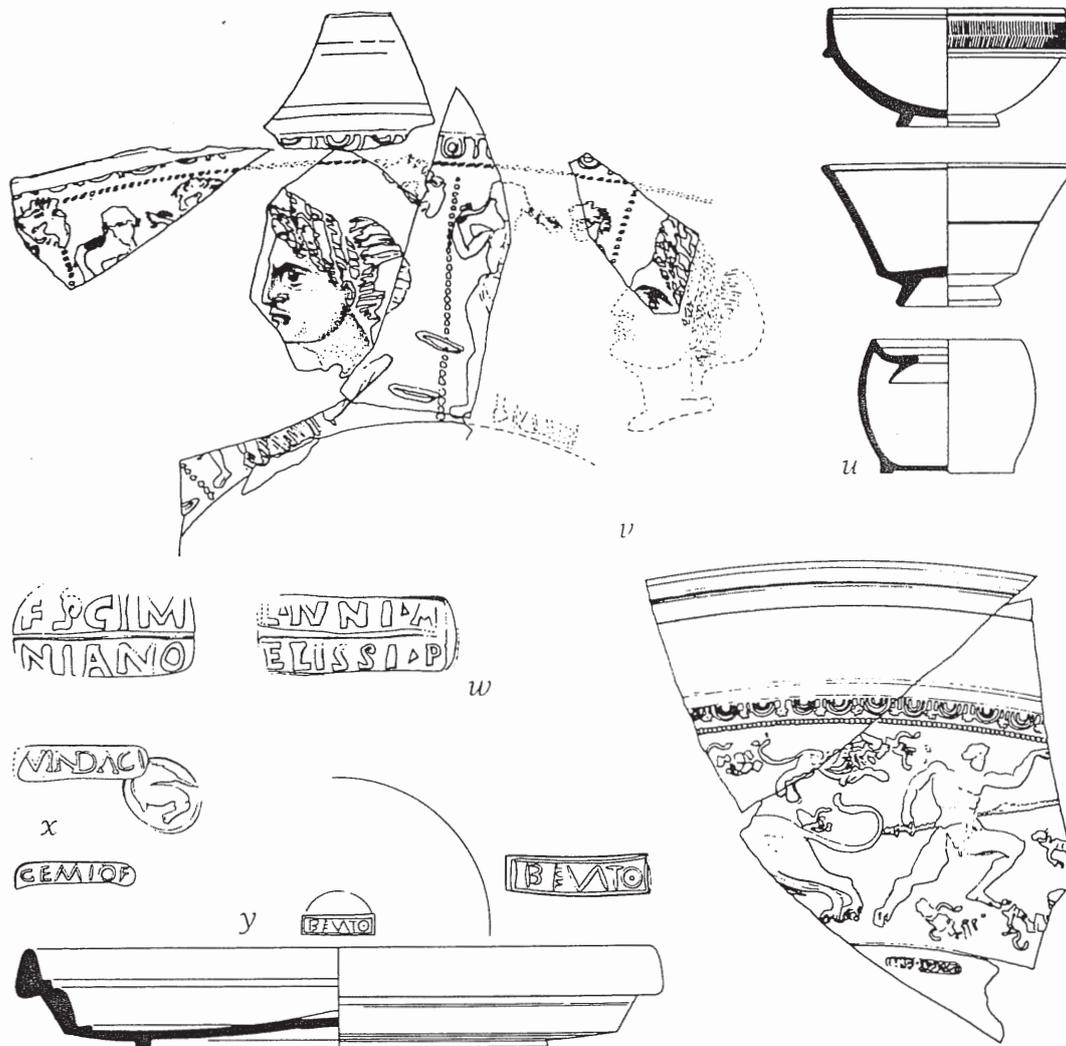
Wheelthrown pots are usually made in one piece and exhibit turning marks, particularly in those parts difficult to reach when finishing, such as the insides of closed forms, underneath rims and so on. At least some of these can be shown if present, and used to illustrate texture. Some internal detail will therefore be necessary (see *f*, *k*, *l*). Flagons and bottles may have been made in two parts, and amphora



construction can be quite complex; any surviving details must be shown. Handles are shown in cross-section as well as elevation, and, if there are two, fig. *f* shows the convention to avoid obscuring the profile. Other applied components like feet and spouts are treated in the same way. Check whether the handle is applied onto, or tanged through the body of flagons, using a dentists' mirror or X-ray if the pot is whole. And if the pot is whole and the interior inaccessible, simply draw it as an external elevation.

Handbuilt pots may be pinched up or coiled, usually in coarser fabrics than their wheelthrown fellows.

They are recognised by the absence of turning marks and often by finger marks in places inaccessible to the finishing process, notably on the interior of shoulders (e.g. in *i* and *j*). Normally, of course, they will be less regular than wheelthrown pots, but this need not apply to the rims of Roman examples which were often coiled and then trued up on a simple turntable (e.g. *m*). If pots are irregular it is senseless to draw their horizontals with a ruler, as in *g* and *h*; *i* and *j*, in fact, represent precisely the same type of pot as *g* and *h*, but their method of construction has been realised (prehistorians take particular note). Fig. *k*, on the other hand, has a similar form but different fabric, construction and finish — it is from a quite separate source.



Coil-built pots are not always obvious, although in *m* neat individual coils are clearly defined internally. More often a vertical break can give the game away by showing an imperfectly bonded coil, a slight change in fabric, or a wavy orientation of any plate-like inclusions such as shell. When recognised, coils can be shown on the section as in fig. *r*.

Moulds are usually employed to produce multiples of a decorative scheme, and are thus a *die* which can be traced from pot to pot and can even be shown to have been carried from one production site to another in the case of samian pottery. It follows that drawings should be as accurate as possible and quite unambiguous; *v* is a good example. The same applies to stamps, whether on samian and other finewares, amphorae, mortaria or tiles. Stamps should be shown at twice the reproduction scale of the vessel (more if need be) and a suggested style is shown in *w*, *x* and *y*.

For any method of construction, individual pots or the work of whole industries will fall into a continuum from the rough and ready to works of consummate technical skill. As this may help to differentiate the products of different workshops, such aspects of technique should be shown in drawings (fig. *f* cf. *q*).

Finally, for any pot, draw as many views as are required for an unambiguous statement. With pottery illustration as with all other aspects of an archaeological report, it should be possible to produce a fair replica of the artifact or even the site itself from the published drawings, at least in theory!

### Summing up

In the 'historical' section of this essay the work of a Victorian engraver was examined and its strengths emphasised. His images, however, belong to the world of haphazard barrow-digging, villa-trenching and pot-hunting. Today controlled excavation has made great strides and can trace the most ephemeral structures as well as following the more substantial of the masonry walls. The study of pottery is also advancing fast, and I have tried to indicate some ways in which illustrations might belatedly help this process, recapture a little aesthetic appeal and represent their subjects in a more immediately recognisable fashion. They are suggestions, not new rules to be slavishly adopted. The fewer rules the better, in fact, the best one being to treat each archaeological object on its own merits and to adapt one's approach to it, rather than *vice versa*. And in each pottery illustration we should question how far we have advanced beyond the images left by our anonymous Victorian. To date, not very far at all.

## Appendix: Basic techniques

This appendix is for beginners only; the basics of drawing a profile are not difficult to acquire. In the end, everyone develops their own method, and I think it is best to play with some basic equipment (listed below) until one finds it. Nonetheless, I offer a few suggestions which may be of help.

### Equipment

- a. Drawing board.
- b. Paper, A3 and A2 heavy smooth cartridge. Terston 'Cartridge Sketch Blocks', ref. CSB3 (A3) and CSB2 (A2) are excellent, and although better quality papers are available (e.g. CS 10 blocks, Colyer & Southey Ltd, Hatton Wall, London EC1) they are expensive and probably unnecessary for this kind of work.
- c. Masking or drafting tape (fixes b to a).
- d. Tee square, if not integral to a.
- e. Set squares (graduated in mm., 45° and 30°).
- f. Pencil (about grade H), with sharpener or knife. *No one* draws well with a blunt pencil.
- g. Eraser (plastic type).
- h. Dividers.
- i. Pens: generally Rotring tubular pens (e.g. 'Variant', 'Radiograph' or 'isograph' with c. 0.25 and 0.6mm points) or Rotring 'Graphos' with 0.2 and 0.4mm 'O' series nibs. A thicker pen (say, 2mm nib) helps to fill in sections quickly. 'Variant' pens are very well known, the 'Graphos' less so; it is however a most versatile split nib pen and I much prefer it for all archaeological work other than the drawing of small objects, where a mapping pen may be called for.\*
- j. Compasses are needed if plan views have to be drawn (e.g. decoation inside a bowl).
- k. Radius aids: i) typical rim chart with 25 to 300mm (+) radii, homemade on card (fig. 6A). ii) Radius templates, covering the same range of internal and external curves. These are again home-made, most readily by scribing the radii with a pair of dividers on a sheet of '30 thou' (i.e. 30/1000 inch, just under 1mm) 'Plasticard', a sheet polystyrene available from model shops. Once scribed about a quarter of the way through, the shape can be snapped out far more accurately than it could be cut with a knife, and provides both internal and external curves. A set of these templates is an extremely useful auxiliary to the rim chart, as it can be used to establish the radius of a body sherd or otherwise inaccessible parts of a pot (e.g. the base of a dish). (Fig. 6B). iii) The formula in fig. 6C is occasionally useful for really large pots (or other objects) outside the size range of your chart or templates. However it is a last resort, being sensitive to error, particularly in measuring x.

\* Since this was written, Rotring have phased out the 'Graphos' nibs mentioned here, leaving no alternative to tubular nib pens for technical work. Given the price of Rotring pens, one feels entitled to the choice, and the right to keep existing equipment in use, rather than see it become obsolete. The implication is also rather sinister; only the draughtsman who uses straight lines and circles of constant line thickness seems to be profitable these days.

### Measurement and construction on paper

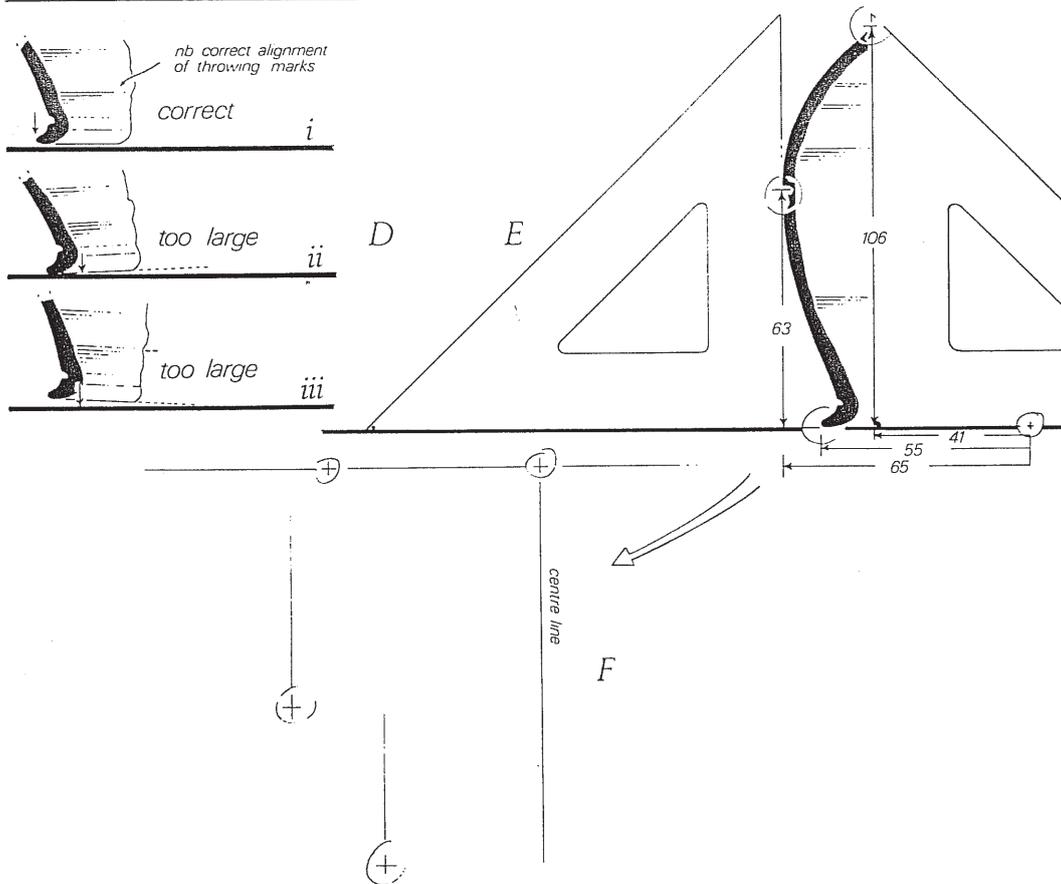
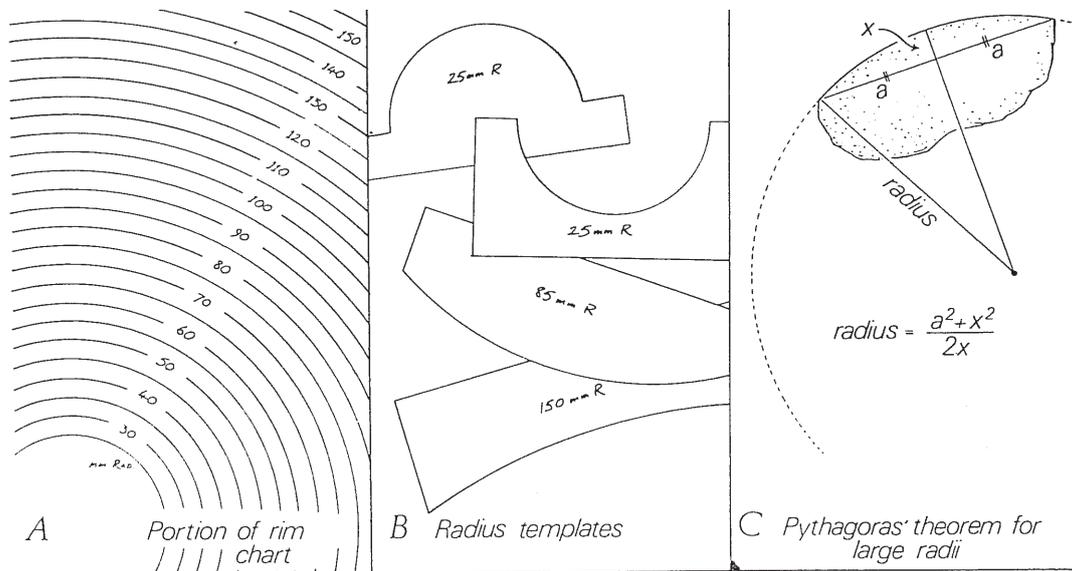
Wherever possible, pottery is drawn full size, so that the maximum number of direct measurements can be made. Any reduction for publication or smaller drawings is made at a later stage, usually photographically.

A number of 'quick and easy' methods using engineers' squares, graph paper, plasticine, etc., have been published in the past (e.g. in Grinsell, Rahtz and Price Williams, *The Preparation of Archaeological Reports*) but they have their limitations, notably the need for substantially complete pots and, for preference, a third hand. For most British sites there will be a need to draw small sherds (possibly bodysherds) with two hands, so that it is best to learn the hard way with the minimum of equipment. I am also convinced that the simpler methods outlined below are in fact the quick and easy ones in the long run.

a) If a pot/sherd retains a rim or base, the obvious starting point is to find its diameter using a ruler (for whole vessels) or radius aid (fig. 6A-C), observing remarks on alignment below. Further measurements can then be made by placing the pot on a flat surface (a rim chart, fig. 6A, for convenience) and using graduated set squares to establish the position of the girth and the overall height (fig. 6E). The method is accurate, always providing that the rim (or base) is 'seated' in its original plane (fig. 6Di). Any deviation from the horizontal will make the diameter of the vessel appear larger than it really is (fig. 6D ii-iii), and distort the whole drawing. A further proviso is that the squares must not only be square to a really flat surface, but must stand vertically, or the pot will appear taller than it really is. Two simple precepts emerge: i) *the pot must be held in its original alignment* (even if it is upside-down) and ii) *all measurements must be taken in the same radial plane*, as if one were measuring across the cut surface of a slice of cake and not diagonally from slice to slice.

Correct alignment — 'getting the angle right' — often proves hard for beginners, but once it is mastered some short cuts can be taken. With smaller sherds, especially, I tend to take dimensions like the 'depth' of the girth (63mm in fig. 6E) by sighting across the top of the rim so that it aligns perfectly with a horizontal ruled on the paper. One point of the dividers is then placed at the girth, and the other moved (vertically with respect to the pot) until it, too, is sighted on the horizontal line. Unless your eye, the pot or both have moved during the operation, the measurement will be correct however far the pot is from the drawing board. This method is really a speedy form of fig. 6E, without the attendant paraphernalia. Horizontal, rather than vertical measurements can be made against a vertical line, again with the rim aligned horizontally.

If a pot (especially handmade types or distorted wasters) is noticeably asymmetrical, measurements of both sides are called for.



**b) Bodysherds.** The correct alignment and measurement of bodysherds is just as important as for rims or bases, but fig. 6E is clearly inapplicable. Internal or external radius templates (fig. 6B) are the only practical means of obtaining the radius, and are kept horizontal to the pot by making their edges touch a wheel mark at all points on the circumference. Again, an oblique alignment produces too large a value. Establishing other points necessarily depends on being able to use the 'sighting' method outlined above, but in this case sighting across a wheel mark to the horizontal line on the paper.

The measurements taken are transferred to paper, as at fig. 6F, providing fixed points for further work. The next step is to complete the external profile, which will pass through the points. Proprietary adjustable metal templates ('Copydex', etc., or, if you want to pay for quality, 'Maco' templates) can be used, while soft solder (in wire form) can be made to do the same job. Personally, however, I much prefer to work by eye, measuring further points such as breaks of curve and rim details directly with a pair of dividers.

While doing this, it is most important to check measurements diagonally (fig. 7G) to see if all is well.

The resulting profile should not only present the dimensions of the pot accurately, but should convey something of its character — i.e. the profile will be a smooth curve or an undulating set of throwing ridges as appropriate to the quality of the vessel.

Measure the thickness of the vessel directly with a pair of dividers, and so complete the section. Then transfer the external profile to the right hand side of the drawing. Here dividers are quicker than tracing paper: a number of horizontals are ruled and the radius of the vessel at each horizontal is pricked into the paper at the right hand side and joined up by eye, fig. 7H. **Label the drawing with its site code, context or layer number, etc.**

### Inking and reproduction

Archaeological drawings should always be made with a specific scale of reproduction in mind — often  $\frac{1}{4}$  or  $\frac{1}{2}$  for pottery — see above. This determines the thickness of the inked line, which must be readily reproducible, and, once reproduced, visible, while remaining delicate enough to ‘resolve’ detail. In practice, this means a final reproduction thickness of 0.1-0.25 mm, so that for  $\frac{1}{4}$  scale the original line thickness would be 0.1-0.25 x 4 mm, = 0.5-1.0 mm, and for  $\frac{1}{2}$  scale, 0.2-0.5 mm. This can be achieved with 0.4 mm ‘O’ series Graphos nibs or 0.6 mm Rotring tubular nibs for  $\frac{1}{4}$  scale, or with 0.2 mm ‘O’ series Graphos or 0.2-0.3 mm tubular nibs for  $\frac{1}{2}$  scale (Graphos nibs produce a thicker than nominal line, and ‘spread’ in use; eventually they are discarded). Going outside these limits can be disastrous. (See fig. 7K).

There is little advice to give about the use of these pens. It is best not to ‘break’ the wrist when drawing long curves in pen (by far the most difficult operation) — move the whole arm or forearm for a smoother result. Otherwise practice makes perfect.

### Paste up

Individual drawings are pasted up on a piece of white card/board (for preference, though stiff white paper would ‘do’), using a dimension x times that of the *printed* area of a page of the journal etc., in which it is intended to publish, where  $1/x$  is the scale of reduction. When measuring this area (‘notes for contributors’ should supply it anyway), do *not* include the area for the caption. If no specific publisher is yet known, bear in mind that all but a few journals (e.g. *Archaeologia Cantiana*) will accommodate a print area of 130 x 185 mm, but that books are often smaller.

‘Cow gum’, while messy to use, is still the best adhesive for this kind of work. Paint round the cut edges of individual drawings with ‘Process white’ when the adhesive is dry; this avoids unwanted marks appearing at the photoreduction stage (fig. 7J). Though often omitted, this touch is worthwhile since it saves possible expense at the printers, and

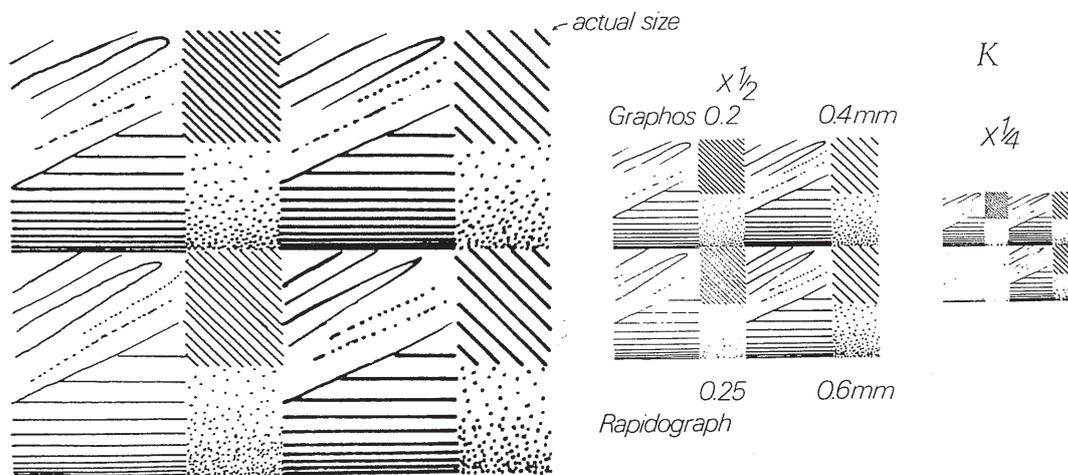
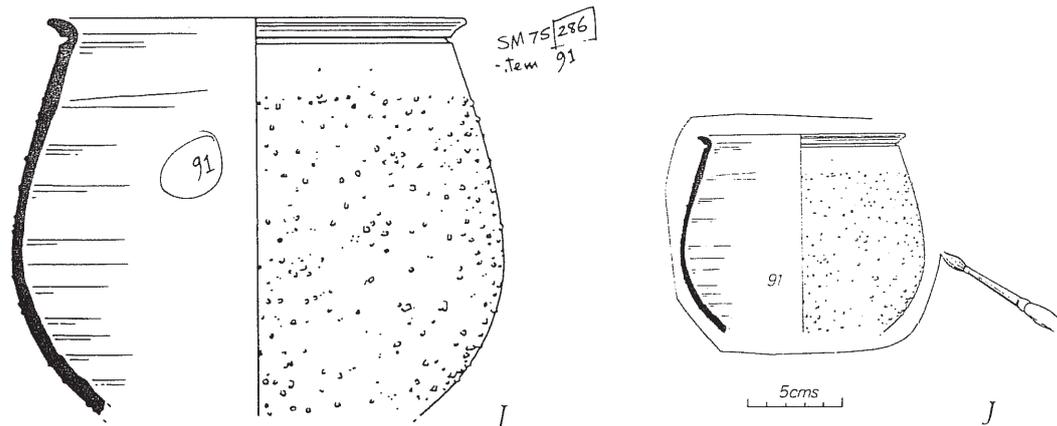
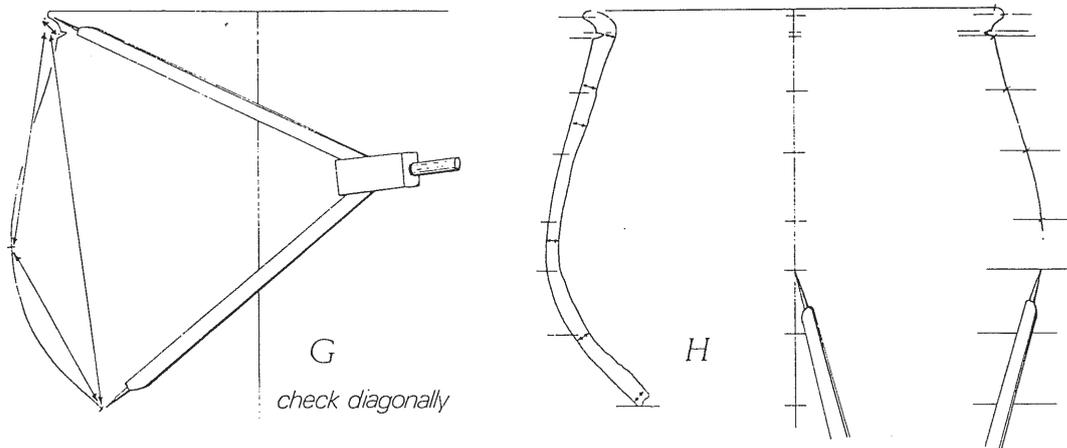
since printers despise grubby artwork and may not treat it with loving care. Numbers should be added with Letraset, using a point size of  $6x$  to  $10x$ , where  $1/x$  is the scale of reduction (i.e. 24 or 36 pt characters for  $\frac{1}{4}$  reduction). Finally, add a simple scale (e.g. fig. 7J), even though the scale of reduction should be stated in the caption, since editors and printers often conspire to get this wrong (report users n.b.!).

Check everything before it goes off to the printers — subsequent corrections are very expensive.

### NOTES ON THE FIGURES

All are reproduced at the scale of publication, with the exception of *a* and *b* (slightly enlarged). Unfortunately the use of examples from previously published works in the case of *a, b, c, d, e, g, h, i, o, r, u* and *v* has necessarily resulted in a degraded image, for which I apologise to the authors involved.

- a, b* from Llewellyn Jewitt, *Half hours with some English Antiquities* (1877 edition). No scale.
- c* from Thomas May, *Catalogue of the Roman pottery in the Colchester and Essex Museum* (Cambridge 1930), pl. LXVIII. 2nd century Colchester mortarium; scale  $\frac{1}{3}$ .
- d* from L. Grinsell, P. Rahtz and D.P. Williams, *The Preparation of Archaeological reports* (1974), 49. Aegean amphora, scale  $\frac{1}{4}$ .
- e* Neolithic bowl drawn by Robert Gurd; from E.C. Curwen, ‘Excavations at Whitehawk Neolithic Camp, Brighton, 1932-5’, *Antiq. J.*, *xiv* (1934), 113. Scale  $\frac{1}{2}$ . More of Gurd’s superlative work can be found in *Sussex Archaeological Collections* for the years 1930-c.1950.
- f* Roman amphora, type Richborough 527, found in London. Scale  $\frac{1}{4}$ . (Author).
- g* Black-burnished Ware type 1 jar, from J.P. Gillam, *Types of Roman coarse pottery vessels in Northern Britain* (1957; 3rd ed. Newcastle 1970), 57. Scale  $\frac{1}{4}$ .
- h* Same type as *g*; from A. Down, *Chichester Excavations 2* (Chichester 1974), 22. Scale  $\frac{1}{4}$ .
- i* Same type as *g*; from R.A.H. Farrar, ‘The techniques and sources of Romano-British Black-burnished Ware’ in A.P. Detsikas ed., *Current Research in Romano-British Coarse Pottery* (1973), 103. An informative drawing closely linked to the text. Scale  $\frac{1}{4}$ .
- j* Same type as *g*; example from London. Scale  $\frac{1}{4}$ . (Author).
- k* Alice Holt (Surrey) jar, 4th century; example from London. Scale  $\frac{1}{4}$ . (Author).
- l* Folded jar (? Colchester source, 3rd century); example from London. Scale  $\frac{1}{4}$ . (Author).
- n, o* From P.A. Rahtz, ‘Pottery in Somerset, AD 400-1066’, in V.I. Evison, H. Hodges and J.G. Hurst (eds) *Medieval Pottery from Excavations* (1974), 107. Excellent examples of contrasting approaches to (n) a hand-made Dark Age vessel and (o) a contemporary classical import, ‘A’ Ware. Scale  $\frac{1}{3}$ .



- p* Hadham Ware (Hertfordshire) jug, 4th century; example from London. Scale  $\frac{1}{4}$ . (Author).
- q* Eggshell Ware, mid 1st century AD import from the Rhine or Moselle; example from London. Scale  $\frac{1}{2}$ . (Author).
- r* Saxon period vessel; from P. V. Addeyman, 'A Dark-Age settlement at Maxey, Northants', *Med. Arch.* viii (1964), 57. To show coil construction. Scale  $\frac{1}{4}$ .

- s* Two roughcast Lyons Ware vessels, 1st century AD; examples from London. Scale  $\frac{1}{2}$ . (Author).
- t* Romano-British 'Marbled Ware' bowl, 1st-2nd century; from London. To show treatment of this variegated type of slip. Scale  $\frac{1}{2}$ . (Author).
- u* Plain forms of samian, various dates and sources; from B.R. Hartley, 'Samian Ware or *Terra sigillata*', chapter xiii of R.G. Collingwood and I.A. Richmond, *The Archaeology of Roman Britain* (2nd ed 1969), 244. Scale  $\frac{1}{4}$ .

- v Two examples of decorated samian bowls (Central Gaulish form 37, 2nd century), drawn by N. Sunter, from B. Cunliffe, *Excavations at Fishbourne 1961-9* (vol. ii, 294). The upper example shows an unusual head in high relief; in the lower example the poor quality of the moulding is very successfully conveyed. Scale ½.
- w Stamps from a Spanish oil amphora, 2nd-3rd century AD; example from London. Scale ½. (Author).
- x Two stamps from 'eggshell ware vessels' (see q), the upper applied over a sealstone impression; examples from London. Actual size. (Author).
- y *Terra nigra* platter, Gaulish, mid 1st century AD; example from London. Scale ½ with stamp detail actual size. (Author).

## FURTHER READING

Anyone wishing to learn about the shortcomings of much routine pottery reporting, and about the necessity of developing the study of pottery, should begin by reading D.P.S. Peacock, 'Ceramics in Roman and Medieval archaeology', in Peacock (ed.) *Pottery and early commerce. Characterisation and trade in Roman and later ceramics* (Academic Press, 1977), 21-33. This volume also contains studies (see especially that by Fulford) which serve as practical examples of the way in which pottery can illuminate otherwise hidden aspects of ancient life, in this case trade. Guidance on minimum standards for pottery reporting have been published by the Department of the Environment/Study Group for Romano-British Pottery, *The Processing and Publication of Roman Pottery* (ed. C.J. Young), and guidelines for other periods are in preparation.

It is more difficult to suggest introductory texts for those illustrators who want to know a bare minimum about the pottery they illustrate, but an inexpensive series of Shire Paperbacks (available from most museums) covers pottery from the prehistoric to Medieval periods. That on Roman pottery is particularly recommended: V.G. Swan, *Pottery in Roman Britain* (2nd edition, revised 1978).