EGGSHELL WARE POTTERY IN ACHAEMENID MESOPOTAMIA

By DAVID FLEMING

The major obstacle facing the student of Mesopotamian post-Assyrian ceramics is the lack of reliably dated pottery earlier than the Seleucian-Parthian material from Seleucia and Ctesiphon. The condition of the sites from which this pottery was recovered precluded stratigraphic recovery, even when this was attempted. Gibson's work at Nippur led him to suggest (1975: 76) that many ceramics classified as late Neo-Babylonian pottery are actually Achaemenid and some considered Achaemenid are Seleucid. The extensive excavations conducted at Babylon in the 1890's yielded material from the period of Achaemenid control, but the relevant sections have not been fully published. These ceramics were excavated on a palace site and are not "common ware", or pottery in ordinary daily use.

Pottery from sites in southern Mesopotamia varies in its value for the study of mid-first millennium B.C. regional ceramics. This variability results from its manner of recovery and its context. The late pottery excavated at Ur by Woolley and his predecessors was almost entirely from graves (see Taylor 1855a and 1855b; Hall 1919) and included a large number of shapes with imprecise stratigraphic attributions. However, the corpus recovered was of great value for its typological variety. In one sense, the Ur pottery is a "perfect" collection of its period, because it is the result of intentional rather than accidental deposition and is therefore likely to show one form of contemporaneous usage. Once the large Ur corpus has been checked, it may be used to illuminate material from smaller sites, or from surveys.

Principal innovations in the post-Neo-Babylonian ceramic corpora of Mesopotamia included technique and vessel form. We cannot now determine who introduced these innovations, but the new usages were contemporaneous with the presence in Mesopotamia, for the first time since the Kassites, of a non-Mesopotamian political authority. The actual technique of manufacture probably remained a Mesopotamian skill, but new masters may have inspired local craftsmen to experiment outside their very conservative traditions. This article will examine the methods by which certain vessel forms were produced, the manner in which they were finished, and their formal appearance.

The late pottery from Ur

The "Persian" pottery from Ur was excavated in contexts that showed that the site was not a major royal residence of the period and so may have produced more "common" pottery than Pasargadae or Susa of the same era. Woolley's excavations yielded the first properly recovered collection of mid-first millennium B.C. pottery from Mesopotamia. Woolley did not classify his material and in his publication of ceramic profiles he sought to present as wide a selection as possible in order to provide the fullest idea of the variety of later ceramics.

Virtually all recorded pottery from the mid-first millennium B.C. from Ur was found in graves dug into the surface of the mound. Woolley sorted the graves into

three temporal classes based on coffin types. He named these Neo-Babylonian, Persian and Common (1962: 54–6) and sorted the pottery by reference to these classes. Unfortunately, Woolley's temporal attributions were based upon a mistaken assumption and resulted in a false chronology. The crucial point for Woolley (1962: 55) was that the coffin-type he named "larnax", represented by two metal examples (PG/1 and PG/2, Woolley 1962: 113, U.6754) and numerous terracotta ones, was attributable to the Persian period at Ur and was the fundamental indicator for all pottery classifications. The basis for Woolley's temporal orderings is not clear from his descriptions of coffin types, although it seems he noted the resemblance of the decorative elements of the metal coffins to Iranian metalwork of the same period (Woolley 1962: 56). The entire pottery corpus of the late occupation at Ur has been skewed by faulty assumptions; more recent work (especially that of Strommenger 1964) shows that the "Persian larnax" was in common use in Mesopotamia at least by the Neo-Assyrian period and continued into the fourth century B.C. Indeed, the Ur bronze larnax that is now in the British Museum (BM 118604) is described as a Neo-Assyrian bathtub re-used as a coffin at Ur in the Persian period (*vidi;* see also Moorey 1971: 260). This means that the elaborate separation of pot-types in Woolley's notes cannot be followed for his late pottery (1962: 92–100) and must be replaced by a chronological system based upon comparisons with material from other excavations.

Before large-scale reattribution can be made one must consider in detail the nature of one class of pottery from Ur that may be used to date contemporaneous Mesopotamian ceramics more securely. This is the extremely thin, fine pottery known conventionally as "Eggshell Ware", first identified at Ur and recovered there in large quantities. It has been found subsequently on other major Mesopotamian sites, but never studied.

Eggshell ware

In the examination of Mesopotamian ceramics one feels that there is never anything wholly new from one millennium to the next. It is therefore refreshing to encounter a ceramic practice that was both new and technically sophisticated, although even in this case it is possible to point to antecedents. From the evidence available from sites in southern Mesopotamia and elsewhere, it seems that the vessels classified as "Eggshell Wares" (hereafter referred to as EW) were largely made in southern Mesopotamia in the mid-first millennium B.C. after the conquest of the region by the Achaemenid Persians.

Recognition of this pottery's distinctiveness came early, with Peters' finds at Nippur (1893: 390 and Pl. 6.2), although the first use of its evocative name seems to have been made by Hall in his description of the first seasons at Ur (Hall 1919: 184 fig. 146, top left and right). Woolley recovered substantial amounts of EW at Ur (1962: Pl. 38.2–8). Published examples and occurrences at other sites in the region are:

Nippur: McCown 1952: Pl. 18.5b; McCown and Haines 1967: Pl. 103 13–14 "Type 66"; McCown *et al.* 1978: 45; Gibson 1975: 41 and fig. 35.4, 116 and fig. 88.2; Gibson *et al.* 1978: 43 and figs. 33.6, 33.8, 33.13; 44 and figs. 33.15, 34.2, 34.9; 45 and figs. 35.2, 35.5, 35.7; 102 and fig. 55.3;

Uruk: Strommenger 1967: 12 and Taf. 3.16–17; 33.5a–b;
Babylon: Reuther 1926: 36, Grave 204;
Sippar: Haerinck 1980: 67.
EW was mentioned, but not illustrated, from Kish (Moorey 1978: 51); a single bowl of EW was recovered in the pottery of the Tall-i Takht at Pasargadae (Stronach 1978: fig. 109.1); some EW bowls were found at Parthian Seleucia (Debevoise 1934: 42 Types 1–6); many examples were recovered from the Chaour palace at Susa (Labrousse and Boucharlat 1972: fig. 51.1–15; 1979: fig. 29.1–5). All have been dated, on stratigraphic grounds, to the mid-first millennium B.C. or later. Examples of this pottery have been found at Samaria in Israel (Stern 1982: 142 fig. 235), where their dissimilarity to local styles and their complete identity with Mesopotamian EW allows one to assume that they were imports. There has not, however, been any consideration of the EW as a pottery type, since its fragility has prevented the recovery of very many complete examples from various sites, and partial examples are simply recorded as sherds. In the British Museum there is a small collection of EW from Mesopotamia, in which the characteristics of vessels published from the area may be seen and which forms a useful start to an investigation (Figs. 1–3).

Several features of this pottery are obvious. The first is the thinness of its walls and the uniformity of profile thickness. These would have given rise to an original supposition that fragments of this pottery were portions of ostrich eggshells. The fabric is extremely clean and free of grit and, in general, the vessels are fired to a uniform buff colour that Woolley described as "drab", although some examples were over-fired to a greenish colour and certain individual vessels were warped by the heat (for example, 1919–10–11, 524 from Ur, Fig. 1.B), or were scorched through the fabric (1919–10–11, 525 from Ur, Fig. 1.C).

The range of shapes is restricted, although this must have been due as much to the fragility of the unfired fabric as to aesthetics. Shapes were, for the most part, hemispherical or sub-hemispherical bowls with rounded or slightly pointed bases, although the Susa-Chaour examples include forms peculiar to Khuzistan. Peters recorded (1897: 390) that these vessels were often found either as covers on jars of food left in tombs, or as holders of food. Peters' comments are very valuable because they are the only precisely recorded findspots for the EW. In all other cases one has mere presence of the ware; its enigmatic nature is not illuminated by any other material from the same findspot. It is difficult to ascribe any practical use to the EW: its fragility would have prevented normal working use, the vessels can rarely stand alone as virtually all of them lack any form of constructed bottom, and the absence of obvious decoration would suggest that they were not merely ornamental. There is little evidence for funerary wares in other periods of Mesopotamia, but such an identity might explain EW's restricted geographical and temporal distribution. The finding of two EW vessels in Samaria, alone amidst the sites of the Persian period in the Levant, suggests that the ware was restricted outside Mesopotamia to sites of major economic importance. Samaria was the capital of the Persian province in Palestine and would have been a ready market for luxury goods, such as the Achaemenid ivory throne found in excavations there (Tadmor 1974: 42).

What distinguishes the EW from other wares is its method of manufacture. The techniques used indicate that a great deal of care was taken. EW would have been

expensive in labour in comparison with contemporaneous pottery and would have been more difficult to make than glazed wares, which by then were made in great quantities. The thinness of the vessel walls was a result of a secondary manufacturing process, which, by its nature, sharply limited the number of possible vessel shapes. Inner surfaces were smoothed by hand. Visual inspection shows the parallel ribbing left by the potters' fingers. Once the unfired clay vessel had dried to the leather-hard stage it was replaced on the potter's wheel on its rim, was centered and set turning. A blade, probably metal or obsidian, given the smoothness of the resulting work, was held tangentially to the surface of the vessel and used to pare away layers of clay until the desired thinness was achieved. This technique was used, rather than the "Templet" [*sic*] suggested by Woolley (1962: 90), which would have meant that vessel surfaces were mould-made, or at least mouldshaped. The evidence of vessel surfaces shows that the pots were shaped by hand. The use of a mould would not have produced the regular scorings and striations in the outer surfaces, as there would have been no motion between the mould and the exterior vessel surface; the inner surfaces would not have been worked in the manner presently visible if the clay had been packed into a mould. The use of a template is discounted by the fact that parallel shaving marks are visible on the outer surfaces of several of the vessels; the provision of a single smooth curve with a template would have precluded the formation of this sort of surface marking, which indicates a sequential rather than a simultaneous operation. The mechanics of the paring process have been illustrated for Palestinian Middle Bronze Age pottery (Franken 1978: figs. 1–2), although the pottery so produced was not as fine as the EW and in that instance the paring process was obviously intended more to smooth the vessel than to produce a thin ware.

The shaving or paring technique presupposed great skill on the potter's part, because it demanded that the thickness of the vessel wall before the shaving be regular enough to prevent the holing of the wall from the exterior by the inadvertent removal of the base of a hollow in the inner surface. The shaving removed any striations or ribbing in the outer surface that would have remained from the hand-working process, but added an occasional deep concentric scoring. There are also examples (1919–10–11, 545, Fig. 2.D; 1931–10–10, 552, Fig. 2.H) which show that in certain cases at least the shaving was done with a straight edge whose marks were not completely removed, so that the outer surfaces of the vessels have a ribbed appearance. Fig. 2.D shows that the shaving was not only horizontal. The shaving was intended only to thin the vessel profile and not to burnish the outer surface; there is no uniformity in the relative distribution of supplementary polishing of the outer surface. In some examples the profile nearer the rim is more smoothly polished and without striations or scoring, whilst in others the profile nearer the base shows the same treatment.

Close examination of the vessels shows that at least two of the sub-hemispherical bowls (56–9–8, 108, Fig. 1.A; 1919–10–11, 585, Fig. 1.E) were made in two pieces, in which the exterior profile shows a concentric line one-third of the distance from the centre of the base and, more revealingly, the interior profile shows that while the inner surface from the rim down two-thirds of the distance to the base is strongly marked by parallel smoothing marks (ribbing and occasional striation) left by the potter's fingers, the inner bottom one-third (which corresponds to the profile below

the exterior concentric line) is marked with random smudges left by fingertips. The potter apparently made a conical ring of clay in one operation, set that aside, prepared a sub-hemispherical base, and joined the base to the conical upper section before shaving down the resulting small vessel.

The EW vessels were unslipped, unpainted and seldom burnished. The only deliberate treatment of the surfaces for decorative purposes was the occasional use of horizontal incisions in the outer surfaces (Figs. 1.D, 1.E, 1.H, 2.A, 3.C) and in one case the making of a slight spiralled pattern around the outer surface (Fig. 1.F, U.15195; compare Woolley 1962: Pl. 38.5), which was perhaps a mishandled attempt at a circular pattern. The plain round rim was modified in certain cases (Figs. 1.C, 2.F, 2.G) by the provision of an everted lip to the vessel.

Shaving the vessels to their final thinness ensured that the original shapes of the profiles would be very simple. It was not that the turning of the vessel profile could not achieve a complicated shape, but that the more complicated the profile, the less control there would be over the regularity and thickness of the wall. If the desired result was a wall of exceptional thinness, the initial vessels had to be of very regular profile cross-section.

The most revealing decorative feature occurred on vessel 1931–10–10, 534 (Fig. 2.C): the lower portion of its profile had two concentric rows of impressed dimples, the inner (nearer the base) of four dimples and the outer of eight. These marks had been made after the shaving of the profile was complete, because they indented the inner surface of the vessel wall and the exterior markings dipped uninterruptedly into the hollows. Some of the dimples were marked with traces of the potters' fingerprints. A second sherd, 1919–10–11. 4907, the base of a flat-bottomed bowl from Hall's 1919 excavations at Ur (not drawn because it was too fragmentary), showed that the same treatment was also used for platters. The fact that the dimples were made after the surface was shaved indicates that the outer surface of the pot was dampened to make the clay plastic again after it had dried to leather-hard. This treatment differs from its one known antecedent, the Neo-Assyrian Palace Ware that was first discussed in the examination of the pottery from Nimrud (Rawson 1954).

Rawson's notes on the technical nature of the fine pottery first identified at Nimrud shows that there is little more than a generic resemblance between the Neo-Assyrian pot fabric and that of the later period at Ur. The Neo-Assyrian ware was not shaved, but thrown to its final thinness (Rawson 1954: 168), which would have required great skill; the dimples on the sides of the vessels (Rawson 1954: Pl. 40.1–2) were an unavoidable part of the process of removing the vessel from the potter's wheel and were, therefore, made part of the decoration by the addition of extra dimples in a regular pattern. The shapes of the Neo-Assyrian vessels confirm that the forming was done by hand when the clay was plastic, rather than leather-hard, because they are too complex to have been the result of shaving. Unlike the EW, the profiles of the Palace Wares duplicated standard later Neo-Assyrian vessel forms and were perhaps intended as very fine examples of the usual shapes in the Neo-Assyrian repertoire. Examples of this duplication of shapes in Palace Wares and non-Palace Wares may be seen from Nimrud (Oates 1959: Pl. 38.61 in Palace Ware, duplicated by Pl. 38.78 in plain ware) . There is no apparent correlation of the shapes of the EW

and the Palace Wares, which would suggest that the ultimate origins of the EW lay elsewhere.

One point that should be made before the origins and the modifications of this tradition are discussed is that a ware so fragile must have been extremely difficult to fire and the percentage of wasters must have been very high. Kilns that produced this ware exclusively have been identified only at Ur (Woolley 1962: 50) (a point to which I will return below). Were one to seek such a kiln, it would not be difficult to separate it from the kilns used for plain wares. There would be great quantities of fragile, distinctive wasters around the kilns which would not be found with kilns producing coarser or common wares whose firing did not have to be so closely controlled. EW's fragility and the implicit demand for skilled workers probably ensured that the ware was produced in major economic centres in which quality potters could have operated profitably.

The origins of the EW may be deduced from its method of manufacture. Although there is an apparent similarity between Neo-Assyrian Palace Ware and EW, EW is not derived from the Palace Ware for technical reasons. Although the final appearances of the two wares are similar, the methods by which these appearances were reached, and the shapes that were made, show that resemblances are incidental. The use of shaving is a technique used in the production of metal vessels (most conveniently described by Maryon 1949: 101–2 and fig. 14), which could be turned or spun to their final profile from flat sheets of metal, or at least planished down after being hammered into shape. The shapes of the EW are far more reminiscent of metal vessels than of contemporaneous pottery cups or plates. There is an obvious reluctance to attempt anything more than shallow platters or sub-hemispherical cups, with the exception of vessels similar to two slightly rimmed bowls (Figs. 2.F, 2.G). EW's extremely thin profile walls and the very regular surface produced by hard even firing remind one of metal examples, although the colours of the EW do not, unlike some grey Iranian vessels that obviously copied silver originals (Stronach 1978: fig. 106.11). It may have been that the potters who made the EW were copying metals other than silver.

In northern Mesopotamia the methods used to produce EW were used to make post-Neo-Assyrian "Palace Ware". From Nimrud three shallow bowls of a type and size not found in southern Mesopotamia were recovered (Figs. 3.F, 3.H, 3.I). These were, however, found in graves of the Hellenistic settlement (cf. Oates and Oates 1958: Pl. 24.8–10 and p. 145). These bowls were made by the EW method of shaving, rather than hand-thinning, but reproduced shapes not found in the southern EW corpus. In fact, the only "southern" EW shape reminiscent of the northern Palace Ware/EW examples is Fig. 3.G, from Rassam's excavation: its findplace is listed as "Babylon", but records in the British Museum show that its origin is uncertain, so its value is limited. The northern Mesopotamian sites have not yet yielded any of the deep bowls or cups that are so common in the southern EW corpus.

I predict that an ultimately Iranian origin for the EW will be demonstrated: Young published four bowl shapes from Ziwiye in western Iran (Young 1965: 58 fig. 3.9, 11; 60 fig. 4.6–7) of the general Iron Age III collection that could be ancestral to some of the EW forms (especially Figs. 1.C, 2.F, 2.G), although the

Ziwiye wares were apparently much coarser than any EW vessel and the technique of manufacture was not that of the EW. Unfortunately, the unreliability of the Ziwiye evidence means that these sherds cannot be used for more than suggestions, but since the EW show similar shapes to these Iranian Iron Age III vessels and do not have any other recognizable antecedents, they could be related. The *execution* of the EW seems to have remained a lowland skill. The shapes of the EW from southern sites were not derived from any pre-existing ceramic usages in southern Mesopotamia and were not much repeated after the collapse of the Achaememid empire. It is extremely difficult to relate the EW to other contemporaneous pottery in Mesopotamia. Whether or not it was of Iranian inspiration, it does seem to have been produced for the first time after the Iranian assumption of control of Mesopotamia. It may ultimately have been the product of a single group of potters, although there is no way to confirm this idea.

A clue to the origin of EW comes unexpectedly from Egypt (Cooney 1965). There were found in Egypt two metal bowls made during the Persian occupation. One of them (Cooney 1965: Pl. 23 fig. 3 right) is the standard Achaemenid Persian shape of shallow incurved bowl with attached everted collar and flared rim seen in the Persepolitan reliefs and in much of the surviving metalwork of the Achaemenid empire (e.g. Amiran 1972: 135 fig. 1).

The second bowl (Cooney 1965: Pl. 23 fig. 3 left and fig. 4) is altogether different: the vessel profile is sub-hemispherical, without carination or any sinuousness in the profile; the interior is plain but the exterior is worked in a series of horizontal planes or bands that encircled the vessel and were slightly concave (Cooney 1965: 42). Close examination of the surface has shown that the vessel was mould-made, but finished by turning on a lathe; the outer surface bore turning marks and the centre of the vessel bottom had a scar left by a lathe support (Cooney 1965: 43). Certain of the bowls from Ur in the British Museum have such scars in the middle of the exterior portions of the base, although the inner surfaces of the bowls bear no marks of a lathe; it would, in any case, have been very difficult to support an unfired clay vessel on a lathe. The colour of the bowls from Persian Egypt also supports an analogy with metal forms, since each of the bowls was made of 11–12% tin bronze (Cooney 1965: 42), which imitated gold in its yellowness. The ware of the EW in its turn copied the imitation gold of the Egyptian examples. Regrettably there is no information recorded about the findspots of the two Egyptian vessels, other than "Thebes" (Cooney 1965: 41), so any association with funerary usages is uncertain. Of particular importance here is the fact that a method of construction was used for vessels in humble bronze-seeming clay and less humble gold-seeming bronze, which suggests very strongly that this method was also used for making gold vessels. The absence of known gold vessels makes this supposition very tentative, but the malleability of gold would permit this construction method.

Three pieces (Figs. 1.C from Ur and 3.D and 3.E from Uruk) were made by the same technique as the EW but were not shaved down to the same thinness. With the Uruk pieces it is evident that this caution resulted from the more complicated vessel profile. These pieces illustrate the apparent popularity of the shaving method in pot-shaping and the limitations of the shaving method in that with an enclosed shape the walls could not be as thin as those of an open vessel since the potter could not have

seen at all times what was happening to the clay. In the case of the Uruk pieces, the shapes of the two profiles are more in the general mid-first millennium B.C. Mesopotamian styles.

Recent work in Susiana has revealed that EW was used at Susa and at sites in the Susiana plain. Labrousse and Boucharlat (1972: fig. 51.1–7; 1979: fig. 29.1–2) found shapes in the pottery collections from the Chaour palace site exactly like the Ur examples, apparently employing the same ware, colour and method of manufacture. Wenke (1975–6: fig. 13.726) found the ware on a few sites in Khuzistan, but did not illustrate any complete vessels and did not date the ware.

What was unusual in the Chaour palace collections was the presence of shapes of EW not found anywhere but Susa (Labrousse and Boucharlat 1972: 94 and figs. 51.8–15; 1979: 74 and figs. 29.3–6). These "goblets" were presumably intended for use, because all those whose lower profiles have been recovered were ring-based; a unique example (1979: fig. 29.3) was made in a shape also found at Pasargadae (Stronach 1978: fig. 107.8). These goblets were found in great numbers (1979: 74) and the EW was found in the earliest levels of the Chaour palace (1979: 75). It appears that the "goblet" was an EW form of the later Elamite standard goblet, a persistent shape in the Susiana corpus.

The dating of the EW

The dating of the EW is not absolutely certain. Woolley stated in his notes to the late pottery from Ur (1962: 89) that EW was an introduction of the Persian period, made at Ur itself. This would relate to a proposed derivation from cast and turned metal vessels, whose introduction, in Egypt, at least, was attributed to the Persian period (Cooney 1965). The EW shapes were not related to known Neo-Babylonian shapes, and there is no record of such a method of construction in reports of excavations on Neo-Babylonian sites. Furthermore, Woolley recorded only four examples of non-"Persian" graves that contained EW, in each case one example of EW Type 3: Neo-Babylonian graves 19, 20, 47 and 93. On the basis of the published evidence, none of these graves was clearly and unmistakably to be dated to the pre-Persian occupation of the site: Grave 19 (Woolley 1962: 59) was one whose "... relationship to [the] building [was] doubtful ..." although it was apparently one of the graves associated with "... house remains all definitely of the later Neo-Babylonian period ..." (ibid: 58). The other three graves are listed simply as being on the NH site (Grave 20), close to the Temenos wall (Grave 47) and in Cemetery X (Grave 93). This uncertainty could show that the EW was in fact a product of the later Achaemenid period and was dated earlier at Ur on the basis of confused stratigraphy.

Woolley's original field notes, preserved in the British Museum, recorded that in the excavation of the Ziggurat Gate, in the south-west portion of the Temenos Wall, there were large quantities of EW:

> "In the gateway, especially in the lower burnt stratum, quantities of pottery. The green ware pots, bowls etc were most in evidence and therefore must date to the destruction period. With these were quantities of ps. of egg-shell tumblers, mostly in applegreen occasionally in light greenish white or in red clay: all of the thin

> hard unmistakeable biscuit ware. Pots, where the upper parts were preserved, often marked with sharply square wheelturned incised lines."
> [Across the top of the page is written NEOBAB.]
> [Unpublished MS in the Department of Western Asiatic Antiquities, British Museum.]

This would unequivocally place the making of the EW before the destruction of the Temenos at Ur. The dating of this event is not certain, due to a lack of evidence; Woolley was not sure it could be dated to the reign of Cyrus II (Woolley 1939: 144), although he implies that there were good reasons for accepting this date. The original dating of the destruction that Woolley had derived from his notes (see above) was not one that he believed later, since the notes contradict his statement (1962: 90) that the kilns for making EW were over, rather than in, the destruction levels:

> ". . . an important historical point is that the kilns had been built over the ruins of the intramural chambers surrounding the Ziggurat terrace, i.e. after the destruction of the work done there by Nabonidus . . ."

I prefer to accept the evidence of the original field notes in which Woolley recorded his impressions at the time of excavation, rather than to believe his later statements.

I do not think that the destruction of the Ziggurat area was due to the eventual success of Zoroastrianism in Iran, as Woolley believed (1939: 145): there is no evidence that the earlier Zoroastrians were as rigorous as the Sasanians and in any case the religion had been established in Iran for nearly a millennium. It is more probable that the destruction of the Temenos and the Ziggurat was incidental to the suppression of one of the revolts that occurred in the reigns of Darius I and Xerxes: these were the revolts of Nidintu-Bel or "Nebuchadrezzar III" of October to December 522 B.C. (Parker and Dubberstein 1971: 15) and Araka or "Nebuchadrezzar IV" of August to November 521 B.C. (ibid: 16), both of whom were active in southern Mesopotamia, as shown by the date formulae on tablets dated to their short reigns, while in the reign of Xerxes there were the ephemeral usurpations of Bel-shimanni and Shamash-eriba that took place in Year 4 or 482 B.C. (Parker and Dubberstein 1971: 17) and which led to the destruction of the temple of Marduk in Babylon. After these insurrections the victors could have destroyed any of the rebel towns. It is preferable to date the destruction of the central religious and symbolic area of Ur to the reign of Xerxes, when the king was secure in his overall power and did not have his attention distracted by other military commitments. The commercial life of the city of Ur did not cease at the destruction of the Temenos. There are business documents from Persian period Ur that were dated to Year 39 of Artaxerxes II or 356 B.C. (Figulla 1949: 5). What did cease soon after the city's conquest was the large-scale public building celebrated by inscriptions of the rulers: there are no royal inscriptions from Ur later than Cyrus II (Gadd and Legrain 1928: No. 194). The town itself lost importance when the course of the Euphrates changed and the harbour dried up, which, combined with the increasing use of land caravans, reduced the value of the site as a transshipment point for trade from the head of the Gulf into Central Mesopotamia (Mealeau 1968: 365). This extreme dependence

upon water resources for prosperity has been repeatedly emphasized by Adams (1965; 1981) and a collapse of the canal system would have been far more destructive in the long run than the razing of the temple precinct. The lack of construction at Ur after the reign of Cyrus II may also have been one incidental result of the shift of the political centre of the lowland empire from Mesopotamia to the Susiana plain that seems to have occurred in the reign of Darius I and was continued by his successors.

The evidence from other sites in southern Mesopotamia is of little assistance. At Nippur, McCown and Haines' excavations of the TA site (1967: 71 ff.) yielded EW in the late levels of TA II, TA I and post-TA I. The Nippur ceramic Type 66 was EW and was recorded as having been found in TA II (three examples), TA I (four examples) and post-TA I (McCown and Haines 1967: notes to Pl. 103.13–14). Unfortunately, although the Achaemenid attribution of TA I would appear to be secure, TA II was a mixed level in which the distinction between the late Babylonian and the early Persian periods could not be made (McCown and Haines 1967: 71), so there is still no absolute chronological certainty from Nippur.

A very tentative conclusion is that the process by which EW could be made was a development of one ceramic workshop at Ur at, or near, the end of the Neo-Babylonian occupation of the site. The process was admired by the early Achaemenid Persians and was encouraged and developed under their administration, with a diversification in vessel forms. It is conceivable that the process began as a modification of methods used by metal-workers, although it quickly developed usages suited to a more plastic material. The use of the technique spread to other sites; the shapes produced at other sites (e.g. Uruk) were more elaborate but could not match the delicacy of the fabric of the Ur vessels. The memory of the technique endured after the end of the Achaemenid empire, although the shapes produced by the Seleucid potters were not like those of the Persian period potters at Ur.

The chronological significance of the EW

By using the EW as the basic chronological indicator it is possible to show which vessel forms of the mid-first millennium B.C. were in use in the period of Persian domination of the site. Temporal conclusions reached in this manner are not always those reached by Woolley himself, but where there are differences the revisions are supported by the evidence from the graves.

The first stage in a temporal reclassification is the identification of the vessel types that were directly associated in Ur graves with EW and therefore at least in current use during the period of EW production. Since EW was not made in any quantity until after the arrival of the Achaemenid Persians at Ur, ceramic forms found associated with various EW vessels are *de facto* "Persian" period types, although they need not have been inspired by actual Persian pot types nor need they have been introduced subsequent to the arrival of the Persians. The relevant pot types are (from Woolley 1962):

(a) *Eggshell Ware:* 2a–b, 3a–b, 4, 5a–b, 6, 7, 8a–b;

(b) *Directly associated with EW:* 20, 23, 26a, 27a–b, 34a–b, 35a–c, 36a–b, 38, 39, 40,

43, 44, 47, 52, 54, 80, 87, 91a–b, 92, 97, 98, 99, 102, 103a–b, 104, 111, 122, 124, 125, 132, 134, 135, 141, 149, 150, 159a–b, 162, 163, 165, 166, 168a–b, 169, 171, 178, 181, 182, 183, 184, 186, 194, 210, 215, 223, 235.

The next stage in the process of reclassification is the identification of vessel types associated, not directly with EW, but with examples of types that in their turn had been found with EW. This form of "stepped attribution" is defensible because one is dealing with discrete units rather than accumulated strata; the only problems occur where there were several coffins in the same grave (in other words, the deposits in the graves were not necessarily contemporaneous), but these cases were few. The ceramic types in the third category are:

(c) *Found with EW associates:* 1, 14, 19, 22, 25, 29, 30, 31, 32, 33, 61, 62, 63a–b, 70, 71, 72, 89, 90, 94, 100, 101, 106, 107, 109, 110, 112, 113, 116, 118, 120, 121, 123, 126, 128, 130, 138, 139, 140, 143a–b, 145, 146, 148, 156, 157, 158, 160, 161, 167, 173, 177, 179, 180, 185, 187, 188, 190, 193, 195, 196, 204, 208, 212, 213, 217, 219, 221, 224, 225, 226, 227, 237.

Certain pot types that were single occurrences which could not be dated by associations are:

41 (U.15187), 86, 93, 144, 170, 189, 229, 236.

Pot types that remain from Woolley's series are not *necessarily* specifically Neo-Babylonian, since graves were dug in the site until at least the reign of Philip Arrhidaeus, but given the general abandonment of the city after the fall of the Achaemenid empire, such types probably pertain to the Neo-Babylonian period.

A final noteworthy point is that the use of glazes, which had reached a peak of extravagance in the Neo-Assyrian period, was, by the Achaemenid period at Ur, both routine and unadventurous. Many vessel types were made in both glazed and unglazed versions and there seems to have been no particular significance in the use of glazes. Woolley recorded one example of a glazed EW vessel, which seems not to have been duplicated anywhere (Woolley 1962: notes to Grave P.257, an example of Type 2 EW).

Conclusion

Such conclusions as may be drawn concerning relationships between the material usages of the western Iranian highlands and the Mesopotamian lowlands in the mid-first millennium B.C. apply largely to Mesopotamia south of the junction of the Diyala river with the Tigris. There is minimal archaeological information for the region to the north and north-west of the Diyala for the occupations that followed the collapse of Assyria (e.g. the occupation of the Harran region of northern Mesopotamia seems to have been sporadic and violent in the time of the Umman-Manda, Gadd 1958: 73). What information there is shows that the area was a sparsely-populated region of agricultural estates and large ruins. The satrapal capital of Athura has not yet been identified and there are no descriptions of post-Assyrian rural settlement in the rainfall zone of northern Mesopotamia. Given that the Achaemenid Persians considered agricultural land to be the most valuable form of real estate (Herodotus 6.42; Andreades 1933: 92 and notes 5–8), the lack of study of the material remains of this part of the ancient economy is regrettable.

One concludes from the study of the ceramics of southern Mesopotamia in the mid-first millennium B.C. that the introduction of an external political dominion for the first time in over a millennium did not noticeably alter the local non-luxury ceramic usages, at least as known from the excavated corpora. Traditional ceramic shapes that were found in earlier southern Mesopotamian contexts continued to be produced in large and monotonous quantities and there was no apparent specifically Iranian infusion into Mesopotamian potters' workshops.

Iranian influences seem to have been indirect. The creation and diffusion of eggshell ware ceramics was at least encouraged in the period of Persian control of southern Mesopotamia, although the actual production of the ware was a Mesopotamian skill and the shapes of the vessels seem not to have reflected previous usages anywhere. Study of this distinctive pottery fabric would be greatly advanced by consideration of whether it was found in any quantity outside southern Mesopotamia. The practice of covering plain earthenware vessels in monochromatic or (rarely) bichromatic glazes seems to have been a Mesopotamian or even a Babylonian technique that was increasingly favored in post-Babylonian Mesopotamia.

It is curious that even after the political union of western Iran and Mesopotamia there was virtually no physical transfer of material from the lowlands to the highlands. The prosperity of the region was considerable and the varieties of luxury goods within the Achaemenid empire reflected an emergent "imperial style" in finer arts, but the local production of even high quality "humble" material did not travel, either as manufacturing processes or as finished articles.

This brings the argument to the proposition that the presence of identifiably Iranian-Achaemenid Persian ceramic usages in areas beyond their "core-area" of south-western Iran was an indicator of the actual local presence of Persians themselves. What is known of Mesopotamia in the Achaemenid period from historical records shows that the principal Persian inhabitants were senior administrators and members of the nobility, who were concentrated in the satrapal capital. There are very few recorded examples of Persians at lower levels and onomastic evidence for them is vestigial; there are virtually no recorded instances of Persian pottery of this period on any site in Mesopotamia. This is an archaeological confirmation of the historical conclusion that the Achaemenid empire in Mesopotamia, as in the other bureaucratized western areas, was managed by local citizens, even though they were ultimately responsible to an administration outside their own territory.

Bibliography

Adams, R.McC. (1965) *Land behind Baghdad. A history of settlement on the Diyala plains,* Chicago–London: University of Chicago Press.

Adams, R.McC. (1980) *Heartland of cities. Surveys of ancient settlement and land use on the central floodplain of the Euphrates.* Chicago–London: University of Chicago Press. Chapter 5: Culmination and collapse of an agrarian base and urban superstructure (Neo-Babylonian—Late Islamic periods). 175–241.

Amiran, R. (1974) Achaemenian bronze objects from a tomb at Kh. Ibsan in lower Galilee. *Levant* 4: 135–8.

Andreades, A. M. (1933) *A history of Greek public finance.* Vol. 1; (translated by C. N. Brown). Cambridge (Mass): Harvard University Press.

Cooney, J. D. (1965) Persian influence in late Egyptian art. *Jnl. of the American Research Center in Egypt* 4: 39–48.
Debevoise, N. C. (1934) *Parthian pottery from Seleucia on the Tigris. University of Michigan Studies, humanistic series.* Ann Arbor: University of Michigan Press.
Figulla, H. H. (1949) *Ur excavations. Texts* IV. *Business documents of the New-Babylonian period.* London: British Museum.
Franken, H. J. (1974) *In search of the Jericho potters. Ceramics from the Iron Age and from the Neolithicum. North-Holland studies in archaeology,* Vol. 1. Amsterdam–Oxford: North-Holland Publishing Company.
Gadd, C. J. (1958) The Harran inscriptions of Nabonidus, *Anatolian Studies* 8: 35–92.
Gadd, C. J. and L. Legrain (1928) *Ur excavations. Texts* I. *Royal Inscriptions.* London: British Museum.
Gibson, McG. (1975) *Excavations at Nippur. Eleventh season. O.I.C.* 22. Chicago: University of Chicago Press.
Gibson, McG. et alii (1978) *Excavations at Nippur. Twelfth season. O.I.C.* 23. Chicago: University of Chicago Press.
Haerinck, E. (1980) Les tombes et les objets du sondage sur l'enceinte de Abu Habbah. *In* L. de Meyer (ed.) *Tell ed-Der III. Soundings at Abu Habbah (Sippar).* Leuven: Peeters. 53–79.
Hall, H. R. (1919) *A season's work at Ur.* London: Methuen.
Labrousse, A. and R. Boucharlat (1972) La fouille du palais du Chaour à Suse, *Cahiers de la délégation archéologique française en Iran* 2: 61–168.
Labrousse, A. and R. Boucharlat (1979) Le palais d'Artaxerxes II sur la rive droite du Chaour à Suse. *CDAFI* 10: 19–136.
McCown, D. E. and R. C. Haines (1967) *Nippur* I. *Temple of Enlil, scribal quarter, and soundings. O.I.P.* 78. Chicago: University of Chicago Press.
McCown, D. E., R. C. Haines and R. D. Biggs (1978) *Nippur II. The north temple and sounding E. O.I.P.* 97. Chicago: University of Chicago Press.
Maryon, H. (1949) Metal working in the ancient world. *AJA* 53: 93–125.
Meauleau, M. (1968) Mesopotamia under Persian rule. H. Bengtson (ed.) *The Greeks and the Persians from the sixth to the fourth centuries.* London: Weidenfeld and Nicolson. 354–85.
Moorey, P. R. S. (1971) *Catalogue of the ancient Persian bronzes in the Ashmolean Museum.* Oxford: Clarendon Press.
Oates, D. and J. Oates (1958) Nimrud 1957: the Hellenistic settlement, *Iraq* 20: 114–57.
Oates, J. (1959) Late Assyrian pottery from Fort Shalmaneser, *Iraq* 21: 130–46.
Parker, R. and W. H. Dubberstein (1971) *Babylonian chronology 626 B.C.–A.D. 75.* 3rd impression. Providence, R.I.: Brown University Press.
Peters, J. P. (1897) *Nippur or explorations and adventures on the Euphrates. The narrative of the University of Pennsylvania expedition to Babylonia in the years 1888–90.* Vol. II: *Second campaign.* New York: Putnams.
Rawson, P. S. (1954) Palace wares from Nimrud: technical observations on selected samples. *Iraq* 16: 168–72.
Reuther, O. (1927) *Die Innenstadt von Babylon (Merkes). Ausgrabungen der D.O.G. in Babylon,* Band III (W.V.D.O.G. 47). Leipzig: Heinrich.
Stern, E. (1982) *The material culture of Eretz-Israel in the Persian period.* Chapter 4: Pottery. Warminster: Aris.
Strommenger, E. (1964) Grabformen in Babylon. *Baghdader Mitteilungen* 3: 157–73.
Stronach, D. B. (1978) *Pasargadae.* Oxford: Clarendon Press.
Tadmor, M. (1974) Fragments of an Achaemenid throne from Samaria. *Israel exploration journal* 24: 37–43.
Taylor, J. E. (1855a) Notes on the ruins of Muqeyer. *JRAS* (OS) 15: 160–76.
Taylor, J. E. (1855b) Notes on Abu Shahrein and Tel el Lahm. *JRAS* (OS) 15: 404–15.
Wenke, R. J. (1975–6) Imperial investments and agricultural developments in Parthian and Sasanian Khuzestan: 150 B.C. to A.D. 640. *Mesopotamia* 10–11: 31–221.
Woolley, C. L. (1939) *Ur excavations* 5. *The Ziggurat and its surroundings.* London: British Museum.
Woolley, C. L. (1962) *Ur excavations* 9. *The Neo-Babylonian and Persian periods.* London: British Museum.
Young, T. C. (1965) A comparative ceramic chronology for western Iran, 1500–500 B.C. *Iran* 3: 58–86.

Pottery catalogue

Figure 1

A. 56–9–8, 108, from Taylor's excavations at Ur [*JRAS* 15 (OS), 1855]. Very fine grey-yellow fabric; average wall thickness 2 mm; upper part of the interior marked with smoothing lines. Appears to have been made in two pieces, base and upper profile. Exterior has been smoothed but not burnished; external base shows evidence of wheel-turning in the form of two concentric circles scored into the fabric and a slight roughness at the exact centre.

B. Tomb H1; 120410; 1919–10–11, 524 UR; from Hall's (1919) excavations at Ur. Buff fabric with a strong greenish tint. Wall thickness 2 mm; interior strongly marked with horizontal parallel ribbing and smoothing marks. Outside smoothed down; the only horizontal striations are on the upper part of the profile. Warped by the heat of firing so that the rim is not circular.

C. 120402; 1919–10–11, 525 UR; from Hall's excavations at Ur. Overfired to a bright pink, with scorch marks right through the fabric. Flat button base; exterior shaved down diagonally with a flat blade. Note that this vessel is made in the same manner as the formal EW and that the paste is the same, but that the more complicated profile dictated that the vessel wall be thicker.

D. H. 1919–10–11, 533. From Hall's excavations at Ur. Pale buff fabric, very clean and free of grit. Interior strongly marked with striations and slightly ribbed. Exterior slightly ribbed, but most striations shaved down.

E. H.9; 1919–10–11, 585; 115404. From Hall's excavations at Ur. Hard-fired, thin, buff fabric. Raised bands at the rim and interior marked with striations and finger-marks at the base. Base a separate piece that was attached to the upper profile. Upper profile smoothed, lower profile striated.

F. 1930–12–13, 310; U.15195 (PG 99). From Woolley's excavations at Ur. Greenish-buff clay; exterior very smooth, interior striated and ribbed; slightly spiralled pattern around the exterior.

G. 1930–12–13, 311. From Woolley's excavations at Ur. Buff-drab ware; lower portion of the body smoothed and with very few striations, but upper portion shows more marks. Interior marked with finger ribs and smoothing marks. Vessel made in one piece; warped in firing.

H. 1930–12–13, 312. From Woolley's excavations at Ur. Buff ware, slightly pink inside the vessel. Interior shows finger ribbing and striations; exterior shows incised concentric lines on the upper profile and the lower profile shaven smooth.

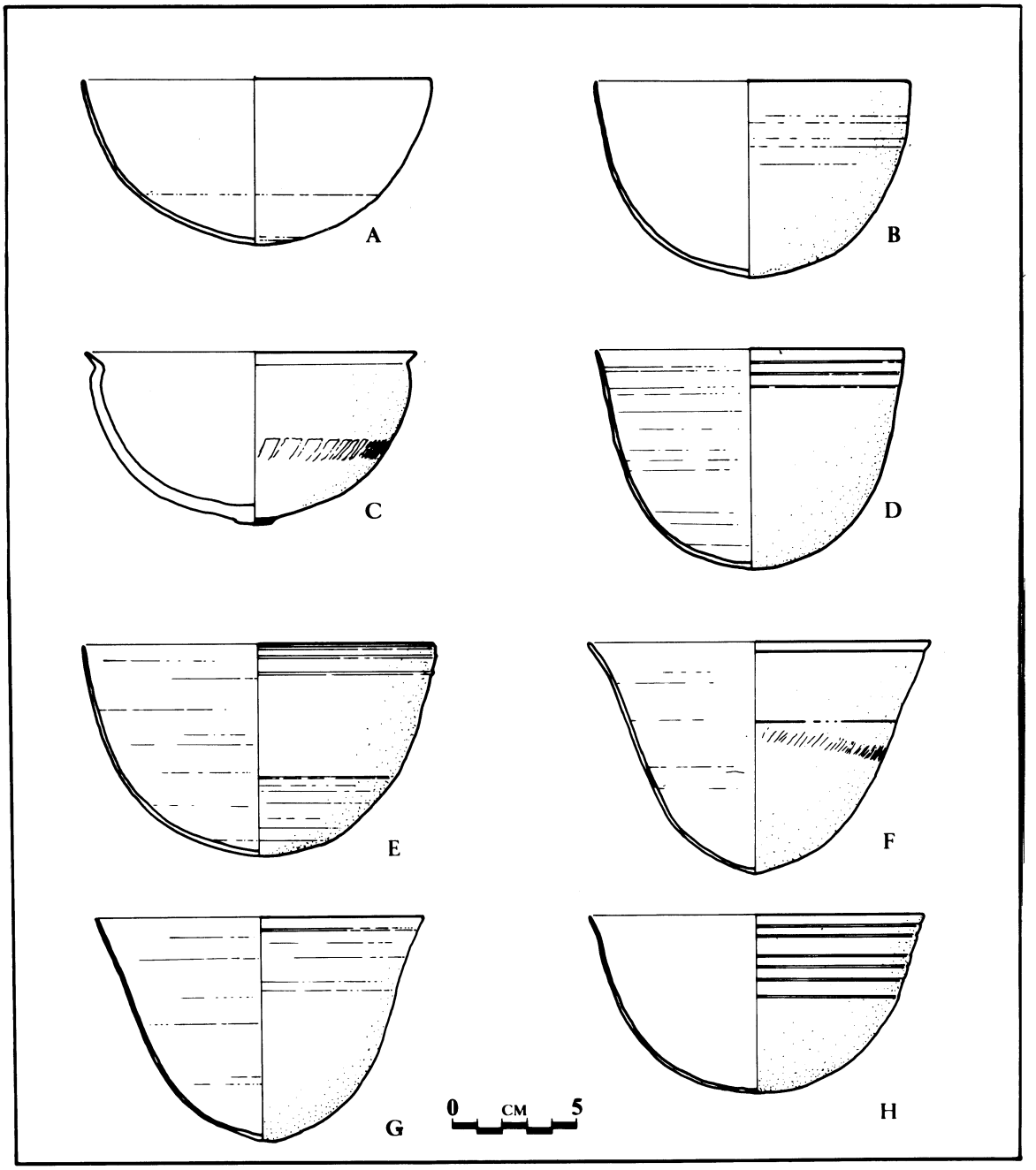

Fig. 1.

Figure 2

A. 1931–10–10, 543. From Woolley's excavations at Ur. Buff fabric; exterior shaven down, but with some striations remaining. Upper half of the exterior shows raised concentric bands, shaven down. Interior smooth, but slightly ribbed.

B. 1931–10–10, 551. From Woolley's excavations at Ur. Buff-green fabric. Lower portion of the exterior shaven smooth, but upper portion striated and grooved. Interior striated and marked with finger ribbing. Interior base marked with smudged finger-marks.

C. 1931–10–10, 544. From Woolley's excavations at Ur. Greenish-buff fabric, but parts of the exterior surface marked with pink patches. Interior smooth, with a minimum of ribbing. Exterior marked with two rows (upper, of 8; lower, of 4) of dimples in the lower portion of the profile, as found in the Neo-Assyrian Palace Ware. Fingerprints are still visible in the dimples; the striations in the exterior surface descend into the dimples, which shows that the dimples were made after the shaving of the outer surface to thin the ware (and therefore that the ware had to be re-softened after shaving).

D. 1931–10–10, 545. From Woolley's excavations at Ur. Buff-drab fabric. Interior ribbed and striated. Exterior: upper profile has vertical shavings taken out of the profile, and a few horizontal scorings; lower profile has numerous horizontal scorings and the lower surface is rougher. Button base.

E. 1931–10–10, 546. From Woolley's excavations at Ur. Green-buff fabric. Exterior shaven, with some striations. Interior ribbed and striated.

F. 1931–10–10, 549. From Woolley's excavations at Ur. Pink-buff fabric, very smooth and fine without inclusions. Interior slightly ribbed and strongly striated; exterior striated on upper profile, smoothed on lower profile. Slight button base, but shaven down.

G. 1931–10–10, 550. From Woolley's excavations at Ur. Buff-pink fabric, very fine and free from inclusions. Exterior shaven and smoothed; interior slightly ribbed and striated. Slight coarsening at the base of interior.

H. 1931–10–10, 552. U.17063 (PG 91). From Woolley's excavations at Ur. Buff-grey fabric. Exterior smoothed down and without many striations. Interior striated. Bands show that the outer surface was shaved with a flat-edged tool held tangentially.

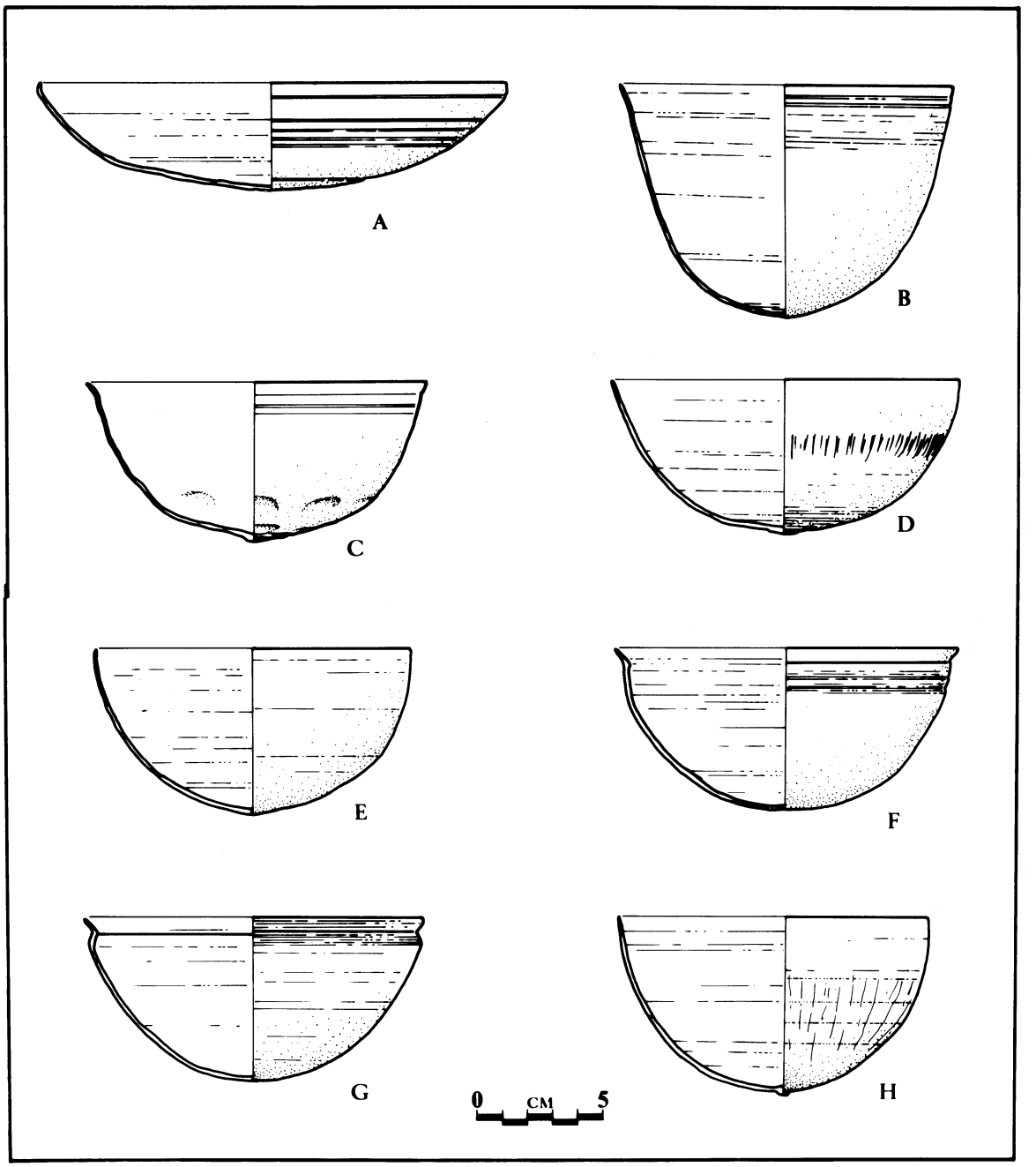

Fig. 2.

Figure 3

A. 1931–10–10, 553. From Woolley's excavations at Ur. Included for comparison: not true EW, but heavier and coarser; made in the same shape and manner as proper EW, i.e. exterior shaven down and interior ribbed and striated.

B. 1931–10–10, 554. U.16309 (Persian grave on AH Site). From Woolley's excavations at Ur. Green-buff fabric; exterior shaven smooth but heavily striated; interior heavily striated and ribbed.

C. 1931–10–10 [no further number]. From Woolley's excavations at Ur. Pink fabric. Fabric at base somewhat coarser than upper profile, with small holes. Upper portion of exterior profile marked with horizontal ribbing, lower portion smoothed with some striation. Interior surface marked with some striation and ribbing.

D. 56–9–3, 1152. WARKA 92917. From Loftus' excavations at Warka in 1856. Included for comparison, as is made in the same fabric and by the same method as the EW, although the vessel wall is thicker than proper EW. Buff-pink clay. Striations very marked on the lower exterior profile, smoothed on upper exterior profile. Outer profile is shaven down; parallel bands are visible on the surface of the vessel. Flat base.

E. 56–9–3, 1260. 92499. From Loftus' work in southern Mesopotamia, but site not recorded. Included to show that the EW-making method was also used for other pot designs. Pink fabric, buff slip. Exterior shaven smooth, with many parallel striations; exterior is slightly burnished where marks of the shaving are obvious. Small chip out of rim.

F. 48–11–4, 155. From Layard's excavations at Nimrud: tombs over the Central Palace. Buff-grey fabric; outer surface shaven, inner surface wet-smoothed. This and the succeeding pieces H and I are included as they are made in the EW manner, but in the region of, and the shapes of, the Neo-Assyrian palace wares.

G. 82–3–23, 5190. Rassam excavations, Babylon. Interesting, as this piece is a cross between the deep bowls of the southern manufacturers and the shallow platters of the northern potters; this piece is the furthest north in Mesopotamia that true EW has been found. Yellow-buff fabric, very fine ware; lowest portion of the exterior shaven, upper portion not shaven. Interior smoothed.

H. N.1559. Nimrud, [probably] North-West Palace; found with copper vessels in Chamber CC. Layard excavations. Buff fabric, very slightly gritty, especially at the base. Outer surface shaven, inner surface wet-smoothed. Groove cut into the upper portion of the outer surface, 3 cm below the rim.

I. 48–11–4, 156. Nimrud; tombs over the Central Palace. From Layard's excavations. Buff-grey fabric. Outer surface smoothed, with many striations and grooves; inner surface wet-smoothed. Band of incised triangles around the upper portion of the outer profile.

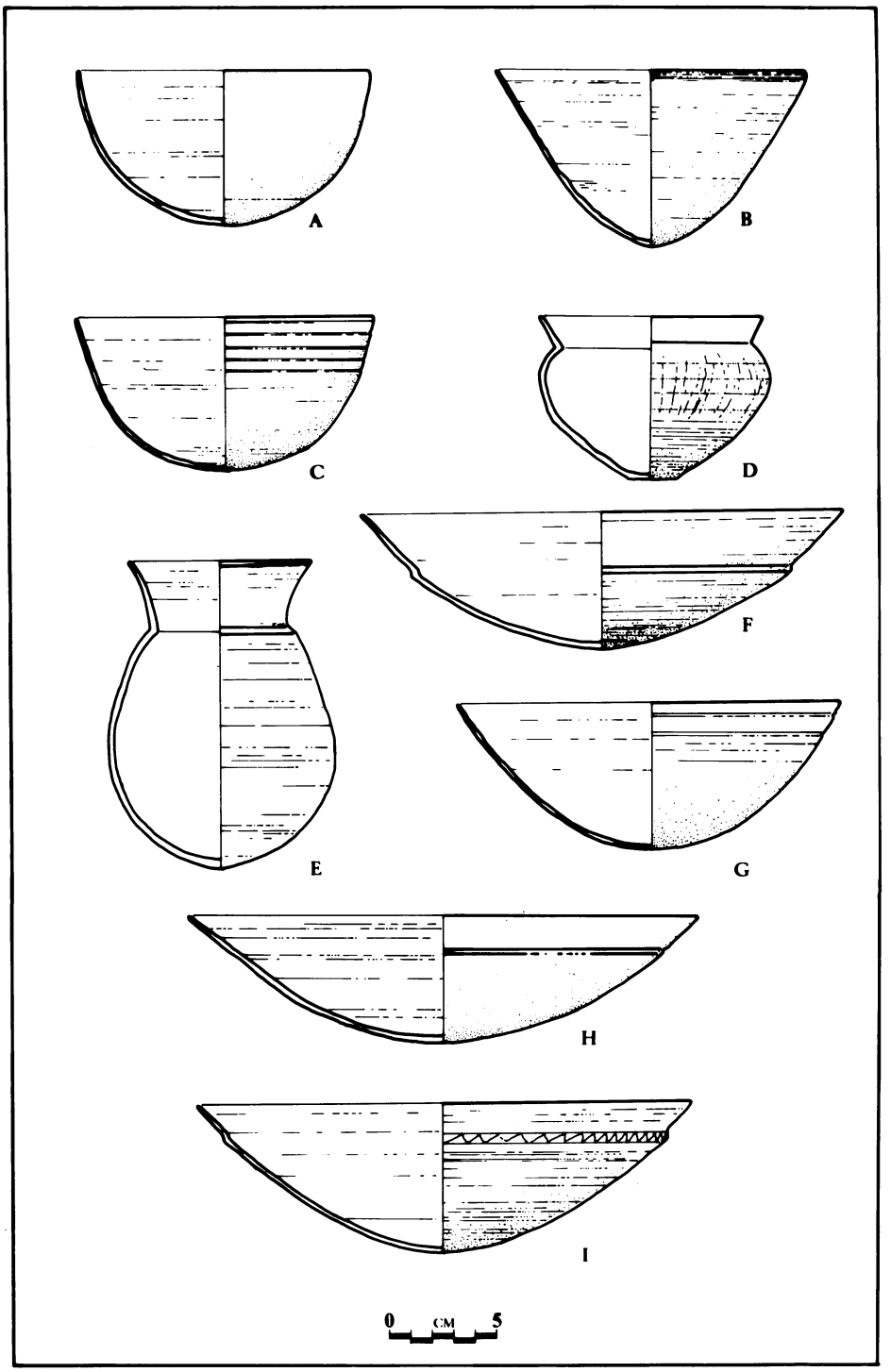

Fig. 3.

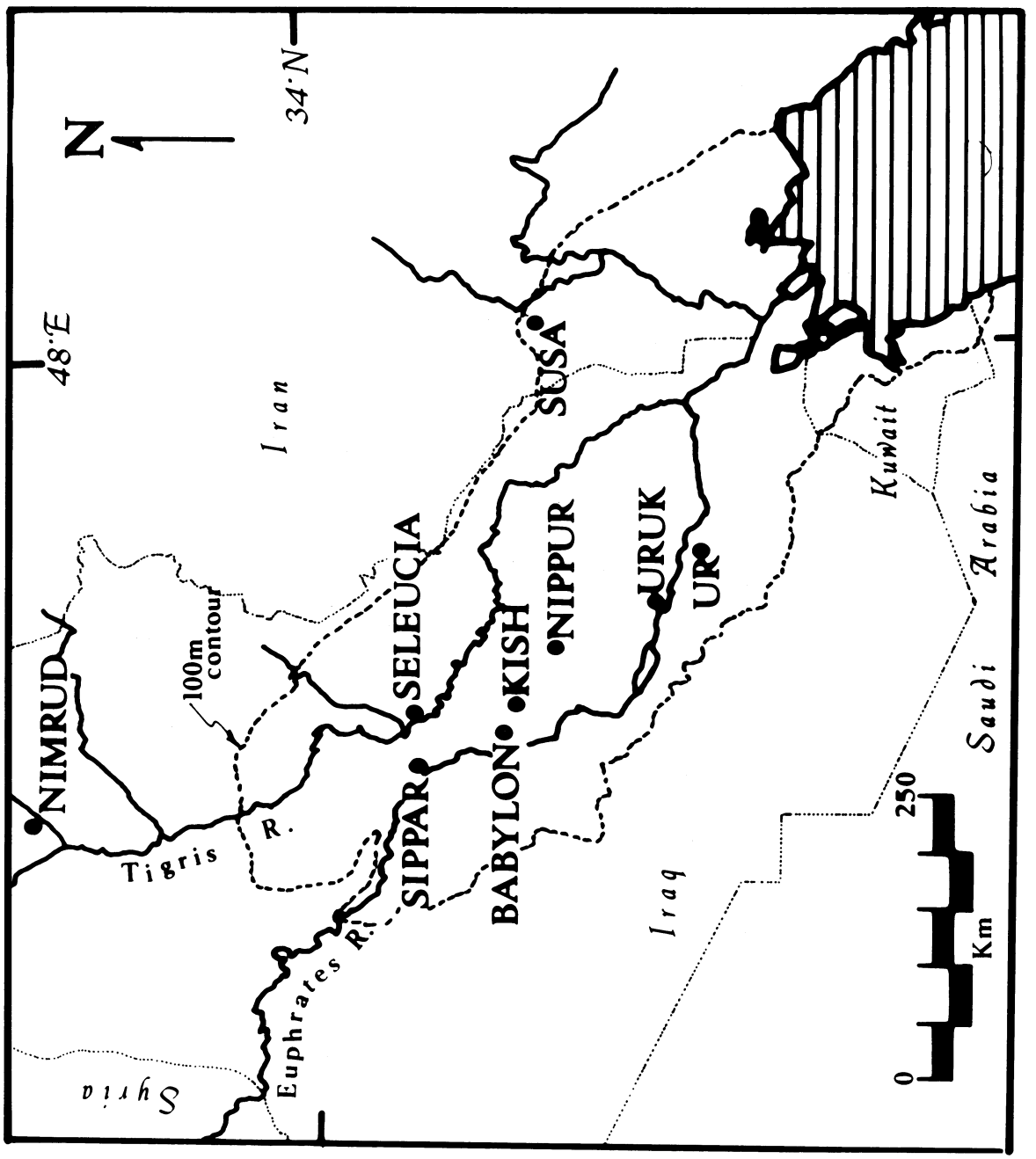

Fig. 4. Map to show location of sites mentioned in the text.

Acknowledgments

I wish to thank Mr. T. C. Mitchell, Keeper of the Department of Western Asiatic Antiquities, British Museum, for permission to study and publish the Eggshell Ware pottery held by the Museum. I am also grateful for permission to quote from C. L. Woolley's unpublished field notes. Dr. J. E. Curtis gave me much assistance within the Museum and criticized the work on which this article was originally based. Professor D. I. Owen of Cornell University kindly read an earlier draft of this paper and made many valuable suggestions. Monica Barnes read the entire paper and made many helpful comments.