

# *Sumerians, Semites, and the Origin of Copper-working*<sup>1</sup>

By H. FRANKFORT

M. DE MORGAN'S remarkable discovery of early civilizations in the possession of painted pottery and copper at Susa in 1897 has remained for about twenty years an isolated addition to our knowledge. But the explorations of the last years have suddenly revealed its real import. In the two civilizations which he found succeeding each other at Susa there seem to be represented large cultural provinces. Their ultimate importance lies furthermore in the fact that they have both contributed elements towards the great culture of the Plain of the Two Rivers, and it seems at present possible, without allowing hypotheses to play an illegitimate part in the argument, to define with some precision the respective elements and their relation to the three great historical problems for which the title of this paper stands.

## *The Persian Highland Culture*

The pottery has once more to guide us in our inquiry. That found in the very lowest layers of the Tell at Susa shows a decoration as much discussed as it is admired,<sup>2</sup> and we need only here recall its main features. We notice how amongst a number of geometric motives sometimes appear wonderfully stylized pictures of animals and even men; but a slavish copying of the designs without renewed reference to nature leads to a rapid degradation, and Abbé Breuil has been able to establish a number of highly interesting series showing how the natural representations become gradually geometric designs<sup>3</sup> (fig. 1).

At Susa the tendency is already noticeable. On some sites towards the west, e. g. Tepe Khazineh, near Tepe Musyan, it is much more pronounced, and thus it seems certain that the remains from there come later than the bulk from Susa I, and technical considerations confirm that view.<sup>4</sup> Those Tells seem, in fact, to be stations on the road along which this civilization descended

<sup>1</sup> The substance of a paper read to Section H of the British Association, Leeds, 1927.

<sup>2</sup> For literature see Frankfort, *Studies in Early Pottery of the Near East*, i, 25. Henceforth quoted as *Studies*.

<sup>3</sup> *Comptes rendus du XIII<sup>m</sup>e Congrès Intern. d'Anthrop. et d'Archéol. Préhist.* Monaco, 1906.

<sup>4</sup> *Studies*, i, 49-54.

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into Mesopotamia; and in the still later Mesopotamian stage there is hardly any trace of natural representations left.

In Mesopotamia we find this culture represented as far north as Tell Zeidan on the lower Balikh, as Dr. Albright has shown.<sup>1</sup>

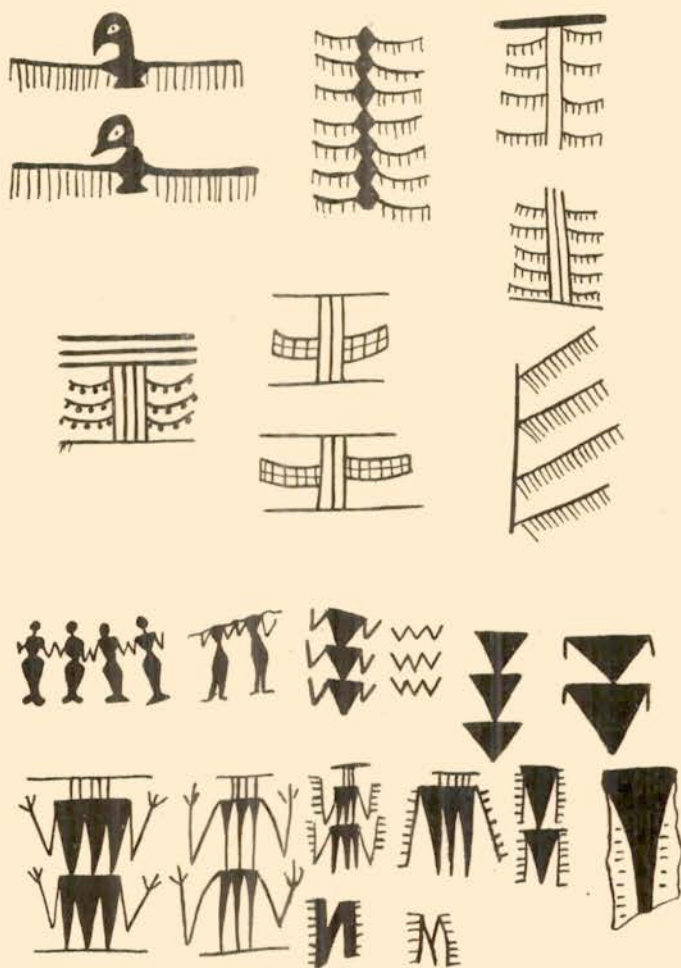


FIG. 1. Degeneration of natural representations into geometric designs (after Breuil).

It was further found by Dr. Andrae in the neighbourhood of Assur; at Samarra by Dr. Herzfeld;<sup>2</sup> and as far south as Bender

<sup>1</sup> *Man*, 1926, 25.

<sup>2</sup> Some doubt has been raised as to the affinity and date of this pottery, but it seems clearly to point to a stage of development intermediate between Susa I and Al 'Ubaid by its technique, its shapes, and the style of its decoration alike. See

Bushire by M. Pézard. Near Kish a few stray sherds appeared,<sup>1</sup> and Mr. Campbell Thompson got a more considerable group at Abu Shahrein,<sup>2</sup> but the largest mass of coherent material was obtained at Al 'Ubad by Dr. Hall and Mr. Woolley.<sup>3</sup>

In Persia, on the other hand, M. de Mecquenem has recently reported specimens of this ware from Rhagae near Teheran,<sup>4</sup> while a pot from Urmya, now in Berlin (fig. 2), and others from Mohammedabad in the north,<sup>5</sup> as well as Sir Aurel Stein's gleanings from Seistan, belong here.<sup>6</sup> Even in Beluchistan vessels related to this style appear,<sup>7</sup> while others, found near Fort Sandeman in the Zhob valley at Tell Kaudeni,<sup>8</sup> may also be connected, if with less certainty. Into India we cannot as yet follow this culture. The small amount of painted pottery found in the Indus valley as yet published, is related to the apparently later painted fabric from Nāl in Beluchistan, for which there are no more westerly parallels. On the other hand, there were found at Tell Kaudeni, along-



FIG. 2. Vase from Urmya.

X  
 Chistan  
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 2 309

side of the painted pottery and a copper axe, lapis lazuli which points to Persia, and agate and the pottery statuette of an elephant which point to India. And it may well be that the continuation of the work of Sir John Marshall and his collaborators reveals the extension into India of the culture now under discussion.

If we consider the finds enumerated above, it is clear that the stylistic evidence as well as the shapes and technique mark the pottery of Susa I as the earliest representative of this culture yet known to us, while the Urmya pot can hardly be much later ; in

*Reallexicon der Vorgeschichte*, article *Vase-Vorderasien*, § 3, c, where literature is given.

<sup>1</sup> These stand in no relation to the main body of remains. Just so Mr. Woolley found sherds and even a few unbroken pots in the soil in which the later people, of the First Dynasty of Ur, had buried their dead, upsetting thereby some earlier graves. The sherds from Kish are now in the Ashmolean Museum.

<sup>2</sup> *Archaeologia*, lxx, 110 sqq.

<sup>3</sup> *Ur-Excavations: Al 'Ubad, a report on the work carried out at Al 'Ubad for the British Museum*, etc., by H. R. Hall and C. L. Woolley. I am dealing with the pottery in a review to appear in the July number of this *Journal*.

<sup>4</sup> *Revue Archéologique*, 1926, 17.

<sup>5</sup> *Centenary Supplement of the Journal of the Royal Asiatic Society*, 1924, pls. xv, xvi.

<sup>6</sup> *Burlington Magazine*, December 1925 ; *Studies*, ii, 184.

<sup>7</sup> *Illustrated London News*, 20 Sept. 1924, 531, top row.

<sup>8</sup> *Zeitschrift für Ethnologie*, 1898, 460 sqq.

fact the latter resembles most closely a specimen of the black-on-red ware found towards the end of Susa I.<sup>1</sup> Thus the early stage is well represented in the Persian Highlands. Furthermore, this style seems to have long persisted there. In the first place this is suggested by the finds from Seistan, where, amongst a group of sherds of the first style, with exclusively geometric ornaments, appear two which are exceptional in their technique and are considered by Mr. Andrews to be foreign imports; and in fact their animal representations belong to the monochrome style of Susa II, and they are therefore in all probability imported from that city. It would then follow that in the Persian Highlands the first civilization still persisted though displaced at Susa by the second. The pottery from Anau, though not belonging to the Persian culture, may also be adduced in this connexion; for now that Susa I appears to be a representative of a large cultural province which includes all Persia, the isolation of the pottery from Anau, which I advocated in 1924,<sup>2</sup> need no longer so rigidly be maintained. Already in the first settlement, and more clearly in the second, there appears red ware with matt black paint, applied after the polishing. In the second settlement there appears also plain red-polished ware which is identical with the common Anatolian fabric. In Anatolia, however, pot-painting is not known before the last centuries of the third millennium; and thus it is tempting to explain the painting at Anau as due to influence from the Persian culture. Now the third settlement at Anau is somewhat more closely related to the Persian culture,<sup>3</sup> as well as the pottery from the neighbouring Mohammedabad. But if Anau can thus reflect influence from the Persian culture in its second and third, and perhaps in its first, settlement, that Persian culture must have apparently existed for a considerable period.

In Mesopotamia nothing similar is found. With the exception of Samarra we have there no early instances of the style, nor is there anywhere proof of a development during a considerable lapse of time or through various stages. Thus one may tentatively consider the civilization, of which Susa I is the best-known representative, as characteristic of the Persian Highlands, whence it would have descended to the Plain, and when it was displaced there it seems still to have flourished in the east and north.

The so-called second style at Susa, as well as the first, appears to be no mere local growth on the Kerkhah. At the same time recent discoveries tend to emphasize a distinction, already made in 1924, between a polychrome and a monochrome variety.<sup>4</sup> The

<sup>1</sup> *Studies*, i, pl. III, 4.

<sup>2</sup> *Ibid.*, 78.

<sup>3</sup> *Ibid.*, 83 sqq.

<sup>4</sup> *Ibid.*, 66 sqq.

polychrome class is not found farther to the east than Susa II, where it occurs in a few specimens. At Tepe Musyan and the neighbouring Tepe Aly Abad it occurred in great quantities, and also at Jemdet Nasr near Kish and at Assur, while one single example occurs at Al 'Ubaid.<sup>1</sup> The monochrome painted pottery is represented in Mesopotamia by various vessels from Jemdet Nasr and by one single pot at Telloh, by common consent an importation from Susa II.<sup>2</sup> At Susa II it is common, and it is recently reported by M. de Mecquenem<sup>3</sup> and by Dr. Herzfeld<sup>4</sup> from NW. Persia. Some of these vessels, from Nihawad, have recently been obtained for the British Museum and will soon be published in the 'Quarterly'. Two of them (118740, 118742) have the same shape as the pot published by Herzfeld, a shape which is, like that of some small pots in the group, typical for the second style at Susa; and their designs, e.g. the eagle with spread wings and the summarily sketched birds, are found also in Susa II.<sup>5</sup> Some other vessels in the British Museum, however, found apparently at the same site, but, of course, not necessarily of the same date, stand quite apart; they have much more differentiated forms than those used in Susa II, e.g. real feet and handles. The designs show a framework of rectilinear patterns of too simple a nature to guide us; amongst these are strewn rather irregularly small nondescript birds and rosettes. M. de Mecquenem has already published two of these vases,<sup>6</sup> the affinities of which are as yet not clear.

When this monochrome ware was only known from Susa it seemed that it was simply a later stage of the polychrome variety. This was suggested by the stratigraphy as well as by the objects with which the two varieties were found;<sup>7</sup> and it can indeed not be denied that the polychrome seems to precede the monochrome ware at Susa II, while certain vessels, like the large monochrome store-jars, are obviously degraded descendants of the polychrome ones of the same shape. Among the small pots we find those with sharp-edged rim and shoulder, typical of the polychrome ware, also represented among the monochrome variety;

<sup>1</sup> Al 'Ubaid, 155 and pl. LI, p. xv b (T.O. 521). See now also Langdon, *Ausgrabungen in Babylonien seit 1918* (*Der Alte Orient*, 1928) especially p. 74. Unfortunately Professor Langdon, all through this booklet, treats the pottery without discrimination.

<sup>2</sup> Cros-Heuzey, *Les Nouvelles Fouilles de Telloh*, 310, fig. 20.

<sup>3</sup> *Revue Archéologique*, 1926, 17.

<sup>4</sup> *The Illustrated London News*, Nov. 17, 1927.

<sup>5</sup> For shapes see *Corpus Vasorum Antiquorum*, France, Fasc. 2, pl. v, 1-3; for designs *ibid.*, pl. vi, 44, iv, etc.

<sup>6</sup> *Revue Archéol.*, 1926, 17, figs. 3, 4.

<sup>7</sup> *Studies*, i, 66 sqq.

while the rounded forms of the monochrome bottles, not represented in the polychrome class, are quite naturally explained as a further stage of ceramic technique in which the different parts of a vessel are no longer separately made on the wheel and then joined, but where the whole vessel is 'thrown' in one piece.

But if the evidence from Susa alone can be satisfactorily explained in this way, it cannot account for the difference in the distribution of the two varieties. For the polychrome style does not seem to have penetrated into Persia, whence the monochrome ware is now reported. On the other hand, we have found that there is a great probability that the Highland culture, with its equally monochrome pottery, persisted long in Persia proper. At Susa itself, where we only know the first style in an early form, and where, moreover, a sterile layer intervenes, no connexion between the first and second civilization exists, as we have shown elsewhere.<sup>1</sup> But did such a connexion exist more towards the east in the Persian Highlands? If this question should be answered in the affirmative it would prove that we have without justification read into the low-grade natural representations of the monochrome variety of the second style at Susa the manifestation of a naturalistic mentality which as such would be too different from that of the makers of the first style for the first-named variety to be ascribed to descendants of the latter. Then also the similarities in the contents of the decoration of the two styles, on which M. Pottier has so strongly insisted,<sup>2</sup> would gain importance. At present the matter must be left in abeyance until specimens of the monochrome variety from North and Central Persia are found in regular excavations. We shall then be able to judge of what

<sup>1</sup> See also Addendum, p. 234.

<sup>2</sup> *Revue Archéologique*, 1926, *Une théorie nouvelle sur les vases de Susa*. This criticism of some views expressed in *Studies*, i, does not, to my mind, do away with the main results of that inquiry. But I am not prepared to dogmatize about the origin of the Susa I pottery in leather vessels though that seems still probable to me. I have not, however, based that suggestion on a misinterpretation of certain vessels which got deformed in the firing (*Rev. Arch.*, *loc. cit.*, 6, fig. 1) to which M. Pottier takes me to refer when speaking about the 'bulgy outlines' of the vessels. Even such beakers as that figured in *Studies*, i, pl. 1, 1, have, especially near the foot, that peculiar roundness which reminds one of leather. This, however, is a minor point, as is also my tentative sketch of the economic conditions under which the inhabitants of Susa I lived. I confess that here, as on a number of points, I have expressed myself somewhat too vigorously, not to say dogmatically (see *Studies*, ii, p. iv, foot-note). In the matter of the survival of religious motives from Susa I into Susa II, M. Pottier quotes again the eagle with outstretched wings, but does not take into account a seal-cylinder which proves that we have no right to take the bird on the Susa I pots (which never grasps animals, as do the heraldic birds from Sumer and Susa II) as an eagle (*Studies*, i, 46, n. 4).

Les vases en terre cuite, dans le type qui leur est  
 propre - ils ne sont pas de la même  
 fabrication et ils ne sont pas de la même  
 époque. Les uns sont de la même époque  
 que les autres, mais ils ne sont pas de la même  
 époque. Les uns sont de la même époque  
 que les autres, mais ils ne sont pas de la même  
 époque.

the eventual links with the earlier Highland culture consist, and also to what extent similarities exist with the pottery from Susa II, where the features which form a contrast with that from Susa I may be explained, even in the monochrome ware, as due to the influence of the makers of the naturalistic polychrome pottery which precedes the monochrome variety at Susa II. Are these contrasts with the older style absent in Persia? How far did the foreign or the mixed culture on the fringe of the Highlands influence the interior? All this remains to be investigated. If it should appear that the rigid separation between the homologues of Susa I and II respectively, which we have advocated, could not be maintained in the light of the new material from Persia (as M. de Mecquenem implies), then it would be incorrect to speak of monochrome and polychrome *varieties* of a presumed 'second style', but we should have to distinguish, on the one hand, a later Highland culture with monochrome painted pottery, and, on the other, the outposts, in the foothills of Susiana, of a Lowland culture with polychrome pottery, which we shall now proceed to consider.

#### *The Lowland Culture*

At Susa the polychrome pottery is later than the Highland culture of Susa I; the one is actually found above the other in the mound. In Mesopotamia the descendants of the Highland culture appear with a wealth of stone implements and without any trace of script, and the polychrome ware appears together with the most archaic Sumerian tablets at Jemdet Nasr.

Thus it seems certain also that the Highland culture in Mesopotamia precedes the culture with polychrome pottery; the latter in its turn accompanies the earliest stage which we know of the Sumerian culture. We knew this already from Assur, where polychrome pottery was found antedating the earliest Sumerian layers H and G (fig. 3). But clearer evidence comes now from Jemdet Nasr. There a particularly rich set of polychrome vessels was found together with cuneiform tablets, which were, as Mr. Gadd has established,<sup>1</sup> older than the first dynasty of Ur or the tablets from Fara.

We have spoken for brevity's sake of a polychrome pottery. But it should be clearly realized that the use of one or two colours is not the sole criterion upon which we should like to base a division of pot-fabrics. In the present case we find at Assur, Jemdet Nasr, Tepe Aly Abad, Tepe Musyan, and Susa II a pottery which has quite a number of specialized features in its decoration, and its

<sup>1</sup> *Al'Ubaid*, 128 sqq.

shapes in common, and moreover appears in an archaeological context which is in all cases characterized by other elements (e. g. cylinder-seals and theriomorph or multiple vases) of identical type. And these phenomena are not even confined to Mesopotamia alone.

In the first place it is remarkable that at various times, in various regions of the Near East, there appears pottery very closely akin



FIG. 3. Vase from Assur (after Andrae).

to this polychrome Mesopotamian ware. These various fabrics all show (1) natural representations rendered in a naturalistic (as opposed to an abstract-decorative) way, with animals drawn either in full silhouette or with hatched bodies; (2) the designs grouped in panels (metope-style); (3) the use of red alongside black in various simple schemes of alternation, which are in many cases identical in the different instances. These wares appear in Palestine in the middle of the third millennium, and in Cyprus, Egypt, and Cappadocia in the Hyksos period. In Mesopotamia, as we shall see, it appears already before 3000 B.C., but we cannot consider Mesopotamia as the centre from which it spread later on, because it had already died out there before the time of the first dynasty of Ur, that is to say, several centuries before its appearance

n Palestine. The polychrome painted pottery, which thus appears suddenly, and without connexion with what precedes it, in Mesopotamia, Palestine, Cyprus, Egypt, and Cappadocia at various times, may reasonably be supposed to be at home in a region centrally situated between these countries, where it persisted all along. North Syria suggests itself, therefore, as the only possible place of origin for the civilization with the peculiar pottery under discussion. In this connexion it is interesting to note that at the one North Syrian site where early layers were touched, Sakjegeuzi, the small trial trench produced *inter alia* polychrome pottery, in contrast with the earliest layers in all other regions of the Near East; while Mr. Woolley, who excavated the other North Syrian site, Carchemish, confirms the resemblance between one example of polychrome pottery from Mesopotamia and some from the early layers of his site, where 'the three-colour scheme predominates'.<sup>1</sup> Thus there is a strong case for our assumption, more fully put forward elsewhere, that the polychrome pottery culture of Susa II *a* and Mesopotamia, which appears there without connexion with its local predecessor, is of North Syrian origin.

*Sumerians and Semites*

The interrelations of the three civilizations which existed in early times in Mesopotamia must now be considered. It is clear that there is continuity between the period in which polychrome pottery is used and the fully grown Sumerian culture of about 3000 B.C., when pot-painting had fallen into disuse. The cuneiform tablets from Jemdet Nasr are there to prove it. Additional evidence comes from the tessellated pillars of A-annipadda's temple at Al 'Ubaid, which are also found, with polychrome pottery, at Tepe Aly Abad; the shapes with sharp-edged rim and shoulder, typical for the latter, are also found in the unpainted early Sumerian wares at Assur and Al 'Ubaid. The big store jars have sometimes a plastic ornamentation on the shoulder, in which groups of three vertical ridges connect a horizontal one round the shoulder with another round the base of the neck (this occurs at Musyan and at Jemdet Nasr); or they possess strange triangular excrescences on the shoulder, e.g. at Musyan and at Al 'Ubaid. Finally the remarkable offering-stands and incense-burners occur at Musyan, Assur, Fara, Kish, and Ur. Thus we may not only assert that the polychrome pottery in Mesopotamia overlaps the earliest known stage of Sumerian culture, but also that there is exemplified a certain amount of

<sup>1</sup> Al 'Ubaid, 168.

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the jars are  
highly decorated  
+ by the way

continuity between the polychrome pottery and that of the Sumerians of the time of the first dynasty of Ur and earlier.<sup>1</sup>

It is not at all clear, however, whether there existed continuity between the Persian Highland culture and the Sumerians. At Susa, as we have shown *in extenso*, there is a complete break, which becomes manifest from the existence of a sterile layer of varying thickness which separates the two civilizations.<sup>2</sup> But at Susa we only know the Persian Highland culture in an early stage of its development, and we have seen above that evidence seems to be accumulating pointing to its prolonged existence elsewhere, and thus it can by no means be asserted *a priori* that the discontinuity between the Persian Highland culture and the Sumerian culture was complete. From Jemdet Nasr come a few monochrome vessels, now in the Ashmolean Museum at Oxford, which are important in this connexion (pl. xli, 1). It is hard to say whether they are monochrome descendants, such as we know from Susa II, of the polychrome pottery, or whether they belong to a late stage of the Persian Highland culture. The shape of the lugs, paralleled by some polychrome stone-jars, and their position high up on the shoulder, seems to connect them rather with the later culture. But if continuity between the Persian Highland culture and the Sumerian culture is not yet proved, it is no doubt theoretically a possibility, to which we shall presently return. It seems wiser, however, first to consider the position of the polychrome pottery, as so much more is known about it. We have seen that, as far as shape is concerned, it merges into the Sumerian pottery, and that it is found together with very archaic Sumerian remains; but on the other hand we were led to presume for it North Syrian affinities. Furthermore, it is very remarkable that it seems to be extremely rare in the south of the Plain of the Two Rivers, in Sumer proper in fact, while it seems well represented in Akkad. These circumstances taken in conjunction tempt us to be somewhat more definite about the makers of the polychrome pottery and to identify them with an element which seems from the beginning to have been present in the Sumerian culture, though it was more predominant in Akkad than in Sumer. That element is Semitic.

The Semites present one of the most complicated problems in the Near East, and the view which simply refers to an overflow of

<sup>1</sup> See now also *Reallexicon der Vorgeschichte*, article *Vase-Vorderasien*.

<sup>2</sup> *Studies*, i, 34 *sqq.*, and now *Revue Archéol.*, 1926, 14 *sqq.* It is of little importance that the sterile layer appears to be of varying thickness. The new *sondages* have shown that the two cultures nowhere mix and that the separating sterile layer seems to exist throughout the site.



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Pottery from Jemdet Nasr, by the courtesy of Professor S. H. Langdon

Bedawi from Arabia, as soon as Semitic features appear anywhere, is very often beside the mark. The subject is dealt with in Dr. S. A. Cook's admirable chapter in the first volume of the *Cambridge Ancient History*. In our case it is clear that no infiltration or invasion of Semites from Arabia could account for the peculiarities of material culture now under discussion. It may well be that direct immigration from Arabia has taken place; but that need not imply that there did not exist another source for Semitic features in Mesopotamia as well. Von Luschan has shown<sup>1</sup> that it is in North Syria of all places that one can observe how Semitic waves have affected the country to such an extent that the population was more or less strongly Semitized, either in language or religion or both. On the other hand, the physical type of these (Armenoid) populations was hardly ever changed. Thus Professor Elliot Smith speaks definitely of 'Armenoid Semites' in Syria in the time of the first Egyptian dynasty.<sup>2</sup> Even if one doubts whether the Egyptian ivories which he discusses are sufficiently free from the preoccupation of mere technique to be trustworthy evidence of racial type, one has the roughly contemporaneous statuettes in the round from Assur which show a brachycephalic man with a 'Hittite' pigtail.<sup>3</sup> As far as our sources reach back, North Syria seems to have been a region where races and cultures mixed. That its civilization may have possessed a number of peculiar features of its own need not, however, therefore be denied; and only excavation will enable us to see more clearly in these matters. At present we seem to have good reason to infer that in that more or less Semitic centre a particular kind of polychrome pottery of the type discussed above was used throughout, so that it appeared in surrounding regions whenever movements of peoples compelled groups of the North Syrians to move abroad. Thus this pottery appears in Egypt with the Hyksos, many of whom (but not all) bear Semitic names. In Palestine it appears earlier, about the middle of the third millennium; and some remarkable Egyptian texts recently published by Professor Sethe,<sup>4</sup> show that just in this period a change must have occurred amongst Egypt's Asiatic neighbours, after which, though the place-names in Palestine remain non-Semitic, the names of the chieftains are often Semitic; and the Egyptians in the early Middle Kingdom refer to the Palestinians henceforth (in contrast with Old Kingdom usage) by

<sup>1</sup> Especially in *Rassen, Völker, Sprachen*.      <sup>2</sup> *The Ancient Egyptians*, pp. 99 sq.

<sup>3</sup> Andrae, *Die Archaischen Ischtartempel*, pls. 43, 47 c-f.

<sup>4</sup> *Die Achtung feindlicher Fürsten, Völker und Dinge auf altägyptischen Tongefässen und Scherben des Mittleren Reichs*, in *Abhandlungen der Preussischen Akademie der Wissenschaften*, 1926.

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a term used for the Semitic Asiatics. This bears out fully our conclusions as to the makers of the polychrome pottery.

Now we know that in Mesopotamia the Semitic predominance under Hammurabi's dynasty was not due to a previous direct invasion from Arabia, but to civilized western Semites from North Syria. A similar movement may therefore be surmised for the second half of the fourth millennium. The earliest representations of gods on Sumerian monuments already wear, as Eduard Meyer has shown, the western Semitic beard without moustache. This is strikingly the case on the very archaic inlaid plaques from Kish,<sup>1</sup> near which place, at Jemdet Nasr, the polychrome pottery was found in such abundance. Now as to the features which appear with the polychrome pottery, Dr. Contenau sees in the cylinder-seal the hall-mark of the Semites;<sup>2</sup> and the cylinder-seal appears for the first time in Mesopotamia and Susiana with the polychrome pottery, while earlier the stamp-seal (of probably Anatolian-Caucasian affinities) was used. The evidence of the theriomorph and multiple vases is less conclusive,<sup>3</sup> but a double vase of this type seems to have provided the writing-sign for the Semitic part of Mesopotamia, viz. Akkad.<sup>4</sup> Thus it seems not too rash to ascribe the polychrome pottery and the cylinder seals, and perhaps the theriomorph and multiple vases of alabaster, to Semites or at least Semitized North Syrians.

The other component of the dualistic fabric of Mesopotamian civilization, the Sumerian, is with somewhat less evidence to be made responsible for another group of early material remains. We have seen that there is not yet established any continuity between the earliest painted pottery and the Sumerian civilization, though such a continuity may well have existed. This is shown by analogy with Egypt, where without traceable change in the population a pre-historic civilization with painted pottery develops into the Pharaonic civilization, where pot-painting is no longer practised. Thus we are tempted to identify the Sumerians or their relatives with the makers of the homologues of the Susa I pottery; we should then have to assume that they extended originally well up to the north, as that painted ware is found as far as Tell Zeidan in the Balikh valley. Next Semites with their polychrome ware would have advanced from the north and mixed with the Sumerian population, without however becoming prevalent in the extreme south, in what

<sup>1</sup> Langdon, *Excavations at Kish*, i (1924), pls. xxxvi-xxxix.

<sup>2</sup> *La Glyptique Syro-Hittite*, 60 sqq.

<sup>3</sup> *Studies*, i, 111; Glanville, in *Journal of Egyptian Archaeology*, xii, 53 sqq.; *Studies*, ii, 103, note.

<sup>4</sup> *Studies*, i, 65, n. 5.

was known in historic times as Sumer proper. There their pottery seems to be of great rarity.

It is doubtful whether the two strains in the Mesopotamian civilization are traceable by actual human remains. Physical anthropologists grow more and more sceptical about conclusions based on such relatively small material as we possess as yet from Mesopotamia. Perhaps certain differences already observed are relevant to our problem.<sup>1</sup> Furthermore, Sir Arthur Keith states, as a result of his examination of the Al 'Ubaid skulls, that these ancient Sumerians were very similar to the modern inhabitants of the country, and, like the latter, represent a transition between the 'Iranian and Semitic type, but they have retained more of the Iranian than of the Semite'.<sup>2</sup> This conclusion would well bear out our own. But of course one has to be careful in styling the makers of the painted pottery of the Highland culture as a whole 'Sumerians', for the latter may have been a highly specialized branch amongst a series of related peoples, and such a generalization might be as mistaken as it would be to call all the Hamitic peoples of North Africa 'Egyptians'. The pottery shows certainly that some homogeneity of culture existed at one time from the Balikh in the west down to Beluchistan, and if these wares were found in India, where other similarities with Sumerian culture seem to appear, the relation between the Sumerians and the Highland culture might become clearer, and new light might be thrown on that remarkable hoard of gold vessels found at Astrabad and recognized as Sumerian products by Professor Rostovtzeff.<sup>3</sup> At present we must be satisfied with having realized that both civilizations originally found at Susa appear to represent these vast cultural provinces; and that it is probable that the younger may be ascribed to North Syrian Semites, and possible that the older is due to Sumerians or their kinsmen.

*The Origin of Copper-working*

If, however, the makers of the oldest painted pottery in Susa and Mesopotamia, i. e. the people of the Highland culture, were Sumerians, then it is to those pioneers of civilization that we must attribute the momentous invention of copper-working, or at

<sup>1</sup> In the discussion Mr. L. H. Dudley Buxton stated that the skeletal material from Kish suggested that in addition to the racial elements which are common both to Kish and to Ur there are others which so far have not been found at Ur. If further research confirms these facts, it would appear that the distribution of the two classes of painted pottery in Mesopotamia coincides with that of two different racial elements, which then could be hardly anything but Sumerians and 'Semites'.

<sup>2</sup> *Al 'Ubaid*, 214 sqq.

<sup>3</sup> *Journal of Egyptian Archaeology*, vi, 4 sqq.; *Studies*, i, 85.

least its application to practical use on a scale which made it a revolutionary innovation. We have discussed elsewhere in detail that the few isolated instances of worked copper found in Egypt before the Late Predynastic Period, i. e. before Sumerian influence is noticeable, are of as little consequence as the sporadic use of iron in the same period at Gerzeh.<sup>1</sup> In fact these rare occurrences of copper add only relief to the sudden increase of copper implements after contact with Asia is established and proved by a mass of independent evidence. Relative dating establishes, moreover, that Susa I is older than the period in Egypt in which the Asiatic influences become manifest,<sup>2</sup> and Susa I already uses copper copiously. We have also shown that in Europe copper appears earliest where intercourse with Asia is easy, and then assumes shapes which point, again, to Asia; and the Aegean copper appeared, originally, to be equally dependent on Western Asia, or more precisely Anatolia and its dominion Cyprus. The forms common to Europe and Asia are found in great quantities in the Caucasus region, whence they seem to have spread via Troy towards the west (cf. figs. 4 and 5). In fact classical tradition is unanimous in extolling the excellence of Armenian metallurgy. The methods in which excavations have been carried out in those regions make it impossible to determine the chronological position of the Armenian-Caucasian remains, but indirect evidence shows that the industry must already have existed about 2000 B.C. because its products, eyelet-pins and torques, reach Egypt occasionally via Byblos in the Middle Kingdom.<sup>3</sup>

Now the recent discoveries in Mesopotamia have suddenly revealed that a large number of these common Caucasian types existed already in the last century of the fourth millennium in Sumer. Thus it appears that the extraordinary early Sumerian copper industry, which has been a source of astonishment ever since Dr. Hall recovered at Al 'Ubaid the Imgig-relief and the temple lion and bulls, stands in the closest possible relation to the industry of the Caucasus region. Most striking are the four spatula-shaped pins (*Schaufel-nadel*; *épingle à raquette*), two of silver with turned-over top, and two of bronze, which were exhibited

<sup>1</sup> *Studies*, ii, 4 *sqq.*, 33 *sq.*, 119 *sqq.*, 147 *sqq.*, 189 *sq.* Mr. Lucas has recently (*Journal of Egyptian Archaeology*, xiii, 162 *sq.*) shown how favourable were the conditions in Egypt for the discovery of copper-working. But history is no matter of logic, and comparative archaeology plainly proves that the opportunity was not grasped, and that the use of copper on a considerable scale was due to Asiatic initiative.

<sup>2</sup> *Studies*, ii, and now also *Comptes Rendus de la Session d'Amsterdam de l'Institut International d'Anthropologie*, 1928.

<sup>3</sup> *Studies*, ii, 148.

in the British Museum last year amongst Mr. Woolley's finds from Ur. These have always been regarded as the most characteristic product of the Caucasian metal-industry (fig. 4, 4), reaching Europe via the great emporium at the Hellespont (fig. 5, 3). A form like this

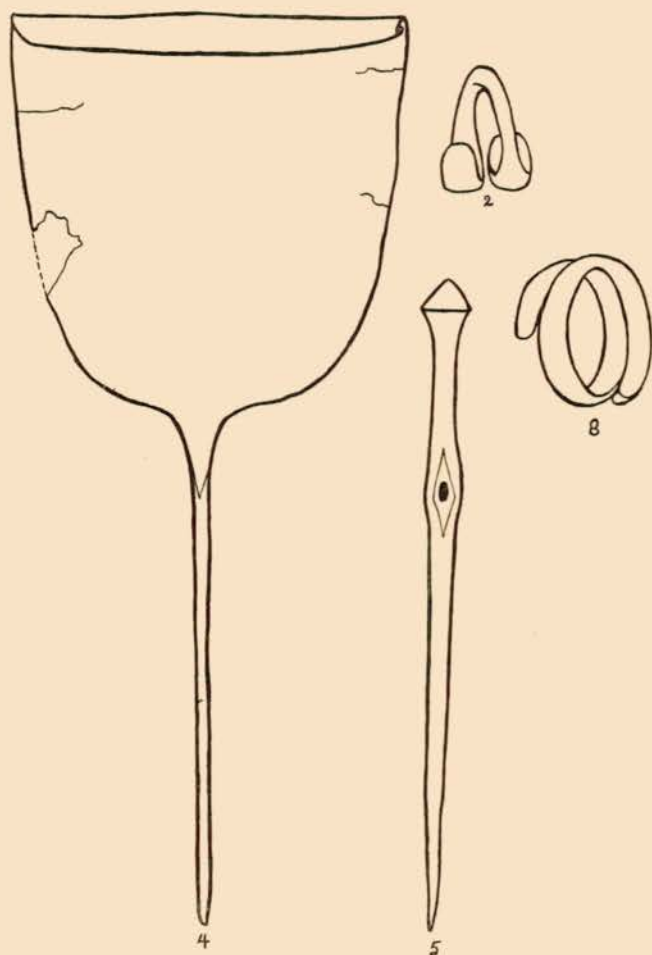


FIG. 4. Ear pendants and pins from the Caucasus (after Chantre).

is so exceptional and arbitrary that its occurrences in different regions cannot reasonably be explained as due to independent development. Moreover, there is a number of other objects which now appear to be common to Sumer and the Caucasus region and its dependants. There were found at Ur and at Kish the simpler pins flattened at the middle or at the top (fig. 6), obviously related to the spatula shape, and also paralleled from the Caucasus. The

same applies to the eyelet-pins, and the spiraliform ear-pendants, which have such a rich development in Troy and Central Europe (figs. 4 and 6), but are of Asiatic origin, as I have shown elsewhere. Then were found at Ur the three-toothed prongs, known from Astrabad and Tsarewskaja. But we need not confine ourselves

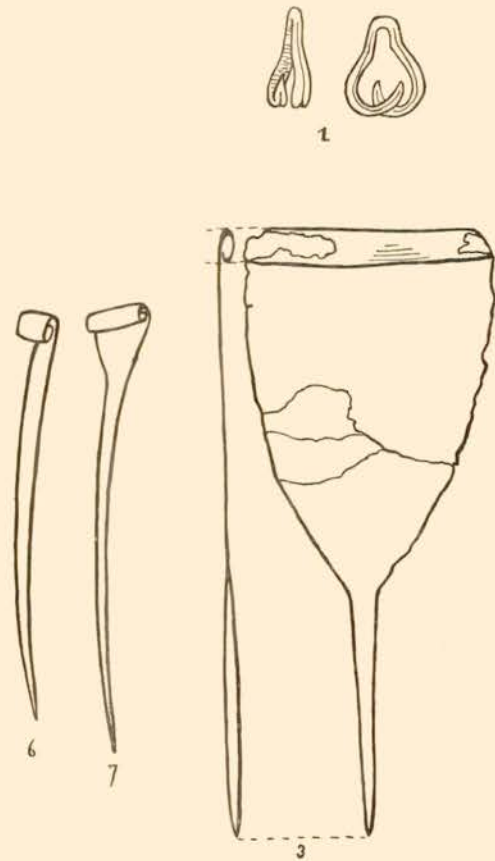


FIG. 5. Ear-pendants and pins from Bohemia (after Ebert, *Reallexicon*, ii).

to objects of copper alone. The jewellery from Ur contains striking features which are paralleled in the Caucasus region on the one hand, and in the West, notably in the Aegean, on the other. The diadems of gold-foil with engraved designs and the gold-foil pendants in the shape of petals<sup>1</sup> are remarkably like those found in the earliest metal age in the Aegean, at Mochlos and Platanos in Crete, and in Amorgos. On the other hand, they are paralleled

<sup>1</sup> *Illustrated London News*, 23rd April 1927.

at Maikop just north of the Caucasus. Gold beads of a remarkable type have exactly the same distribution—they occur at Ur, Crete, and Maikop.<sup>1</sup> It is also relevant to recall here the 'Sumerian' treasure of Astrabad. All this evidence suggests quite clearly that well before 3000 B.C. there already existed an important centre of metallurgy somewhere south of the Caucasus, with which the Sumerians were in close touch. Moreover, when we are entitled to style the bearers of the Highland culture Sumerians, we can attribute the invention to them, for, as we

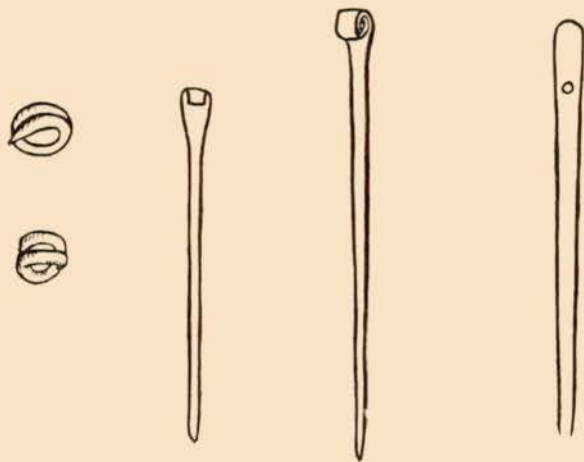


FIG. 6. Ear-pendants and pins from Kish (after Mackay).

have seen, the Highland culture seems to have extended all through the region south of the Caucasus and Caspian. Where exactly the discovery was made cannot be decided as yet.<sup>2</sup> That intercourse within this region already existed at a very early period is shown by the appearance at Susa, towards the end of the first (i.e. the Highland) civilization, of certain red pottery and of stamp-seals, known from Anatolia, and moreover recently

<sup>1</sup> Compare Childe, *Dawn of European Civilization*, fig. 61, with Xanthoudides, *Vaulted Tombs of Mesara*, pl. LVII, top row.

<sup>2</sup> In the discussion Professor Childe rightly insisted on the necessity of distinguishing between the creative region, where discoveries were made and shapes evolved, and the mining region. We cannot as yet be certain about the exact location of the first; it should be remembered, however, that the first movement from Asia into the Aegean which brings copper, starts from the south coast of Asia Minor (*Studies*, ii, 79). And, further, the wealth of Hissarlik II and the distribution of copper and early bronze types in Europe suggest that the Caucasus region or at least some region on the eastern or southern litoral of the Black Sea was exporting metal objects of these various forms, and not metal only.

published as found actually in the Caucasus region.<sup>1</sup> Anyhow wherever the invention was made, there is no doubt that it spread towards the west via Asia Minor and that the subsequent movements of peoples mark the earliest period which historical archaeology can reach.

Some sherds recently found in China might suggest that the knowledge of copper-working perhaps also spread to the east from the Persian-Caucasian province. The beautiful painted pottery with its spiral designs found in neolithic layers by Dr. Andersson seems to be a local growth, but a few painted sherds found with copper at Sha Ching differ from the neolithic ware. As far as one can judge from descriptions and plates, they are very like pottery from Susa I and from Urmya with their designs of birds and triangles; and very like the Urmya pot and sherds from Tepe Mohammed Djaffar near Musyan in technique. These are no doubt significant indications; but our material is as yet too scanty, and though it may be useful to map out, as it were, the tracks which future research might fruitfully explore, it is only future research itself which will allow us to decide whether these tracks lead anywhere at all.

#### *Addendum*

Recently Mr. Woolley has suggested (*Journal Royal Asiatic Society*, Jan. 1928, 35 *sqq.*) that Susa I and II are contemporaneous. The stylistic contrasts between the two types are explained by stressing my suggestion that the pottery of Susa I might be funerary to such a point that ritualistic tradition alone is made responsible for the divergencies.

The rest of the argument is, unfortunately, based on a very careless use of various publications. Nowhere is advocated the impossible 'time-series: Susa I—Musyan-Susa II' with which I am credited (pp. 49 *sqq.*). On the contrary, it was laboriously shown that the 'poterie épaisse' and the 'poterie fine' from Musyan were both representatives of a later stage of the same culture which we know in an earlier stage at Susa I, and which is therefore earlier than Susa II (see *Studies*, i, 49-53; and especially 77 *sqq.*). Mr. Woolley does not seem to be aware of the fact that M. Pottier has whole-heartedly endorsed that view (*Revue Archéol.*, 1926, 26 *sqq.*), so that it is now incorrect to state 'that as soon as we get, at Musyan, wares which diverge slightly from the established Susa types the authorities cannot agree to which of the Susa periods they ought to be assigned' (p. 47). Moreover, Mr. Woolley is no longer entitled to quote the French scholar as maintaining that pottery from Susa I and II was at Musyan found together (p. 47), for that contention was based on M. Pottier's original misconception as to the nature of 'poterie épaisse' (*Studies*, i, 49, n. 3), which he no longer holds.

<sup>1</sup> *Studies*, i, 38, and *Liverpool Annals*, xiv, 54 *sq.*

Lastly Mr. Woolley finds some external evidence for his hypothesis in the '*Coupe théorique du Tell*' of M. de Morgan. In handling that drawing, however, Mr. Woolley forgets the rule that a scientific diagram should never be used as evidence outside the scope of the particular point which it was meant to illustrate. M. de Morgan warns us explicitly that he does not give an exact section from one of his excavations on the site, but merely a diagrammatical synthesis to show the division of the colossal deposit of debris over the various layers, such as his work in a number of trenches, and other *sondages*, had revealed. But Mr. Woolley treats this sketch as if it was meant to show all sorts of details; he actually measures it and concludes from it that the grave-deposit 'retains a horizontal surface flush with the wall-top for a distance of not less than seven and a half metres from the wall-face, etc.' (p. 43). He then proceeds to argue that 'houses are built on the level of the ground and graves are dug down into it. Identity of level is in itself enough to disprove identity of date.' Consequently the graves with the fine pottery cannot be contemporary with the settlement. But the premise is wrong: the houses are definitely known to have stood on natural hillocks, and the same can with certainty be presumed for the graves, as they had to be safeguarded against the floods of the Kerkhah, which flowed past the site. Now there is nothing in M. de Morgan's drawing to show the relative height of these hillocks. The '*collines naturelles*' are merely indicated by one continuous horizontal line, a clear warning not to take the drawing too literally, even if one should overlook M. de Morgan's explicit statement that his sketch is '*théorique*' and '*approximative*'; but M. de Morgan was an admirable draughtsman, known also in other cases (e.g. predynastic Egyptian vases) to have sacrificed sometimes exactness to elegance, and thus he has neatly sketched here a number of graves outside the wall of the settlement, on a much too large scale, and with no other intention than to show that they were numerous there and found in more than one layer. That is all, and there is thus no question of 'archaeological grounds' which would make the later date of the graves 'indisputable'; for these 'grounds' do not consist in newly reported facts or in observations on the site itself, but merely in a far too rigorous interpretation of a constructive and thus imaginative diagram. Two years ago, however, there were published further stratigraphical observations which M. de Mecquenem made at the request of M. Pottier (*Revue Archéol.*, 1926, 13 *sqq.*). These Mr. Woolley does not seem to know, but they are, though not yet final, interesting. While it is confirmed that a sterile layer separates the two successive civilizations over the whole of the site, it appears also that the thickness of the layer varies and that altogether the stratification is very irregular and only tallies in its most general characteristics with the old diagram. Whether the sterile layer was caused by desertion of the site or by levelling will be known when the architectural remains are published.

