

A BRIEF SURFACE SURVEY OF THE PROTOHISTORIC SITE
OF SHAHDAD (KERMAN, IRAN):
PRELIMINARY REPORT (*)

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Introductory note.

The following paper, written at the beginning of 1977 as *ad interim* report to the Iranian Center for Archaeological Research, was planned to be published within a monographic volume on the results of the excavations carried out for several years by an Iranian archaeological mission led by A. Hakemi at Shahdad (Kerman).

The well known Iranian political evolution has vanquished that project, so that we decided to publish our contribution to make available the information we collected on the spot.

From the time this article had been written, one of the authors has repeatedly held the Shahdad problem in different contexts. Firstly with a paper read at the VIth Annual Symposium on Archaeological Research in Iran, November 1977. Later on with two articles published on this Journal.¹

Furthermore an important book by O. G. Meder² has been recently published, largely dealing with a geomorphological analysis of the Shahdad area. Here we have a clear picture of the relationship between the sedimentologic sections and the settlement dynamic history, rising at least at the beginning of the IVth mill. B.C. The exhaustive analysis of the author allows now to link the archaeological data to the alternate depositional and erosive phenomena encompassing the alluvial fan from the actual village and oasis area to a distance of 10 km to the East. The eolic and idric erosion whose action was particularly strong on the eastern section of the alluvial fan allowed only small sections of the clay platform to survive, but enough to preserve diagnostic evidence on the pre-

(*) We are much obliged to A. Hakemi, former director of the Lut Archaeological Mission, not only for his rare spirit of collaboration in giving us the opportunity to do this survey, but also for the amiable hospitality shown us at the Mission's house. Our thanks are also due to Mr. M. A. Kaboli and the entire staff of the Mission for their cooperation.

sumably oldest human exploitation of the area as a permanent settlement.

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In the last ten years intensified archaeological research which has indeed also improved in excavations methods and conceptual approach has brought about profound changes in the state of our knowledge of the protohistoric cultures of the Iranian plateau. This has been accompanied by parallel researches in Central Asia and in the regions of the Indian subcontinent, resulting in an equally profound alteration in the by now canonical standards of historical thought concerning a phenomenon as important and complex as the rise of urban formations.

The work done in recent years in southern Turkmenia,³ at Shahr-i Sokhta,⁴ in Iranian Sistan, at Shahdad,⁵ Iblis,⁶ Tepe Yahya,⁷ Tepe Hissar⁸ and in the Indus valley⁹ with a chronological redefinition of the origins of this culture, has helped to bring about a redimensioning of the leadership role of Sumerian Mesopotamia.

The novelty, then, lies in the changed viewpoint of historical observation: the world of the Iranian plateau and, still further east, Central Asia and the Indus valley can no longer be looked at through the Mesopotamian filter, but must be fitted into a vaster complex of dialectic interrelations at various levels of exchange, in which the geographical environment, the index of demographic growth, raw materials, commercial trends, and technological levels are all brought into play as highly determinative variants.

It is not mere chance that the study of the proto-urban phenomenon in the 3rd millennium B.C., which in the case of Iran has materialized in the excavation of important centres such as Hissar, Shahdad and Shahr-i Sokhta, has been directed towards the analysis of the environment, of modes of production, of instruments and technology and of the socio-economic set-up, as well as towards the trade routes and systematic research into the sources for the supply of raw materials.

This is the pattern of research work into which must be fitted the brief survey which the present authors, thanks to the kindness of Engineer Hakemi, Director of the Lut Archaeological Mission, were able to carry out in the area of the protohistoric settlement of Shahdad, 5th-10th January, 1977.

The survey, given its preliminary nature, but also because of the limited time available due entirely to the authors' previous engagements in Italy, was not carried out according to recently developed strategy in this field of research.¹⁰ On the contrary it was, far as possible, a systematic survey affecting a good half of the site, particularly the southern part.

Our survey was based on a map of the area drawn from the aerial photographs placed at our disposal by the Lut Mission. Thanks to these photos we were able to localize easily and precisely the areas where a greater concentration of material was to be found. These areas, almost all of them within the site boundaries, have been numbered progressively from 1 to 37. (fig. 1). It must also be stated that the surface materials gathered were voluntarily kept to a minimum, and in many cases collecting was avoided altogether, so as not to preclude the chance of a systematic collection in the future, with criteria of surface distribution within each of the units identified, or so as to alter irretrievably the position and the quantitative ratio of the materials. This is especially true for the areas of particular interest, where the materials are more suitable for distributive analyses. In this note we intend to give a synthesis of the most significant results of our survey.

The actual village of Shahdad, a green oasis enjoined by agrumets and date palm-trees, lies on the western edge of the Dasht-i Lut desert (eastern Iran), at Mnt. Joftan feet. A North-South grossly oriented mountain chain running from Darband to Bam, divides Shahdad from the Kerman area. Those reliefs, reaching 4000 m. above sea-level and covered by snow till May, are responsible for the idric resources of the Shahdad plain in the form of perennial streams like the Derakhtangān river. The historic and prehistoric settlement pattern and the shifting of the inhabited area through time are evidently linked to the idrological assessment of the plain and to the erosion-depositional phenomena related to a highly dynamic superficial waters-pattern.¹¹

1. *Chronological aspects.*

In the eastern part of the area which we visited a certain amount of material, especially pottery, was found which leads to a widening of the chronological horizons of the Shahdad site. The excavation of the graveyard in the various digs conducted in the last few years had given a picture of a civilization which comparative study tended to place within the 3rd millennium B.C. The abundant and rich furnishings in the graves of the extensive dig A would seem to belong to the second half of the millennium, while the burials discovered in limited investigations such as digs C and B could possibly be dated to the first half of the same millennium.¹²

Not only does the material gathered during our survey begin to confirm the dating of part of the settlement to the 3rd millennium, but also to include all of the preceding millennium. In Point 2, a hillock which rises in an isolated position to the east of the main settlement, we gathered a certain amount of fragments of strawtempered ware, reddish or brown in colour, very similar to the Lalehzar coarse ware which is typical of Periods I - II at Tal-i-Iblis¹³ together with a more typical pottery of very fine ware. This is a buff ware with black-painted decoration on a red or red-brown slip.

The few sherds which we collected, belonging to thin-sided subcylindrical bowls, all have the same decorative motif made up of a dense chevron pattern which apparently covers the entire external surface. This kind of pottery can also be compared with that found at Iblis (Periods I-II) as well as at Yahya (VB - A). The lithic industry belongs to the same cultural horizon; it is a blade industry belongs to the same cultural horizon; it is a blade industry which seems to have close analogies with that at Yahya.¹⁴

The straw-tempered ware was identified only in one other place (Point 3), here too in a few sherds of painted ware which can tentatively be compared with the Iblis IV complex. In all probability these materials cover the first half of the 4th millennium, but we cannot exclude the possibility that further surface exploration together with the digging of trial-trenches, will give more exact information about the chronological relationship between the straw-tempered coarse ware and the fine painted ware at Shahdad. For the moment, by way of hy-

pothesis, we shall restrict ourselves to placing the beginnings of the settlement of Shahdad early in the 4th millennium B.C. with a warning that a beginning in the 5th would be realistic in the light of the dynamics of the pottery sequence in the Period VI levels at Tepe Yahya.¹⁵

We were not able to distinguish a clear assemblage of materials parallel to Iblis III, whereas the Iblis IV horizon seems to be well represented. Materials of this period are spread over a vast area, that is to say, the area where the large mound marked on the map as Point 4 is situated. Here the buff ware with black-painted decoration predominates. Some fragments have a characteristic green oxidization.

A certain number of sherds of painted ware from Point 37 in the north-east corner of dig A in the graveyard are of mixed character and can be linked with similar ware from Yahya VA-IVC.

A group of sherds collected in Point 5 (fig. 14) can be referred to a tradition which goes back to Yahya IVC-B. At this Point were noted, amongst other things, numerous fragments of querns, and stone sockets or weights.

In Point 6 we left « in situ » a spouted jar of plain orange-buff ware with a black and red painted decoration on the spout. This has a close parallel in Yahya IVA.¹⁶

Among the surface materials in the western part of the area visited the red ware is widely present. This ware is well known, thanks to the abundant furnishings recovered in dig A in the graveyard. Also present, but in a limited quantity, is a handmade ware of a coarse-grained grit-tempered fabric with a red-brown surface.

On a first examination it seems then that the materials collected cover the whole span of the 4th and 3rd millennia B.C. and their distribution confirms Eng. Hakemi's theory about the territorial dynamism of the pre-protolithic settlement of Shahdad. The picture which emerges is that of a fairly marked shift of the nucleus of inhabitation from east to west during the 4th millennium, a shift which seems to continue in the same direction during the 3rd millennium. All the same, in the 3rd millennium a shift along a south-north line, too, cannot be excluded. This second directrix cannot be documented at the moment, since only a limited part of the sector north of dig A was visited by us.

2. Pottery production.

Numerous kilns for the firing of pottery ware were localized in Point 1 and on the eastern slopes of Point 4. These latter kilns are rather limited in number, not exceeding four, and can be dated, thanks to the pottery, to the second half of the 4th millennium. Point 1 on the other hand seems to have a larger number of kilns (twenty or so). It was visited, without materials being collected, by one of the authors, M. Vidale, and by M. A. Kaboli, and it is not possible to give a chronological collocation.

3. Metallurgical activity.

The very large number of items in bronze found in the burials in dig A - vases, pins, axes, objects of art such as embossed plates, and the famous standard - left no room for doubt that their production was local.¹⁷ Furthermore the Kerman area, very rich in copper minerals as can be seen from an examination of the new mineralogical map of Iran, was already known as an area of advanced experimentation in bronze-working technology. As early as the 5th millennium, going by the evidence of Tal-i-Iblis, copper smelting was well advanced.

In the future Shahdad will certainly be seen to be a key site for our knowledge of the technological levels of bronze production in the 3rd and perhaps also in the 4th millennium. In fact, large expanses, in an area c. 500 x 500 m. (fig. 2) are literally covered with slags from the smelting of copper, nor is it rare to see on the ground traces of circular or rectangular structures which denote the presence of furnaces. We restricted our collecting to a few scoriae, some fragments of crucibles, and finished objects (fig. 6: 1-6).

The vastness of the area over which the scoriae are scattered makes us think of a considerable volume of production which could not be explained if its purpose were to meet internal demand only. The question shall remain open, to be taken up again after a close study of the slags, furnaces and crucibles. We must not forget, however, that the Kerman area may have been one of the major sources of supply of copper minerals for Sumerian Mesopotamia, as well as the Oman peninsula, the other great centre of production in the 3rd millennium, as literary sources and archaeological evidence seem to indicate.¹⁸

4. Working of semiprecious stones.

One of the most interesting results of our survey was without doubt the discovery of areas where semiprecious stones were worked, in particular carnelian and agate and, to a lesser extent, chalcedony, including the blue variety of oriental chalcedony, calcite, chlorite, lapis lazuli, turquoise. The « fossil indicators » to the localization of these areas were the drill-heads which in recent times have attracted the attention of scholars and have been the subject of specific studies.¹⁹

We can list a total of sixteen points where we collected flint drill-heads and semi-precious stone wastes, especially carnelian, in various stages of manufacture (figg. 3-5). These points have been plotted on a map (fig. 2) and grouped under a general graphic index. Within this generalization of area we have kept distinct the collection points where a greater amount of drill-heads was gathered (more than 50). We must make a special mention of Point 17 where in a very short time we gathered more than 700 drills. The area over which the drills were scattered in Point 17 is c. 1800 sq.m. and we reckon that over this surface are spread some thousands of drills. On the whole, among the various collection points we were able to gather about 1100 drills of different types. The greater part (88.41%) consists of flint microdrills obtained from burin blows, with dimensions which vary between 5 and 20 mm. (most widely represented are those in the 5-12 mm. range). A second type, which represents 2.6% of the total, is obtained from short, thick blades. A third type, of which there is only a limited number of specimens — about 26, equal to 2.90% of the total — consists of drills of flint, and in three cases of basalt, with a cylindrical functional part and a central depression in the head.

This last type is known elsewhere at Shahr-i Sokhta, at Mehrgarh (J.-F. Jarrige, personal communication), at Amri, Chanhu-daro and Mohenjodaro in the Indus valley²⁰ where, however, it is never in flint but exclusively in basalt or a type of granite.²¹ The study of the function of this type of drill has shown that it was used at Shahr-i Sokhta not only for drilling beads of a certain size but also for executing the geometric patterns which are a characteristic feature of the numerous stamp seals in chlorite.²²

The other two types of drill are typologically similar if not identical to those found during a recent survey at Tepe Hissar²³ as Mrs. Bulgarelli herself has confirmed to us. The microdrills from Shahdad and those from Hissar coincide completely, and the coincidence can also be established in the subtypes. Naturally, in both sites the technique used in the manufacture of these implements is the same, also from the standpoint of the support, which, both at Shahdad and at Hissar, is the burin-blow for the first type and a short thick blade for the second.

It should be emphasized that from the technical point of view of the manufacture of microdrills, the province of Shahdad/Hissar is quite distinct from that of Shahr-i Sokhta/Kyzyl Kum (Kel'teminar culture²⁴) where this type of implement is obtained from a regular retouch on flint microblades.²⁵

At Shahdad as at Hissar the microblade technique seems to be almost entirely absent, even though in both sites there are attested pyramidal and prismatic cores of small size from which microblades could be detached. It seems, however, that the flakes from these cores were produced by burin blows. The drills were obtained from these flakes by retouching.

As has already been mentioned above, a fair number of beads was gathered together with those implements, for the most part carnelian, in various phases of processing. The manufacture process of the beads can easily be followed in the circular ones with a central hole (fig. 4).

From the large number of beads broken during their manufacture (this fact is made clear by their incompleting drilling, of a bipolar type) we may supposedly infer a high proportion of waste, which is understandable both on account of the delicate nature of the drilling operation and also due to a lowering of the standard of work in the case of a material like carnelian which was certainly plentiful in the shape of pebbles in the dried-out branches of the river-beds that characterize the morphology of the Shahdad area.

Other types of stones were noted much less frequently in our survey, e.g. agate, chalcedony, oriental chalcedony, calcite, turquoise (we found only one bead; another was found in the graveyard), chlorite, lapis lazuli. It is worth making a special mention of this last-named stone. Amongst the finds at the Shahdad graveyards lapis lazuli,

in the form of beads whose types vary considerably, is frequently attested. We found only two finished beads (a cylindrical and a circular one) and five small waste fragments. Nevertheless, we also found two prepared blocks on which the out of a groove made by a flint blade is clearly evident (fig. 5: 1). This detail is a characteristic step in the process of working lapis lazuli²⁶ and, unlike the finished article, it suffices to show that at Shahdad in the 3rd millennium B.C. this stone was also worked. It is thus highly probable that somewhere in the settlement of Shahdad, perhaps outside the area which we visited, there can be found a workshop for the manufacture of lapis lazuli. If this is so, it will be a well-defined place of restricted area, as is logical where an imported, and therefore very valuable, material is worked, unlike the case of other types of semiprecious stones which are easily obtainable *in loco*. As regards carnelian, we have in fact seen that the areas of manufacture appear to be fairly widely scattered over a rather extensive area.

Returning to the drills, we shall point out that their importance has previously been neglected, as has in practice the greater part of lithic industry, both in excavating and in studying urban and protourban centres. This importance has been stressed more than once²⁷ and we shall not repeat it here. All the same, it is worth while emphasizing the basic concept, i.e. that the study of technological levels and of the productive and manufacturing processes connected with them, can

be an incalculable aid in the historical reconstruction of economic and cultural phenomena, also in the case of urban and protourban cultures. The study of these features of material culture becomes particularly meaningful in the geographical setting of arid and semi-arid regions, where high levels of craftsmanship appear to be born of incentives and of necessity which arise in environments where there is a chronic shortage of raw materials.²⁸ For the Iranian plateau this stimulus came from Sumerian Mesopotamia with its ever-increasing demand for luxury goods which was a result of its rapid socio-economic growth. We have evidence of this as far back as the Early Dynastic II in Sumerian texts such as « Enmerkar and the Lord of Aratta » and « Enmerkar-Lugalbanda »²⁹ but we think it possible that the process may have had remoter origins, as early as the second half of the 4th millennium B.C., though with different forms and mechanisms.³⁰

This thickening of trade relationships, which in the 3rd millennium B.C., not without ups and downs, appears to involve the whole Middle East, from Mesopotamia to the Indus, from Turkmenia to the southern regions of the Persian gulf, is one of the most impressive phenomena linked to the busting out of urban centres on the Iranian plateau, resulting in large and flourishing centres such as Hissar, Shahr-i Sokhta and Shahdad.

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- ¹⁴ M. PIPERNO, in *East and West*, 23, 1973, pp. 59-74.
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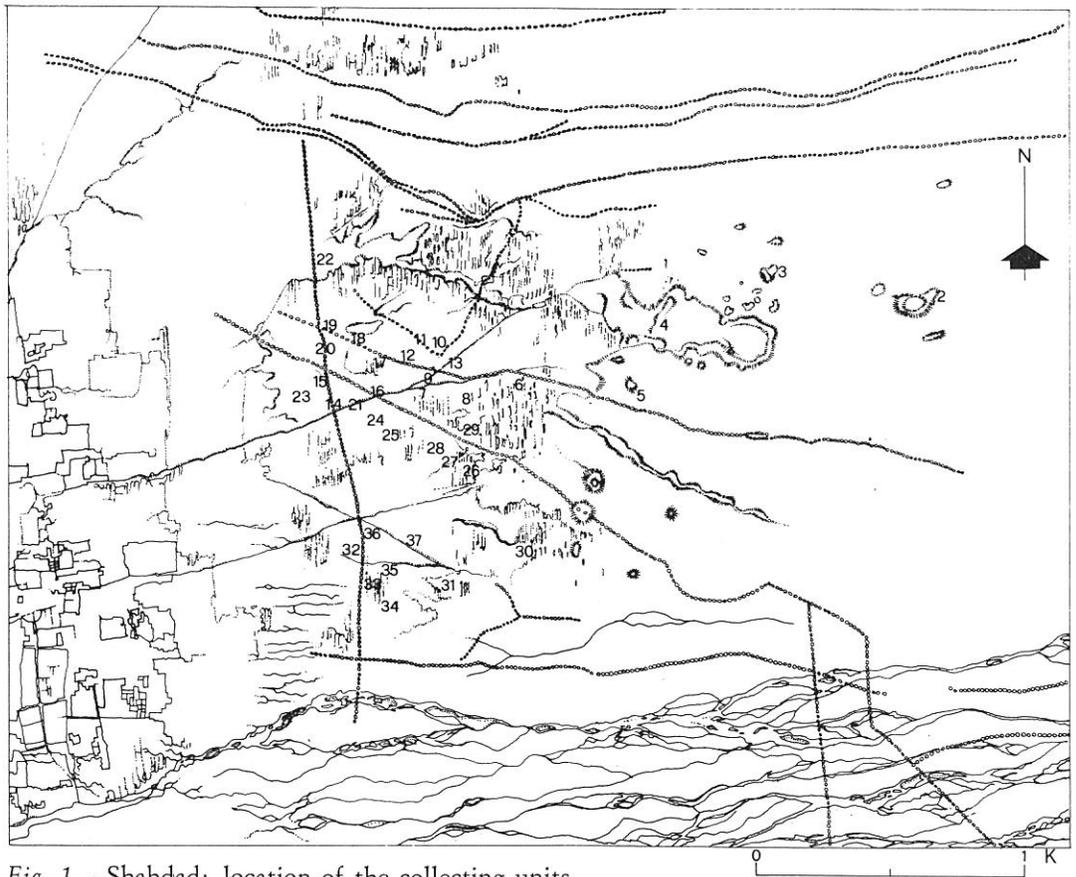


Fig. 1. - Shahdad: location of the collecting units.



Fig. 2. - Shahdad: areas of working activities within the surveyed area.

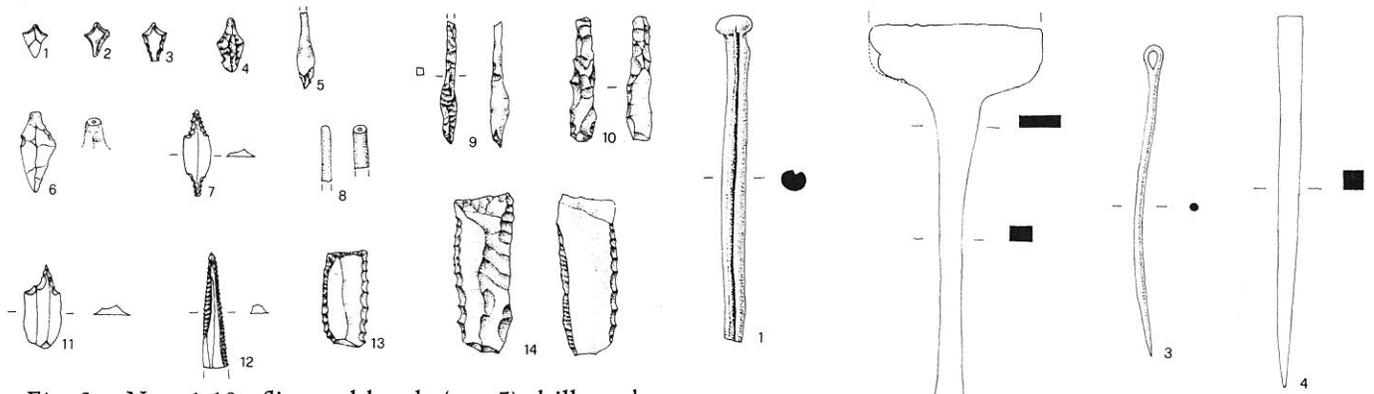


Fig. 3. - Nos. 1-10: flint and basalt (no. 5) drills and drill-heads; 12: double side retouched bladelet; 13-14: sickle blades.

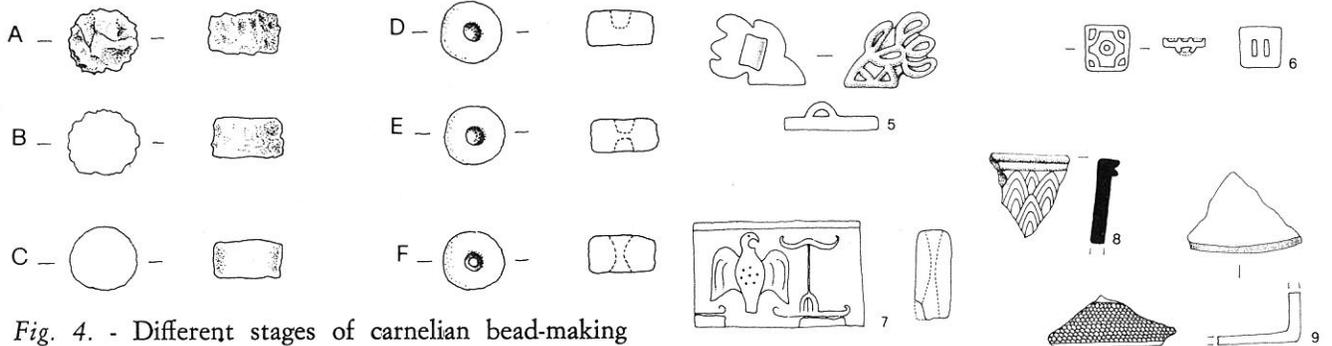


Fig. 4. - Different stages of carnelian bead-making process.

Fig. 6. - 1-6: copper and bronze implements and stamp-seals; 7: white stone cylinder seal; 8-9: chlorite bowl fragments.

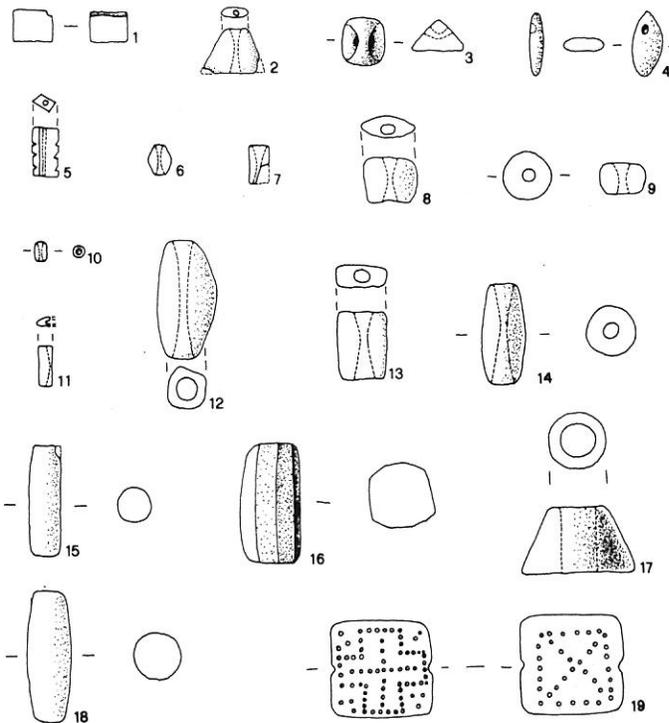


Fig. 5. - 1: lapis-lazuli block with groove produced by a flint blade; 2: green stone bead; 3, 4, 6, 9: Carnelian beads; 5: white stone bead; 7, 8, 11, 13, 14, 15: Calcite beads; 10: lapis-lazuli bead; 12: chalcedony bead; 16: chlorite unfinished bead; 17: chlorite spindle-whorl; 18: alabaster unfinished bead; 19: chlorite unfinished stamp-seal.

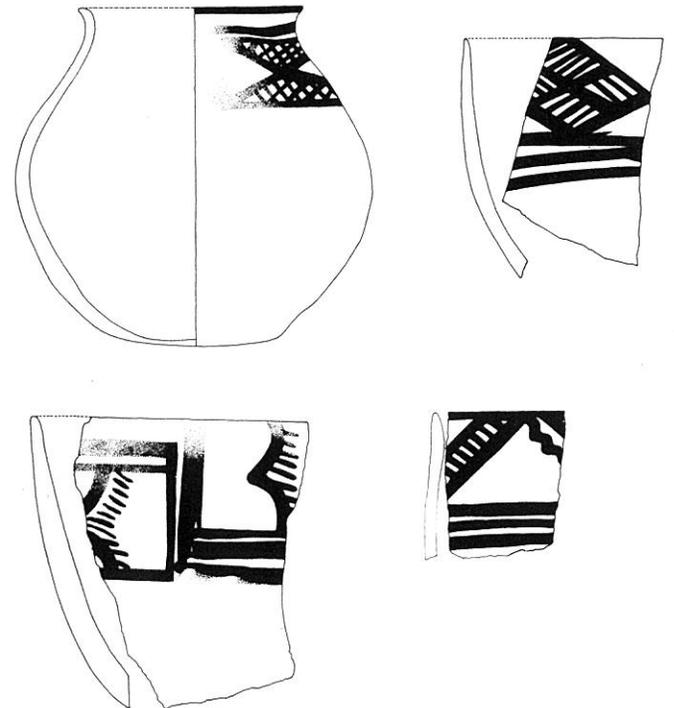


Fig. 7. - Black on buff pottery ware from Point 18.



Fig. 8. - Black on buff pottery ware from Point 37.

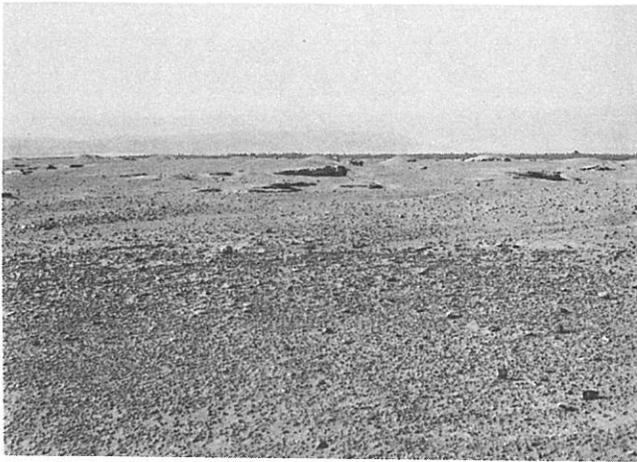


Fig. 9. - Shahdad landscape.

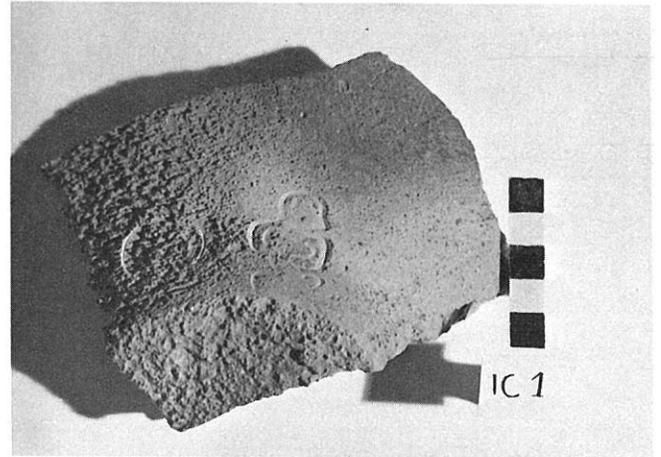


Fig. 12. - Red pottery sherd with stamped mark from Point 22.



Fig. 10. - Traces of merging structures of a metal workshop in the working area at Point 8.

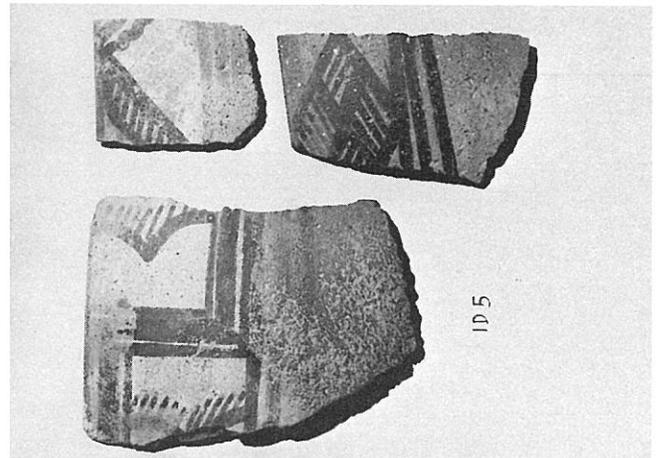


Fig. 13. - Black on buff pottery sherds from Point 18.



Fig. 11. - *Idem.*



Fig. 14. - Black on green pottery sherds from Point 5.