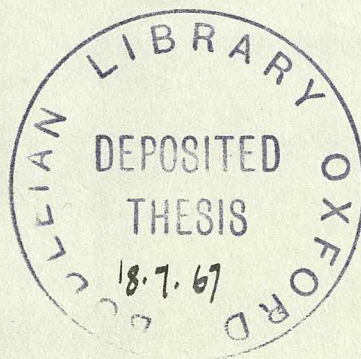


Thesis submitted to the Faculty of Oriental Studies
for the degree of Doctor of Philosophy.

The Source, Distribution, History and Use of
Lapis Lazuli in Western Asia from the earliest
times to the end of the Seleucid era.

by

Georgina Herrmann of St. Hugh's College



Volume II - Plates

August 1966.

Plate 1 consisted of four samples of lapis lazuli. There were, unfortunately, only two sets of these samples and they have therefore had to be omitted from this volume. They were:

1. From Baikal, showing the typical 'grainy' texture. Given by the University Museum.
2. From Badakhshan, showing the wide colour range of the stone.
3. From Badakhshan, comparable in colour and appearance to 4.
4. Section of a bead from Ur, given by the British Museum.

PLATE 2

A selection of samples of lapis lazuli collected at Sar-i-Sang in Badakhshan. Though indicating the wide range of colours from very pale to deep blue, this colour plate fails to reproduce the true colours of the samples. Unfortunately, it has proved impossible to obtain either a photographic or printed reproduction of greater fidelity.

(Colour plate by courtesy of the Geographical Magazine.)

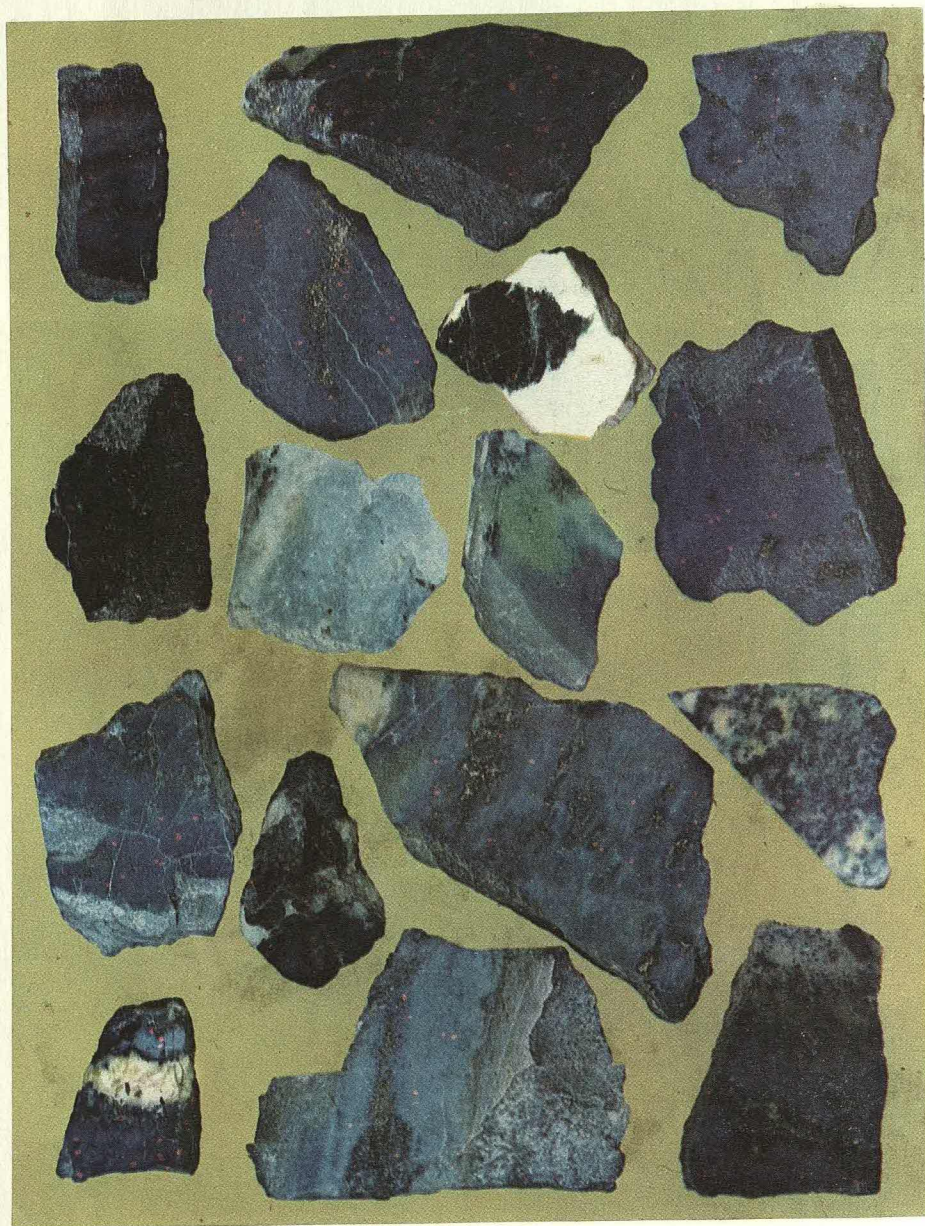


PLATE 3

Thin sections, greatly magnified, of lapis lazuli.
Above: from Sar-i-Sang; Below: from Lake Baikal.
These and the following plate have been provided by
Dr. Peter Woodrow.

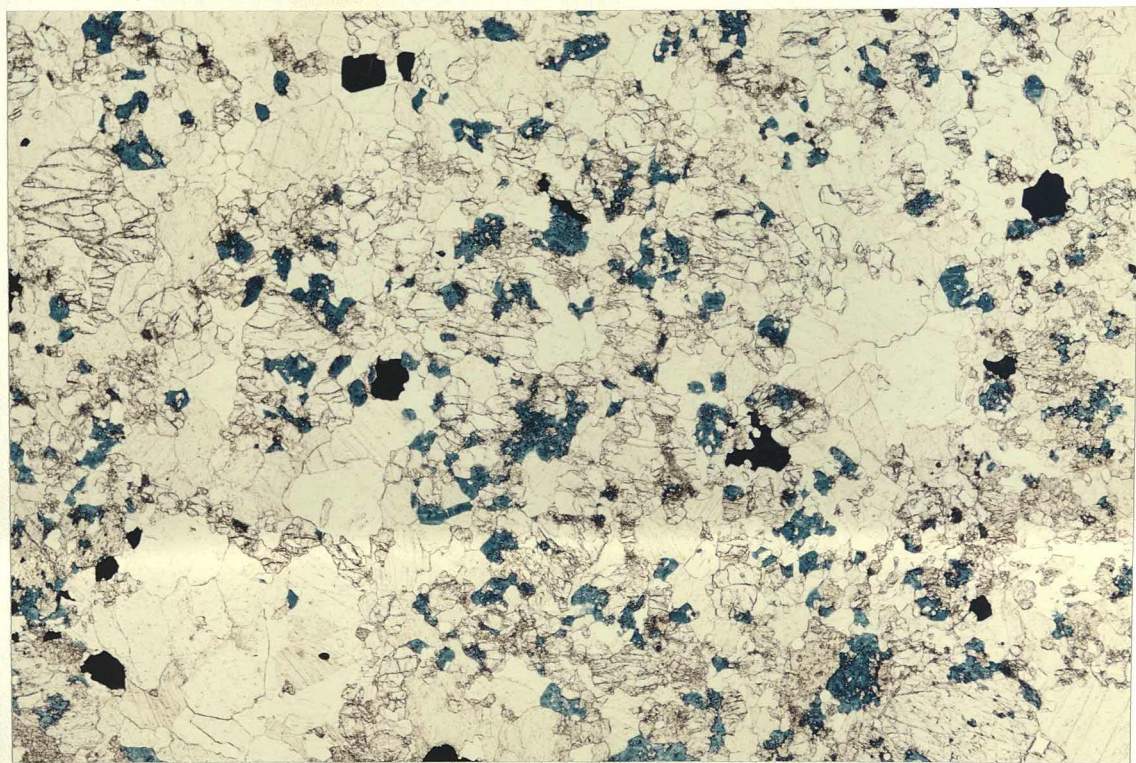
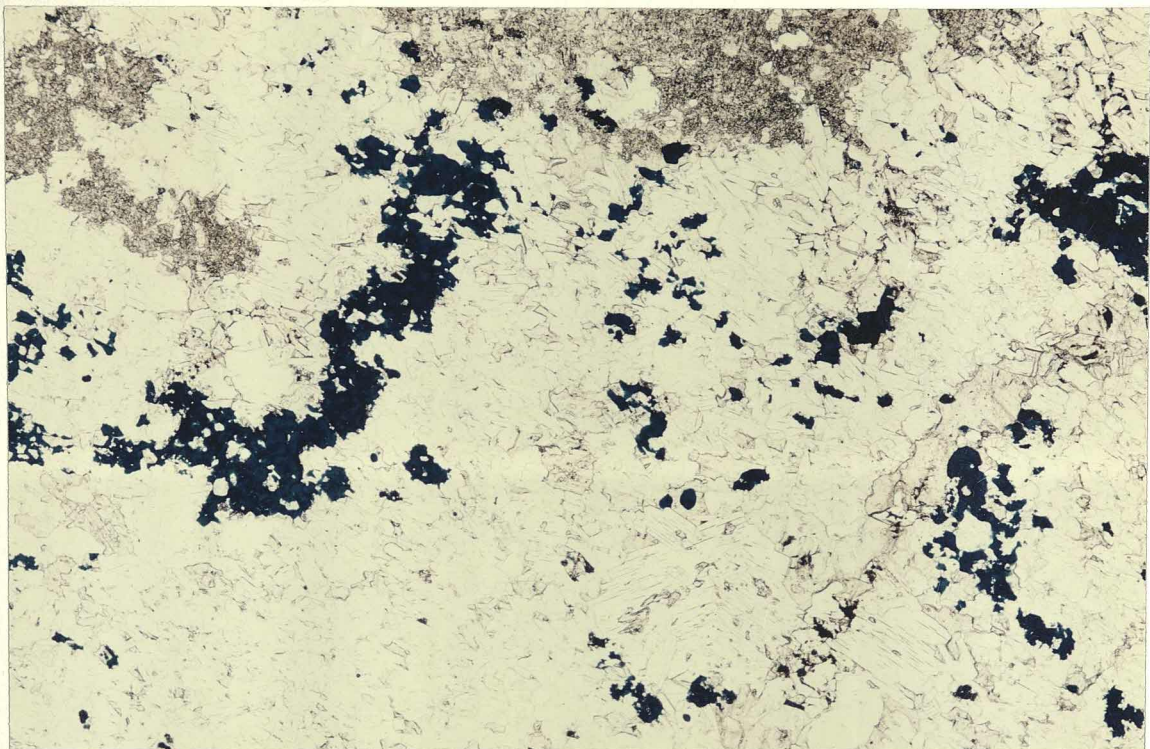


PLATE 4

Thin section, greatly magnified, of a lapis
lazuli bead from Ur.

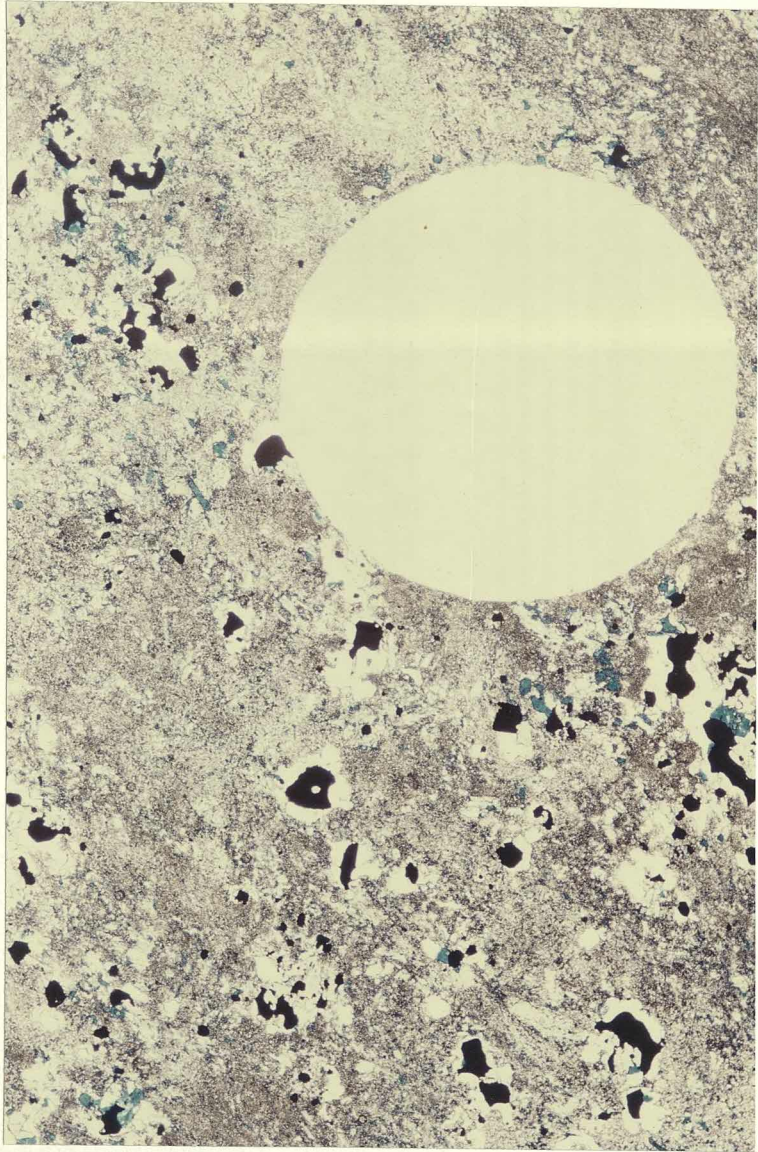


PLATE 5

On the precipitous track from the village of Azarat
Said to Sar-i-Sang. All the lapis lazuli mined at
Sar-i-Sang has to be transported along this track
in the Kokcha valley.



PLATE 6

Above: the Kokcha valley looking north from the
mine at Sar-i-Sang.

Below: the Kokcha valley at Sar-i-Sang.



PLATE 7

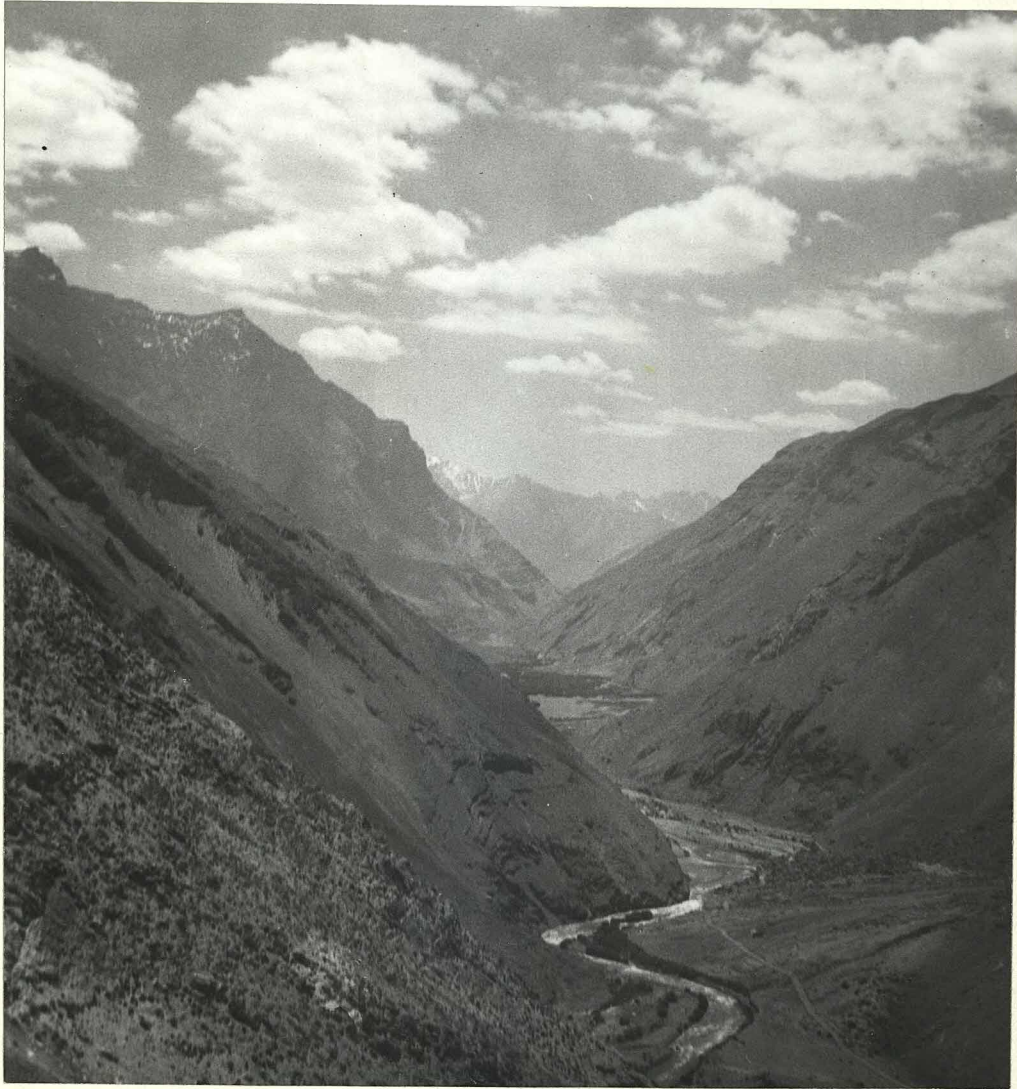
A composite picture of the mountain at Sar-i-Sang.
The mines are located to the left of the peak near
the top.





Plates 8 and 9: closer views of the mountainside shown in Plate 7. Note the built-up zig-zag track leading to the mining area, and the rubble tip to the right of Plate 9.





The Kokcha valley looking north from the mine.



Looking down on the River Kokcha from the mine.





Top left: The filled in entrance to the disused old mine.

Below left: Graffiti on stones to the left of the door seen above.

Above: At the door of the old mine, an Afghan miner holding samples of lapis lazuli.

PLATE 14

A reconstruction of the head-dress of a woman from the Great Death Pit, PG 1237, showing the way the jewellery of the Early Dynastic Royal Cemetery was worn. From U.E. II, Pl. 144.



PLATE 15

Above: row 1 - Wreath from PG 1068, U.11558.
rows 2-4 - Wreaths from the head-dress
shown on the preceding plate, U.12380.

All four wreaths are made of lapis lazuli,
carnelian and gold. From U.E. II, Pl. 135.

Below: assorted head shapes from the cloak of
Queen Pu'abi. U.E. II, Pl. 131.

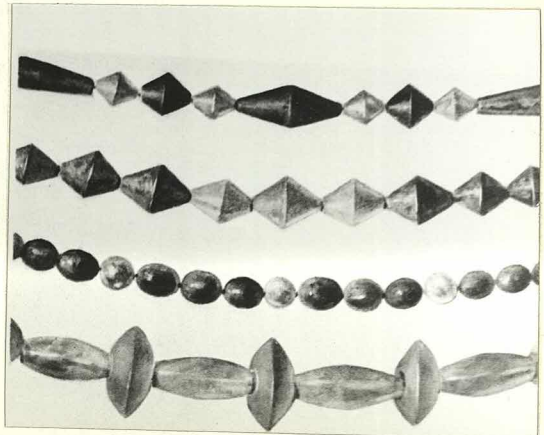
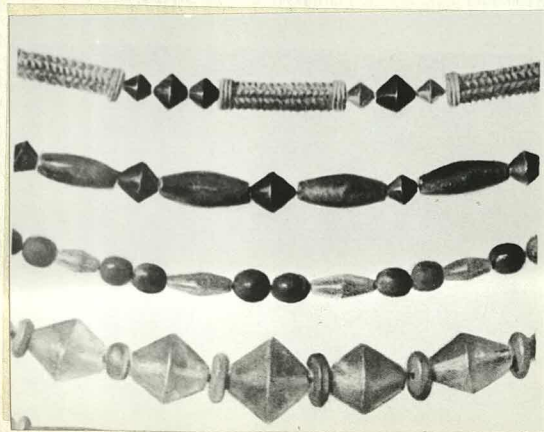
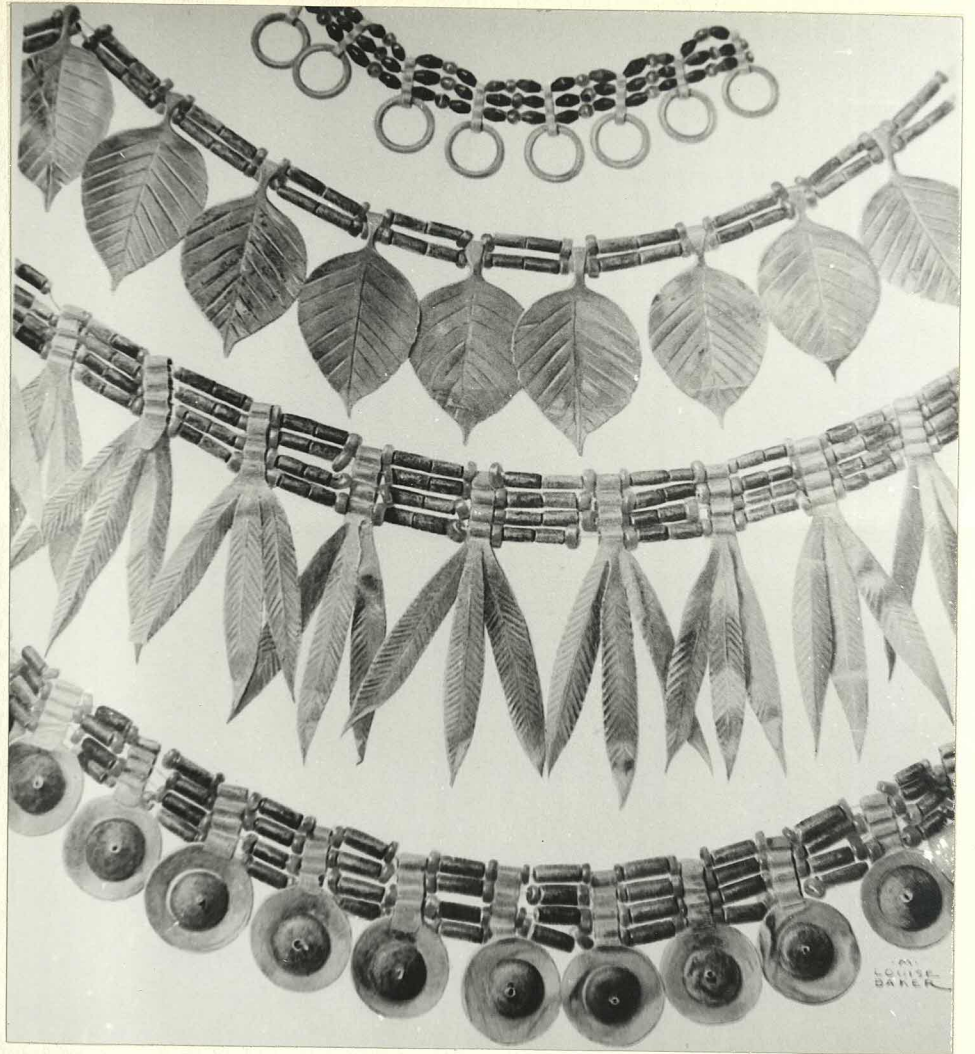


PLATE 16

Above: An adaptation of the 'dog-collar', the fluted triangles being made of minute beads, instead of solid pieces of alternating gold and lapis. Pendant from the necklace hangs a delicate 'cloisonné' flower, U.8565, the petals of which are formed of lapis lazuli, the background of carnelian.

Below: A child's head ornament, U.11806 C with U.11807, from PG 1133.

U.E. II, Pl. 133.

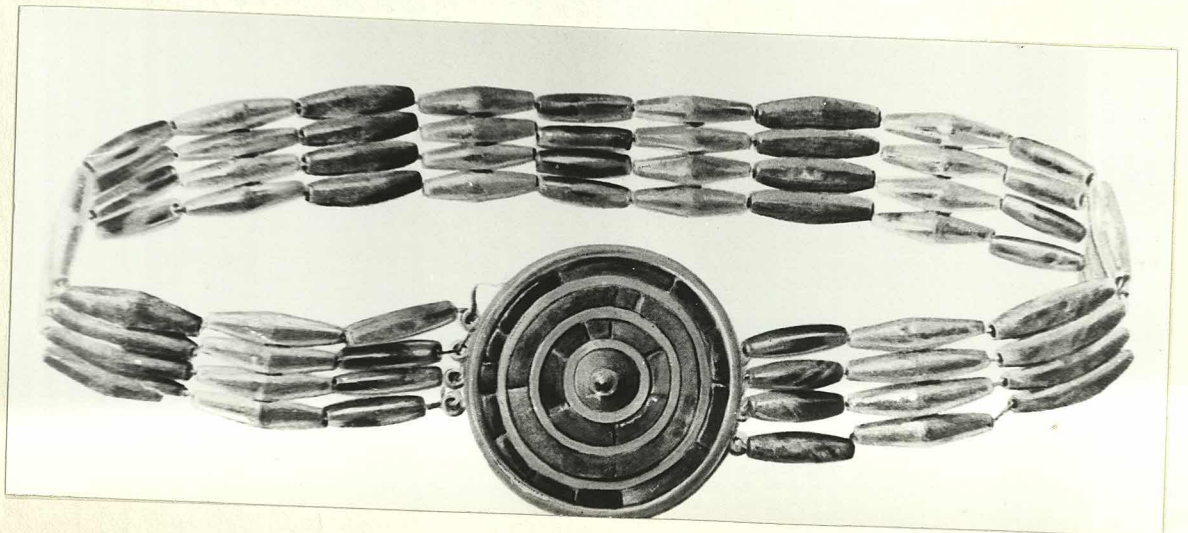
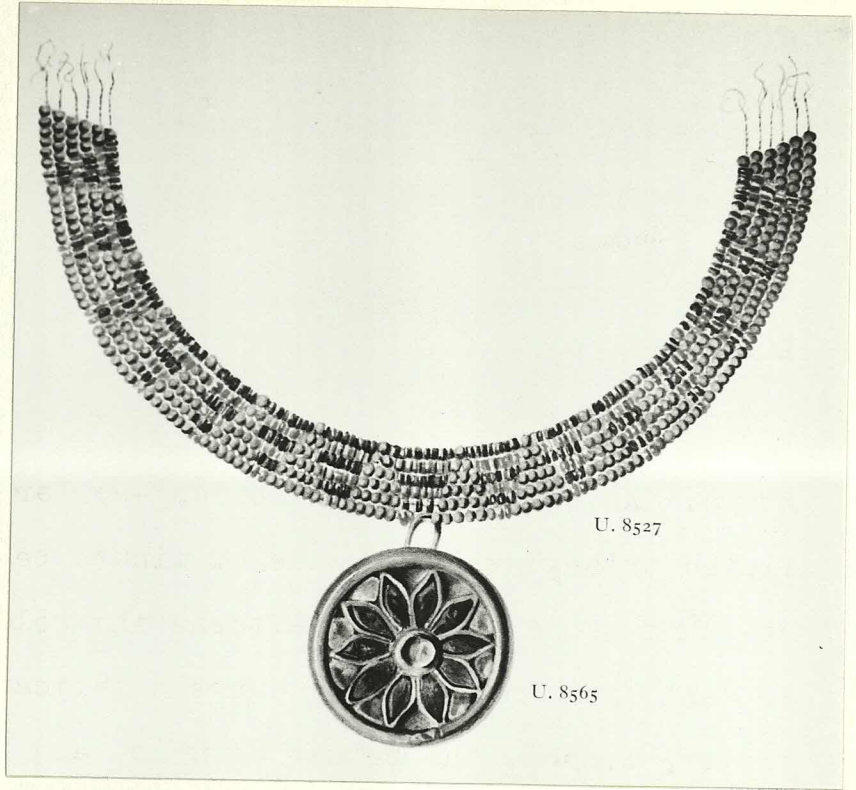


PLATE 17

Assorted bead shapes from the Royal Cemetery.

U.E. II, Pl. 134.

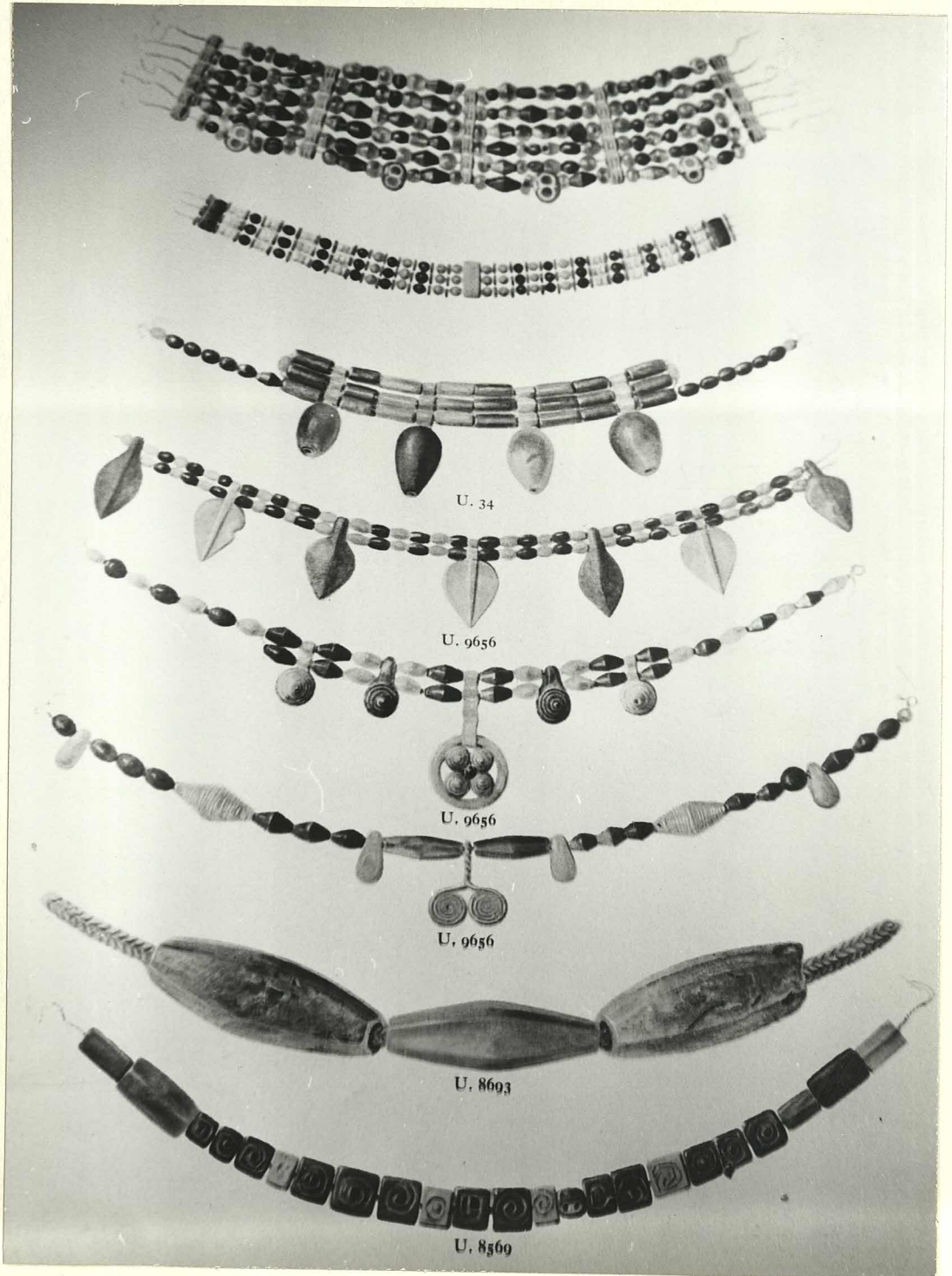
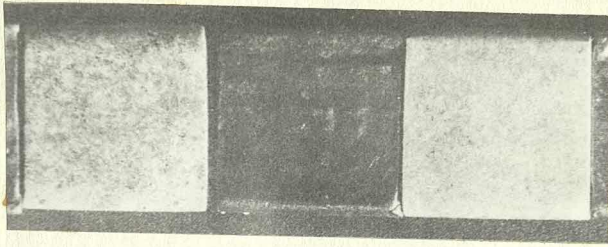


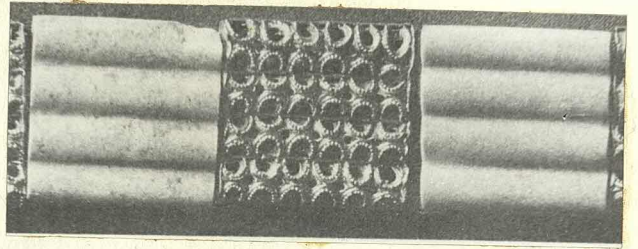
PLATE 18

Jewellery of gold and lapis lazuli from the rich Middle Assyrian tomb, Gruft 45 at Assur (nos. 1-9). The lapis palmettes, no. 10, were found with a hoard of lapis seals of Kassite and other styles in Thebes.

1. A. Haller, Die Gräber und Gräfte, Pl. 33 f.
2. Ibid, Pl. 33 e.
3. Ibid, Pl. 35 e and g.
4. Ibid, Pl. 34 y.
5. Ibid, Pl. 34 n and p.
6. Ibid, Pl. 36 h.
7. Ibid, Pl. 34 t.
8. Ibid, Pl. 34 s.
9. Ibid, Pl. 34 l.
10. I.L.N. of 28.11.64, p. 860, fig. 6.



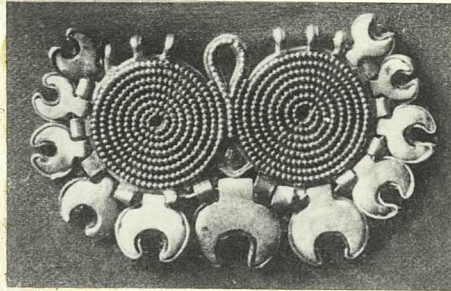
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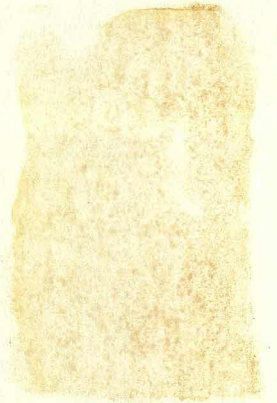
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3



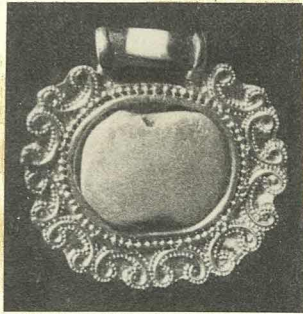
4



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6



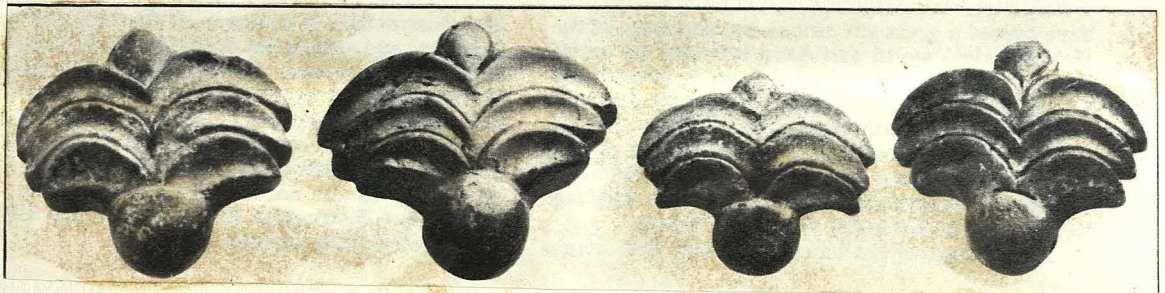
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PLATE 19

Lapis lazuli amulets from Mari and Ur:

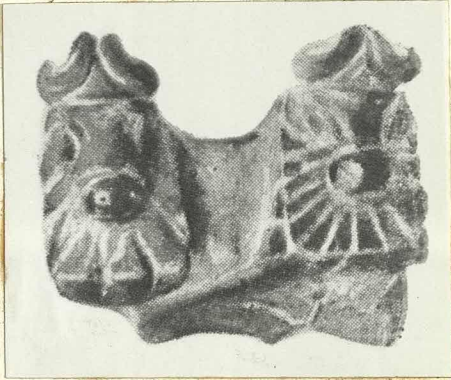
1. A double-headed bull protome from Mari, M.1079, H. 22.5 mm., L. 32.5 mm. M.A.M. I, p. 158, fig. 94.
2. A reclining bull from Mari, M.1018, H. 10 mm., L. 13 mm. M.A.M. I, p. 158, fig. 94.
3. A double-headed bull protome from Ur, U.11232. U.E. II, Pl. 142.
4. A reclining bull from Ur, U.8368. L. 27 mm. U.E. II, Pl. 142.
5. A bull from Ur, U.2918, H. 20 mm., L. 20 mm. U.E. II, Pl. 142.
6. An ibex with turned head from Ur, U.10009. L. 29 mm., H. 22 mm. U.E. II, Pl. 142.
7. A gasping fish, U.10945, from the tomb of Queen Pu'abi. L. 30 mm. U.E. II, Pl. 142.
8. A frog from Ur, U.10008. L. 24 mm. U.E. II, Pl. 142.



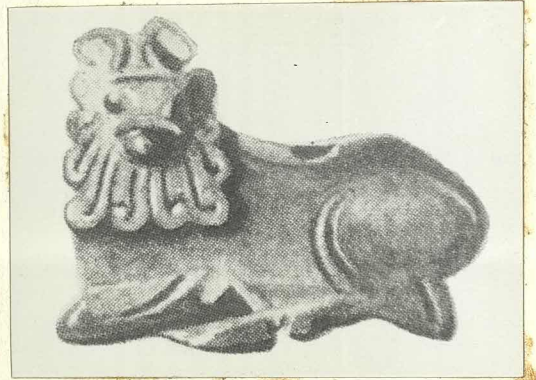
1



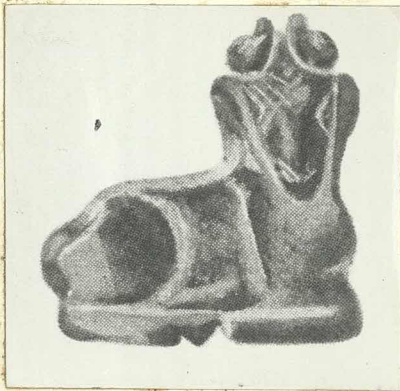
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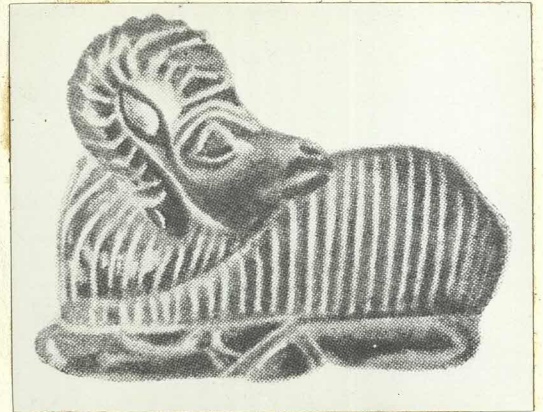
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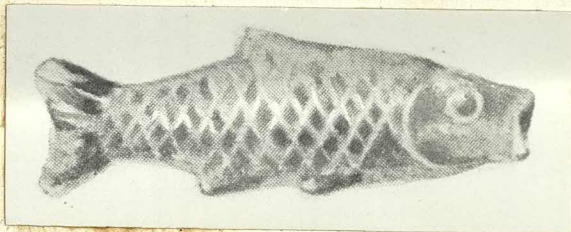
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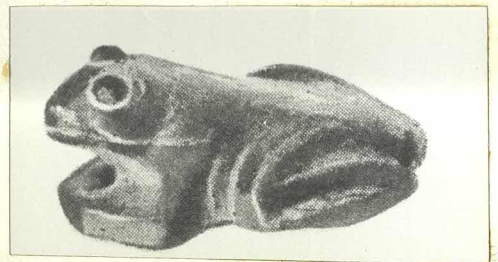
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PLATE 20

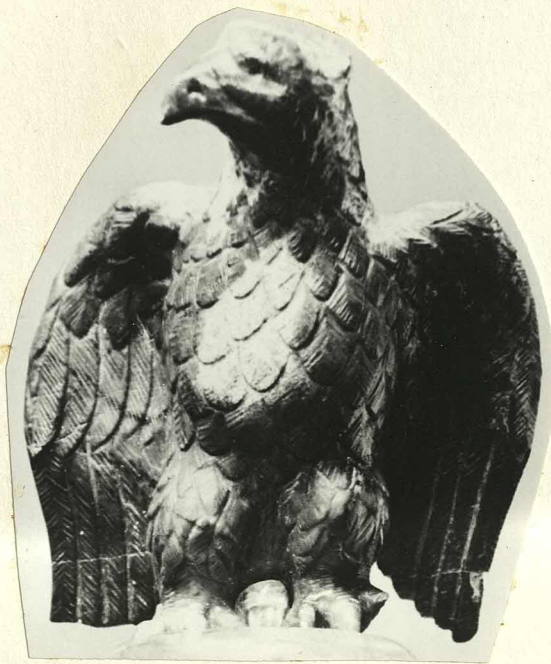
1. An amulet, M.4405, showing an eagle with wings and body of lapis lazuli, head and tail of gold. Given by Mesannipadda of Ur to Anshud (?) of Mari.

Syria XLII, pp. 216-224, Pl. XV, 3.

2. A Byzantine eagle of lapis lazuli, WAG 42.1400. Fourth to fifth centuries A.D. It is interesting to compare the different approaches of the two craftsmen.

By courtesy of the Walters Art Gallery, Baltimore.

1



2

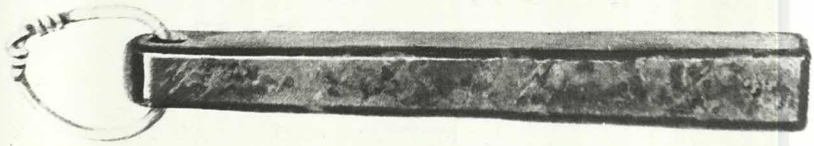
PLATE 21

1. Lapis lazuli cup, U.10517, from Queen Pu'abi's tomb. H. 7 cm., D. at rim, 8.8 cm., D. at base, 4.5 cm. U.E. II, Pl. 174.
2. Lapis lazuli whetstone, with gold loop handle, U. 10552, from PG 789, the King's Tomb. L. 11 cm. U.E. II, Pl. 174.
3. Golden dagger in golden sheath with handle of lapis lazuli, studded with gold, U.9361. From PG 580. U.E. II, Pl. 151.

1



2



3

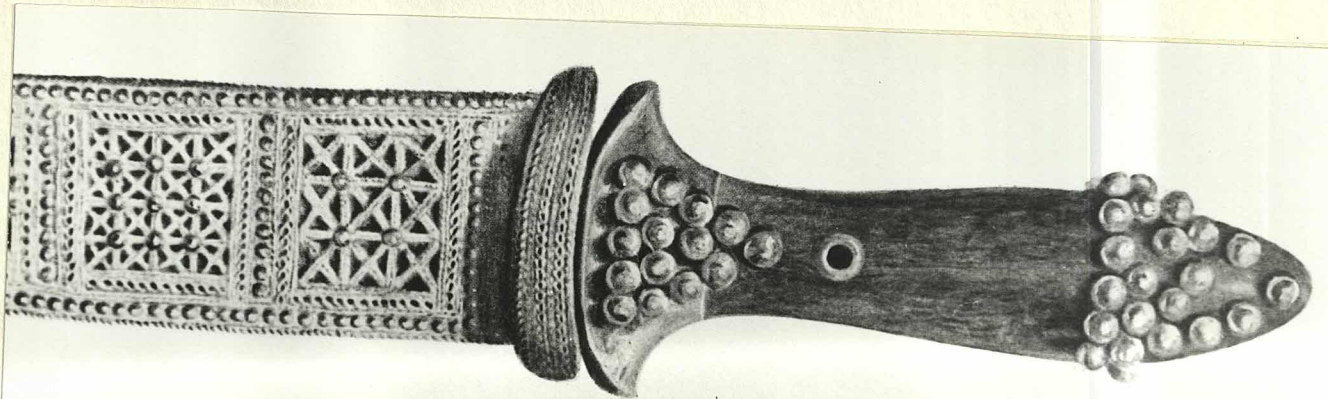


PLATE 22

Panels from the "Standard" of Ur, U.11164, now in the British Museum. Note the varying colours of the pieces of lapis lazuli inlay. These pieces are closely comparable with specimens from Sar-i-Sang.



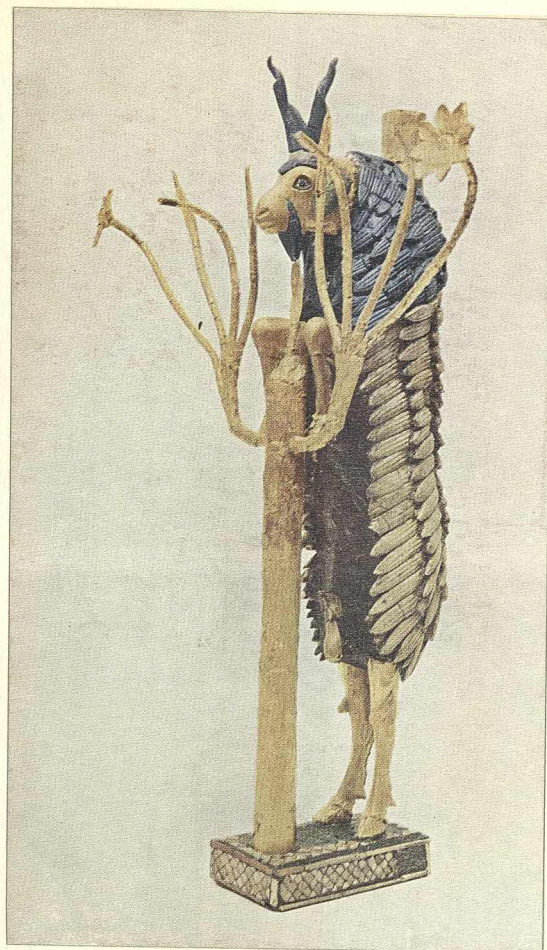
PLATE 23

1. The bearded bull's head set as a terminal on a lyre from Ur, U.10412, BM. 121198. The beard, the eye-balls and the forelock are carved from lapis lazuli. Beards of lapis lazuli had a specific mystic value, not ascertainable today.
2. The "Ram in a Thicket", U.12357, BM.122200. His horns, forelock, & neat pointed beard are of lapis lazuli, as is the upper part of his fleece.
3. A gaming board from Ur, U.9000, formed of sections of lapis lazuli, carnelian and shell set in bitumen.

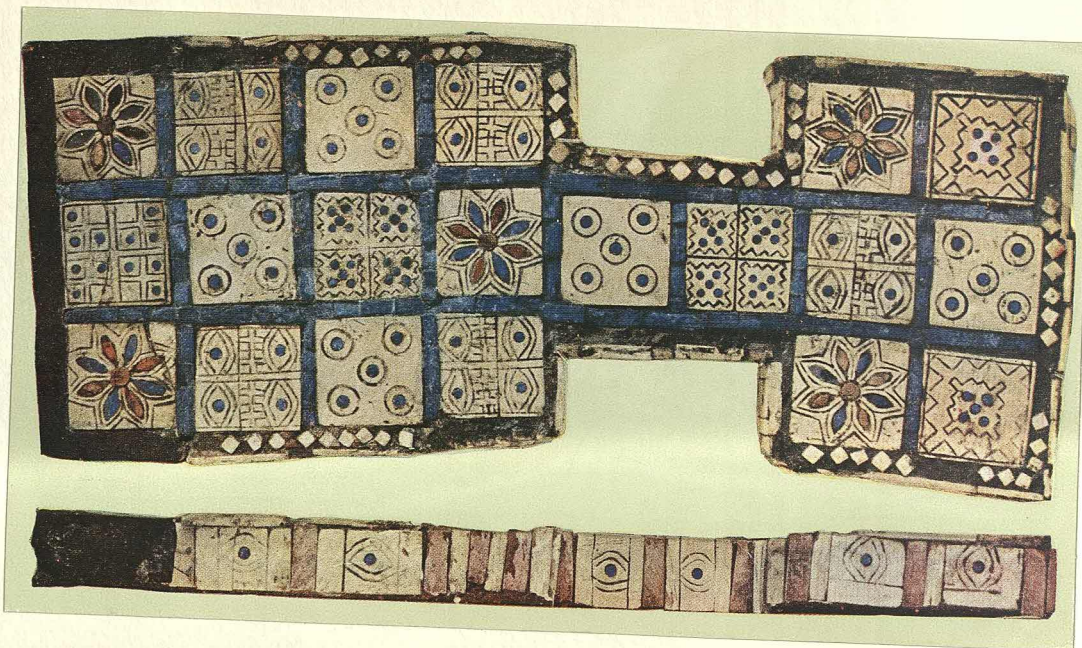
Post-cards from the British Museum.



1



2



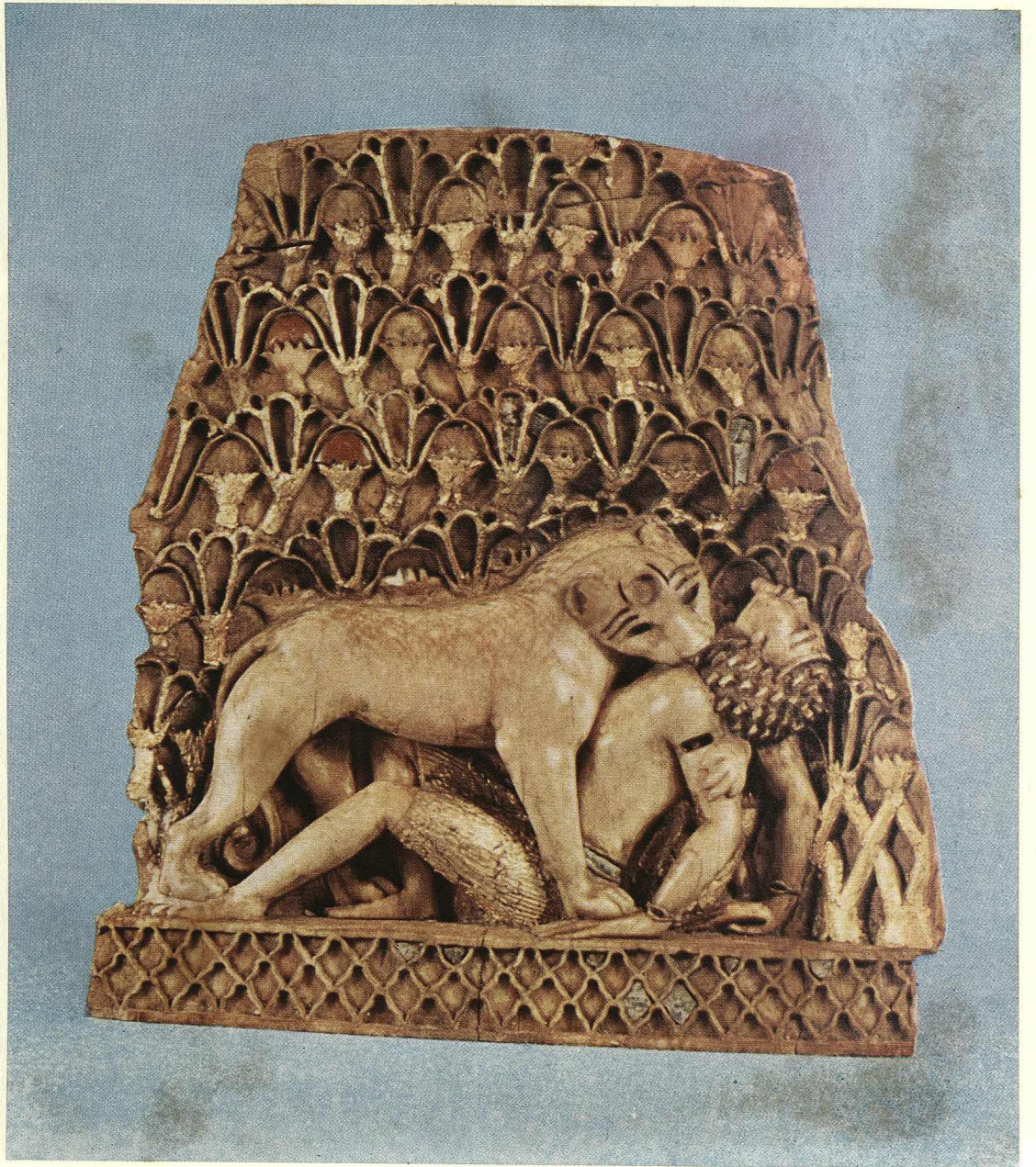
3

PLATE 24

Nimrud ivory, ND 2547 B. Height 10.5 cm.

Some of the lapis lazuli incrustation of the Egyptian lilies has survived. The pieces of lapis inlay were bedded on a layer of 'Egyptian blue'.

Colour plate by courtesy of 'The Connoisseur'.



Finds of lapis lazuli of the Ubaid and Uruk periods from Tepe Gawra.

1. Stamp seal of lapis lazuli, G.7-205. D. 33 mm. Unstratified but stylistically assigned to Gawra XIII. Gawra II, p. 189, Pl. CLXIX, 167.
2. Seal impressions from Gawra XIII, illustrating the glyptic style of that stratum. Ibid, Pl. CLXIV, 100 and 102.
3. Beads from Tomb 109, Gawra X. Ibid, Pl. CVI, 40, 41 and 43.
4. Pendant of lapis and gold, G.4-759. L. 17 mm. Tomb 109, Gawra X. Ibid, Pl. CVI, 46.
5. Hemispheroidal stamp seal, G.4-749. D. 19 mm. Tomb 110, Gawra X. Ibid, Pl. CVI, 37.
6. Amulet of lapis and gold, G.5-1456. L. 22 mm. Found loose in the soil of Gawra X. Ibid, Pl. CLXXV, 66.
7. Hemispheroidal stamp seal, G.4-831. D. 18 mm. Tomb 114, Gawra X. Ibid, Pl. CVI, 38.
8. Amulets from Tomb C in Stratum IX. Ibid, Pl. LVI, 1-3.
9. Amulet from Gawra IX, G.3-54. L. 17 mm. Ibid, Pl. CLXXV, 65.
10. An ivory pin inlaid with lapis and turquoise and banded with gold, G.3-152. L. 200 mm. Tomb 24 of Gawra VIII C. Ibid, Pl. LIVc and Pl. CV, 29.



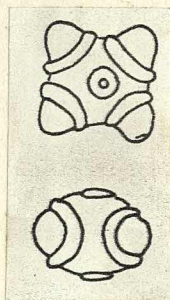
1



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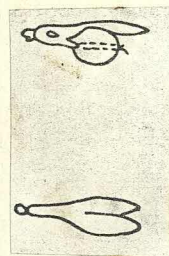
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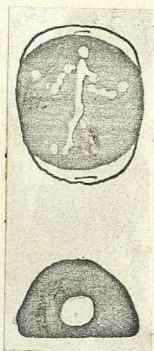
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6



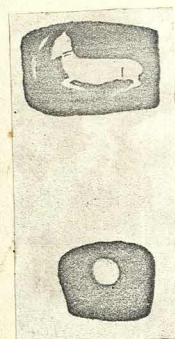
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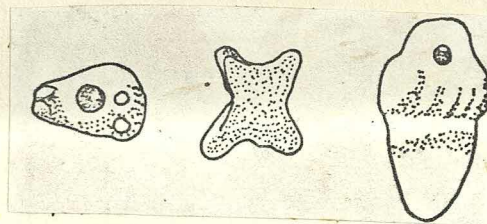
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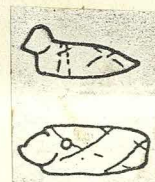
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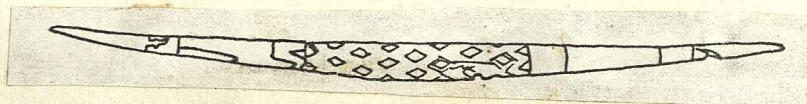
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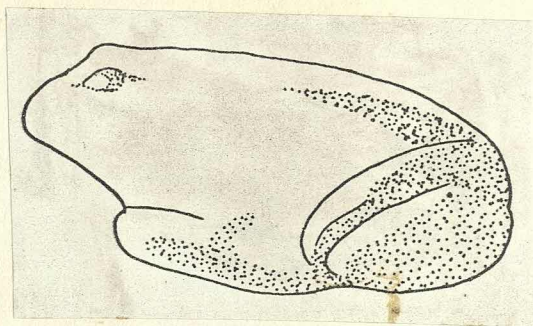


13

PLATE 26

Lapis lazuli finds of the Uruk and Jemdat Nasr periods in Mesopotamia (nos. 1-5): and of the Ubaid ? to Jemdat Nasr periods in Iran (nos. 6-11).

1. A fine frog amulet, F.548, L. 6.7 cm., from Tell Brak. Iraq IX, Pl. IX, 1, p. 100.
2. Vase-shaped amulet from Warka, W.14766 u, VA 11112. H. 25 mm. Kleinfunde, p. 41, Pl. 30 e.
3. Vase-shaped amulet from Brak, Iraq IX, p. 130, Pl. XX, 15.
4. Bird-amulet from Eanna III A, W.14573 a, L. 23 mm. Kleinfunde, p. 26, Pl. 13 e.
5. Disc, W.14819 kl, VA 11127, from Eanna III A. 4.5 mm. thick. Kleinfunde, p. 45, Pl. 34 e.
6. Stamp seal from Giyan V C. Giyan, Pl. 38, 31.
7. Stamp seal from Giyan V C. Giyan Pl. 38, 42.
8. Rectangular bead from Bakun A III, no. 3637. W. 15 mm. Bakun, Pl. 84, 17.
9. Ear-ring made of alternate discs of lapis and gold. Sialk IV. Sialk I, Pl. XXX b.
10. Horseshoe-shaped pendant encrusted with lapis and bone from Sialk IV. Sialk I, Pl. XXX e.
11. Circular silver pendant inlaid with lapis and bone. Sialk IV. Sialk I, Pl. XXX 1.



1



2



3



4



5



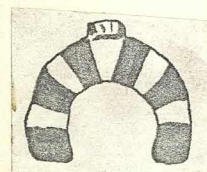
6



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PLATE 27

Impressions of lapis lazuli seals of the Uruk IV
(no. 1) and Uruk III or Jemdat Nasr periods (nos.
2 to 6).

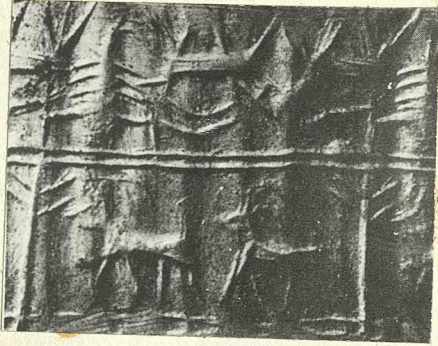
1. Kleinfunde, Pl. 17 a, W.14772 cl. 43 x 35 mm.
2. Kleinfunde, Pl. 17 b, W.14766 f. 31 x 24 mm.
3. U.E. X, Pl. 6, no. 80, U.19075. 32 x 9 mm.
4. O.I.P. LXXII, Pl. 72, no. 791, Ag.36:116. 19 x 9
mm.
5. U.E. II, Pl. 192, no. 5, U.12711. 34 x 5 mm.
6. O.I.P. LXXII, Pl. 79, no. 847, Ag.36:324. 76 x
13 mm.



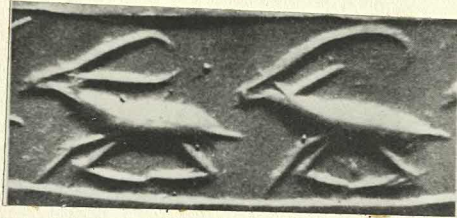
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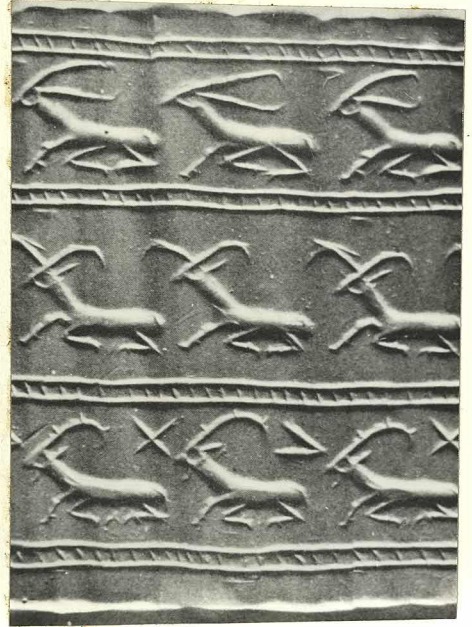
2



3



4



6



5

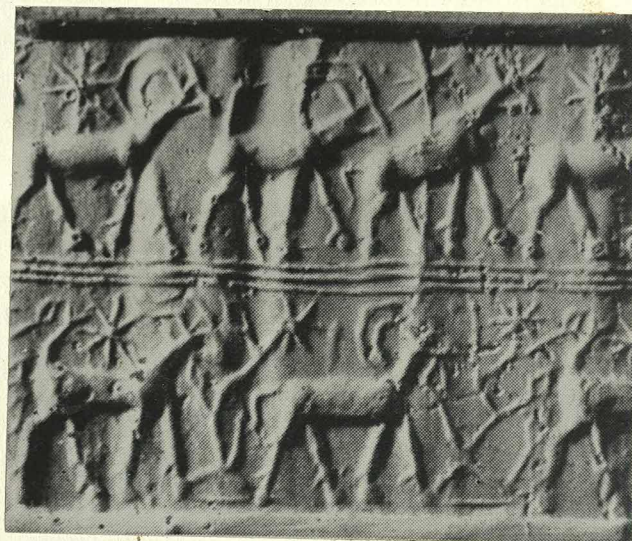
PLATE 28

Impressions of lapis lazuli seals showing animal motifs of the Jemdat Nasr period.

1. Louvre I, Pl. 3, 4, Telloh 84. 20 x 13 mm.
2. U.E. X, Pl. 6, no. 81, U.6133. 34 x 12 mm.
3. U.E. II, Pl. 207, no. 206, U.11895. 18 x 9.5 mm.
4. U.E. II, Pl. 199, no. 84, U.11757. 40 x 10 mm.
5. U.E. II, Pl. 203, no. 131, U.11868. 26 x 12 mm.
6. U.E. II, Pl. 203, no. 133, U.8169. L. 19 mm.



1



2



3



4



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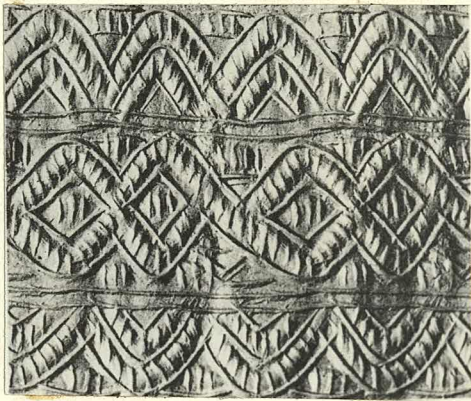


6

PLATE 29

Impressions of lapis lazuli seals carved with geometric motifs, usually assigned to the Jemdat Nasr period. Buchanan has, however, suggested that these seals may continue to be produced in later periods. Ashmolean Catalogue, p. 134.

1. Brett, Pl. IV, no. 35. 48 x 9 mm.
2. Brett, Pl. IV, no. 34. 56 x 9 mm.
3. U.E. II, Pl. 207, no. 202, U.8339. L. 44 mm.
4. Brett, Pl. IV, no. 33. 41 x 10 mm.
5. Brett, Pl. IV, no. 31. 42 x 12 mm.
6. U.E. II, Pl. 207, no. 204, U.8681. L. 29 mm.
7. U.E. II, Pl. 207, no. 203, U.8420. 19 x 10 mm.
8. U.E. II, Pl. 192, no. 1, U.11110. 13 x 7 mm.
9. U.E. II, Pl. 203, no. 129, U.11488. 30 x 9 mm.
10. U.E. II, Pl. 203, no. 130, U.11973. 30 x 10 mm.
11. U.E. II, Pl. 199, no. 78, U.11899. 30 x 13 mm.
12. Brett, Pl. IV, no. 30. 34 x 7 mm.
13. U.E. II, Pl. 192, no. 2, U.12658. 44 x 9 mm.



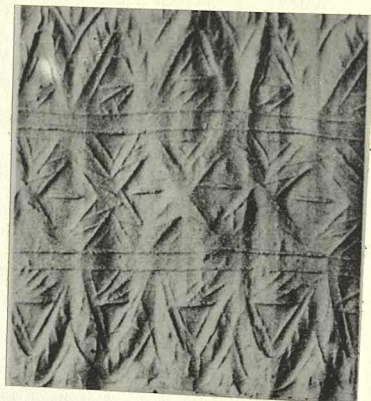
1



2



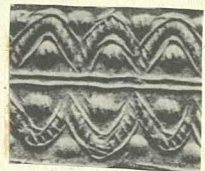
3



4



5



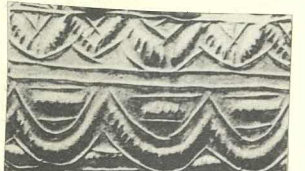
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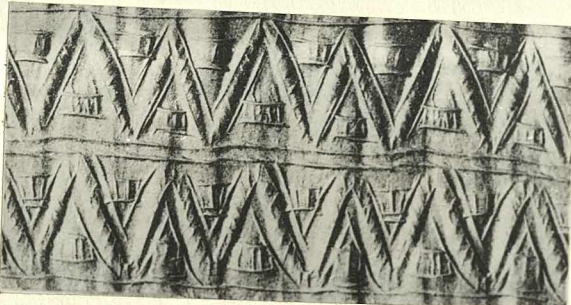
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7



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12



13

PLATE 30

Impressions of lapis lazuli seals assigned to the Early Dynastic II period. No. 3 is carved from speckled lapis, identified as possibly coming from Lake Baikal in Siberia.

1. U.E. II, Pl. 196, no. 47, U.8228. L. 30 mm.
2. B.M. Catalogue I, Pl. 13 e, BM 104493. 21 x 16 mm.
3. Ashmolean Catalogue, Pl. 10, no. 133. 50 x 16 mm.
4. U.E. X, Pl. 6, no. 88, U.18951. 22 x 12 mm.
5. B.M. Catalogue I, Pl. 15 d, BM 122550 and see also UE II, Pl. 195, no. 43, U.12448. 30 x 12 mm.



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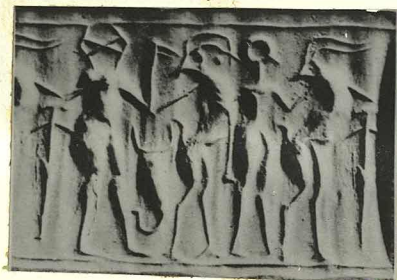
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PLATE 31

Impressions of lapis lazuli seals assigned to the
Early Dynastic II period.

1. Louvre II, Pl. 65, 2, A.44. 20 x 9 mm.
2. C.A.N.E.S. I, Pl. X, no. 62. 25 x 12 mm.
3. U.E. II, Pl. 192, no. 7, U.12704 F. 39 x 13
mm.
4. Louvre II, Pl. 65, 3. A.45. 15 x 7 mm.



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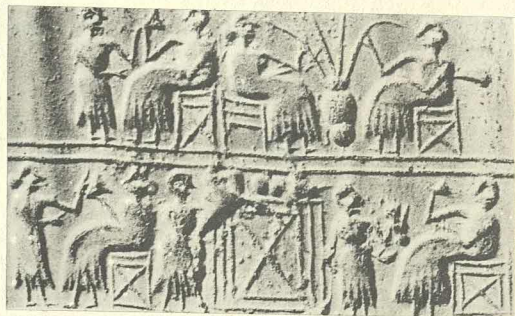


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PLATE 32

Impressions of lapis lazuli seals depicting typical banquet scenes of the E.D. III period. Nos. 1, 2 and 4 were found in the tomb of Queen Pu'abi, PG 800. The last is inscribed with her name.

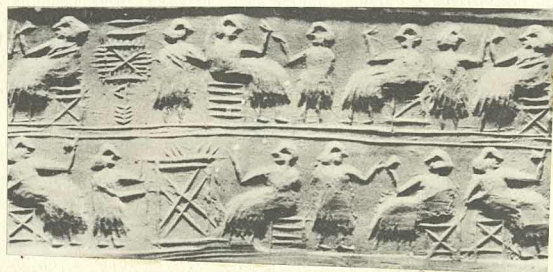
1. U.E. II, Pl. 193, no. 17, U.10871. 44 x 23 mm.
2. U.E. II, Pl. 193, no. 18, U.10872. 44 x 23 mm.
3. U.E. II, Pl. 193, no. 19, U.10448 A. 40 x 25 mm.
4. U.E. II, Pl. 193, no. 16, U.10939. 48 x 25 mm.
5. U.E. II, Pl. 194, no. 27, U.8615. L. 39 mm.
6. U.E. II, Pl. 194, no. 28, U.11774. 40 x 13 mm.
7. U.E. II, Pl. 194, no. 22, U.12374. 41 x 17 mm.
8. U.E. II, Pl. 194, no. 23, U.12387. 38 x 12 mm.
9. U.E. II, Pl. 194, no. 30, U.12258. 39 x 14 mm.
10. U.E. II, Pl. 200, no. 100, U.8053. 34 x 15 mm.
11. U.E. II, Pl. 195, no. 37, U.14041. 35 x 10 mm.
12. U.E. II, Pl. 200, no. 99, U.7985. 29 x 10 mm.
13. U.E. II, Pl. 200, no. 98, U.9315. L. 39 mm.



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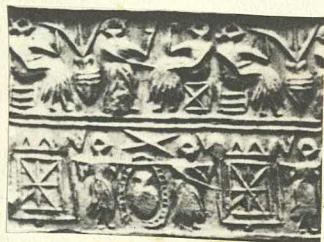
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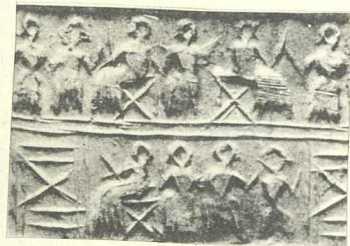
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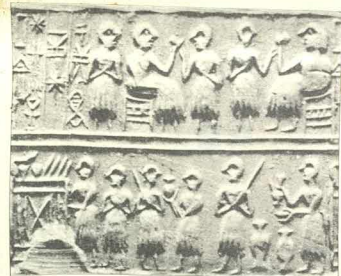
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PLATE 33

Impressions of lapis lazuli seals showing less 'classic' examples of banqueting scenes, sometimes combined with spread eagle or contest friezes.

1. U.E. II, Pl. 194, no. 26, U.8119. 38 x 14 mm.
2. U.E. II, Pl. 194, no. 29, U.10823. L. 38 mm.
3. U.E. II, Pl. 203, no. 138, U.8367. 42 x 22 mm.
4. U.E. II, Pl. 193, no. 20, U.14319. 30 x 12 mm.
5. U.E. II, Pl. 200, no. 101, U.7657. L. 28 mm.
6. Moore, Pl. IV, no. 26. H. 34 mm.
7. U.E. II, Pl. 195, no. 35, U.11773. 35 x 13 mm.
8. U.E. II, Pl. 211, no. 286, U.17656. 33 x 10 mm.
9. U.E. II, Pl. 203, no. 140, U.11952. 32 x 13 mm.
10. U.E. II, Pl. 203, no. 139, U.8656. 37 x 12 mm.
11. U.E. II, Pl. 195, no. 36, U.10822. 34 x 19 mm.
12. U.E. II, Pl. 194, no. 33, U.12256. 36 x 15 mm.
13. U.E. II, Pl. 195, no. 39, U.12380. 45 x 20 mm.
14. U.E. II, Pl. 200, no. 105, U.8792. 42 x 18 mm.
15. U.E. II, Pl. 200, no. 106, U.11828. 26 x 10 mm.
16. U.E. II, Pl. 200, no. 107, U.8006, 33 x 18 mm.
17. U.E. II, Pl. 203, no. 141, U.12664. 22.5 x 10.5 mm.
18. U.E. II, Pl. 207, no. 209, U.15473. 19 x 9 mm.
19. U.E. II, Pl. 193, no. 14, U.12427. 28 x 15 mm.



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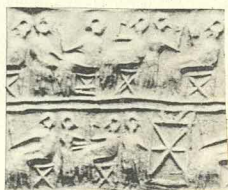
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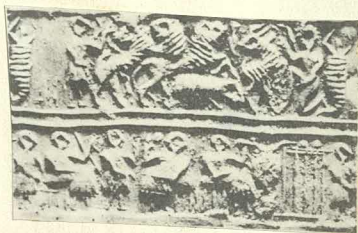
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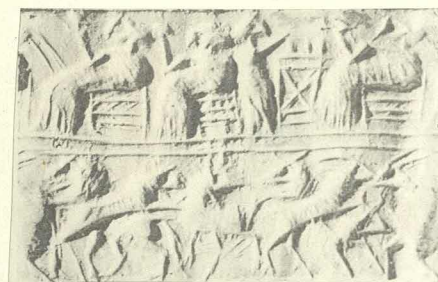
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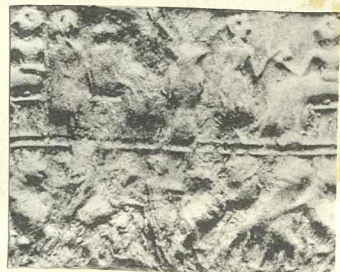
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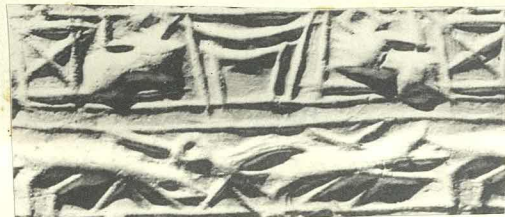
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PLATE 34

Impressions of lapis lazuli seals showing various forms of the contest frieze. Note the inverted sheep on nos. 1 and 4: the 'shoulder connection', nos. 6-11: and the heavy upright figures in nos. 12 and 13.

1. Louvre II, Pl. 65, 7, A.50. 29 x 18 mm.
2. U.E. II, Pl. 201, no. 118, U.9023. 23 x 16 mm.
3. U.E. II, Pl. 212, no. 302, U.9027. 27 x 14 mm.
4. U.E. II, Pl. 198, no. 65, U.11825. 35 x 19 mm.
5. U.E. II, Pl. 198, no. 67, U.12674. 25.5 x 15 mm.
6. U.E. II, Pl. 204, no. 157, U.10766A. 17 x 10 mm.
7. U.E. II, Pl. 203, no. 146, U.12680. 29 x 16 mm.
8. U.E. II, Pl. 211, no. 280, U.12705. 20 x 12 mm.
9. U.E. II, Pl. 204, no. 161, U.11499. 17 x 6 mm.
10. U.E. II, Pl. 204, no. 159, U.10168. 17.5 x 9 mm.
11. U.E. II, Pl. 198, no. 69, U.11554. 24 x 11 mm.
12. U.E. II, Pl. 198, no. 66, U.12707 E. 35 x 25 mm.
13. Moore, Pl. IV, no. 20. 38 x 22 mm.



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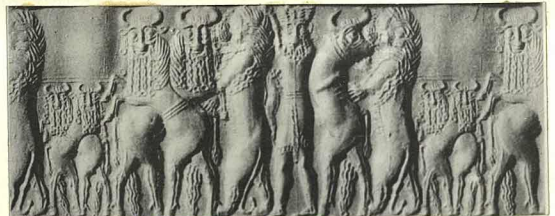
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PLATE 35

Impressions of lapis lazuli seals from the Royal Cemetery. No. 4 is the seal of Nin-tur-nin, wife of Mes-anni-padda. Most of the rest show varieties of the contest frieze. No. 11 depicts an early and crude version of the presentation scene.

1. U.E. II, Pl. 192, no. 12, U.11734. 36 x 23 mm.
2. U.E. II, Pl. 212, no. 298, U.9751. 43 x 20 mm.
3. U.E. II, Pl. 198, no. 72, U.12413. L. 35 mm.
4. U.E. II, Pl. 207, no. 216, U.8981. 41 x 13 mm.
5. U.E. II, Pl. 198, no. 71, U.11938. 34 x 14 mm.
6. U.E. II, Pl. 211, no. 279A, U.12701F. 30 x 7 mm.
7. U.E. II, Pl. 198, no. 70, U.12654. 34 x 16.5 mm.
8. U.E. II, Pl. 204, no. 166, U.8359. L. 39 mm.
9. U.E. II, Pl. 203, no. 135, U.12011. 31 x 8 mm.
10. U.E. II, Pl. 204, no. 165, U.10153. L. 38 mm.
11. U.E. II, Pl. 193, no. 15, U.11871. 16 x 9 mm.



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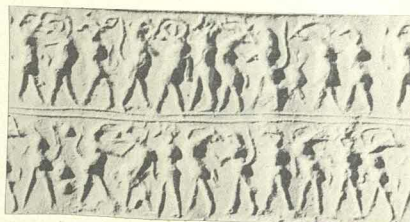
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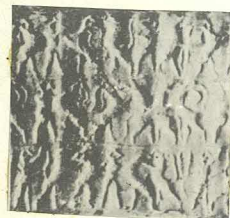
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PLATE 36

Impressions of lapis lazuli seals of the Akkadian period. No. 1, the seal of Daguna, shows a superbly carved presentation scene. The chignon worn by the two worshippers is considered indicative of Akkadian date. No. 2 was found in Red Stratum Grave no. 306 at Kish.

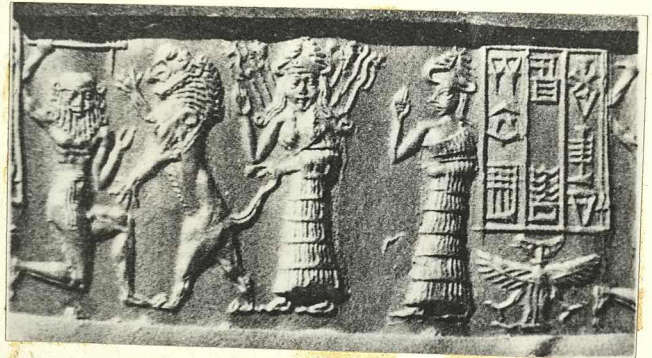
1. Syria XXXVII, p. 209-14, fig. 2.
2. Moore, Pl. V, no. 37. 28 x 16 mm. R.S. Grave 306, Kish.
3. Berlin, Pl. 33, no. 243, VA 3605. 24 x 13 mm.
4. U.E. X, Pl. 16, no. 228, U.18975. 20 x 11 mm.
5. Louvre II, Pl. 70, 4, A. 121. 31 x 10 mm.
6. U.E. II, Pl. 206, no. 188, U.7956. 46 x 13 mm.
7. U.E. II, Pl. 206, no. 190, U.9681. 24 x 10 mm.
8. U.E. II, Pl. 210, no. 262, U.11438. 16 x 8 mm.
9. Louvre II, Pl. 74, 6, A. 177. 25 x 10 mm.



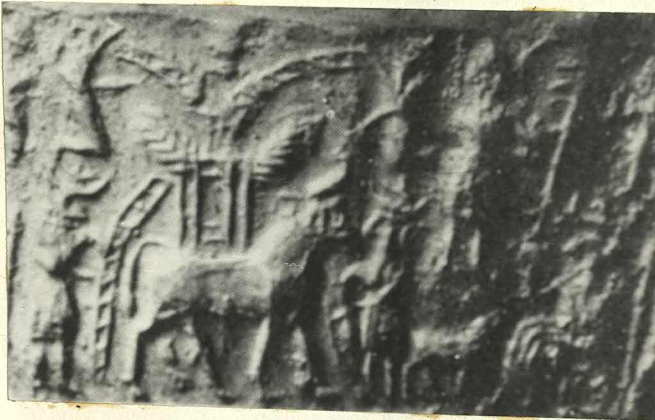
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PLATE 37

Impressions of lapis lazuli seals showing the pairs of contestants version of the Akkadian contest scene. Characteristic is the hero's elongated, sharply bent arm.

1. U.E. X, Pl. 14, no. 182, U.19000. 22 x 14 mm.
2. U.E. II, Pl. 205, no. 181, U.8666. L. 33 mm.
3. U.E. II, Pl. 216, no. 376, U.8417. 26 x 13 mm.
4. U.E. II, Pl. 216, no. 373, U.9024. 24 x 14 mm.
5. U.E. II, Pl. 209, no. 246, U.8991. 25 x 15 mm.
6. U.E. II, Pl. 205, no. 182, U.9183. 37 x 14 mm.
7. U.E. II, Pl. 216, no. 372, U.9552. 28 x 14 mm.
8. U.E. II, Pl. 211, no. 289, U.15303. 18 x 10 mm.
9. U.E. II, Pl. 212, no. 310, U.9693. 20 x 11 mm.
10. U.E. II, Pl. 213, no. 319, U.8926. L. 27 mm.
11. U.E. II, Pl. 212, no. 311, U.11590. 17.5 x 11 mm.
12. U.E. II, Pl. 213, no. 328, U.9064. 18 x 12 mm.
13. U.E. II, Pl. 207, no. 207, U.11123. 32 x 12 mm.
14. U.E. II, Pl. 212, no. 303, U.11581. 15 x 8 mm.
15. Moore, Pl. V, no. 30. H. 20 mm.



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Impressions of lapis lazuli seals showing Akkadian contest scenes of two types: those showing the 'shoulder connection' begun in E.D. III; and those with heavy upright figures. No. 18 is a fragment of the seal of the servant of Enkheduanna, Sargon's daughter and high-priestess of Ur.

1. U.E. II, Pl. 204, no. 167, U.9082. 24 x 13 mm.
2. U.E. II, Pl. 204, no. 160, U.10303. 15 x 7 mm.
3. U.E. X, Pl. 11, no. 139, U.18917. 37 x 10 mm.
4. U.E. II, Pl. 208, no. 217, U.11897. 40 x 17 mm.
5. U.E. II, Pl. 205, no. 175, U.9150. L. 18 mm.
6. U.E. II, Pl. 204, no. 163, U.12157. 24 x 12 mm.
7. U.E. II, Pl. 208, no. 218, U.12706. 24 x 6 mm.
8. U.E. II, Pl. 198, no. 68, U.12704G. 29 x 12.5 mm.
9. U.E. II, Pl. 204, no. 158, U.8464. 22 x 11 mm.
10. U.E. X, Pl. 16, no. 221, U. - . 27 x 8 mm.
11. U.E. II, Pl. 209, no. 239, U.12079. 30 x 11 mm.
12. U.E. II, Pl. 208, no. 226, U.9809. 23 x 11 mm.
13. U.E. II, Pl. 211, no. 290, U.12470. 28 x 18 mm.
14. U.E. II, Pl. 212, no. 313, U.9813. 35 x 20 mm.
15. U.E. II, Pl. 198, no. 74, U.12701E. 20 x 11 mm.
16. U.E. II, Pl. 208, no. 227, U.9321, L. 22 mm.
17. U.E. II, Pl. 205, no. 169, U.9764. 26 x 13 mm.
18. U.E. II, Pl. 212, no. 308, U.8988.



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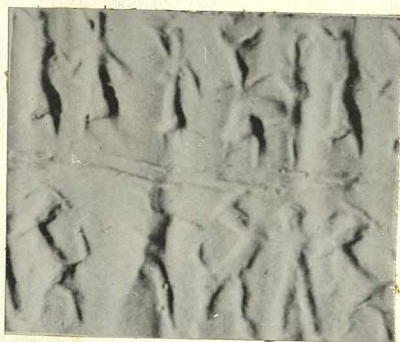
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Seal impressions of lapis lazuli seals. Nos. 1 to 9 can probably be assigned to the Third Dynasty of Ur. Whether nos. 10 to 21 belong to the Late Akkadian or to the Post Akkadian period is unknown.

1. Louvre II, Pl. 75, 23. A.214. 20 x 10 mm.
2. C.A.N.E.S. I, Pl. XLIV, no. 290. 28 x 16 mm.
3. U.E. X, Pl. 18, no. 253, U.18279. 32 x 8 mm.
4. U.E. X, Pl. 18, no. 251, U.7664. 42 x 8 mm.
5. Newell, Pl. XII, no. 118. 38 x 13 mm.
6. U.E. II, Pl. 211, no. 297, U.15309. 14 x 5 mm.
7. U.E. II, Pl. 206, no. 197, U.10766B. 17 x 6 mm.
8. U.E. II, Pl. 204, no. 156, U.7955. L. 18 mm.
9. U.E. II, Pl. 203, no. 134, U.8584. 21 x 11 mm.
10. U.E. II, Pl. 214, no. 339, U.11458. 23 x 10 mm.
11. U.E. II, Pl. 215, no. 369, U.7957. 13 x 6 mm.
12. U.E. II, Pl. 213, no. 333, U.11580. 26 x 7.5 mm.
13. U.E. II, Pl. 206, no. 187, U.7954. 30 x 11 mm.
14. U.E. II, Pl. 214, no. 337, U.9710. 23 x 12 mm.
15. U.E. II, Pl. 214, no. 347, U.11592. 15 x 9 mm.
16. U.E. II, Pl. 214, no. 341, U.11464. 13 x 8 mm.
17. U.E. II, Pl. 214, no. 350, U.11442. 16.5 x 8 mm.
18. U.E. II, Pl. 210, no. 253, U.8965. 15 x 7 mm.
19. U.E. II, Pl. 204, no. 162, U.9242. 21 x 10 mm.
20. U.E. II, Pl. 213, no. 329, U.11598. 16 x 11 mm.
21. U.E. II, Pl. 212, no. 306, U.8916. L. 24 mm.



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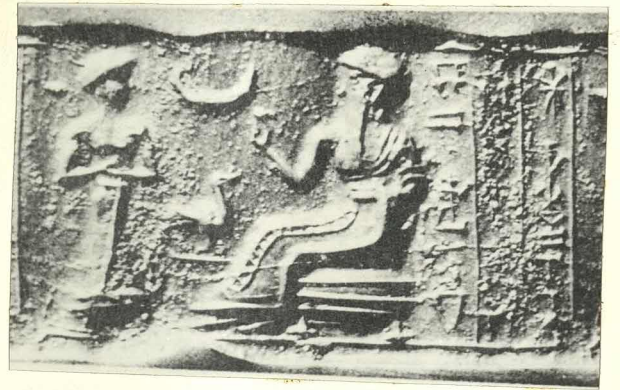
PLATE 40

Impressions of lapis lazuli seals depicting presentation scenes, assigned to the Third Dynasty of Ur.

1. Berlin, Pl. 35, no. 265, VA 3883. 17 x 7 mm.
2. C.A.N.E.S. I, Pl. XLV, no. 291. 27 x 14 mm.
3. C.A.N.E.S. I, Pl. XLV, no. 293. 28 x 14.5 mm.
4. Louvre II, Pl. 75, 25. A.216. 23 x 14 mm.
5. U.E. X, Pl. 22, no. 348, U.15043. 17 x 8 mm.
6. U.E. II, Pl. 211, no. 294, U.17912. 30 x 15 mm.
7. U.E. X, Pl. 18, no. 255, U.16360. 34 x 12 mm.
8. U.E. II, Pl. 211, no. 292, U.12471. 30 x 12 mm.
9. U.E. II, Pl. 211, no. 295, U.17904. 30 x 15 mm.
10. U.E. II, Pl. 216, no. 384, U.9529. 20 x 9 mm.
11. U.E. II, Pl. 214, no. 346, U.10796. 18 x 11 mm.
12. C.A.N.E.S. I, Pl. XLIV, no. 288. 17 x 9 mm.



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PLATE 41

Seal impressions assigned to the Isin-Larsa period. No. 1 is the seal of Bilalama of Eshnunna, who ruled shortly after the collapse of the Third Dynasty. No. 4 belongs to the group of miniature seals found at Tell Asmar.

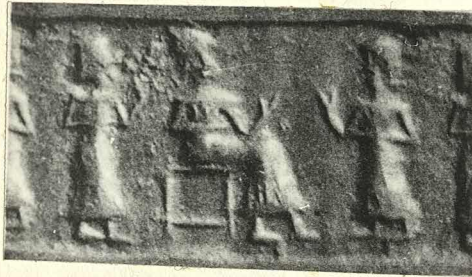
1. O.I.P. LXXII, Pl. 66, no. 709, AS 30:1000. 28 x 15 mm.
2. Berlin, Pl. 34, no. 254, VA 3113. 22.8 x 15 mm.
3. Berlin, Pl. 29, no. 213, VA 605. 21 x 10 mm.
4. O.I.P. LXXII, Pl. 89, no. 951, Ish 35:50. 8 x 5 mm.
5. U.E. X, Pl. 23, no. 384, U.16801. 25 x 10 mm.
6. O.I.P. LXXII, Pl. 67, no. 729, AS 33:385. 20 x 9 mm.
7. Louvre II, Pl. 75, 4. A.192. 13 x 8 mm.



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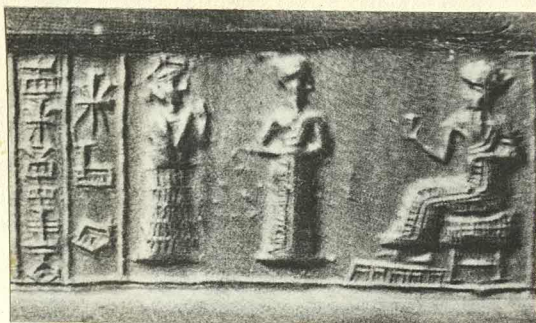


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PLATE 42

Impressions of lapis lazuli seals bearing presentation scenes assigned to the Old Babylonian period. The interceding goddess, if present, now usually stands behind the worshipper with raised hands.

1. Berlin, Pl. 38, no. 288, VA 814. 20 x 11 mm.
2. C.A.N.E.S. I, Pl. LXXIII, no. 539. 19.5 x 8.5 mm.
3. C.A.N.E.S. I, Pl. LVI, no. 393. 24 x 11 mm.
4. Berlin, Pl. 38, no. 295, VA 815. 24 x 15 mm.
5. C.A.N.E.S. I, Pl. XLIX, no. 324. 20 x 9.3 mm.
6. U.E. X, Pl. 17, no. 245, U.18208. 25 x 12 mm.
7. Louvre II, Pl. 74, 13. A.182. 20 x 7 mm.
8. Louvre I, Pl. 35, 7. S.516. 18 x 8 mm.
9. U.E. X, Pl. 31, no. 478, U.10407. 23 x 12 mm.
10. C.A.N.E.S. I, Pl. L, no. 340. 21 x 11 mm.



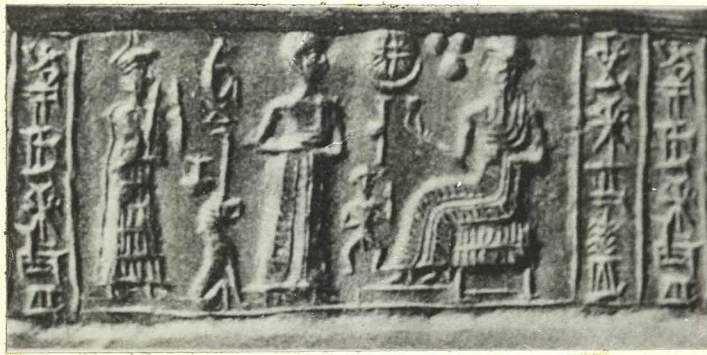
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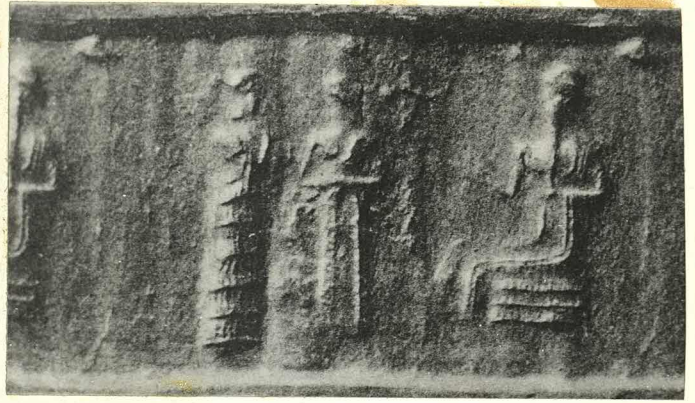
PLATE 43

Impressions of lapis lazuli seals of, and contemporary with, the Old Babylonian period. Nos. 8 and 9 are Old Assyrian in style and come from Assur. No. 10 comes from Alalakh 7 and is contemporary with the First Dynasty.

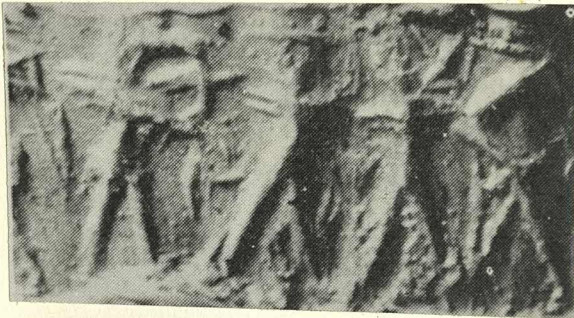
1. Berlin, Pl. 41, no. 316, VA 3253. 16 x 8 mm.
2. Berlin, Pl. 34, no. 257, VA 546. 26 x 12 mm.
3. U.E. X, Pl. 16, no. 218, U.20038. 14 x 7 mm.
4. Louvre II, Pl. 74, 12. A.184. 24 x 10 mm.
5. Newell, Pl. XV, no. 181. 17 x 8 mm.
6. Brett, Pl. VI, no. 47. 25 x 15 mm.
7. U.E. X, Pl. 23, no. 379, U.16006. 19 x 10 mm.
8. Berlin, Pl. 61, no. 506, VA 5364. 22 x 12 mm.
From Assur.
9. Berlin, Pl. 61, no. 508, VA 5368. 14 x 7 mm.
From Grave 20, Assur.
10. Moore, Pl. X, no. 86. 34 x 14 mm. Late First
Dynasty. Syrian - Alalakh 7.



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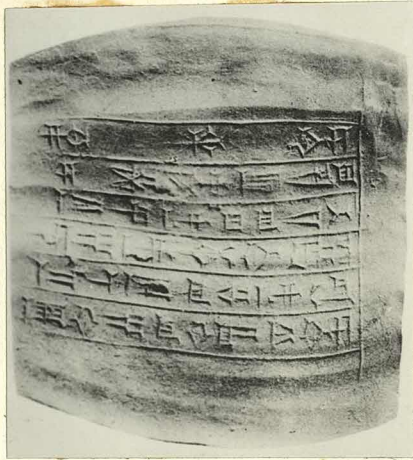
PLATE 44

Impressions of lapis lazuli seals of the Kassite period. No. 1, from the Theban hoard, belonged to an official of Burnaburias II. No. 5 also comes from Thebes and shows Mitannian influence.

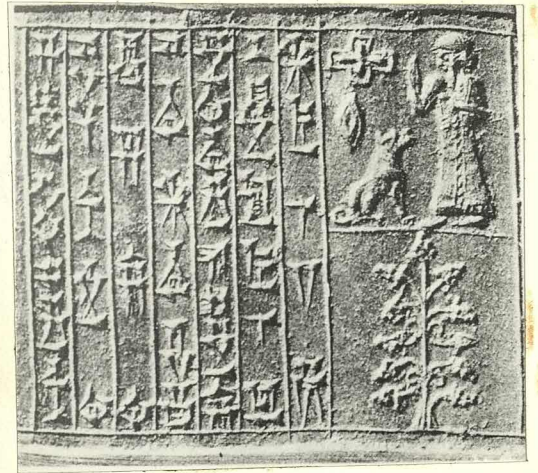
1. I.L.N. of 28.11.64, p. 860, figs 2 and 3.
2. Newell, Pl. XXXVIII, no. 665. 53 x 15 mm.
3. Berlin, Pl. 66, no. 556, VA 6935. 50 x 16 mm.
From a Late Kassite level in Babylon.
4. Louvre II, Pl. 93, 18. A.818. 19 x 19 x 4 mm.
Dedicated by Kurigalzu, son of Burnaburias.
5. I.L.N. of 28.11.64, p. 861, fig. 10.



1



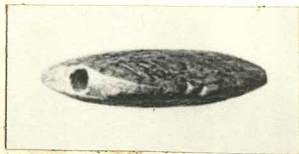
2



3



4



5

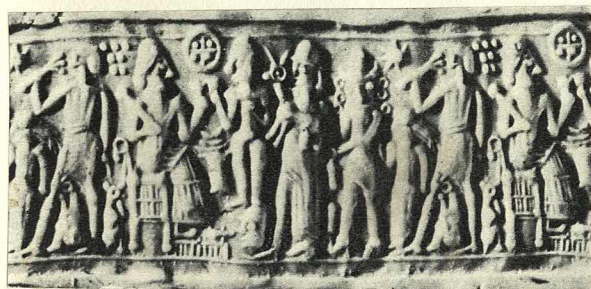
PLATE 45

Impressions of lapis lazuli seals from Thebes (nos. 1 to 4) and from Assur (no. 5) contemporary with the Kassite period.

1. I.L.N. of 28.11.64, p. 861, fig. 5. This seal may be agate, not lapis lazuli.
2. I.L.N. of 28.11.64, p. 860, fig. 7.
3. I.L.N. of 28.11.64, p. 860, fig. 8.
4. I.L.N. of 28.11.64, p. 861, fig. 9.
5. Berlin, Pl. 70, no. 586, VA Ass. 1129. 21 x 7 mm. From the Middle Assyrian Graft 45 at Assur.



1



2



3



4



5

PLATE 46

Impressions of lapis lazuli seals cf, or contemporary with, the Neo-Assyrian period. Nos. 6, 8 and 9 are exceptionally large seals, used only for dedicatory purposes. No. 8 is inscribed with the name of Marduk-zakir-shumi, a contemporary of Shalmaneser III, and no. 6 with the name of Esarhaddon.

1. Newell, Pl. XXIX, no. 429. 24 x 12 mm.
2. Berlin, Pl. 88, no. 752. 32 x 14 mm.
3. BM 129556. 25 x 12 mm. By courtesy of the British Museum.
4. C.A.N.E.S. I, Pl. CXVIII, no. 777. D. 17 mm.
5. Brett, Pl. XI, no. 130. 19 x 9 mm.
6. W.V.D.O.G. 15, Pl. 8, no. 75. L. 120 mm. ?
7. C.A.N.E.S. I, Pl. CXV, no. 762. D. 18 mm.
8. W.V.D.O.G. 15, Pl. 8, no. 74. 200 x 40 mm. ?
9. Louvre II, Pl. 93, 16. A.830. 84 x 34 mm.



1



2



3



4



5



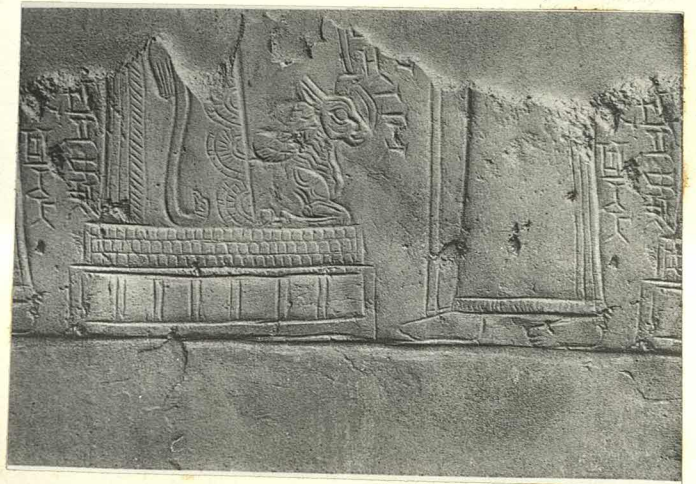
6



7



8



9

PLATE 47

Impressions of cylinder (nos. 1 and 2) and stamp (nos. 3 and 4) seals of lapis lazuli of the period of the Neo-Babylonian Empire.

1. C.A.N.E.S. I, Pl. CXIX, no. 781. 39 x 18 mm.
2. Louvre II, Pl. 85, 12. A.619. 41 x 16 mm.
3. Louvre II, Pl. 91, 16. A.711. 32 x 24 x 24 mm.
4. Brett, Pl. XII, no. 143. 25 x 23 x 30 mm.



1



2



3

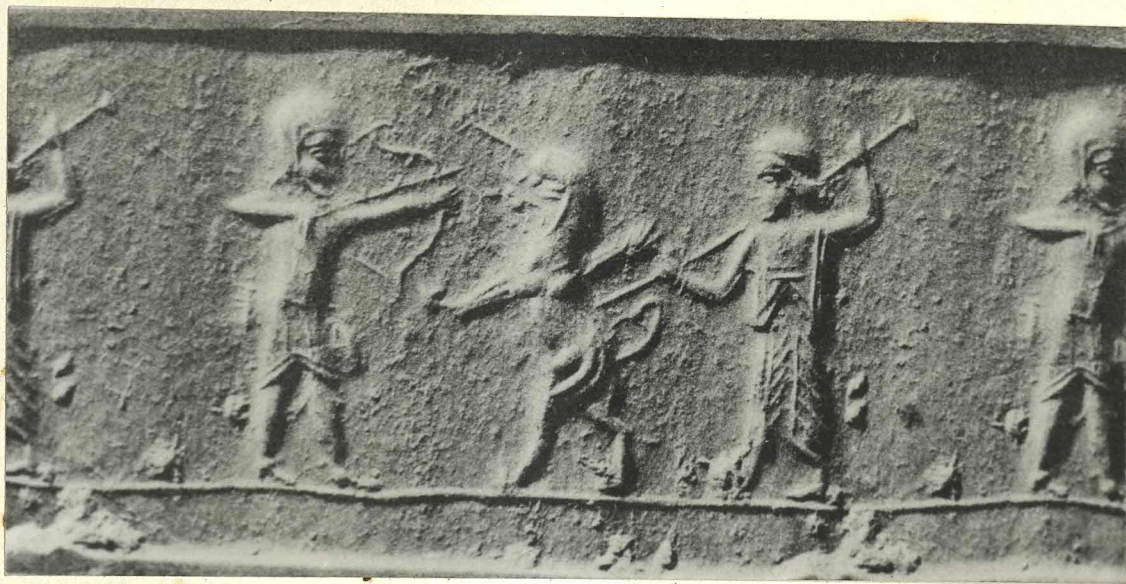


4

PLATE 48

Impressions of cylinder and stamp seals of the Achaemenian period (nos. 1 to 3), Jewellery from the sarcophagus at Susa of the Late Achaemenian Period.

1. Berlin, Pl. 90, no. 771, VA 4291. 35 x 18 mm.
From Toprak-kale.
2. Newell, Pl. XXXI, no. 458. 28 x 17 mm.
3. BM 130690. Circa - 20 mm. By courtesy of the
British Museum.
4. M.D.P. VIII, p. 50, fig. 78.
5. M.D.P. VIII, p. 55, fig. 87.
6. M.D.P. VIII, p. 49, fig. 77 and Pl. VI.
7. M.D.P. VIII, pp. 43-8, fig. 70 and Pl. IV.



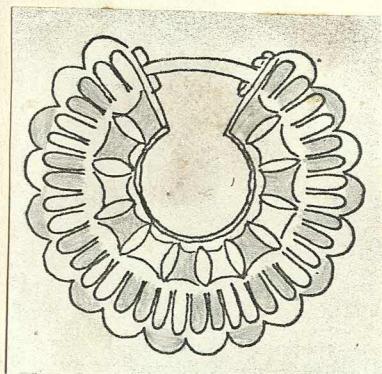
1



2



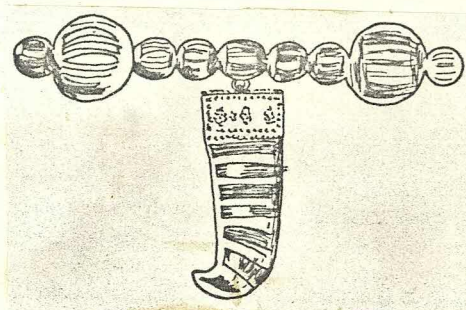
3



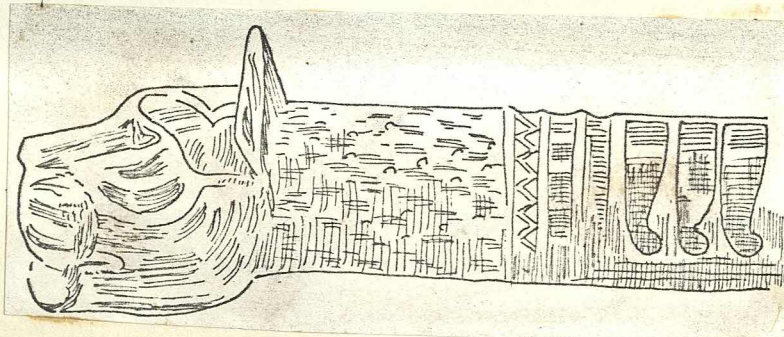
4



5



6

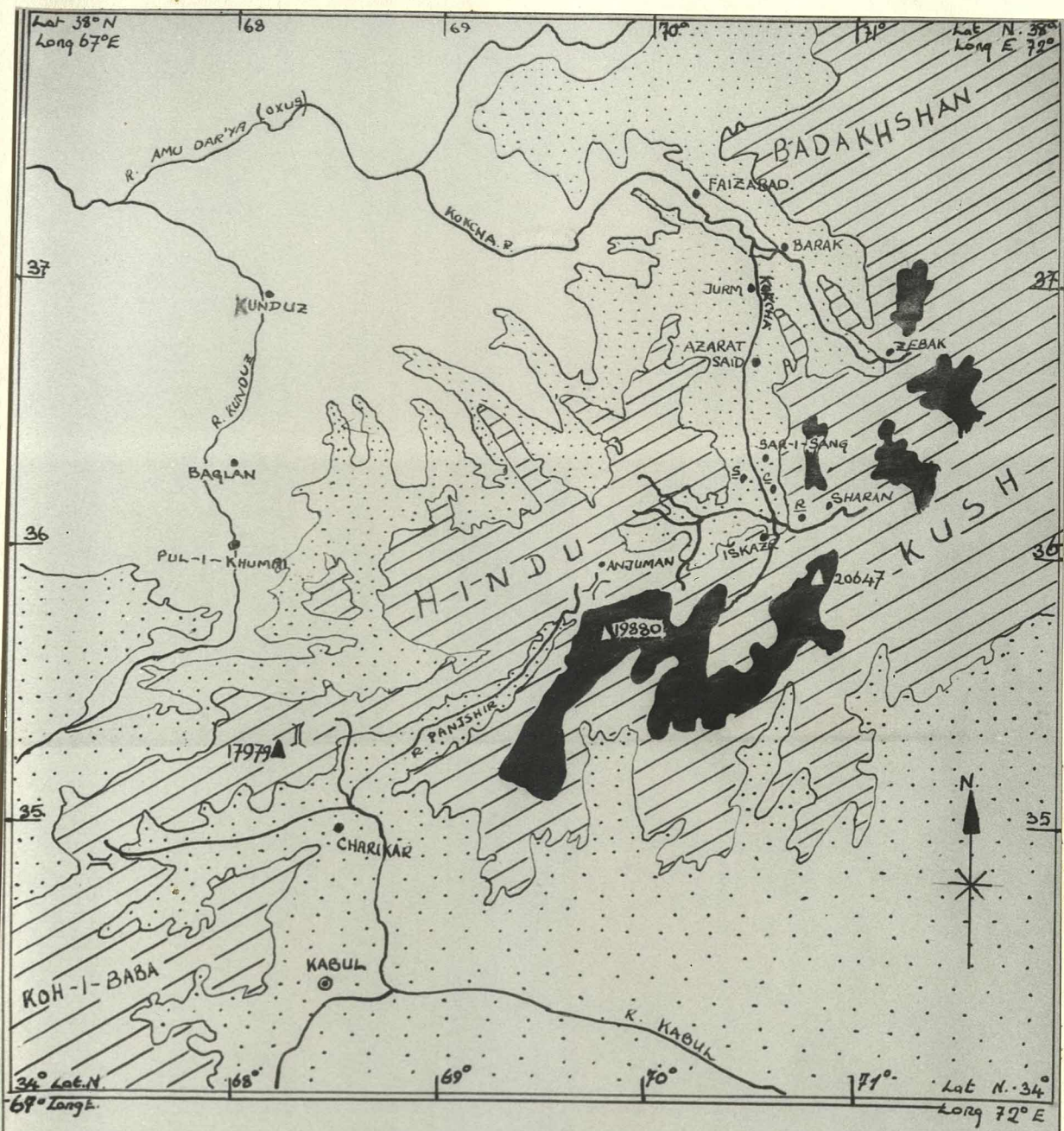


7





PLATE 49

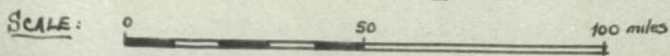
MAP 1 of N.E. Afghanistan.

The Badakhshan mines. Although only one area is mined today, that at Sar-i-Sang, where the old mine is located, there were three others - at Stromby, Chilmak and Robot-i-Paskoran. All four are marked on the map.



THE 4 LAPIS LAZULI MINES AT :-

- | | | | |
|---|----------------------|-------------------------------|--------------------|
|  | 15,000' or 4,572m | 1. SAR-I-SANG. | () PASS |
|  | 9,000' or 2,743m | 2. <u>S</u> STROMBY. | • TOWNS & VILLAGES |
|  | 3,000' or 914m | 3. <u>C</u> CHILMAK. | △ PEAKS - |
|  | 1-2,000' or 304-609m | 4. <u>R</u> ROBAT-I-PASKARAN. | [height in feet] |



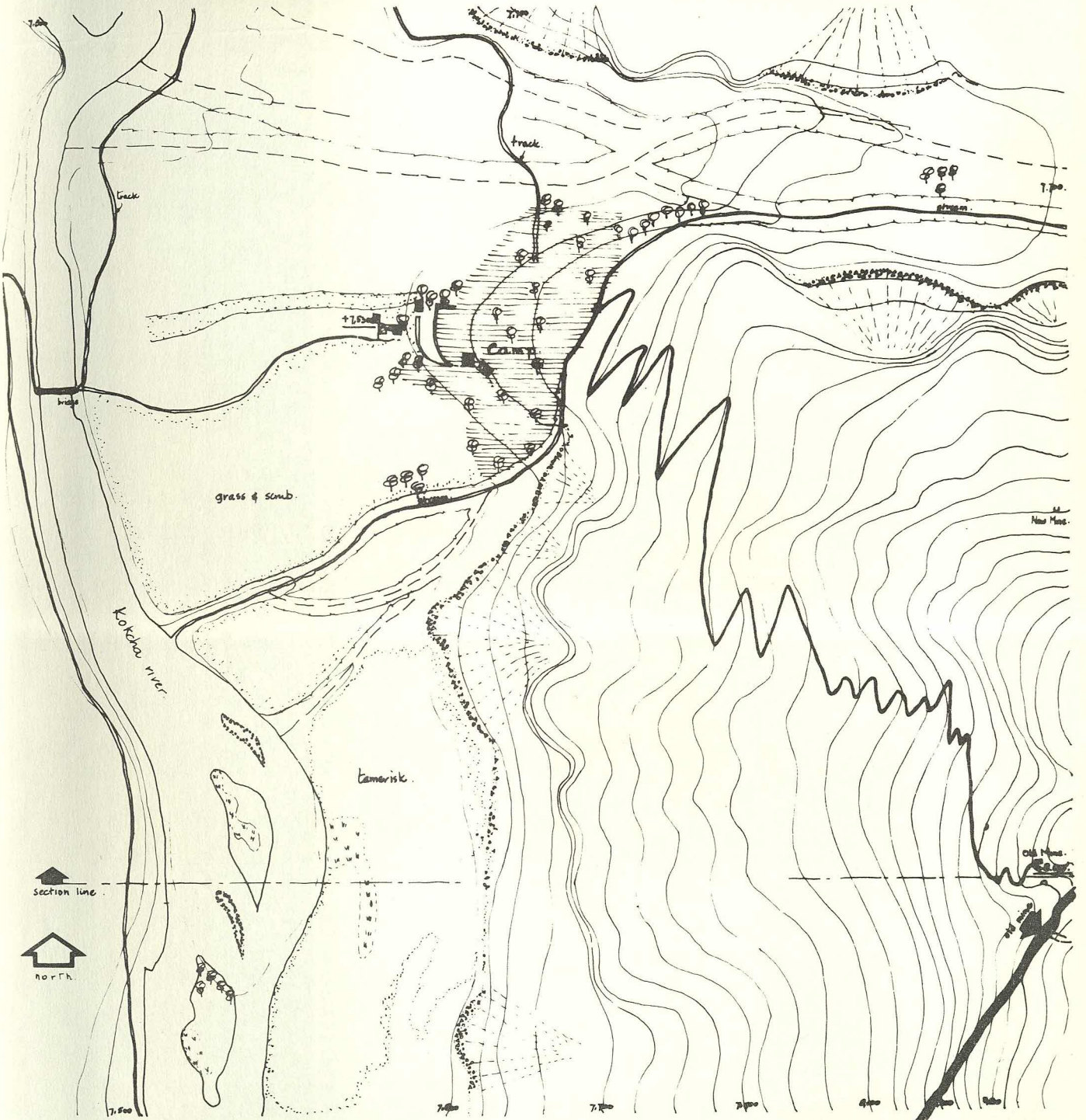
Taken from U.N No 279 .rev 3

PLATE 50

Plan of the valley and mines of Sar-i-Sang. See also
the photographs of the mountain and valley on Plates
7 to 11.

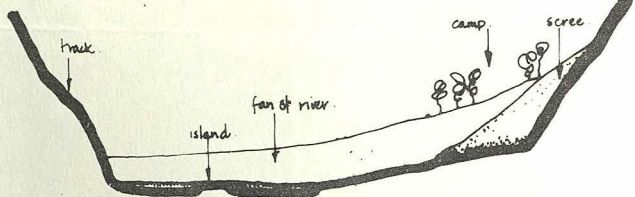
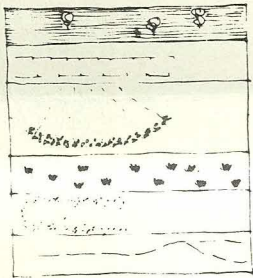
the valley of sar-i-sang

Lat. 36 50' Long. 70 50'



plan 2a

- Key
- planted area.
 - river bed.
 - scree.
 - edge of scree.
 - marsh.
 - scrub & tamarisk.
 - dried up river.

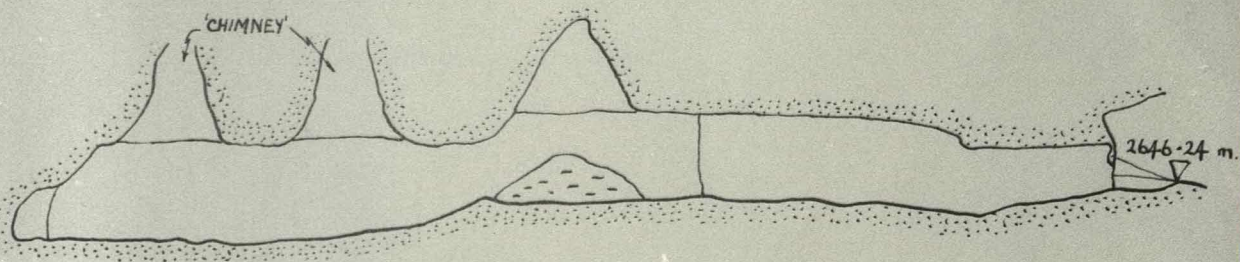


section 2b

Scale. 1:3000
 Contours at 50'.0"
 Altitude of Old Mine -8'.600.
 August. 1964. -2646.24 m.
 C.L.

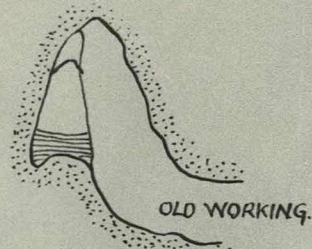
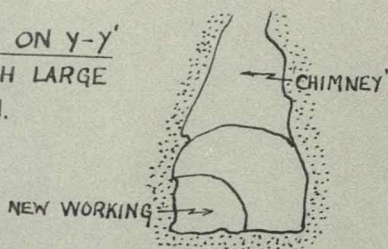
PLATE 51

Sketch map of the old mine, giving an indication of the size of the great caverns, which have been carved out of the mountain. All the rock surfaces, except the new working at the end, were obscured by a heavy deposit of soot. 'Addi's cave' was sealed by a rock fall.

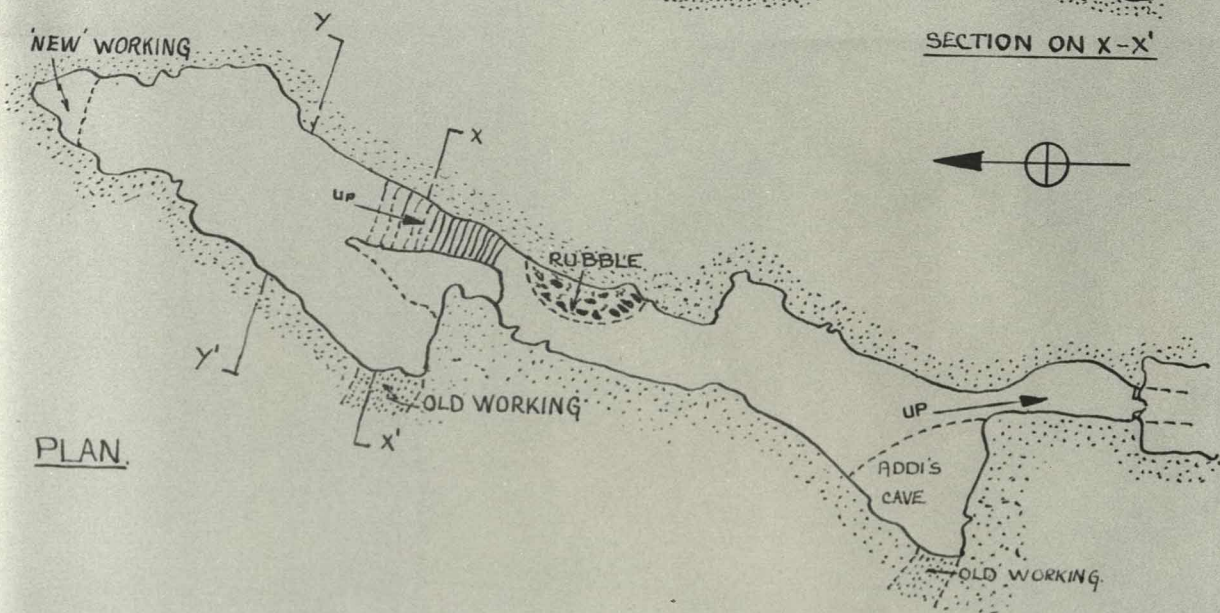


LONG SECTION

SECTION ON y-y'
THROUGH LARGE CAVERN.



SECTION ON x-x'



PLAN.

THE OLD MINE, SAR-L-SANG, BADAKHSHAN.
sketch map after GHULAM MOHAMED.

Scale 1:500.

PLATE 52

The course followed by the possible routes between Badakhshan and Mesopotamia are marked as follows:

- (i) The northern route by a red line;
- (ii) The southern route by a green line.



TOWNS & SITES
BETWEEN BADAKHSHAN
AND MESOPOTAMIA

.....International boundaries

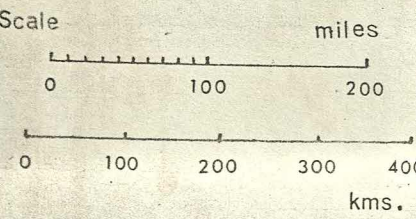


PLATE 53

Map of the provinces of the Abbasid Caliphate, showing the chief high roads. The course of the Great Khurasan Road is coloured red. The four alternative routes from Nishapur to Balkh or Tirmid are marked.

From Le Strange, Lands of the Eastern Caliphate.

PLATE 54

A more detailed record of the provinces traversed by the Great Khurasan Road from Iraq to the province of Kumis. The road is marked in red.

From Le Strange, Lands of the Eastern Caliphate.

PLATE 55

A more detailed record of the province of Khurasan.
The course followed by the Great Khurasan road is marked
in red. Note the diverging routes between Nishapur and
Balkh or Tirmid on the Oxus.

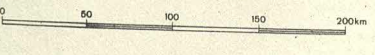
From Le Strange, Lands of the Eastern Caliphate.



- Quaternary i.g.
- Alluvium, coastal plains, Fans
- Swamps with vegetation
- Soft flats (heavy)
- Sand dunes
- Terraces (Landslides)
- Travertine
- Marine terraces
- Loess (Caspian area)
- Plio-Pleistocene i.g. (partly folded)
- Freshwater Limestone (NW Iran)
- Mio-Pliocene (Neogene i.g.)
- Conglomerate Facies (Babliar)
- Miocene i.g.
- Caspian Miocene
- Upper part Upper Red Formation (Fars)
- Lower part
- Oligo-Miocene, including Oligocene red beds "Asmar" limestone of SW Iran
- Eo-Oligocene (Paleogene i.g.)
- Eocene
- Volcanic Eocene i.g. (Green beds of Elburz)
- Paleogene of SE Iran (may include K2) Flysch facies with reef limestone lenses
- Mesozoic i.g. (mainly limestones)
- Cretaceous i.g.
- Upper Cretaceous (Turin-Santon)
- "Coloured Melange" (SE Iran) mainly Up. Cret.
- Lower and Middle Cretaceous (mainly Orbolina limestone)
- Siliceous facies of Jurassic-Cretaceous (Zagros)
- Upper Jurassic limestone (may include K1)
- Lower to Middle Jurassic (mainly continental, locally coal)
- Triassic
- Paleozoic i.g.
- Permian Permo-Carboniferous
- Carboniferous
- Devonian (partly Old Red type)
- Pre-Devonian Paleozoic
- Metamorphics i.g.
- Schists and Slates
- Marbles
- acid igneous rocks
- intermediate igneous rocks
- basic igneous rocks
- ultrabasic
- Diapiric Uplifts (mainly salt domes)
- Coarse clastic sediments (mainly conglomerates)
- Sediments with pyroclastics
- extrusive igneous rocks
- intrusive igneous rocks
- low grade metamorphism in sediments
- faults, thrusts
- anticlines
- synclines
- strike lines
- mud volcanoes
- craters of Quaternary volcanoes

NATIONAL IRANIAN OIL COMPANY
GEOLOGICAL MAP
 OF
IRAN

1:2500000

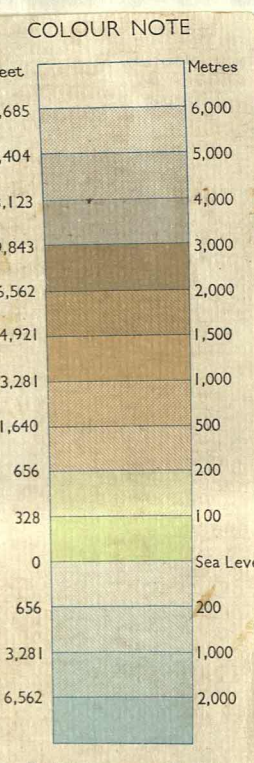


COMPILED BY THE GEOLOGICAL STAFF OF THE IRAN OIL COMPANY

BASED ON ITS OWN FIELD WORK AND PHOTOGEOLOGY AND ALL OTHER AVAILABLE INFORMATION UP TO 1957
Heights in Meters, Depths in Fathoms. Projection: Adjusted from Polyconic Projection of International 1:1000000 Map of the Earth

MAP A
 Lapis lazuli can only occur in a pink zone (see x mark), which represents metamorphic rocks. It is most likely to occur in a pink zone which lies next to an orange zone (see X mark) which represents granitic rocks.

MAP B
Map showing the principal physical features of the area between Badkhashan and Mesopotamia.
From the Bartholomews series.



- Arterial Routes
- Other Roads
- Tracks
- Difficulties of Passage
- Canals
- Railways
- Main Civil Airports
- Other Airfields
- International Boundaries
- State and Divisional Boundaries
- Cease-fire Line
- Sand Deserts



1 : 4,000,000



