

THESIS SUBMITTED TO THE FACULTY OF ORIENTAL STUDIES
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THE METALWORKING INDUSTRY IN IRAN IN THE EARLY ISLAMIC PERIOD

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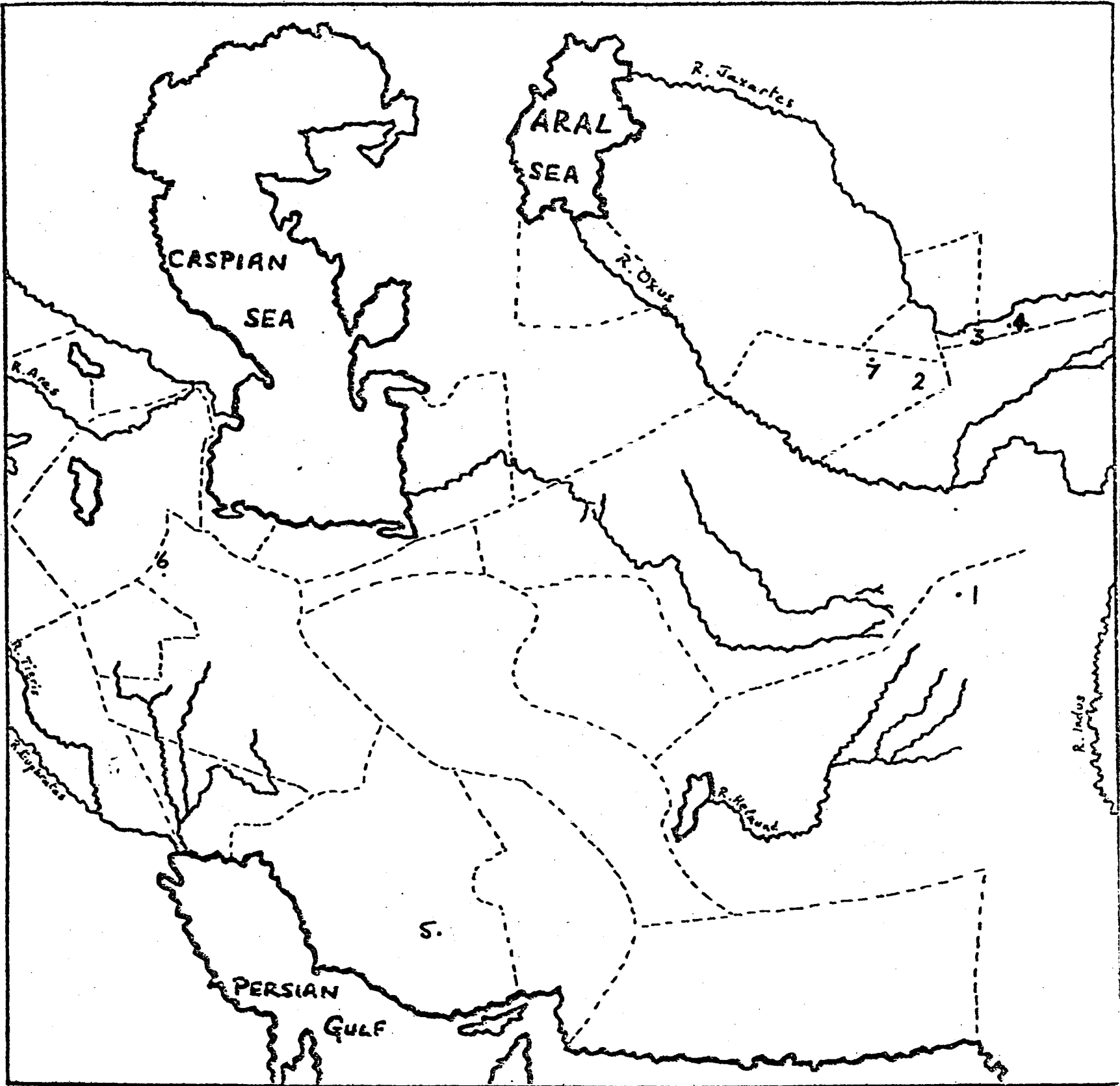
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TABLE 1 GAZETTEER OF MERCURY SOURCES

<u>Province</u>	<u>Location</u>	<u>Reference</u>	<u>Comments</u>
1. <u>9th century</u>			
Khurāsān	Bāmiyān	Yaq p.289	
2. <u>10th century</u>	A) <u>General geographers</u>		
Transoxania		Išt p.288; IH p.464	
	Farghāna	Išt pp.313, 334; IH p.488	
	Qubā	Muq p.326	in Farghāna; (spring of mercury)
	Sūkh	IH p.515; HA para.25.49	in Farghāna (probably = Shūh (HA))
Fārs	Dārābjird	Išt p.155; IH p.200	
	B) <u>Local travellers or geographers</u>		
Jibāl	Shīz	ADu para. 4	("superior mercury to that of Khurāsān")
3. <u>Post 10th century</u>			
Transoxania	Samarqand	Tha p.126	

MERCURY SOURCES - MAP



1. Bāmiyān
2. Transoxania
3. Farghāna
4. Qubā
5. Dārābjird
6. Shīz
7. Samarqand

TABLE 2 GOLD : SELECT VOCABULARY

<u>ibrīz</u>	pure or purified gold (Bir p.233)
<u>bundug</u>	gold nugget (Bir p.232)
<u>tibr</u>	native gold (Ham. throughout); gold-silver alloy as used by goldsmiths, occasionally gold-silver-copper alloy, rarely other metals (Bir p.232)
<u>jalad</u>	gold (Ham fol. 8b)
<u>jamad</u>	gold (Ham fol. 8b)
<u>khuld</u>	gold (Ham fol. 8b)
<u>dhahab</u>	gold (general Arabic word)
<u>rikāz</u>	piece of native gold (Bir p.233)
<u>arkaza</u>	to find a <u>rikāz</u> (Bir p.233)
<u>zukhruf</u>	gold (Qurān 6:112; Ham fol. 8b; Bir p.233)
<u>zar</u>	gold (general Persian word)
<u>zarsīm</u>	electrum (Ham fol. 36b, 54a, 60a-b; Toll 1969 pp.151-2)
<u>zar-i talī</u>	pure gold (NT p.211; AQ p.221)
<u>zarnāb</u>	pure gold (Ham fol. 8b)
<u>zain</u>	gold (Ham fol. 8b)
<u>sām</u>	gold (Ham fol. 8a)
<u>sijābadhī</u>	gold used for jewellery (ADu para.4)
<u>sahandī</u>	var. of <u>sijābadhī</u> (Yqt II p.354)
<u>sahraqī</u>	var. of <u>shahrabī</u> (Yqt II p.354)
<u>shahrabī</u>	gold found in nuggets (ADu para.4)
<u>sarīf</u>	gold (Ham fol. 8b)
<u>tīb</u>	gold (Ham fol. 8b) gold-silver-copper alloy used by jewellers (Ham fol.28a)
<u>'asjad</u>	gold (Ham fol. 8a; Bir p.232)
<u>'iqvān</u>	gold (Ham fol. 8b); native gold (Bir p.232)

/cont....

TABLE 2 GOLD : SELECT VOCABULARY (cont.)

<u>qūmisī</u>	alluvial gold (ADu para.4; Yqt III p.354)
<u>lujain</u>	gold (Ham fol. 8a)
<u>laqaṭ</u>	piece of native gold (Bir p.233)
<u>nuḍār</u>	pure gold (Ham fol. 8a; Bir p.232)
<u>hibrizī</u>	var. of <u>ibrīz</u> (Ham fol. 8a)
<u>muhraqān</u>	gold (Ham fol. 8b)

TABLE 3 GOLD TECHNOLOGY : SELECT VOCABULARY

<u>būṭaq</u>	crucible (Ham fol.28a, 37b etc.)
<u>turāb al-dhahab</u>	the gold and silver left in the <u>dawā'</u> (q.v.) after cementation (Ham fol.51a)
<u>jāzz</u>	shears for cutting gold (Ham fol.29b)
<u>jawza</u>	button of gold and mercury left after squeezing amalgam through leather (Ham fol.27a)
<u>dawā'</u>	cementation mixture (Ham Ch. 12)
<u>al-dhahab al-dūn</u> <u>al-ṣalāḥ</u>	finer-than-standard gold (Ham fol.36a)
<u>al-dhahab al-dūn</u> <u>al-'atīq</u>	high quality gold (Ham fol.37a)
<u>al-dhahab al-dūnī</u>	poor quality gold (Ham fol.53b, 70b)
<u>dhahab zi'baqī</u> or <u>dhahab muzabbag</u>	gold recovered from purification by amalgamation (Bir p.234)
<u>al-dhahab</u> <u>al-'atīq</u>	good quality gold (Ham fol.70b)
<u>arjaha</u>	to be overpure (Ham fol.37a)
<u>rasūb</u>	purification of gold by heating (Ham fol.71b)
<u>ziriyāb</u>	gold leaf (Ham fol.8b)
<u>zalla</u>	to be deficient in purity (Ham fol.37a)
<u>zar andūd kardan</u>	to gild (AQ p.211)
<u>sabīka</u>	ingot (Ham fol.27b; Bir pp.241, 243; AQ p.226)
<u>sabaqa</u>	to amalgamate gold with mercury (Ham fol. 66a)
<u>sūd</u>	button of gold left in crucible after purification by melting (Ham fol.23b)
<u>matraqat al-dast</u>	quiere hammer (Ham fol.29b)
<u>taṣ'īd</u>	cementation (Ham Ch. 12)
<u>tabakh</u>	cementation (Ham Ch. 12), purification by melting (Bir p.233)
<u>talā'</u>	gilding (Ham fol. 65b)

/cont....

TABLE 3 GOLD TECHNOLOGY : SELECT VOCABULARY (cont.)

<u>ṭilā kardan</u>	to gild (AQ p.212)
<u>ta'riq</u>	purification of gold by melting (Ham Ch. 11)
<u>ma'ād</u>	gold cemented a second time (Ham fol.35a)
<u>'iyār</u>	assay (Ham fol.31b)
<u>afragha</u>	to cast (Ham fol.28b)
<u>qalīmiyā yi zar</u>	scum on top of melt during purification process (AQ p.217)
<u>lattaḥa</u>	to refine (Ham fol.28a)
<u>talwīn</u>	returning of a mercury gilded object to the fire to bring out the colour (Ham fol.67a)
<u>mā' al-dhahab</u>	leaf gold (Ham fol.63a)
<u>nawā</u>	button of gold left in crucible after purification by melting (Ham fol.28b)
<u>tahrīj</u>	breaking up of gold by pouring it molten into cold water (Ham fol.61a-b)
<u>waraqā</u>	leaf gold (Ham fol.63a)
<u>waṭ'a</u>	to hammer gold into thin sheets (Ham fol.29b)

TABLE 4 GAZETTEER OF GOLD SOURCES

<u>Province</u>	<u>Location</u>	<u>Reference</u>	<u>Comments</u>
1. <u>9th century</u>			
Transoxania	River Sughd	Yaq p.294	alluvial gold
Transoxania/ Khurāsān	River Oxus	IK p.179	panned gold; especially nr. Bakshū
2. <u>10th century</u>	A) <u>General geographers</u>		
Transoxania		Išt p.298; IH p.464	
	Land of Khirkhiz	Išt p.281; IH p.445; Tha p.128; Qaz I p.396	cf. HA p.282
	Bārmān	Muq p. 326	S.E. of Uch-turfān cf. HA p.295
	Farghāna	Išt pp.313, 334; IH p.488	
	Akhsīkath	IH p.515	and the mountains nearby
	Nasyā	IH p.515	area of Farghāna around Marqīnān, Andukān & Ush
	Nuqād	IH p.515	mountainous area S. of Ush
	Ilāq	Išt p.333; IH p.509	
	Samarqand	Išt p.319; IH p.495	in a nearby hill called Kūhak; probably uneconomic
	Buttam mountains	Išt p.327	
	Khuttal mountains	Išt pp.279-80, 297; IH p.476; IR p.93; Bir pp.236-7	alluvial gold /cont...

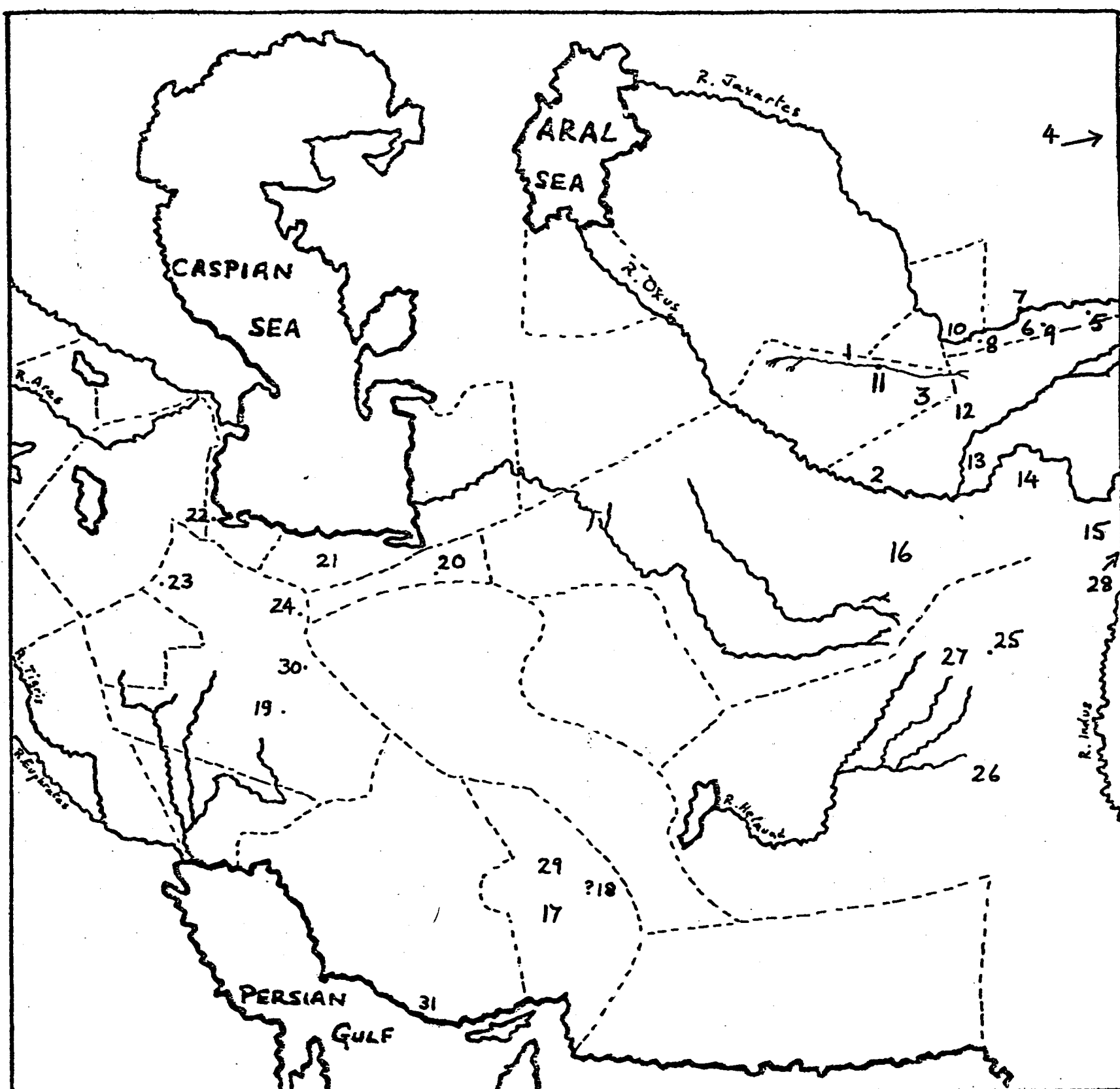
TABLE 4 GAZETTEER OF GOLD SOURCES (Cont.)

<u>Province</u>	<u>Location</u>	<u>Reference</u>	<u>Comments</u>
Khurāsān	Badakhshān	H̄A para.24.24	
	Hindu Kush and Pamirs	Iṣṭ p.281; IH p.445	
	Gharj al-Shār	Muq p.324	probably includes both Gharchistān & Gūzgān
	Gūzgān	H̄A para.23.47,51,63	
Kirmān		H̄A para.28	
	Damandān	IF p.206	But see above p.150
Jibāl	Greater & lesser Taymara	Muq p.397	
	B) <u>Local travellers or geographers</u>		
Transoxania	Khuttal Mountains		see above
Qūmis	Damghān	ADu para.55; AQ p.216	the latter had actually seen the mines
	Ṭabaristān	ADu para.52; Isf p.33	
Māzandarān	Khashm	ADu para.52	best mine in Ṭabaristān
Gīlān	Shīz	ADu para.4	
Jibāl	Alarān	ADu para.8	but see Minorsky's comments
	Rayy	ADu para.48,50; Qaz I p.251	uneconomic; still unopened
			/cont...

TABLE 4 GAZETTEER OF GOLD SOURCES (Cont.)

Province	Location	Reference	Comments
3. Post 10th century			
Transoxania	Land of Khirkhiz		see above
	Khuttal		see above
Sīstān	Chazna	Tha p.122	
	Zābulistān	Bir pp.213-4	
	Tūthbank	Bir p.233	In Zarūyān (Urzgān)
	Sarshank	Bir p.238	"
	Sankzarīz	Bir p.238	"
	Nawkazdam	Bir p.245	" also copper mine
	Nāūnū	Bir p.246	" ore mixture of gold, silver & copper
	River Indus	Bir p.236	gold extracted from its sources
	mountains S. of Kirmān	AQ p.216	
	Greater Taymara	Māf p.18	
Jībāl	Qum	Qaz I p.297	"kept hidden from the people"
Persian Gulf	Damghān		see above
	Tabaristān		see above
	its edges	Dim p.166	

GOLD SOURCES - MAP



- | | | |
|---------------------|------------------------------|-----------------------------|
| 1. R. Sughd | 12. Buttam mts. | 23. Shīz |
| 2. R. Oxus | 13. Khuttal mts. | 24. Rayy |
| 3. Transoxania | 14. Badakhshān | 25. Ghazna |
| 4. Land of Khirkhiz | 15. Hindu Kush/Pamirs | 26. Zābulistān |
| 5. Bārmān | 16. Gharj al-Shār/
Gūzgān | 27. Zarūyān |
| 6. Farghāna | 17. Kirmān province | 28. Sources of
R. Indus |
| 7. Akhsīkath | 18. Damandān | 29. Mts. south of
Kirmān |
| 8. Nasyā | 19. Taymara | 30. Qum |
| 9. Nuqād | 20. Damghān | 31. Persian Gulf |
| 10. Ilāq | 21. Ṭabaristān | |
| 11. Samarqand | 22. Khashm | |

TABLE 5 SILVER: SELECT VOCABULARY

<u>sām</u>	silver; vein of silver (Bir p.242)
<u>sīm</u>	silver (general Persian word)
<u>samāna</u>	large pieces of natural silver (Bir p.242)
<u>ṣarīf</u>	silver (Bir p.242)
<u>ṣūlaj</u> or <u>ṣūlaja</u>	silver (Bir p.242)
<u>ḡaṣīl</u>	silver (Bir p.242)
<u>ḡaṣīl</u>	silver (general Arabic word)
<u>luḡain</u>	silver (Ham fol.8b; Bir p.242)
<u>luḡa</u>	silver (Ham fol.32a)
<u>warīq</u>	silver (Ham fol.8b; Qurān 18:18)

TABLE 6 SILVER TECHNOLOGY : SELECT VOCABULARY

<u>pālūdān</u>	to refine (silver) (AQ p.227)
<u>ṛūbās</u>	cupellation (Ham fol.57b)
<u>ṛūbās</u>	cupel (Ham fol.56a)
<u>ṛūbās</u>	cupellation (AQ p.227)
<u>ṛūbās</u>	cupellation (Ham fol.57b)
<u>ṛūbās</u>	second purification process for silver (Ham fol.57b, 59b)
<u>ṛūbās</u>	silver oxide (p. p.215; AQ p.226)
or <u>ṛūbās</u>	
<u>kāh</u>	cupel (HQ p.219)
<u>ṛūbās</u>	cupel (AQ pp.227, 240)
<u>ṛūbās</u>	ash and dross on back of silver nugget after cupellation (AQ p.227)
<u>tahrīj</u>	fragmenting silver by pouring it into cold water (Ham fol.61a-b)

TABLE 7 GAZETTEER OF SILVER SOURCES

<u>Province</u>	<u>Location</u>	<u>Reference</u>	<u>Comments</u>
1. <u>9th century</u>			
Transoxania	Shāsh	IK p.39; Qud pp.207-8	Shāsh & the silver mine together paid tax of 607,100 dirhams (IK); mine was 7 parasangs from Shāsh at Khujaṇḍa (Qud)
2. <u>10th century</u>	A) <u>General geographers</u>		
Transoxania			
	Land of Khirkhiz	Iṣṭ p.288; IH p.464	
	Bārmān	Iṣṭ p.281; IH p.445; Qaz I p.396	cf. HA p.295
	Farghāna	Muq p.326	
		Iṣṭ p.334; IH p.488	
	Akhsīkath	IH p.515	in Farghāna
	Nasyā	IH p.515	"
	Nuqād	IH p.515	"
	<u>Kūh-i sīm</u>	HA para.25.65	"
	Ilāq	Iṣṭ p.3 ; IH pp.509-10	
	Samarqand	Iṣṭ p.319; IH p.495; Ham fol.25a	in nearby hill called Kūhak probably uneconomic
	Bukhārā	Ham fol.25a	But see p.42
	Euttam mountains	Iṣṭ p.327	/cont....

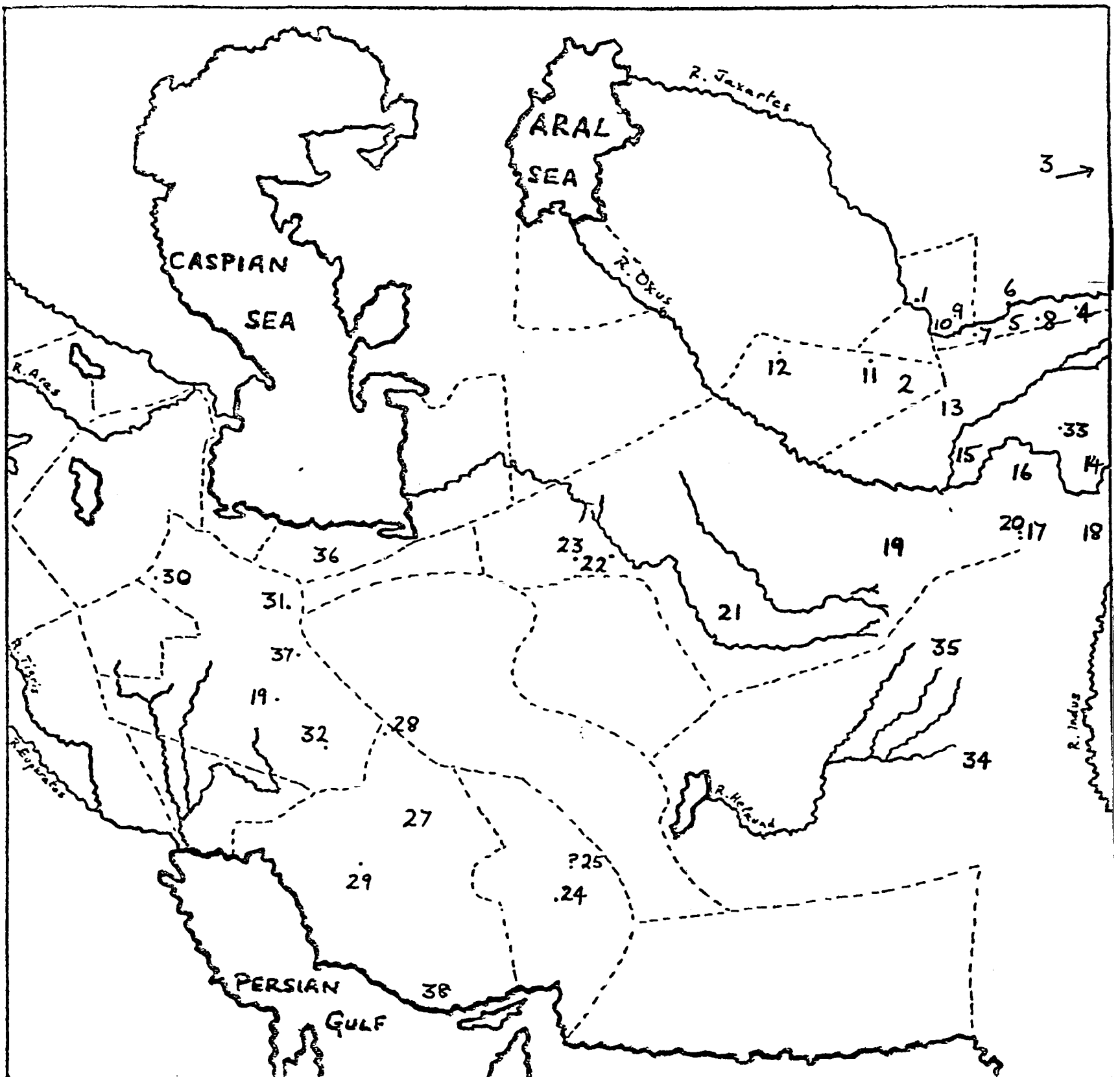
TABLE 7 GAZETTEER OF SILVER SOURCES (cont.)

<u>Province</u>	<u>Location</u>	<u>Reference</u>	<u>Comments</u>
Transoxania (cont.)	Wakhkhan	Iṣṭ p.297; IH p.476	
	Khuttal	HA para.5.9Aa	
	Badakhshān	HA para.24.24	
	Panjhīr	Iṣṭ pp.280-1,288; IH pp.449, 464-5; IF pp.255,327; Muq pp.303, 326; Ham fol.24b; Mas para.455	Ham calls it ma'dan Balkh and locates it at Andarāb
Khurāsān	Hindu Kush and Pamirs	Iṣṭ p.281; IH p.445	
	Gūzgān	HA para.23.51	
	Jāriyāna/Jārbāya	Iṣṭ pp.279-80; IH p.449	twin town of Panjhīr
	Bādghīs	Iṣṭ pp.268-9; IH p.441; Muq p.308; HA para.23.27	mine on hill called <u>jabal al-fidda</u> or <u>kūh-i sīm</u> ; abandoned due to lack of fuel
Kirmān	Nūqān mountains	IH p.434	near Nīshāpūr
	ṭūs	Ham fol.25a	probably = IH p.434
	Nīshāpūr	Ham fol.25a	" "
	Jabal ma'ādin al- <u>fīḍḍa/kūh-i sīm</u>	Iṣṭ pp.163,165; IH p.311; Muq pp.470-1; HA para.5.10	north-west of Jīruft
Jibāl	Damandān	IF p.206	But see p.150
	Greater & Lesser Taymara	Muq p.397	
Fārs		IH p.300	/cont...

TABLE 7 GAZETTEER OF SILVER SOURCES (cont.)

<u>Province</u>	<u>Location</u>	<u>Reference</u>	<u>Comments</u>
Fārs (cont.)	Nā'īn	Iṣṭ p.155	
	Iṣṭakhr	ḤA para.29.2	
	<u>B) Local travellers or geographers</u>		
Jibāl	Shīz	ADu para.4	but see Minorsky's comments
	Alarān	ADu para.8	
	Rayy	ADu para.48,50; Qaz I p.251	unopened; uneconomic
	Iṣfahān	IR p.156	abandoned at start of Islamic period; traces still visible
<u>3. Post 10th century</u>			
Transoxania Sīstān	Land of Khirkhiz		see above
	Yamkān Khashbājī	Qaz I p.328 Bir p.213	Mountains nearby, in Zābulistān
	Nāūnū	Bir p.246	ore contained gold, silver & copper; in Zarūyān (Urzgān)
	Wastānāt	Bir p.244	produced iron & silver; in Zarūyān
Māzandarān	Ṭabaristān	Isf p.33	
Jibāl	Qum	Qaz I p.297	"kept hidden from the people".
Persian Gulf	its edges	Dim p.166	
Rūm	Lūlūh	AQ p.224	outside Iran but sources of Tabrīz silver c.1300 A.D.
	Asbhar	AQ p.224	
	Gamsh Bāzār	AQ p.224	

SILVER SOURCES - MAP



- | | | |
|---------------------|-----------------------|------------------|
| 1. Shāsh | 13. Buttam mts. | 25. Damandān |
| 2. Transoxania | 14. Wakhkhān | 26. Taymara |
| 3. Land of Khirkhiz | 15. Khuttal | 27. Fārs |
| 4. Bārmān | 16. Badakhshān | 28. Nā'īn |
| 5. Farghāna | 17. Panjhīr | 29. Iṣṭakhr |
| 6. Akhsīkath | 18. Hindu Kush/Pamirs | 30. Shīz |
| 7. Nasyā | 19. Gūzgān | 31. Rayy |
| 8. Nuqād | 20. Jārbāya | 32. Iṣfahān |
| 9. Kūh-i sīm | 21. Bādghīs | 33. Yamkān |
| 10. Ilāq | 22. Nūqān/Ṭūs | 34. Khashbājī |
| 11. Samarqand | 23. Nīshāpūr | 35. Zarūyān |
| 12. Bukhārā | 24. Kūh-i sīm | 36. Ṭabaristān |
| | | 37. Qum |
| | | 38. Persian Gulf |

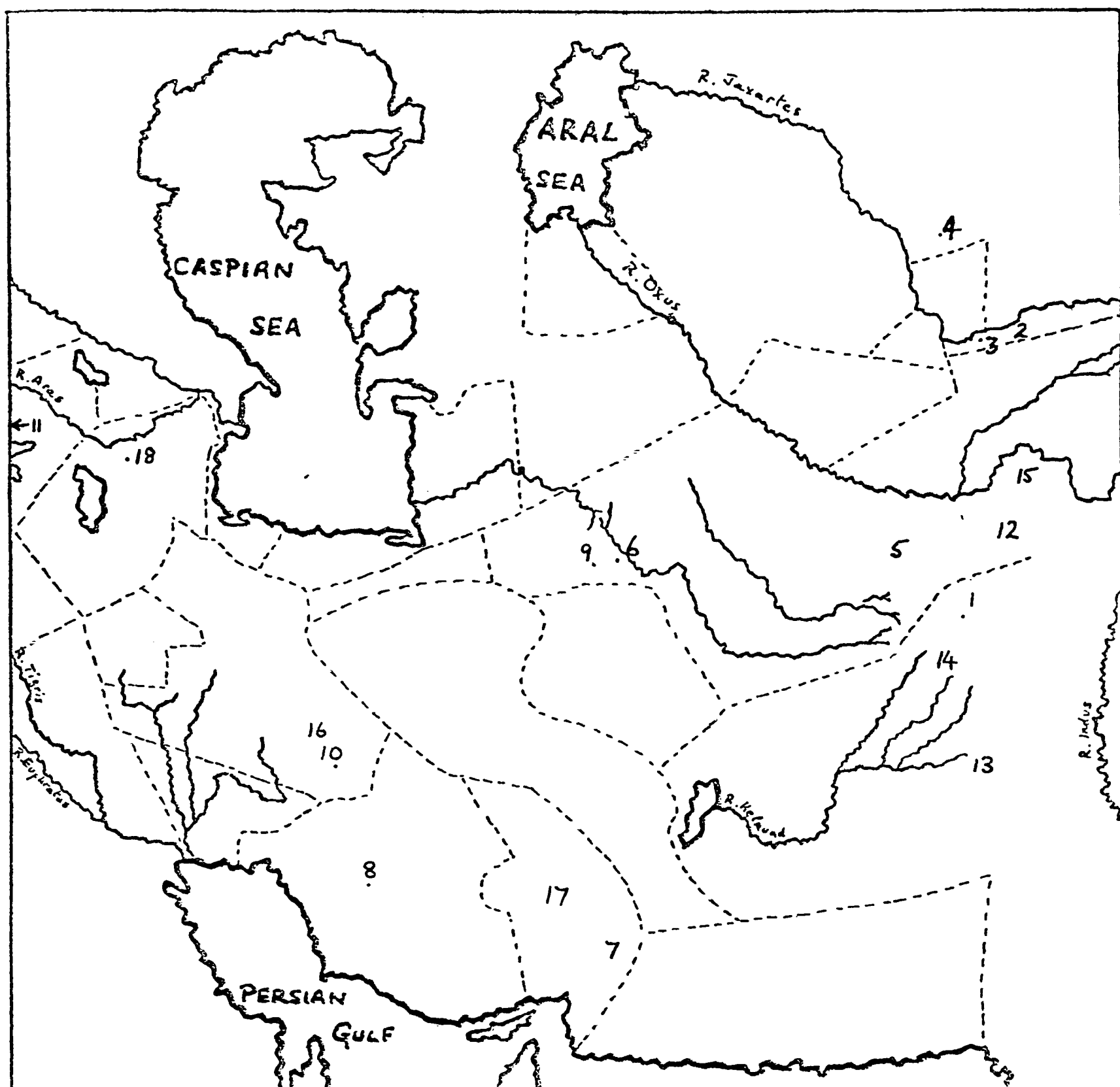
TABLE 8 GAZETTEER OF COPPER SOURCES

<u>Province</u>	<u>Location</u>	<u>Word used</u>	<u>Reference</u>	<u>Comments</u>
1. <u>9th century</u>				
Khurāsān	Bāmiyān	naḥās	Yaq p.239	
2. <u>10th century</u>	A) <u>General geographers</u>			
Transoxania	Farghāna	naḥās	Išt p.313; IH p.488 Muq p.325	
		ṣufr mis	Išt p.334 HA para.25.45	
	Nasyā	naḥās	IH p.515	
	Asbījāb	naḥās	Muq p.325	
Khurāsān	Gūzgān	mis	HA para.23.51	
	Nūqān	naḥās mis	IH p.434 HA para.23.11	
Kirmān	Jīruft/Bam	mis	HA para.28, 5.10	Mountains between the two towns
Fārs	Sardan	ṣufr rud/rūdh	Išt p.155; IH p.300 HA para.29.42	
	B) <u>Local travellers and geographers</u>			
Khurāsān	Nīshāpūr	naḥās	ADu para.60	Probably = Nūqān (above)
Jībāl	Iṣfahān	ṣufr	IR p.156	
Azarbāījān	Bājunais	naḥās	ADu para. 19	/cont...

TABLE 8 GAZETTEER OF COPPER SOURCES (cont.)

<u>Province</u>	<u>Location</u>	<u>Word used</u>	<u>Reference</u>	<u>Comments</u>
3. <u>Post 10th century</u>				
Khurāsān		<u>mis kalān</u>	Bir p.245	area bordering on India
	Zābulistān	<u>naḥās</u>	Bir p.213	
	Nāunū	<u>naḥās</u>	Bir p.246	in Zarūyān (Urzgān); ore mixture of gold, silver & copper
	Nawkazdam	<u>naḥās</u>	Bir p.245	in Zarūyān; copper with much gold in it
	Badhakhshān		Polo (a) p.46	
Jibāl	Quhistān	<u>ṣufr</u>	Māf p.18	
Kirmān		<u>naḥās</u>	Bir p.196	
	Ghār	<u>naḥās</u>	Bir p.196	quoting al-Kindi
Azarbāījān	Dizmār		AQ p.229	

COPPER SOURCES - MAP



- | | |
|--------------------|-------------------------|
| 1. Bāmiyān | 10. Iṣfahān |
| 2. Farghāna | 11. Bājunaīs |
| 3. Nasyā | 12. Khurāsān near India |
| 4. Asbījāb | 13. Zābulistān |
| 5. Gūzgān | 14. Zarūyān |
| 6. Nūqān | 15. Badakhshān |
| 7. Jīruft-Bam mts. | 16. Quhistān |
| 8. Sardan | 17. Kirmān province |
| 9. Nīshāpūr | 18. Dizmār |

TABLE 9 GAZETTEER OF LEAD SOURCES

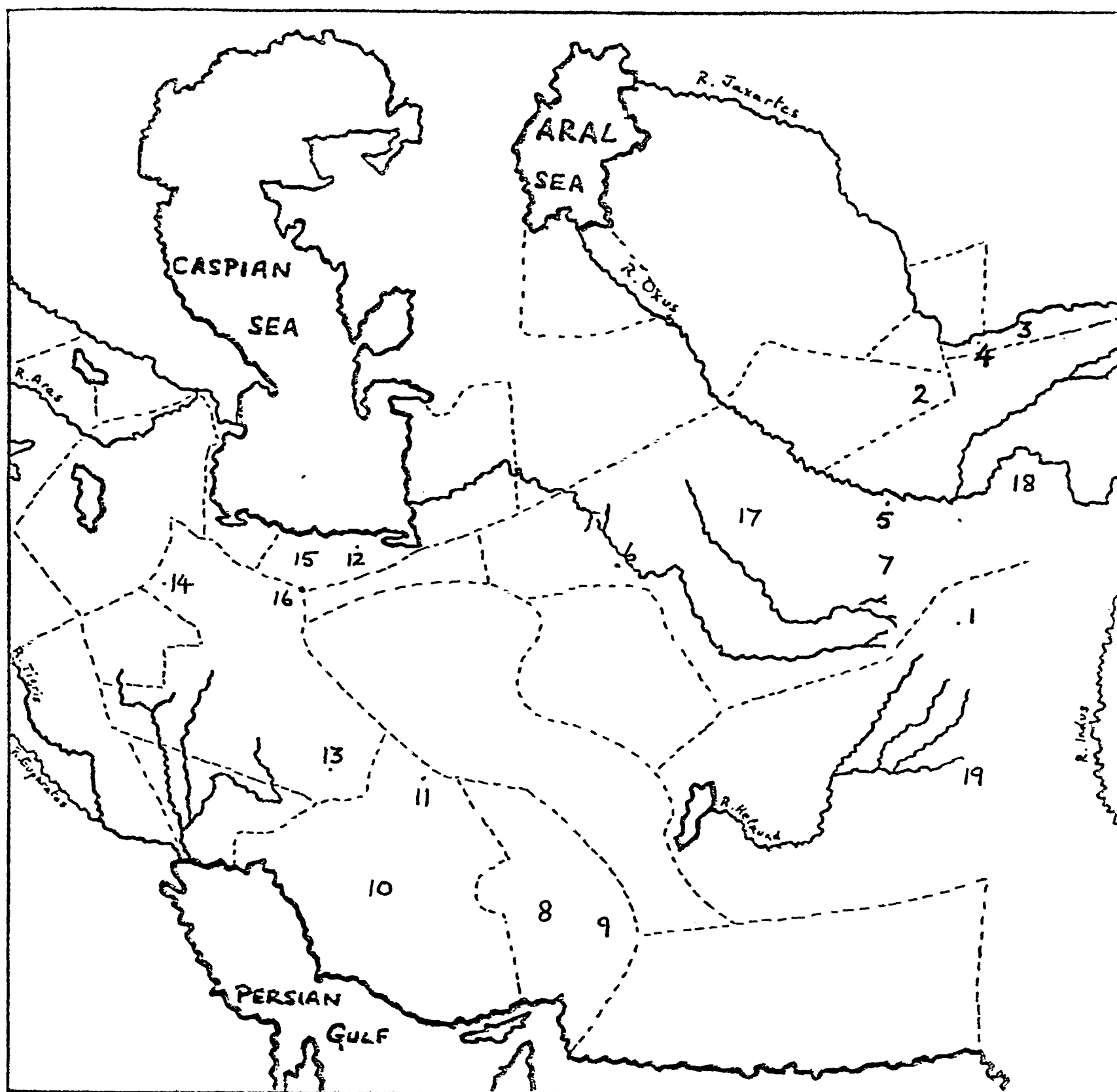
<u>Province</u>	<u>Location</u>	<u>Word used</u>	<u>Reference</u>	<u>Comments</u>
1. <u>9th century</u>				
Khurāsān	Bāmiyān	<u>raṣāḥ</u>	Yaq p.289	
2. <u>10th century</u>	A) <u>General geographers</u>			
Transoxania		<u>surb</u>	ḤA para.5.4	
	Farghāna	<u>ānuk</u> <u>surb</u>	Iṣṭ p.334; IH p.488 ḤA para 25.45	
	Nasyā	<u>ānuk</u>	IH p.515	
Khurāsān	Balkh	<u>raṣāḥ</u>	Muq p.324	
	ṭūs	<u>surb</u>	ḤA para.23.11	
	Qūzgān	<u>surb</u>	ḤA para.23.51	
Kirmān		<u>surb</u>	ḤA para. 28	
	Barijān mountains	<u>surb</u>	ḤA para.5.10	
Fārs		<u>ānuk</u>	Iṣṭ p.155; IH p.300	
	Katha	<u>ānuk</u>	Iṣṭ p.125; IH p.280	
- andarān	Sāmār	<u>surb</u>	ḤA para.32.23	

/cont....

TABLE 9 GAZETTEER OF LEAD SOURCES (cont.)

<u>Province</u>	<u>Location</u>	<u>Word used</u>	<u>Reference</u>	<u>Comments</u>
	<u>B) Local travellers and geographers</u>			
Jibāl	Iṣfahān	<u>usrub/ānuk</u>	IR p.157	but see Minorsky's comments
	Alarān	<u>raṣāṣ/usrub</u>	ADu para.8	
	Shīz	<u>usrub</u>	ADu para.4	
	Ṭabaristān	<u>mardāsānj</u>	ADu para.52	
	Damāvand	<u>usrub</u>	ADu para.51	
<u>3. Post 10th century</u>				
Khurāsān		<u>ānuk/usruf</u>	Bir p.258	
	Badakhshān		Polo (a) p.46	
Sīstān	Khashbājī	<u>usrub</u>	Bir p.213	in mountains nearby; in Zābulistān
Kirmān		<u>usrub</u>	AQ p.340	
Fārs	Yazd	<u>usrub</u>	AQ p.340	

LEAD SOURCES - MAP



- | | |
|--------------------|----------------|
| 1. Bāmiyān | 10. Fārs |
| 2. Transoxania | 11. Katha/Yazd |
| 3. Farghāna | 12. Sāmār |
| 4. Nasyā | 13. Iṣfahān |
| 5. Balkh | 14. Shīz |
| 6. Ṭūs | 15. Ṭabaristān |
| 7. Gūzgān | 16. Damāvand |
| 8. Kirmān province | 17. Khurāsān |
| 9. Bārijān mts. | 18. Badakhshān |
| | 19. Khashbājī |

TABLE 10 COPPER, ITS ALLOYS AND ALLOYING METALS : SELECT VOCABULARY

<u>ānuk</u>	lead (Ham fol.11a; Bir p.258)
<u>abār</u>	lead (AQ p.234)
<u>batruy</u>	lead bronze (see p.163above) (Bir pp.266-7; AQ p.245)
<u>birini</u>	brass (AQ pp.189, 244); var. birinz (Ham fol.68b)
<u>tāl</u>	lead bronze (see p.163above) (AQ p.245)
<u>tūtīyā</u>	zinc oxide sublimate (Ham fol.64b; AQ p.189); zinc oxide vapour (Bir pp.262-3)
... <u>yi paykānak</u>	unidentified (AQ p.188)
... <u>yi dīkak</u>	= <u>tūtīyāyi hindī</u> unidentified (AQ p.188)
... <u>marāzibī</u>	zinc ore; zinc oxide sublimate (Muq p.470)
... <u>difād'ī</u>	unidentified (ADu para.19)
... <u>yi faidī</u>	unidentified (AQ p.188)
... <u>yi kirmānī</u>	zinc oxide sublimate (AQ p.188)
... <u>mahmūd</u>	unidentified (ADu para. 19)
... <u>mahmūdī</u>	unidentified (Rāzī in Stapleton et al.1927 pp.350-1)
... <u>yi nāvāra</u>	zinc oxide sublimate (AQ p.188)
... <u>hindī</u>	unidentified (ADu in Yqt III pp.455-6; Tha p.125; IF p.251; FN p.27; AQ p.188)
<u>hadīd sīnī</u>	similar to <u>ṭālīqūn</u> (see p. above)
<u>khār sīnī</u>	Chinese high tin bronze with small proportion of lead (see p. above)
<u>arzīz</u>	lead (AQ pp.112, 341)
<u>raṣāṣ</u>	lead (Ham Ch.21-22); tin and lead (AQ p.234); tin (Ham fol.68b; short for <u>raṣāṣ min al-qal'ī</u> ; Bir p.267: contrasted to lead; pp.251-2: squeaks; p.267: alloy of copper and ... is stable); AQ pp. 232-3, 340, 342)
... <u>abyad</u>	tin (Ham fol.63a-b: leaf of ... used with gold leaf for decorating wooden boxes)
... <u>abyad qal'ī</u>	tin (Ham fol.69a)

/cont....

TABLE 10 SELECT VOCABULARY OF COPPER, ITS ALLOYS AND ALLOYING METALS
(cont.)

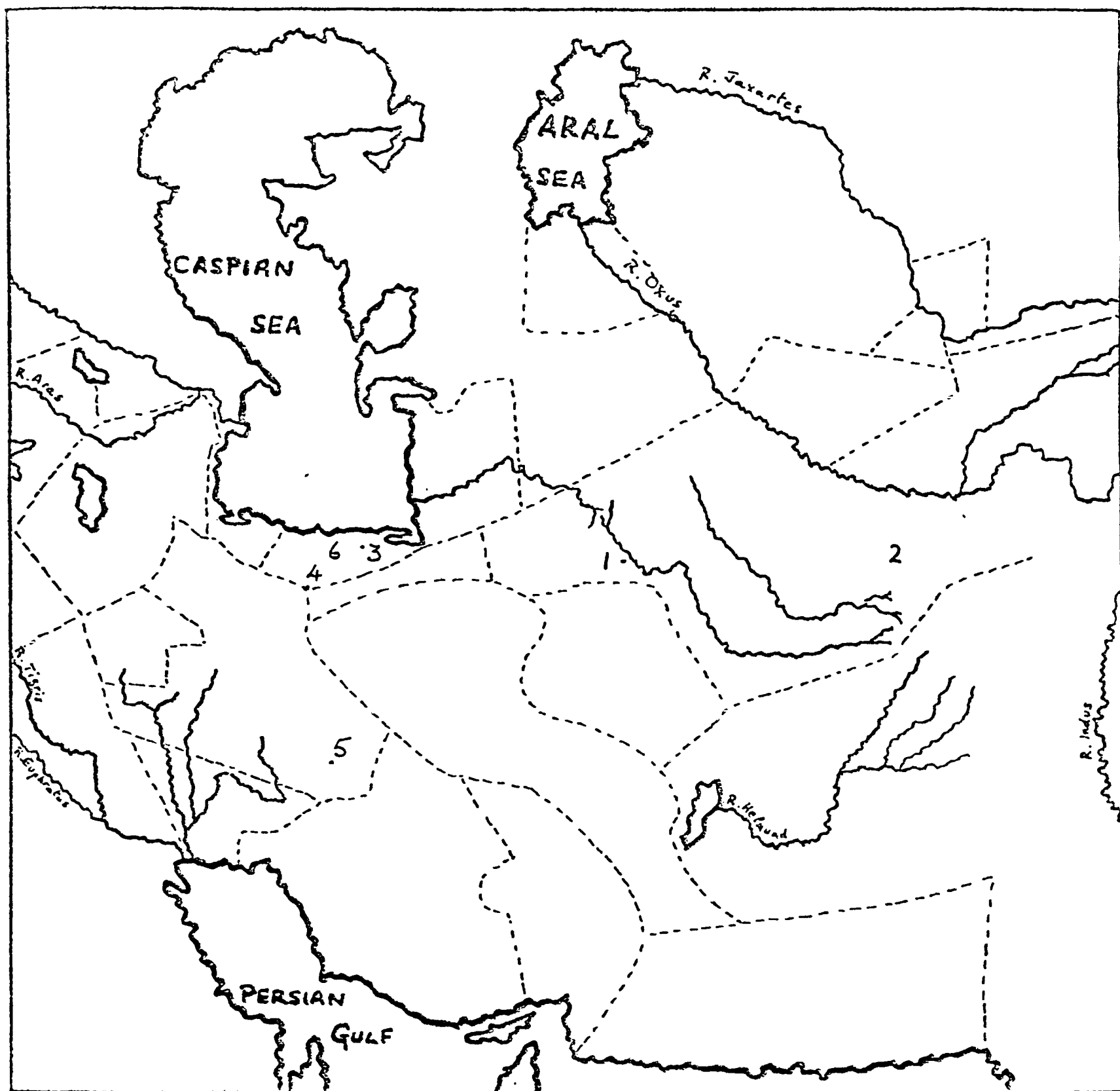
... <u>gal'ī</u>	tin (Bir pp.259, 261)
... <u>min gal'ī</u>	tin (Ham fol.68b)
<u>ruy</u>	copper (Bir p.245); tin or lead when added to copper (Bir p.245)
<u>isbīdrūj</u>	tin alloy (Ham fol.68b)
<u>usrub</u>	lead (Ham ch.21-22; Bir pp.258-262; AQ pp.224-5, 234-5)
<u>surb</u>	lead (HA throughout)
<u>usruf</u>	lead (Ham fol.69a; Bir p.258)
<u>safīdruy</u>	high tin bronze (see p.156 above)(AQ pp.230, 244-5)
<u>asfīdhruy</u>	high tin bronze (see p.156 above) (Bir pp.264-5)
<u>sang-i tūtīyā</u>	zinc ore or other types of <u>tūtīyā</u> (AQ p.188)
<u>shabah</u>	brass (Bir pp.262-4; AQ p.244)
<u>sufṛ</u>	copper (Ham fol.34a); high tin bronze (Bir p.264: alternative name for asfīdhruy; AQ p.244: alternative name for <u>safīdruy</u>); copper alloys in general (see p.164 above)
... <u>aṣfar</u>	brass (Ham fol.68b)
<u>tālīqūn</u>	similar to <u>khār ṣīnī</u> (see p.162 above)
<u>'irq al-tūtīyā</u>	zinc ore (Bir p.263)
<u>qitr</u>	copper (Bir pp.244-5)
<u>gal'ī</u>	tin (Ham fol.69a; AQ pp.232-3, 340-2)
<u>mardāsanj</u>	lead oxide (ADu para.52 cf. Allan 1973 para.10,13,22)
<u>mis</u>	copper (Bir pp.244-5; AQ pp.229,244); comes from copper (Ham fol.68b)
<u>sīvāh mis</u>	probably chalcocite (see p.141 above) (Bir p.245)
... <u>-i kalān</u>	probably chalcopyrite (see p.141 above) (Bir p.245)
<u>nahās</u>	copper (Ham fol.64b; Bir p.244; AQ p.229); low tin bronze (see p.164 above)

TABLE 11 GAZETTEER OF COPPER OR COPPER ALLOY PRODUCTS IN ASSOCIATION WITH TOWNS

<u>Province</u>	<u>Location</u>	<u>Products</u>	<u>Reference</u>	<u>Alternative town name</u>
Transoxania	Baikand			<u>shahristān-i ruyīn</u> (Nar p.16)
	Bukhārā	<u>ṣufr al-manāyir</u>	Muq p.324	<u>madīnat al-ṣufriyya</u> ie. <u>shahristān-i ruyīn</u> (Nar p.20)
	Rabinjān	<u>tāsāt asbīdruy</u>	Muq p.324	
	Samarqand	<u>qudūr ‘adhīma min naḥās</u>	Muq p.325	
	Shargh	<u>ruy</u>	Nar p.13	
Khurāsān	Herāt	<u>al-awānī al-ṣufriyya</u> <u>al-muta’ am bil-fiqda</u>	Qaz II pp. 322-3	
	Marv	<u>naḥās</u>	Muq p.324	
		implements of <u>shabah</u> and <u>ṣufr</u>	IF p.254	
Sīstān		<u>asfīdhruy</u>	Bir p.264	
		<u>asfīdhruy</u>	Muq p.396	
Jibāl	Hamadān	<u>asfīdhruy</u>		

TABLE 12 GAZETTEER OF SOURCES OF KUHL, ITHMID AND SURMA

<u>Province</u>	<u>Location</u>	<u>Word used</u>	<u>Reference</u>	<u>Comments</u>
1. <u>10th century</u>	A) <u>GENERAL GEOGRAPHERS</u>			
Khurāsān	Ṭūs	<u>surma</u>	ḤA para.23.11	in mountains nearby
	Gūzgān	<u>sang-i surma</u>	ḤA para.23.51	
	Sāmār	<u>surma</u>	ḤA para.32.23	near Sārī
Māzandarān				
B) <u>LOCAL TRAVELLERS AND GEOGRAPHERS</u>				
Jibāl	Mt. Damāvand	<u>kuhl</u>	ADu para.51	mines nearby
	Iṣfahān	<u>ithmid</u>	IR p.156	superior quality, exported everywhere
		<u>kuhl</u>	Iṣt p.203; IH p.372 Muq p.397; Tha p.110	
		<u>kuhl</u>	Jāḥ p.345	imported into Iraq
		<u>ithmid</u>	Qaz II p.210	
2. <u>Post 10th century</u>				
Māzandarān	Ṭabaristān	<u>surma</u>	Isf p.33	
Jibāl	Iṣfahān	see above		

SOURCES OF KUHL, ITHMID AND SURMA - MAP

1. Ṭūs
2. Gūzgān
3. Sāmār
4. Mt. Damāvand
5. Iṣfahān
6. Ṭabaristān

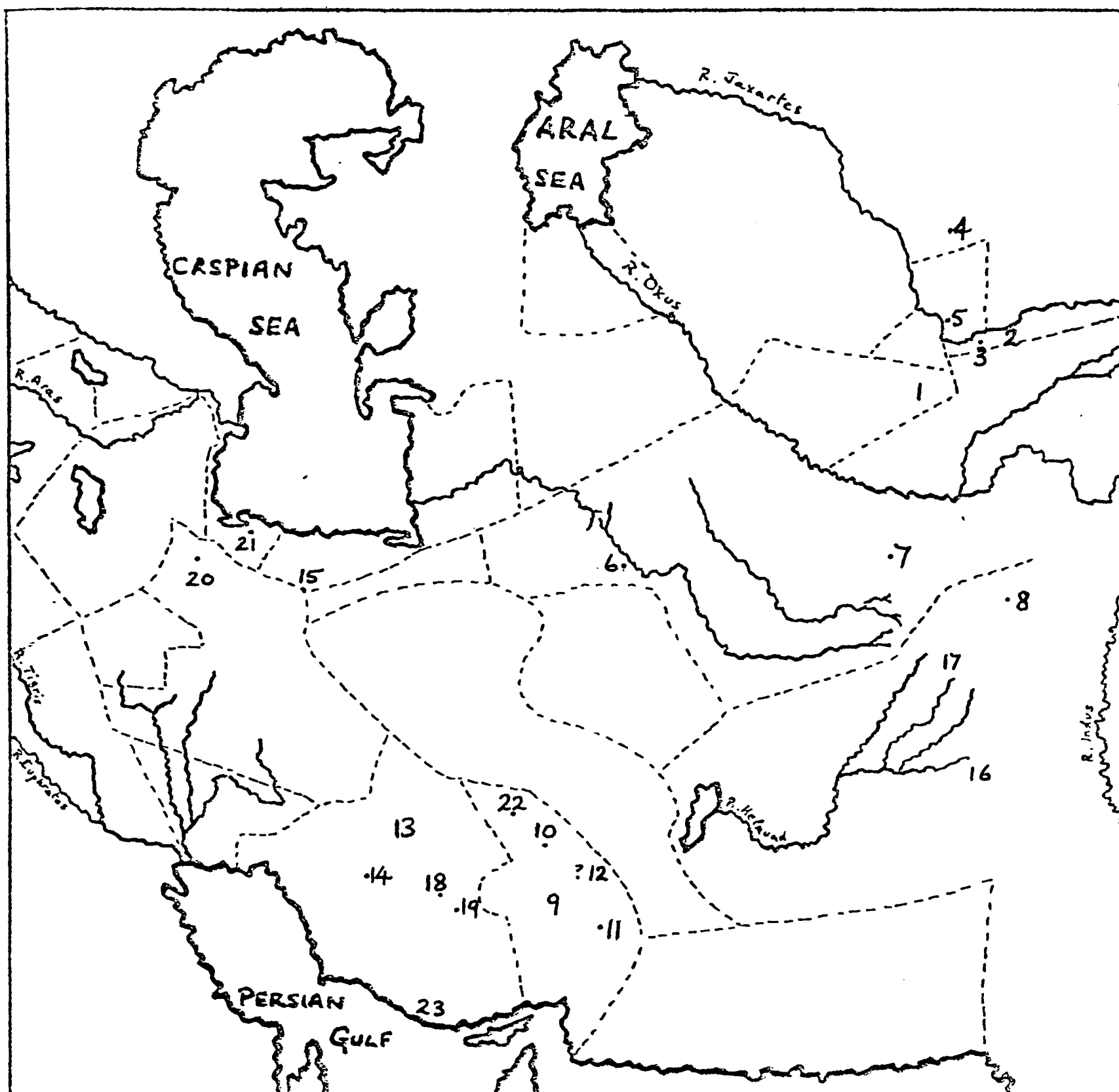
TABLE 13 GAZETTEER OF IRON SOURCES

<u>Province</u>	<u>Location</u>	<u>Reference</u>	<u>Comments</u>
1. <u>10th century</u>	A) <u>General geographers</u>		
Transoxania		HA para.5.4.	
		Išt p.288; IH p.464	the iron exceeded the demands of weapons, implements or general commerce
	Farghāna	Išt pp. 313,334; Muq p.325; IH pp.488,506	
	Nasyā	IH p.515	area in Farghāna
Khurāsān	Asbījāb	Muq p.325	
	Shāsh	Qaz II p.362	claiming to quote Išt who does not mention it
	Nūqān	IH p.434	
	Ṭūs	Ham fol.25a	
Sīstān	Gūzgān	HA para 23.51	in the mountains
	Kābul	IH p.450	
		Muq p.470	
Kirmān	Kirmān	Mas para.256	the region around
	Bāriz mountains	Išt p.165; IH p.310	
	Damandān	IF p.206; Yqt II p.600	/cont...

TABLE 13 GAZETTEER OF IRON SOURCES (cont.)

<u>Province</u>	<u>Location</u>	<u>Reference</u>	<u>Comments</u>
Fārs		Iṣṭ p.155; IH p.300	
	Iṣṭakhr mountains	Iṣṭ p.155; IH p.300; ḤA para.29.2	
Ṭabaristān	Mt. Damāvand	ḤA para.32.20	
<u>2. Post 10th century</u>			
Sīstān	Khashbājī	Bir p.213	in Zābulistān
	Wastānāt	Bir p.244	where the mine also produced silver
Fārs	Šāha	FN p.125	
	Quṭra	FN p.128	
Jibāl	Zanjān	Qaz II p.256	
Gīlān	Arasht	Qaz II p.190	
Kirmān		Polo (a) p. 32	
	Kūhbanān	Polo I p.125	
Persian Gulf		Dim p.166	

IRON SOURCES - MAP



- | | |
|--------------------|-------------------|
| 1. Transoxania | 12. Damandān |
| 2. Farghāna | 13. Fārs province |
| 3. Nasyā | 14. Iṣṭakhr mts. |
| 4. Asbījāb | 15. Mt. Damāvand |
| 5. Shāsh | 16. Khashbājī |
| 6. Nūqān/Ṭūs | 17. Wastānāt |
| 7. Gūzgān | 18. Ṣāha |
| 8. Kābul | 19. Quṭra |
| 9. Kirmān province | 20. Zanjān |
| 10. Kirmān | 21. Arasht |
| 11. Bāriz mts. | 22. Kūhbanān |
| | 23. Persian Gulf |

TABLE 14(a) MANUFACTURING CENTRES OF ARMS AND ARMOUR

<u>Province</u>	<u>Location</u>	<u>Objects</u>	<u>Reference</u>
Transoxania	Farghāna	arms and swords	Muq p.325
	Asbījāb	arms and swords	Muq p.325
Khawārazm		<u>Salmānī</u> swords	Kin p.26
		swords and breastplates (<u>durū'</u>)	Muq p.325
		weapons and breastplates (<u>durūgh</u>)	IF p.316
		Khurāsānī <u>sarandīb</u> swords	Kin p.10
Khurāsān		Khurāsānī <u>muwallad</u> swords	Kin p.11
	Herāt	steel	Muq p.324; Bir pp.254,256
	Ṭūs	coats of mail (<u>surūd</u>)	Ham fol.25a
	Ghūr	breastplates (<u>jawshan</u>)	Jāḥ p.345
Jibāl		coats of mail (<u>zara</u>), breastplates (<u>jawshan</u>), and good arms	HA para.24.1
		arrow heads (<u>nuṣūl al-sihām</u>)	Jāḥ p.344; but cf. IF p.210
		axes (<u>fu'ūs</u>)	Jāḥ p.345
		all equipment of mounted warrior including spurs, swords & armour	Polo (a) p.32
Fārs	Ṣāha	swords, called <u>chāhākī</u>	FN p.125

/cont....

TABLE 14(a) MANUFACTURING CENTRES OF ARMS AND ARMOUR (cont.)

<u>Province</u>	<u>Location</u>	<u>Objects</u>	<u>Reference</u>
Fārs	Šāha	Fārs <u>sarandīb</u> swords and Fārs white swords	Kin p.10
Armenia	Qasās	<u>qasāsī</u> swords made from iron mined in Qasās mountains	Bir p.253

TABLE 14(b) MANUFACTURING CENTRES OF OTHER IRON GOODS

<u>Province</u>	<u>Location</u>	<u>Objects</u>	<u>Reference</u>	<u>Comments</u>
Transoxania	Mīnk and Marsmanda	iron instruments	Iṣṭ p.288; cf. IH p.464	"iron mines which provide more than they need for weapons and implements"
			IH p.506	"found all over Khurāsān and even spread to Iraq"
Khurāsān	Jurjān		Qaz I p.349	good iron smiths
	Nīshāpūr	needles & knives	Muq pp.325-6	
Jibāl	Rayy	scissors	Tha p.111	
	Hamadān	mirrors, spoons censers & gilded drums	IF p.253	
Kirmān	Kūhbanān	steel mirrors	Polo (a) pp.38-9	
		mirrors, censers & other implements of iron	IF pp.205, 254	
Fārs	Shīrāz	knives, arrow- or spear-heads, locks	Qaz II p.140	

TABLE 15 IRON AND STEEL : SELECT VOCABULARY

<u>sāfīd-i sāfīd</u>	lit "white iron", probably a hard variety of iron (N. p.220; AQ p.236) (See p.409)
<u>pūlād</u>	steel (NT p.220-1; AQ pp.236-7) var. <u>āhan-i pūlād</u> (FM p.259)
<u>tūbāl</u>	iron scale (Bir p.225); scale of <u>dūṣ</u> (Bir p.251)
<u>ḥadīd</u>	iron
<u>ḥisāl</u>	iron dross (Qaz I p.222)
<u>ḫabath</u>	iron dross (Bir p.251; p.221; AQ p.238)
<u>dūṣ</u>	cast iron, or possibly iron dross (Bir p.248) (See p.412)
<u>shāburgān</u>	a hard variety of iron; cast iron; meteoric iron (see p.411) var. <u>shaburgand</u> (Ham fol. 69b)
<u>ṭūlāsh</u>	steel (Kin p.6; Bir p.252; Tar p.106) (cf. <u>ṭūlād</u>)
<u>qāti'</u>	a type of iron used amongst other things for goldsmiths' and carpenters' tools (AQ p.236)
<u>māl</u>	a variety of iron (AQ p.237)
<u>narm-āhan</u>	a soft variety of iron; wrought iron (see p.411)

TABLE 16 SWORD MANUFACTURING AND DAMASCENING: SELECT
VOCABULARY

<u>'ard</u>	area of sword blade without damask (Kin p.14)(See p.422)
<u>bākhra</u>	a type of damask (Bir p.255); a sword without damask (Bir p.255); a sword with poor damask (FM p.259)(See p.423)
<u>būta</u>	var. of Arabic <u>būtaqa</u>
<u>būtaqa</u>	crucible used for making steel cakes (Bir pp.252,256; Ṭar pp.106-7)
<u>būm</u>	area of sword blade without damask (AQ p.237)(cf. <u>'ard</u>)
<u>baiḍa</u>	cake of steel (Bir p.252); hence <u>baiḍa ijtama'a</u> and <u>baiḍa tadawwara</u> - to make a cake of steel (Ṭar p.106)
<u>tiḡh</u>	sword (<u>ShN</u> ; FM pp.258-9; AQ pp.237-9)
<u>thaqb</u>	hole through hilt and base of blade, presumably for a rive (Kin p.31); hole through blade holding pin of different metal (Kin p.33)
<u>jalā' aḥmar</u>	name given to <u>dawā'</u> by sword polishers (Kin p.15)
<u>jawhar</u>	damask (Kin p.15; Bir p.253; FM pp.258-9)
<u>ḥadīd</u>	damask, in terminology of sword polishers (Kin p.14)
<u>khafcha</u>	cake of steel (FM p.259)
<u>makhūs</u>	a damask based on a particular method of forging the steel cake (Bir p.255)(see p.419)
<u>dawā'</u>	compound used for etching a sword (Kin p.15)(See p.422-3)
<u>zāj</u>	substance used in etching compound, probably iron sulphate or sulphide (Bir p.253)
<u>saif</u>	sword
<u>shamshīr</u>	sword (<u>ShN</u> ; NT pp.220-1; FM p.259)
<u>ṭaba'a</u>	to fashion (a sword)(Kin p.5)
<u>ṭarah</u>	the throwing of the <u>dawā'</u> onto the blade (Kin p.15)
<u>'irq</u>	a dark vein on a damascened blade (Kin p.18)
<u>'aqd</u>	a transverse band in a damask (Kin p.15, 33-4)(see p.420)

TABLE 16 SWORD MANUFACTURING AND DAMASCENING : SELECT
VOCABULARY (cont.)

<u>‘ālaqa</u>	to work iron (Kin p.23)
<u>firind</u>	damask (Kin throughout; Bir p.252); var. <u>barand</u> (Bir p.252)
<u>qalāchūr</u>	long, curved sword (see pp.435-6)
<u>kabasa</u>	to forge (Kin pp.22, 26, 27)
<u>kasr</u>	light area on a damascened blade (Kin p.18)
<u>mulassan</u>	sharpened, pointed (Kin p.26)

TABLE 17 SWORD PARTS : SELECT VOCABULARY

<u>dhubāb</u>	cutting edge (Kin p.20)
<u>ra's</u>	tip or point (Kin pp.26, 28, 32, 33)
<u>asfal</u>	part of blade nearest hilt (Kin p.32)
<u>sunbuq</u>	end of blade fitting into hilt (Kin p.31)
<u>sīlān</u>	hilt (Kin p.16)
<u>shuṭba</u>	ridge on blade (Kin pp.32, 33)
<u>shafra</u>	edge of blade (Kin p.20; Bir p.251)
<u>safiha</u>	blade (Hamadh p.212)
<u>madrib</u>	the part of the cutting edge used for that purpose, being according to al-Kindī one span's length of the cutting edge (Kin p.20)
<u>tarf</u>	the actual edge of a sword blade (Kin p.33; Bir p.256)
<u>a'lā</u>	tip or point (Kin p.32)
<u>qā'im</u>	hilt (Kin p.31)
<u>gabḍa</u>	hilt (Bir p.256)
<u>matn</u>	blade (Kin p.28); the flat of the blade as opposed to its edges (Bir p.252 quoting Imr'u'l-Qais and Ibn al-Mu'tazz)
<u>naṣl</u>	blade (Bir p.252)

Note: Further details of Arabic sword terminology based on other literary sources are to be found in Schwarzlose 1886 pp.161-4

TABLE 18 AL-KINDĪ'S SWORD TYPOLOGY

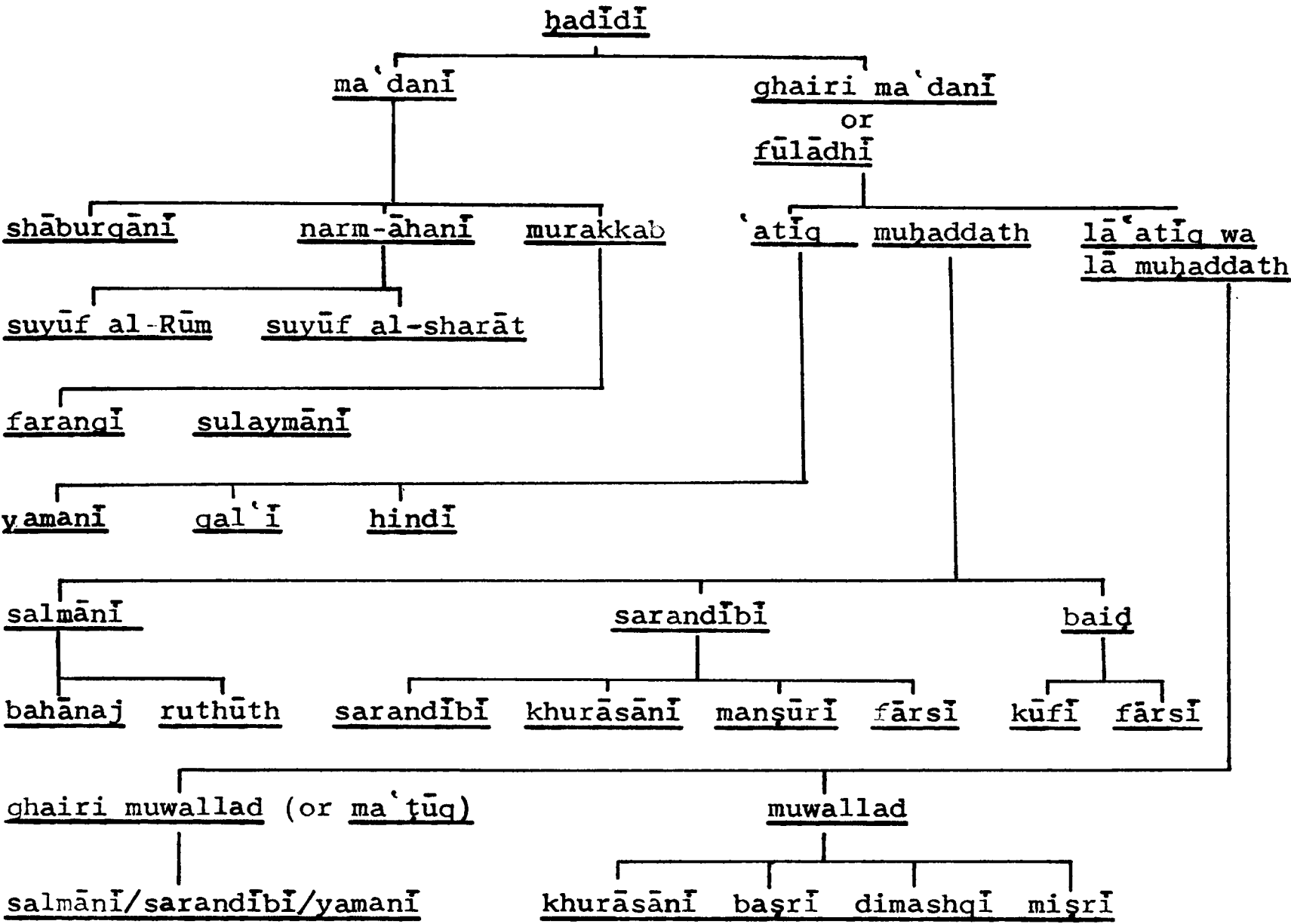


TABLE 19

IRON AND STEEL OBJECTS : SELECT TEXTUAL REFERENCES

Adze	<u>tīsha</u>	ShN; FM p.262
Anchor	<u>anīar</u>	Bir p.251
Anvil	<u>sandān</u>	Ham fol.35a
Axe	<u>tabar</u>	ShN
Axle	<u>fa's</u> <u>qaṭb</u>	K. & D. p.167, Jāh p.345 Ham fol. 51b
Balance	<u>mīzān</u>	al-Khāzinī
Cauldron	<u>dīk</u> / <u>dīq</u>	NT p.221; Jūz p.338
Chain	<u>silsila</u>	Iṣṭ p. 84; Bir p.247
Chair	<u>kursī</u>	Tan p.223
Chisel	<u>minqāsh</u>	Kin p.34
Crucible	<u>būṭaq</u>	Ham fol. 37b
Drill	<u>hīb</u>	Tan p.86
Dye (coins)	<u>sikka</u> <u>ḥadīdat al-sikka</u>	Ham fol. 80a Bir p.235
Fetter	<u>wathāq</u> <u>ṣafad</u> <u>qaid</u> <u>ghall</u>	Bir p.247 Bir p.248 Bir p.247 Bir p.247
File	<u>mibrad</u>	Ham fol. 62b; Bir p.252
Graver	<u>kūnarnar</u>	Kin p.16
Hammer	<u>miṭraqa</u> <u>khayisk</u>	Bir p.235 NT pp.174, 227-8; AQ pp.190, 244
Incense-burner	<u>mijmara</u>	IF p.253
Knife	<u>kārd</u> <u>saṭūr</u> <u>sikkīn</u>	NT p.223; FM p.262 Hamadh p.61 Bir p.237
Ladle	<u>mighfara</u>	Bir p.230
Lock	<u>qafl</u>	Qaz II p.140
Mirror	<u>mirāt</u>	IF p.253; Polo (a) pp.38-9

/cont....

TABLE 19

IRON AND STEEL OBJECTS : SELECT TEXTUAL REFERENCES

(cont.)

Nail	<u>mismār</u>	Bir p.256
Needle	<u>'ibra</u>	Tan p.89
Pick	<u>kaland</u>	FM p.262
Pole	<u>watad</u>	Bir p.237
Saw	<u>'arra</u> <u>minshār</u>	<u>ShN</u> Hamadh p.147
Scissors	<u>miqrād</u>	Tan p.248
Sheers	<u>jāzz</u> <u>lahyān</u>	Ham fol. 29b Ham fol. 38a
Shoe (animal)	<u>na'l</u>	Bir p.256
Shovel	<u>bīl</u> <u>mishāt</u> <u>miḡhaf</u>	FM p.262 Ham fol. 31a Ham fol. 31a
Sickle	<u>dās</u>	FM p.262
Steelyard	<u>qustās</u>	Bir p.246
Stirrup	<u>rikāb</u>	Jāh <u>Bayān</u> III p.20
Tongs	<u>anbur</u> <u>kalbatān</u>	Ham fol. 33b Ham fol. 33a, 66a
Weight	<u>sanja</u>	Bir p.236

TABLE 20 IRON GATES : SELECT TEXTUAL REFERENCES

<u>Province</u>	<u>Location</u>	<u>Reference</u>	<u>Comments</u>
Transoxania	Ush	Idrisi trans. p.488	
	Tughusghur	Qud p.262	
	Kash	Išt p.324 Idrisi trans. p.200	Gate called <u>bāb al-ḥadīd</u> Gates wood covered in iron
Khawārazm	Nūzvār	Muq p.289	
Khurāsān	Herāt	Išt p.365; IH p.437	
	Balkh	Išt p.278	Gate called <u>bāb al-ḥadīd</u>
	Gharshistān	Yqt III p.785	
Kirmān	Katha	Išt p.125; IH p.280	
Fārs	Fasā	Idrisi trans. p.395	Gate had iron facings
	Dārābjird	Muq p.428	Gate called <u>bāb al-ḥadīd</u>
Jibāl	Sunaqīn	IR p.168	
	Būzanjird	IR p.167	
	Hamadān	Išt p.198; IH p.263	
	Dayr al-Jiss	Muq p.491	a caravanserai near Kāshān

TABLE 21 Introduction

The analyses listed in Table 21 come from a number of different sources. Objects 1-7 were analysed by X-ray fluorescence by van Zelst and Meyers in the Metropolitan Museum of Art, and will be published by Melikian-Chirvani in his forthcoming article on the high tin bronzes of Khurāsān. Some of the objects are in the Metropolitan, others are in private collections. Since the writer has not been able to study the objects concerned and since they have not yet been published none of them have been included in the catalogue or the text of the thesis. The relevance of the analyses to the high tin bronze industry of Iran, however, demanded their inclusion. Objects 8-11, which are in the British Museum, were analysed by atomic absorption by Dr. Michael Hughes of the British Museum Research Laboratory. Objects 12-30, all of which are in the Louvre, were analysed in the Laboratoire de Recherche des Musées de France by emission spectrometry. Objects 31-65 were analysed in the Research Laboratory for Archaeology and the History of Art at Oxford by Dr. Alex Kaczmarczyk using X-ray fluorescence. Objects 31-45 are in the Ashmolean Museum and 46-65 are from the Sīrāf excavations. Objects 66-7 were chemically analysed by Professor E.R. Caley of Ohio State University, and the analyses were published by Dupree (1958 pp.291-2). Semi-quantitative spectrographic analyses of objects 68-9 were undertaken in Washington and published by Gettens and Waring (1959 p.88 nos.14-15).

Although each set of figures clearly indicates the principle elements in the alloy concerned, the range of information given regarding the less important elements varies from one set of results to another. Because of this, and also because of the different methods and machines used for the different analyses, the results should not be compared in

the smallest details. For this reason only the major elements have been taken as significant in the text of this thesis. The two or sometimes three readings given for many objects in the Paris and Oxford groups (12-30 and 31-65) underline the fact that an alloy does not contain exactly the same proportions of any given elements throughout its volume.

Certain analyses of uncatalogued objects are included in the Table in addition to those from the Metropolitan Museum of Art. These were done at the same time as the other objects in the relevant group and have been retained for the sake of completeness. The symbol x in an analysis means that the element was present in such large quantities that it could not be measured, and the symbol P means that the element was detectable but not measurable. Where no figure or symbol is given for an element it should be understood that that element was not sought by the analyst.

TABLE 21 ANALYSES

	Cu	Zn	Pb	Sn	As	Sb	Fe	Ni	Al	Ag	Bi	Co	Au	Si
1. Uncatalogued	76		0.4	21.9										
2. "	80		0.4	22.9										
3. "	80		0.5	21.6										
4. "	81		0.3	23.6										
5. "	77		0.6	22.1										
6. "	82		0.5	22.6										
7. "	81		<0.7	21.6										
8. Ewer C/3/c/2	80.3	19.3	0.11	0.1		0.03	0.06	0.009		0.020		0.003		
9. Table top B/1/1	78.7	19.7	0.45	0.7		0.06	0.13	0.038		0.162		0.012		
10. Stem bowl A/2/3	78.4	0.01	0.03	20.2		0.031	0.91	0.075		0.020		0.278		
11. Bucket B/3/4	63.7	13.0	20.6	1.5		0.48	0.44	0.136		0.081		0.025		
12. Dish B/2/2	x	9.1	>20	1.6	0.86	0.03	0.27	0.05	<0.03	0.13			P	P
	x	9.4	>20	1.8	0.93	0.03	0.26	<0.04	<0.03	0.13			P	P
13. Incense-burner A/2/8	x	7.7	>20	7.7	1.2	0.45	0.37	0.16	<0.03	0.18			P	P
	x	9.6	>20	8.3	1.3	0.50	0.39	0.23	<0.03	0.21			P	P
	x	8.5	>20	8.1	1.2	0.50	0.43	0.20	<0.03	0.18			P	P
14. Lamp A/7/3	x	10.8	17.8	7.2	0.68	0.30	0.33	0.07	<0.03	0.15			P	P
	x	10.2	17.6	7.7	0.60	0.30	0.34	0.07	<0.03	0.14			P	P
	x	5.4	18.6	7.9	0.54	0.15	0.26	<0.04	<0.03	0.09			P	P
15. Lamp A/1/3	x	17.4	17.5	3.4	0.28	0.15	0.34	<0.04	<0.03	0.05			P	P
16. Bottle B/2/2	x	19.5	18.6	3.9	0.42	0.25	0.44	<0.04	<0.03	0.08			P	P
17. Cymbal 3	x	5.8	>20	7.8	1.3	0.45	0.29	0.11	<0.03	0.18		P	P	P
	x	7.4	>20	9.4	1.4	0.50	0.25	0.21	<0.03	0.22		P	P	P
18. Cymbal 4	x	3.0	13.4	20.0	1.2	0.30	0.17	0.18	<0.03	0.22			P	P
	x	2.7	16.6	19.0	0.87	0.30	0.18	0.10	<0.03	0.25			P	P
19. Ewer C/3/c/5 neck	x	25.7	<0.3	0.7	<0.1	0.15	0.03	<0.04	<0.03	0.07			P	P
A/1/d/9 body	x	5.0	>20	7.2	2.1	1.6	1.6	0.25	<0.03	0.35		P	P	P
20. Ewer A/2/c/3	x	13.9	>20	5.7	1.6	0.70	0.37	0.18	<0.03	0.21			P	P
	x	13.3	>20	5.9	1.6	0.70	0.36	0.16	<0.03	0.21			P	P
21. Table top B/2/1	x	24.9	0.37	0.68	0.1	0.20	0.03	<0.04	<0.03	0.10			P	P
	x	29.2	0.30	0.68	0.1	0.20	0.03	<0.04	<0.03	0.09			P	P

/cont...

	Cu	Zn	Pb	Sn	As	Sb	Fe	Ni	Al	Ag	Bi	Co	Au	Si
22. Incense-burner F/2/1	x	12.3	>20	3.5	2.2	1.1	0.66	0.08	<0.03	0.30	P		P	P
	x	13.4	>20	3.6	2.2	1.1	0.66	0.07	<0.03	0.31	P		P	P
23. Incense-burner F/3/1	x	20.0	1.3	0.68	<0.1	0.15	0.08	<0.04	<0.03	<0.02			P	P
	x	23.7	1.8	0.81	0.1	0.20	0.09	0.06	<0.03	0.04			P	P
24. Inkwell B/3/13	x	17.0	21.8	7.3	0.9	0.55	0.70	<0.04	<0.03	0.18			P	P
	x	18.6	>20	6.9	1.2	0.70	0.83	0.11	<0.03	0.21	P		P	P
25. Unidentified object C/1	x	32	<0.3	0.48	<0.1	0.20	0.04	<0.04	<0.03	0.10				P
26. Basin A/5	x	33	<0.3	0.36	<0.1	0.25	0.05	<0.04	<0.03	0.05			P	P
	x	31	<0.3	0.34	<0.1	0.20	0.04	<0.04	<0.03	0.04				P
27. Lamp A/2/1	x	19.6	>20	6.6	1.0	0.70	0.79	0.35	<0.03	0.09	P		P	P
28. Lamp A/4/V.1	x	7.4	>20	6.9	0.39	0.40	0.35	<0.04	<0.03	0.05	P		P	P
	x	8.0	>20	7.7	0.43	0.45	0.38	<0.04	<0.03	0.05	P		P	P
	x	9.6	>20	7.9	0.53	0.50	0.47	0.07	<0.03	0.08	P		P	P
29. Uncatalogued	x	3.2	>20	0.57	0.23	0.30	0.43	<0.04	<0.03	0.06	P		P	P
30. Balance pan 1	x	20	<0.3	n.d.	<0.1	0.10	0.06	<0.04	<0.03	0.07			P	P
31. Pen-case C/3 catch	75	23	0.5	0.5			<0.9	0.2						
hinge	64	35	0.3	0.2				<0.2						
body	74	10	9	4.5	0.8	0.5	<0.7							
lid	80	8	6	3.5	1.3	0.6	<0.5							
32. Mortar C/2/b/1/1	69	8	16	3.0	0.8	0.7	<1.0	1.0						
33. Incense-burner A/2/9 leg	62	5.7	30	1.9	0.9									
	71	7.4	18	2.3	1.0		<0.3							
	72	9.4	15	2.9	1.1		<0.4							
body	<50	<6	>40	2	1		<0.4							
	56	8	33	1.7	0.9		<0.4							
34. Bucket B/4/6 body	<48	<7	>40	<4	1.6	<1	<0.5							
	48	8	38	3	1.1	0.7	<0.5							
	56	9	29	4	0.7		<0.6							
handle	48	8	39	3	1.1		<0.6							
	54	6	33	5	1.3		<0.4							
	61	8	25	4	1.0		<0.5							
35. Cauldron A/5 leg	72	7.6	16	3.0	0.5	0.6								
	68	7.0	21	2.5	1.1	0.5								
handle	63	6.8	26	2.4	1.1	0.5								
flange	63	6.3	22	6.0	1.8	0.5								

/cont...

	Cu	Zn	Pb	Sn	As	Sb	Fe	Ni	inlay Sn
36. Stem bowl B/3/1	70	9	13	5.5	0.2	0.3	<0.5		
37. Lampstand B/5 top	62	8.6	24	3	1.3	0.3	<0.5	0.5	
	62	9.1	23	3	1.3	0.4	<0.5	0.4	
stem	47	10	33	8	0.9	0.2	<0.5		
	<40	<9	>40	<10	1.3	0.2	<0.6		
	63	7.5	25	3	1.2	0.2	<0.5		
base	55	6	35	3		0.3	<0.5		
	66	8	22	3		0.2	<0.5		
	57	8	32	2			<0.4		
	64	10	24	2			<0.5		
38. Table top A/1/2	77	22	0.1	0.4		0.1			inlay Ag
39. Uncatalogued	83	0.8	8	6.5	1.0	0.4			
	<40	<1	>40	<10	2-4	<1			
40. Support fitting A/2/d/4	60	7	30	2	0.4		<0.6		
	60	6	32	1.5			<0.5		
41. Handle L/6	65	13	19	1.8	0.4		<1.0		
42. Lock 2	55	5	35	2.5	1.8		<0.6		
43. Incense-burner F/4/1 body	66	13	18	1.6	0.3		<0.6		
	68	14	15	1.8			<0.5		
leg	60	12	25	1.5			<0.8		
44. Incense-burner F/2/8	60	15	20	3.0	0.2		<1.0		
45. Mortar C/1/a/2/1	56	6	34	3			<0.8		
46. Mirror A/2 concave side	74	4	1	20			1		
convex side	84	3	<0.5	1			1		
47. Lamp C/1	<54	<2	>40	<1		<0.4			
48. Uncatalogued	82	11	1	4	1		1		
49. Cosmetic mortar 1	84		2	10	2	2			
50. Kohl stick 1	<51	<8	>40	<1			0.5		
51. Handle F/1	89	1	5	4		1			
52. Uncatalogued	x		p						
	<50	<2	<20	>30					
	96		1	2					
53. Tweezers B/2	76	6	17	1					
54. Belt fitting B/1/a/3	76	6	14	3		0.3	0.5		
55. Spatula blade 1	80		10	9		1			/cont....

	Cu	Zn	Pb	Sn	As	Sb	Fe	Ni	Ag	Co
56. Box fitting B/6	54	14	28	4						
57. Box fitting B/9	78	10	7	3		0.3	1.5			
58. Box fitting B/10	90	3	4	1			2			
59. Box fitting B/8	91	4	4	0.5			0.5			
50. Bell A/8	74	3	17	3	2	0.3				
51. Bell A/7	55	1	40	4						
52. Bell B/4	<50	<1	>40	<10		<0.5				
53. Spout 1	56		40	3		0.7				
64. Spatula B/9	84	5	2	8	0.5	0.5				
65. Spatula A/9	80	15	4	<1		0.2				
66. Uncatalogued	67.22	0.66	25.53	3.36			0.49	0.11	0.20	0.13
	64.54	0.74	28.29	3.29			0.52	0.11	0.22	0.12
67. Lead object B/7		0.08	32.64	63.87			0.03			
		0.07	32.89	63.64			0.02			
68. Silver bowl A/5	Over 10%	Over 10%	Ag					69. Silver rosewater	Over 10%	Ag
	1-10%		Cu, Pb					sprinkler 8	1-10%	Cu, Pb
	0.1-1.0%		Al, Ni, Fe, Zn,						0.1-1.0%	Au, Bi, Sn
			Au, Co						0.01-0.1%	Fe, Si, Mg,
	0.01-0.1%		Si, Sn, Bi, Mg,							Al, Ca
	0.001-0.01%		Cr, Mn, Ga						0.001-0.01%	Zn, Ba, Ni, V
			Ti							

TABLE 22 MIRROR DESIGNS

<u>Group</u>	<u>No. of Zones</u>	<u>Zone 1</u>	<u>Zone 2</u>	<u>Zone 3</u>	<u>Boss</u>	<u>Handle</u>
1. B/1	1	6-petal pattern	?	-	Yes	-
2. B/2	2	4 hares	unidentified	-	Yes	-
3. B/3	2	2 sphinxes	inscription	-	Yes	?
4. B/4	3	floral pattern	animals	inscription	Yes	-
5. B/5	3	lobed surround	animals	inscription	Yes (lobed)	-
6. B/6	3	lobed surround	animals	inscription	Yes (lobed)	-
7. B/7	1	4 animals	-	-	Probably	-
8. C/1	2	hunter	inscription	-	-	Yes
9. C/2	2	hunter	inscription	-	-	Yes
10. D/1	3	hunter	animals	inscription	Yes	?

Bibliographical Abbreviations

<u>AA</u>	=	<u>Artibus Asiae</u>
<u>AARP</u>	=	<u>Art and Archaeology Research Papers</u>
<u>ABKK</u>	=	<u>Amtliche Berichte aus der Königlichen Kunstsammlungen</u>
<u>A-e I</u>	=	<u>Athār-é Īrān</u>
<u>AI</u>	=	<u>Ars Islamica</u>
<u>AIUON</u>	=	<u>Annali dell'Istituto Universitario Orientale di Napoli</u>
<u>AJA</u>	=	<u>American Journal of Archaeology</u>
<u>AO</u>	=	<u>Ars Orientalis</u>
<u>BAIPAA</u>	=	<u>Bulletin of the American Institute for Persian Art and Archaeology</u>
<u>BCMA</u>	=	<u>Bulletin of the Cleveland Museum of Art</u>
<u>BDIA</u>	=	<u>Bulletin of the Detroit Institute of Arts</u>
<u>Berliner Museen</u>	=	<u>Berliner Museen. Berichte aus den ehemlichen preussischen Kunstsammlungen</u>
<u>BGA</u>	=	<u>Bibliotheca Geographorum Arabicorum</u>
<u>BGN</u>	=	<u>Beiträge zur Geschichte der Naturwissenschaften</u>
<u>BMFA</u>	=	<u>Bulletin of the Museum of Fine Arts, Boston</u>
<u>BMMA</u>	=	<u>Bulletin of the Metropolitan Museum of Art</u>
<u>BMQ</u>	=	<u>British Museum Quarterly</u>
<u>BSOAS</u>	=	<u>Bulletin of the School of Oriental and African Studies</u>
<u>CZ</u>	=	<u>Chemiker-Zeitung</u>
<u>JA</u>	=	<u>Journal Asiatique</u>
<u>JAOS</u>	=	<u>Journal of the American Oriental Society</u>
<u>JARCE</u>	=	<u>Journal of the American Research Centre in Egypt</u>
<u>JISI</u>	=	<u>Journal of the Iron and Steel Institute</u>
<u>JPK</u>	=	<u>Jahrbuch der Preussischen Kunstsammlungen</u>
<u>JRAS</u>	=	<u>Journal of the Royal Asiatic Society</u>
<u>KO</u>	=	<u>Kunst des Orients</u>

<u>MASB</u>	=	<u>Memoirs of the Asiatic Society of Bengal</u>
<u>MIASSSR</u>	=	<u>Materiali' i issledovaniya po arkheologii SSSR</u>
N.S.	=	New series
<u>OA</u>	=	<u>Oriental Art</u>
<u>QDAP</u>	=	<u>Quarterly of the Department of Antiquities in Palestine</u>
<u>SSPMSE</u>	=	<u>Sitzungsberichte der physikalisch-medizinischen Sozietät in Erlangen</u>
<u>ZDMG</u>	=	<u>Zeitschrift der Deutschen Morgenländischen Gesellschaft</u>

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Additional list of abbreviationsa: museums

Amsterdam	- Rijksmuseum, Amsterdam
Ashkhabad	- Muzei Istorii Turkmenskoy SSR, Ashkhabad
Ashmolean	- Ashmolean Museum, Oxford
Baghdād	- Iraq Museum, Baghdad
Bologna	- Museo Civico, Bologna
Boston	- Museum of Fine Arts, Boston, Mass.
BM	- British Museum, London (RL - Research Laboratory)
BN	- Bibliothèque Nationale, Paris
Brooklyn	- Brooklyn Museum
Cairo	- Museum of Islamic Art, Cairo
Chicago	- Art Institute, Chicago
Cleveland	- Museum of Art, Cleveland
Copenhagen	- David collection, Copenhagen
Dahlem	- Museum für Islamische Kunst, Berlin-Dahlem
Damascus	- National Museum, Damascus
Detroit	- Institute of Arts, Detroit
Donsk	- Donsk Museum, USSR
East Berlin	- Staatliche Museum, Berlin DDR
Florence	- Museo Nazionale, Florence
Freer	- Freer Gallery of Art, Washington D.C.
Gotha	- Herzoglichen Museum, Gotha
Hamburg	- Museum für Kunst und Gewerbe, Hamburg
Hermitage	- State Hermitage Museum, Leningrad
Istanbul	- Türk ve Islam Eserleri Müzesi, Istanbul
Jerusalem	- L.A. Mayer Memorial Institute, Jerusalem, Israel
Kābul	- Kabul Museum
Kiev	- Museum of Eastern and Western Art, Kiev
Leipzig	- Kunstgewerbe Museum, Leipzig

Los Angeles	- Los Angeles County Museum
Louvre	- Musée du Louvre, Section des Arts Musulmans, Paris
Lyon	- Musée des Beaux-Arts, Lyon
Minusinsk	- Minusinsk Museum
MMA	- Metropolitan Museum of Art, New York
Munich	- Ethnographical Museum, Munich
Naples	- Museo di Capodimonte, Naples
Oxford HSM	- History of Science Museum, Oxford
PUM	- University Museum, Philadelphia
Rome	- Museo Nazionale di Arte Orientale, Rome
St. Louis	- City Art Museum, St. Louis
Stockholm	- National Historical Museum, Stockholm
Tehrān	- Archaeological Museum, Tehrān
Tiflis	- Historical Museum, Tiflis
Tomsk	- University Museum, Tomsk
V&A	- Victoria and Albert Museum, London
WAG	- Walters Art Gallery, Baltimore

b: general

colln. collection; d. diameter; gr. grams; h. height; lg. length;

n.p. no provenance; nr. near; th. thickness; unp. unpublished;

w. width

"ex" before the name of a collection indicates that the object was last heard of in that collection but that its present whereabouts are unknown.

Catalogue Preface

Each catalogue entry is arranged as follows:-

Present location; provenance; exact date of manufacture; bibliography.

Metal; techniques used; parts missing; dimensions (in centimetres).

Description of object. Description of decoration. Craftsman's name.

(Analysis reference) (Figure reference)

Where certain aspects of such an entry are irrelevant, for example the date and craftsman's name on an uninscribed object, these are omitted.

The name of a place as a provenance means that the object was excavated there, unless otherwise stated. The Sīrāf material catalogued is described as being in the Ashmolean Museum, Oxford. This is indeed its temporary abode, but the description given is not intended to suggest that it belongs to the Ashmolean or indeed is necessarily destined to remain there. Where the provenance is unknown "n.p." (no provenance) is used to indicate this fact, where it is unpublished "unp." is inserted in the appropriate position. In the silver and gold section provenances of objects which were found in a hoard are referred to by the name of that hoard - Harari hoard, Valgīr hoard, Chimkent hoard or Nihāvand hoard. These hoards are discussed above (p.51). The bibliographical references are not intended to be comprehensive, but to give the most important reference or references for the purposes of the thesis. In the references to metals the following usages should be noted. "Bronze" means that the exact nature of the copper alloy is unknown; "lead bronze" means a copper-tin alloy with added lead; "high tin bronze" means a copper-tin alloy with more than about 17% tin in it; "quaternary alloy" means an alloy consisting of copper, tin, lead and zinc; "brass" means a copper-zinc alloy; "pewter" means a tin-lead alloy. In the catalogue of scientific instruments the craftsman's name has been placed next to the date of manufacture since it is by the craftsman's name that such objects are commonly referred to.

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Subdivisions Within Object Categories

(object types arranged according to order in Contents above)

Gold and Silver

Bottles A: ovoid-bodied

 B: spherical-bodied

 C: cylindrical-bodied

Bowls A: footless, rounded

 B: inverted truncated conical

 C: footed, rounded

 D: handled

 E: deep, footed

Dishes A: vertical-rimmed

 1: footless

 2: footed

 B: flat-rimmed, footless

 1: circular

 2: octagonal

Ewers A: ovoid-bodied

 B: spherical-bodied

 C: cylindrical-bodied

Jugs A: ovoid-bodied

1: with low shoulder and flaring mouth

2: with high shoulder and flaring mouth

3: with high shoulder and vertical mouth

B: spherical-bodied

1: with flaring mouth

2: with low almost vertical mouth

Incense-burners A: handled

B: dish-form

Amulet cases A: cylindrical

B: six-faced

C: six-faced, flattened

D: rectangular

E: semi-circular

F: three-faced

Belt fittings A: plates

1: circular

2: square

3: short, pointed rectangular

4: long, pointed rectangular

5: plain rectangular *(6: cordiform)

7: other forms

B: buckles

1: tongued

a: with bar attachment

b: with plate attachment

C: rings

* types shown in brackets are unknown from extant examples.

- Bracelets**
- A: round section**
- 1: open circle with overlapping animal-head terminals
 - 2: open circle with pointed terminals
 - 3: open circle with pointed terminals and hinge
 - 4: full circle with hing and elaborate clasp
- B: flat section**
- 1: complete circle with joint
 - 2: made up of hinged curving plates
 - 3: with hinge and clasp
 - 4: open circle with triangular boss
- C: triangular section**
- D: made up of sections of varying forms**
- Earrings**
- A: with beads**
- B: other forms**
- Finger-rings**
- A: flat face**
- B: round narrowing bezel**
- C: flaring bezel**
- D: others**
- Necklaces**
- A: bead**
- B: others**

Bronze

Bottles A: ovoid-bodied

- 1: with flaring mouth and low foot
- 2: with shallow vertical mouth and low foot
- 3: with shallow vertical mouth and tall foot
- 4: with tall vertical mouth and tall foot

B: spherical-bodied

- 1: with shallow vertical mouth and low foot
- 2: with tall vertical mouth and tall foot
- 3: with tall vertical mouth and low foot
- 4: with tall vertical mouth and flaring foot
- 5: beaten

C: domical-bodied

- 1: plain
- 2: lobed

D: polyhedral

E: flat, circular-bodied

Bowls A: hemispherical, high tin bronze, forged

B: hemispherical, high tin bronze, cast

C: flattened hemispherical, high tin bronze

D: rounded, bronze

Cauldrons A: hemispherical

B: cylindrical

Dishes A: with vertical rim

1: bronze

2: high tin bronze a: footless

b: footed

B: with narrow horizontal rim

1: footless

2: footed

C: with wide horizontal rim

D: polygonal, handled

Ewers A: ovoid-bodied

1: round-mouthed

a: pear-shaped, low-footed

b: pear-shaped, high-footed

c: bulbous

d: high-shouldered, squat

e: high-shouldered, tall

2: spouted

a: tubular-spouted

b: flat-spouted

c: zoomorphic-spouted, small

d: zoomorphic-spouted, large

e: open beak-spouted

f: lamp spouted

g: with cusped spout

B: spherical-bodied

1: spouted

2: round-mouthed

Ewers C: cylindrical-bodied

- 1: cast, spouted a: small
- b: large
- 2: beaten, round-mouthed
- 3: beaten, spouted a: plain
- b: facетted
- c: convex-sided
- d: alternately convex and
 triangular-sided

Jugs A: ovoid-bodied

- 1: low-shouldered, with flaring mouth, cast
- 2: low-shouldered, with flaring mouth, beaten
- 3: low-shouldered, with vertical mouth, cast
- 4: low-shouldered, with vertical mouth, beaten
- 5: high-shouldered, with flaring mouth cast
- 6: high-shouldered, with flaring mouth, beaten

B: bulbous-bodied

- 1: with vertical mouth, cast
- 2: with vertical mouth, beaten

C: other forms

Mortars

A : rimless	1 : round	a: handleless	*(1: without bosses)
			2: with almond bosses
		(b:one-handled)	
		c:two-handled	(1: without bosses)
			2: with almond bosses
B : with flaring rim	1 : round	a: handleless	(1: without bosses)
			2: with almond bosses
C : with flaring rim and foot	1 : round	a: handleless	1: without bosses
			2: with almond bosses
			3: with variety of bosses
		b:one-handled	(1: without bosses)
			2: with almond bosses
			3: with variety of bosses
	2 : octagonal		
		(c:two-handled)	
		d:four-handled	(1: without bosses)
			(2: with almond bosses)
			3: with variety of bosses
	3 : nine-sided	a: handleless	1: without bosses
		b: one-handled	1: without bosses
			2: with almond bosses
			3: with variety of bosses
		c: two-handled	1: without bosses
			2: with almond bosses
			3: with variety of bosses
D : with angular foot and flat rim	1 : round	a: handleless	1: without bosses
	2 : octagonal	a: handleless	1: without bosses
	(3 : nine-sided)		
	4 : ten-sided	a: handleless	1: without bosses

*: types shown in brackets are unknown from extant examples

Stem bowls A: high tin bronze

- 1: with rounded body and everted foot
- 2: with rounded body and tall knopped foot
- 3: with shallow rounded body and everted foot
- 4: with inward-curving body and flaring foot
- 5: with flaring body and vertical foot
- 6: with shallow rounded body and vertical foot

B: bronze

- 1: with tall knopped foot
- 2: with flaring body and low foot
- 3: with rounded body and everted foot, cast
- 4: with rounded body and everted foot, beaten
- 5: with shallow rounded body and low foot

Buckets A: cylindrical, cast

B: rounded, cast

- 1: with straight-sided upper body
- 2: bulbous-bodied
- 3: spherical-bodied
- 4: spherical-bodied, angular

C: beaten

Candlesticks A: beaten, with truncated conical body

B: beaten, with concave sides, octagonal

C: cast, with concave sides, round, with projecting shoulder

D: cast, with concave sides, octagonal

E: cast, with concave sides, round, plain

F: with nine concave sides and polygonal faces

Lamps

A: round-bodied, spouted

- 1: with open triangular spout of triangular profile
- 2: with partially covered spout of triangular profile
- 3: with spade-shaped mouth
- 4: with flat top and spade-shaped mouth
- 5: with round-mouthed tubular spout
- 6: with pointed-mouthed tubular spout
- 7: with flat top and pinched spout
- 8: with spherical body and pinched spout
- 9: with stem and dish base

B: pear-shaped

C: dish-shaped

D: zoomorphic

E: hanging

Lampstands

A: three-footed, convex-bodied

- 1: with cylindrical shaft
- 2: with hexagonal shaft
- 3: with lobed body and lobed shaft
- 4: shaft style unknown

B: three-footed with concave lobed body

C: footless, convex-bodied

Lampstand shafts

Lampstand units

Lampstand trays

Weights A: balance weights

- 1: square
- 2: rectangular
- 3: circular
- 4: octagonal
- 5: triangular
- 6: cuboid
- 7: polyhedral

B: others

Inkwells A: with cylindrical body, flaring base and rim

B: with plain cylindrical body

- 1: with lid with almost spherical top
- 2: with lid with conical top
- 3: with lid with six-lobed conical top
- 4: with lid with eight-lobed conical top
- 5: with lid with zoomorphic top
- 6: with lid top of unknown form

C: bulbous-bodied

Pen-cases A: rectangular

B: pointed

C: rectangular with rounded ends

Boxes

A: circular

- 1: plain cylindrical
- 2: cylindrical with bevelled lid
- 3: very shallow

B: octagonal

C: rectangular

- 1: with flat half-lid
- 2: with full bevelled lid a: footless
 b: footed
- 3: with sloping sides

D: semi-circular

Incense-burners A: round-bodied

- 1: with cover and handle
- 2: with half-cover, handleless

B: square-bodied

C: hexagonal

D: ovoid-bodied

- 1: pear-shaped
- 2: high-shouldered

E: zoomorphic

- 1: lion-bull
- 2: lion
- 3: partridge
- 4: bird-form with handle
- 5: with three zoomorphic legs

F: dish-shaped

- 1: with vertical sides and flat rim
- 2: with inward sloping sides and flat rim
- 3: with inward sloping sides and thickened rim
- 4: with concave sides
- 5: beaten 6: handled

Stands	A: cylindrical
	B: octagonal
Table-tops	A: square
	1: with sides
	2: without sides
	B: rectangular
	1: with octagonal centre
	2: with double octagonal centre
Miniature vessels	3: with lobed centre
	A: bowls
	B: buckets
	C: covered bowls
	D: dishes
Bells	A: rounded
	B: conical
Belt fittings	A: plates
	*(1: circular)
	(2: square)
	3: short, pointed rectangular
	(4: long, pointed rectangular)
	5: plain rectangular
	6: cordiform
	7: others

* types shown in brackets are unknown from extant examples.

Belt fittings	B: buckles	
	1: tongued	a: with bar attachment
		b: with plate attachment
	2: other forms	
Finger-rings	A: flat-faced	
	B: pear-shaped with round narrowing bezel	
	C: with flaring bezel	
	D: others	
Pendants	A: crescent-shaped	
	B: circular	
	C: pear-shaped	
	D: others	
Pins	A: with bird finials	
	B: with ring tops	
	C: with other tops	
Mirrors	A: undecorated	
	B: relief cast	
	1: design 1	
	2: design 2	
	3: design 3	
	4: design 4	
	5: design 5	
	6: design 6	
	7: design 7	
	C: relief cast with handle	
	1: design 8	
	2: design 9	
	D: relief cast with triangular handle space	

Spatulas	A: flat-bladed
	B: spoon-bladed
Toilet flasks	A: square-bodied
	B: pear-shaped
	C: zoomorphic
	1: bird-shaped
	2: animal-shaped
Tweezers	3: fish-shaped
Tweezers	A: simple
	B: adjustable
Nails	
	A: with domed heads
	B: with flat heads
Stirrups	C: others
Stirrups	A: with flat base
	B: with rounded base
Box fittings	
	A: appliqués
Door fittings	B: hinges, clasps and clamps
Door fittings	A: plates
	B: pins
Finials	
	A: cocks
	B: other bird forms
Finials	C: others

Handles A: horizontal
 B: drop
 C: ring
 D: oval
 E: open, curved
 F: double-hooked
 G: flat
 H: lion
 J: rectangular mirror-type
 K: long-shafted
 L: unidentified fragments

Hooks A: wall-hooks
 B: suspension-hooks

Lids A: domical
 B: sunken

Rings A: circular section
 B: triangular section

- Support fittings

A: zoomorphic

1: complete animals

2: animal forequarters

a: with bayonet fitting

b: with flat projecting ledge

c: with concave projecting ledge

d: with other fixings

e: nature of fixing uncertain

3: animal legs

B: non-representational

1: ball feet

2: baluster legs

a: throne

b: object

3: circular bases
- Unidentified

A:

B:

C:

D:

E:

F:
- Lead objects

A: utility objects

B: ornaments

C: weights

THE GOLD AND SILVERSMITHS' REPERTOIRE

I Household equipment - (1) Objects connected with Food and Drink

Bottles A : ovoid-bodied

1. Tehrān; Valgīr hoard; Pope 1938 pl.1345. Silver; incised and nielloed; mouth damaged; h.18.0. Flat base; ovoid body with high shoulder; ridge at base of tall cylindrical neck; flaring mouth probably originally cusped. Kufic inscription of good wishes on shoulder. (Fig. 3)

Bottles B : spherical-bodied

1. Hermitage; Tobolsk USSR; Smirnov 1909 pls.81, 83 no.148, van Berchem 1909 p.407. Silver; incised; h.21.0, d.11.0. Low splayed foot; bulbous body with high shoulder of flat disc form; ridge at neck base; cylindrical neck with two projecting flanges near base and bulge below flaring mouth. On body kufic inscription against scrolling ground, three roundels with animals or birds, and band of vegetal scroll; kufic inscription round neck; neck inscription good wishes, body inscription good wishes to Abū'l-Faḍl Sāha ibn 'Alī. (Fig. 3)

Bottles C : cylindrical-bodied

1. Hermitage; Tobolsk USSR; Smirnov 1909 pls.81, 83 no.147, van Berchem 1909 p.406. Silver; incised; h.25.6, d.14.0. Cylindrical body with flat base and slightly sloping shoulder; double ridge at neck base and one below mouth; short neck narrowing towards top; flat mouth plate with seven impressed circular areas. On body three roundels with vegetal or animal designs and kufic inscription in three sections; on shoulder kufic inscription divided by three roundels with animals; body inscription good wishes, shoulder inscription in name of Abū 'Alī Aḥmad ibn Muḥammad ibn Shādhān. (Fig. 3)

Bowls A : footless, rounded

1. Tehrān; Mazandarān; Ghirshman 1957 figs. 1-6, Henning 1959. Silver; probably cast; relief decoration; incised and punched; d.22.0, h.7.0. Rounded body; no foot. Inside undecorated; outside base bird with pearl border; on sides four musicians under vine branches separated from one another by vertical bands in threes, each central one decorated with hearts; below rim pearl border; inscription:"belongs to Windād-ōhrmīzd ī Kārenān, made from 306 drachmas-by-weight". (Fig. 3)
2. Tehrān; Mazandarān; Ghirshman 1957 figs. 7-12, Henning 1959. Silver; probably cast; relief decoration; incised and punched; d.23.0, h.8.0. Form as 1. Inside undecorated; outside decoration almost identical to 1 but with minor variations in detail; inscription as 1 but "274 drachmas-by-weight".
3. Tehrān; Mazandarān; Ghirshman 1957 fig.13, Henning 1959. Silver; probably cast; relief decoration; unfinished; d.21.0, h.6.0. Form as 1. Inside undecorated; outside base has seated drinking figure; on sides two servants and two musicians separated from one another by vertical bands in threes; below rim pearl border; inscription:"belongs to Āzarmīg ī Sa(h)rwēnān".
4. BM 1938.11-12.1; Nihāvand hoard; Gray 1938 pp.77-8, pl.33. Gold; beaten; incised and punched designs; d.7.7, h.2.5. Rounded body; no foot. On inside central roundel with duck against scrolling stem; on outside two pairs of ducks, confronted and alternating with four roundels with vegetal designs; on outside of rim kufic inscription on dotted ground:"Wine is a sun in a garment of red Chinese silk. It flows; its source is the flask. Drink then in the pleasure of time, since our day is a day of delight which has brought dew".

5. Freer 50.6; n.p.; Melikian-Chirvani 1968. Silver; beaten; partially gilt; incised; d.23.9, h.4.3. Shallow rounded body; no foot. Outside undecorated; inside decorated with central eagle; two bands of inscription around offering blessings to Abū Sahl ibn Ṭahmān ibn Farāmarz al-Farhādhjardī. (Analysis Table 21 no.)

Bowls B : inverted truncated conical

1. Tehrān; Valgīr hoard; Wiet 1933 p.18 no.9, pl.3, Pope 1938 pl.1346C. Silver; beaten; inlaid with niello; d.19.0. Flat bottom; almost straight flaring sides. Around inside of rim floriated kufic inscription wishing happiness to amīr Abū'l-'Abbās Valgīr ibn Hārūn. (Fig. 4)
2. Tehrān; Valgīr hoard; Wiet 1933 p.19 no.10, pl.3. As 1.
3. Tehrān; Valgīr hoard; Wiet 1933 p.18 no.8, pl.3. As 1.
4. MMA 64.133.2; n.p.; unp. Silver; beaten; incised; base d.3.8, mouth d.12.6, h.8.1. Flat base; straight flaring sides. Inside undecorated; outside above base band of leaf and stem design; around rim kufic inscription against scrolling stem with large leaves: "Do not obstruct the cup but drink it diluted until you are stone dead without cause. Drink and the day is of secondary importance. If you are aware of it embark (on it) with longing and press on with delight". (Fig. 4)

Bowls C : footed, rounded.

1. Hermitage; n.p.; Orbeli and Trever 1935 pl.3, Livshits and Lukonin 1964 pp.162-3. Silver; partially gilt; relief decoration riveted onto body; incised and punched; d.28.0. Shallow rounded body; low foot ring. Mounted archer firing arrow at standing lion to rear of horse with boar in marshy ground below; pahlavi inscription on outside gives name of owner Pūr ī Vahman.

2. Hermitage; n.p.; Orbeli and Trever 1935 pl.17. Silver; relief decoration; incised and punched; d.25.8. Form as 1. Mounted warrior thrusting spear into mouth of standing lion in front of horse; horse's forelegs resting on another lion; rocks in foreground.

3. Hermitage; n.p.; Orbeli and Trever 1935 pl.18. Silver; relief decoration; incised and punched; d.25.8. Form as 1. Seated king with wine bowl in hand, surrounded by two servants and two musicians; two lions in foreground; arrow-head border.

4. Hermitage; Yamal Nenets region USSR; Marshak 1971 pp.147-8, fig.29. Silver; relief decoration; incised and punched; dimensions unknown. Form as 1. Seated king holding mace, with servant either side; two lions in foreground; pearl border.

5. Hermitage; Anikovskaya, Perm, USSR; Orbeli and Trever 1935 pl.20, Sauvaget 1940 pp.33-46, Sauvaget 1951. Silver; some gilding; relief decoration; incised and punched; d.23.5-23.9. Form as 1. Fortress with bust of figure above portal; trumpeters and soldiers above; two bodies hanging from ramparts; ten horsemen around; border of V's and rosettes.

6. Dahlem I 582; n.p.; Smirnov 1909 pl.81, van Berchem 1909 p.405 and n.2, Pope 1938 pl.1353B. Silver; relief decoration; incised and nielloed; d.13.0, h.3.8. Shallow rounded body; base plate at bottom of foot. In centre of base enthroned figure with lute; four roundels with vegetal designs around; on outside of rim band of stem and leaf ornament; on inside of rim kufic inscription offering good wishes to owner Abū'l-Ḥasan 'Alī ibn Muḥammad.

Bowls D : handled

1. Hermitage; near Menzelinsk, east of Kazan, USSR; Smirnov 1909 pl. 79 no.141 and pl.80, van Berchem 1909 p.404. Silver; beaten; incised; handle missing; d.11.5. Footless; rounded sides. Inside central enthroned figure drinking, between two attendants, with pair of lions beneath; outside on base a roundel with two birds; around rim kufic inscription, first part apparently two lines of Persian verse, second part Arabic good wishes to owner.

2. Hermitage; near Kungursk, Perm, USSR; Smirnov 1909 pl.80 no.143. Silver; beaten; incised; handle missing; d.8.0, h.4.5. Rounded body; low foot. Inscription on outside of rim in kufic script; on lower body roundel with vegetal ornament; inscription good wishes.

3. Stockholm Statens Historiska Museum; Tobolsk USSR; Smirnov 1909 pl.80, no.145, Arne 1914 fig.332. Silver; beaten; incised and punched decoration; cast bronze handle; d.12.3, h.6.5. Rounded body; no foot; handle with projecting thumb-piece. Around outside kufic inscription of good wishes against punched ground. (Fig. 4)

4. Jerusalem; Harari hoard; Pope 1938 pl.1351A, p.2503 fig.828. Silver; body and foot raised from single sheet; incised and nielloed; d.13.0. Wide low foot with base plate at bottom; rounded body with concave band below small rim; handle with horizontal rhomb-shaped thumb piece and second-finger rest. On outside of rim inscription; on body animals of hunt in scrolling stem; on handle vegetal motif. (Fig. 5)

Bowls E : deep, footed

1. Jerusalem; Harari hoard; Pope 1930 p.480, Wilson 1931 no.131S. Silver; pierced, incised and nielloed; d.10.0, h.8.0. Deep rounded body; almost straight vertical sides; fitted rim; splayed foot with step at body joint; separate cover with sunken centre and horizontal edge. Cover edge decorated with inscription against tightly scrolled ground, curving area with three medallions with ducks, pierced area with winged horse; on outside of body kufic inscription against tightly scrolled ground with leaf forms; inscriptions good wishes to owner. (Fig.5)

Dishes A : vertical-rimmed 1: footless

1. BN; Izgherli, Bulgaria; Migeon 1922 pl.30, Melikian-Chirvani 1973 pp.12-13. Silver; traced and partially gilt; d.31.5, h.4.7. Flat body with upturned rim. Central circle containing interlacing six-pointed star and other geometric figures interspersed with vegetal motifs and fishes; outer band of animals and mythical beasts against scrolling stem with blossoms; similar band on outside of rim contains figure of nude woman; traced decorative edging. (Fig. 5)
2. Copenhagen 4/1966; n.p.; Leth 1975 p.77. Silver; double sheet metal soldered at rim; incised; d.20.0. Flat body with thick, upturned rim. Central roundel with two birds against scrolling stem; band of kufic inscription of good wishes against scrolling stem around.

Dishes A : vertical-rimmed 2 : footed

1. BN; Izgherli, Bulgaria; Migeon 1922 pl.29. Silver; incised designs with punching; d.30.0, foot h.4.0. Low foot; flat body with upturned low, dentellated rim. Central decoration of four winged creatures in interlocking floral roundels within a circular band of scrolling stem; around edge running animals separated by vegetal motifs; all decoration

against ground punched in lines. (Fig. 5)

2. BN; Izgherli, Bulgaria; Migeon 1922 p.142. Details as 1.

Dishes B : flat-rimmed, footless 1 : circular

1. Tehrān; Valgīr hoard; Wiet 1933 pl. 2 top, Pope 1938 pl.1346B.

Silver; incised and nielloed; d.37.0. Flat base; low sides; flat rim.

Around edge of base and on rim band of nielloed kufic inscription of good wishes to the amīr Abū'l-'Abbās Valgīr b. Hārūn. (Fig. 6)

2. Hermitage; Perm USSR; Smirnov 1909 pl.84 no.151, van Berchem 1909 pp.410-11. Silver; incised; d.36.0. Flat base; low rounded sides, with a step where they run into base; flat rim with upturned edge. Central roundel with seated drinker against scrolling stem; around are three cartouches containing naskhi inscription against scrolling stems separated by three roundels with birds; inscription in name of the princess Bint 'Izz al-Dīn Ōnör.

Dishes B : flat-rimmed, footless 2: octagonal

1. Dahlem I 4926; n.p.; Pope 1938 pl.238, Berlin-Dahlem 1971 no.218,

Sourdél-Thomine and Spuler 1973 pl.149. Silver; beaten and incised;

some later holes in rim; d.35.8, h.3.0. Octagonal; flat rim with hollow

inner moulding. Rim decorated with frieze of senmurv's, moulding with

feather pattern, and central area with a senmurv surrounded by

alternating senmurvs and blossoms in interlacing roundels.

Ewers A : ovoid-bodied

1. Tehrān; Valgīr hoard; Wiet 1933 p.19 no.11 and pl.1(on right), Pope 1938 pl.1345B. Silver; incised and nielloed; h.26.0. Low slightly flared foot; pear-shaped body with almost straight sides; small round mouth with horizontal spout. A third of the way down the body a cable-pattern ridge with a nielloed kufic inscription above and below it; spout decorated with a band of z-pattern; inscription in name of Abū'l'Abbās Valgīr b. Hārūn. (Fig. 6)

Ewers B : spherical-bodied

1. Hermitage; from a church treasure in Kouta^uis, USSR; Smirnov 1909 pl.73 no.129. Silver; beaten; incised; h.39.0. Tall waisted foot with vertical ribbing; step where it joins body; almost spherical body; rope pattern ridge at base of neck; tall, slightly flaring neck and mouth; handle with simple knob finial. On body roundels with vegetal designs; around upper neck thin band of inscription; band of incised facettes on middle of handle. (Fig. 6)

Ewers C : cylindrical-bodied

1. Hermitage; from a church treasure in Kuta^uis, USSR; Smirnov 1909 pl.73 no.130. Silver; beaten; incised; handle riveted to neck and body; h.37.0. No foot; cylindrical body slightly narrowing towards base; flat shoulder; cylindrical neck with obliquely rising narrow spout and ridge around base; ornamented mouth edge. Seated feline finial on handle; repoussé animals of the hunt on shoulder edge; on shoulder naskhi inscription and repoussé eight-pointed star design; on neck bands of naskhi inscriptions and oval medallions with birds; similar oval medallions on body; inscription good wishes. (Fig. 6)

Jugs A : ovoid-bodied 1: with low shoulder and flaring mouth

1. Freer 43.1; n.p.; Pope 1938 pl.1343 and p.2504 fig.830, Mavrodinov 1943 p.36 fig.10, Sourdel-Thomine and Spuler 1973 pl.28. Gold; beaten; punched and incised ; h.16.2, d.9.4. Very low foot; ovoid body with low shoulder; ridge at base of neck; tall curved flaring mouth; tall handle with animal head finial; on body just above foot a kufic inscription, then interlacing floral medallions containing seated animals or birds and plant forms with fleur-de-lys, stems, and leaves above; leaf pattern on neck ridge; on neck band of stylised plant forms and band of birds in interlacing roundels; kufic inscription round outside of mouth ; inscription above foot good wishes, around mouth good wishes to Abū Manṣūr al-amīr Bakhtīyār ibn Mu'izz al-Dawla. (Fig. 7)

Jugs A : ovoid-bodied 2 : with high shoulder and flaring mouth

1. Tehrān; n.p.; Wiet 1933 p.19 no.12 and pl.2 (bottom left), Pope 1938 pl.1345C. Silver; incised and nielloed; h.19.0. Low foot; ovoid body with high shoulder; tall curved flaring mouth. Around shoulder and mouth niello kufic inscription in name of Abū'l-'Abbās Valgīr ibn Hārūn. (Fig. 7)

Jugs A : ovoid-bodied 3 : with high shoulder and vertical mouth

1. Hermitage; Tobolsk; Smirnov 1909 pl.77 no.316. Silver; incised; handle missing; h.17.3, d.13.5. Ovoid body with high shoulder; concave-sided foot with step where it joins body; wide, almost vertical mouth with small projecting rim. Body decorated with band of animals of the hunt on shoulder and three roundels on lower body containing human-headed bird, lion and gazelle, all against a criss-cross ground; on neck kufic inscription against scrolling stem with background of tightly wound stem; inscription good wishes..

2. Hermitage; Tobolsk; Smirnov 1909 pls.81,83 no.149. Silver; incised; handle missing; h.13.0, d.11.0. Similar form to 1. but with wider mouth. Body undecorated; on neck band of kufic inscription against background of tight scrolls; inscription good wishes.

3. Jerusalem; Harari hoard; Wilson 1931 no.131E, Pope 1938 p.2503 fig. 829a-b. Silver; incised, punched, repoussé and niello decoration; h.13.0, d.7.5. Ovoid body with high shoulder; tall straight neck with very small everted lip; low foot; tall curving handle with simple finial. Band of leaves just above foot; on body repoussé stems, leaves and blossoms with birds, against punched ground; niello kufic inscription on shoulder and another round top of neck; band of double leaves at shoulder neck join; on lower neck band of running animals against punched ground. (Fig. 7)

Jugs B : spherical-bodied 1: with flaring mouth

1. Hermitage; n.p.; Smirnov 1909 pls.71,78 no.127, van Berchem 1909 p.402-3. Silver; incised; handle missing; h.16.5, d.11.0. Spherical body; low slightly everted foot; ridge at neck; flaring straight-sided mouth. On mouth and body interlacing roundels containing peacocks; on shoulder inscription in kufic: "For Abū Sa'īd 'Arāw (?) ibn al-Ḥusain mawlā amīr al-mu'minīn". (Fig. 7)

2. Hermitage; Perm; Smirnov 1909 pls.72,78, no.128, van Berchem 1909 p.403, Pope 1938 p.2493 fig.823. Silver; incised, punched and relief decoration; h.18.3, d.9.0. Spherical body on three small legs; protruding flange round neck; flaring mouth with straight side; handle with bird finial. Body decorated with birds, palmettes and stems in relief against punched ground; on neck birds in interlacing rectangular surrounds against punched ground; on neck flange kufic inscription against punched ground: "Benediction of God, happiness and joy to al-Ḥusain b. 'Alī."

Jugs B : spherical-bodied 2: with low almost vertical mouth

1. Dahlem I 2210; n.p.; Pope 1938 pl.1353A, Berlin-Dahlem 1971 no.367 pl.51
Silver; traces of gilding; decorated in relief with tracing, engraving, punching and niello work; h.14.0, d.10.8. Almost spherical body; hexagonal foot ring with six knob feet; almost vertical mouth; slight rim; curving handle with seated lion finial at top, lion head protruding from lower terminal and spherical boss near the middle. Body decorated with band of animals of the hunt, roundels with pairs of birds between sphinxes, and a kufic inscription; on mouth band of rectangles, two bands of simple scrolling stem and inscription in naskhi; inscriptions good wishes to owner.

2. Jerusalem; Harari hoard; Pope 1930 p.481, Pope 1938 pl.1349 and p.2502 fig.926a & b. Silver; partially gilt; incised and nielloed; h.12.0. Almost spherical body; low foot; almost vertical mouth; handle in form of highly stylised animal; body and neck decoration divided into triangular compartments, each filled with a vegetal design, sometimes with birds; heart-pattern or panel borders and bands; boss on lower body opposite the handle.

3. Jerusalem; Harari hoard; Pope 1930 p.480, Pope 1938 p.2503 fig.829c (upside down). Silver; relief decoration; incising and punching; h.9.0, d.6.5. Almost spherical body; low foot; almost vertical mouth; hemi-spherical lid with almond-shaped lappetts, small finial, and flat rim; tall, curving handle with simple finial. Body decorated with thick stem with blossoms against a punched ground; on shoulder kufic inscription; on lower neck band of leaves; on upper neck scrolling stem with leaves; lid lappetts decorated with vegetal motifs against a punched ground. (Fig.8)

4. Tehrān; Valgīr hoard; Pope 1938 pl.1346A. Silver; incised and nielloed; h.12.0. Almost spherical body; low foot; almost vertical mouth; no handle. Shoulder and mouth decorated with kufic inscription expressing good wishes to the amīr Abū'l-'Abbās Valgīr b. Hārūn.

Spoons

1. Jerusalem; Harari hoard; Pope 1930 p.482 bottom, Pope 1938 pl.1351C. Silver; partially gilded; incised and inlaid with niello; lg.23.0. Pointed bowl, long wide handle ending in ornamental trefoil form with pierced quatrefoil in centre. In bowl niello kufic inscription; incised peacocks on back; on shaft front kufic inscription of good wishes to owner; on back confronted lions and inscription; on handle end vegetal designs against niello ground. (Fig. 8)

(2) Ablutions Equipment

Ewers - see above

(3) Furniture

Caskets

1. Jerusalem; Harari hoard; Pope 1930 p.482, 1938 pl.1352A. Silver; incised and inlaid with niello; gilt copper hasp, two hinges, sixteen clamps, four appliquéés; lg.8.0, h.7.0. Four short everted feet; rectangular body; truncated pyramidal lid; three L-shaped clamps on each corner of body; four rhomb-shaped clamps on lid. Body and lid decorated with cranes and herons against scrolling stem with tightly scrolled ground; appliqué of seated figure or female mask on each side of body; other fittings with simple relief designs. (Fig. 8)

2. Jerusalem; Harari hoard; Pope 1930 p.482, 1938 pl.1352B. Silver; incised and inlaid with niello; gilt copper hasp, two hinges, sixteen clamps, seven appliquéés; lg.7.0, h.5.0. Form as 1, but lid clamps six-sided. Body and lid decorated with scrolling stem against tightly scrolled ground; two appliquéés of partridge on front of body, two on each end and one on back; other fittings with simple relief designs.

Incense-burners A : handled

1. Jerusalem; Harari hoard; Pope 1930 p.482, 1938 pl.1352D. Silver; partially gilt; sheet metal body and handle with repoussé, incised and punched decoration; cast legs with sheet metal sheaths; legs and handle rivetted to body; handle cap missing; lg.19.0, h.8.0. Cylindrical handle; round body with flat base; legs with spherical feet and three-tiered finials. Handle decorated with large stem, blossoms and leaves against punched ground; on three sides of body cruciform opening with central boss with vegetal forms and punched ground around; similar designs on leg sheaths.

2. Jerusalem; Harari hoard; Wilson 1931 no.131 K. Silver; sheet metal body and separate handle with repoussé, pierced, incised, punched and nielloed decoration; cast legs; lg.21.0, h.7.5. Cylindrical handle with cap, containing tongs; square body with rounded interior and flat base; four legs with triangular shafts, spherical feet, and two-tier round finials. On handle kufic inscription and leaf pattern; on body stem and fleur-de-lys pattern with punched ground on either side of protruding pierced work. (Fig. 9)

3. Jerusalem; Harari hoard; Pope 1938 pl.1352C. Silver; sheet metal body and separate handle with pierced, incised and nielloed decoration; lg.22.0, h.12.5. Cylindrical handle with shaped centre and cap, containing tongs; round body; flat base; three diminutive feet; domical lid with hinge and pointed finial. On body kufic inscription and scrolling stem against tightly scrolled ground; on lid pierced interlacing stems; inscription good wishes. (Fig. 9)

Incense-burners B: dish form

1. Jerusalem; Harari hoard; Wilson 1931 no.131 M, Pope 1938 pl.1351B. Silver; incised; d.10.0, h.5.0. Flat base; three spherical feet; slightly inward sloping sides; everted rim. On inside six-pointed star with winged horse; on outside kufic inscription of good wishes against tightly scrolled ground. (Fig. 10)

2. Cincinnati Art Museum; n.p.; Pope 1938 pl.1354B, Grabar 1959 no.16. Silver; partially gilt; incised and inlaid with niello; d.17.1, h.6.7. Flat base; three feet; inward sloping sides. On sides naskhi inscription with scrolling stem on punched ground, separated by roundels with birds in pairs; inside central sphinx with six pear-shaped medallions containing birds around; inscription good wishes.

3. de Unger colln.; n.p.; unp. Silver; sheet with cast legs; pierced and incised; d.12.0, h.3.7. Flat base; three legs; vertical sides; ? remains of handle fitting. Pierced ropework-pattern sides; central roundel inside with interlace pattern against punched ground. (Fig. 10)

4. Jerusalem; Harari hoard; Wilson 1931 no.131 O. Silver; incised; cast legs; d.12.5, h.5.0. Flat base; four legs with six-faced centres, round feet, and two-tier round finials; vertical sides. On base cross-pattern; on sides kufic inscription of good wishes.

Table-tops

1. Hermitage; Tobolsk USSR; Smirnov 1909 pl.82 no.150, van Berchem 1909 p.407-410, Sarre and Martin 1912 pl.125b. Silver; partially gilt; incised and inlaid with niello; 38.0 x 24.8. Rectangular with wide horizontal rim, sunken centre with sloping sides and central raised plaque. On latter foral motif in roundel; at corners of rim peacock in pear-shaped medallion; on rim kufic inscription in name of al-amīr al-sayyid al-malik al-'ādil tāj al-umma wa sirāj al-milla khwārazm shāh Abū Ibrāhīm wālī amīr al-mu'minīn. (Fig. 10)

II Personal and Cosmetic Articles - (1) Personal Articles

Amulet cases A : cylindrical

1. Tehrān; Nīshāpūr, Tapa Madrasa, well in annex W.4; unp. Silver; partially gilded; relief decoration; incised and nielloed; lg. 7.3, d. 2.1. Cylindrical with domed ends, one forming cap; four suspension cubes with rhomb faces, on arms. On one end vegetal motif; along top herringbone pattern; on body Qurānic kufic inscription against punched ground. (Fig. 11)

2. PUM RG 7432; Rayy; unp. Gold; sheet metal with twisted gold wire; one end missing; lg. 1.5, h. 1.6. Form as 1 but small cylindrical suspension hole along top; wire edging; on domed end central knob and small ring.

Amulet cases B : six-faced

1. Hermitage; Chimkent hoard; Spitsyn 1906 fig.28, p.250. Silver; partially gilded; incised and nielloed; lg. 4.4. Six-faced body and domical ends; three suspension rings; granulation. Vegetal motifs on one side hatched and gilded, on other nielloed. (Fig. 11)

2. Hermitage; Chimkent hoard; Spitsyn 1906 fig.30, p.250. Silver; partially gilded; incised and nielloed; lg. 4.3. Form as 1. Decoration similar to 1.

3. Hermitage; Chimkent hoard; Spitsyn 1906 fig.32, p.250. Silver; partially gilded; incised and nielloed; half missing; lg. 3.2. Six-faced; domical end with granulation; suspension ring on tall arm. Vegetal or geometric motifs on one side hatched and gilded, on other nielloed.

4. Hermitage; Chimkent hoard; Spitsyn 1906 fig.34, p.250-1. Silver; incised and nielloed; lg.8.0. Form as 3, with three suspension rings on tall arms. Vegetal motifs in niello.

5. BM 1960.8-1.1; n.p.; unp. Silver; partially gilded; incised and

nielloed; lg. 2.9. Six-faced with polygonal ends and three suspension rings; one end a cap. On ends interlaced triangles gilded; on three sides of body gilded animal, on two sides naskhi good wishes nielloed.

Amulet cases C : six-faced, flattened

1. Hermitage; Chimkent hoard; Spitsyn 1906 fig.36, p.251. Silver; incised; ends missing; lg. 2.5. Six-faced, flattened; two suspension rings. Crude hatched decoration.

2. Hermitage; Chimkent hoard; Spitsyn 1906 fig.37, p.251. Silver; incised and once nielloed; ends and two suspension rings missing; lg.6.0. Form as 1 but suspension ring on arm. Decoration al-mulk twice and vegetal motifs; back plain. (Fig. 11)

Amulet cases D : rectangular

1. Hermitage; Chimkent hoard; Spitsyn 1906 fig.35, p.251. Silver; incised and nielloed; part missing; lg. 4.5. Flat rectangular body; originally three suspension rings on tall arms. Decorated with two lions and al-mulk in kufic twice against niello ground; central interlace pattern.

2. Hermitage; Chimkent hoard; Spitsyn 1906 fig.26, p.250. Silver; gilded and incised; fragment.

3. Hermitage; Chimkent hoard; Spitsyn 1906 fig.25, p.251. Silver; incised; fragment.

4. Hermitage; Chimkent hoard; Spitsyn 1906 fig.29, p.250. Silver; incised and nielloed; fragment.

5. BM 1939.3-13.1; Nihāvand hoard; Gray 1938 pl.32c. Silver; partially gilded; incised and nielloed; one end missing; lg. 2.6. Slightly bulging rectangular form; suspension cylinder along top. On ovoid end dog in niello against gilded ground; on front and back bird against gilded ground with

kufic inscription around against nielloed ground; inscription illegible.

(Fig. 11)

Amulet cases E : semi-circular

1. Hermitage; Chimkent hoard; Spitsyn 1906 fig.33, p.251. Silver; incised; one of three suspension loops missing; lg. 1.2. Flat semi-circular body. Decorated with pseudo-inscription. (Fig. 11)

Amulet case F : three-faced

1. BM 1964.2-12.2; n.p.; unp. Gold; sheet metal; incised; lg.3.0. Three-faced body and ends, the latter with granules at points; cylindrical suspension tube with ring at either end; one of ends a cap. On each face vegetal motif. (Fig. 11)

Beads

1. BM 1939.3-13.6; Nihāvand hoard; unp. Silver; d. 1.9. Filigree circles.
2. BM 1939.3-13.7. As 1.
3. PUM RH 4421; Rayy; unp. Gold; d. 0.8. Twisted wire around; granules on top.
4. Boston RG 2984; Rayy; unp. Gold; d. 1.0. Filigree ornament.
- 5.- 23. Hermitage; Chimkent hoard; Spitsyn 1906 p.249. Silver; various sizes. Plain.
- 24.- 46. Hermitage; Chimkent hoard; Spitsyn 1906 p.249. Silver; various sizes. Twisted wire bands around; twisted rings at ends.
47. Hermitage; Chimkent hoard; Spitsyn 1906 p.250. Silver; dimensions unknown. Twisted wire around.
- 48.- 66. Hermitage; Chimkent hoard; Spitsyn 1906 p.250. Silver; various dimensions. Plain wire bands around.

67.- 69. Hermitage; Chimkent hoard; Spits'n 1906 p.250. Silver; dimensions unknown. Large with convex bosses.

70. Hermitage; Chimkent hoard; Spits'n 1906 fig.21, p.250. Silver; incised and nielloed; d. 1.5. Polyhedral. Stylised leaf pattern on each face.

71. Hermitage; Chimkent hoard; Spits'n 1906 fig.22, p.250. Silver; d. 1.2. Polyhedral. Undecorated.

72. Dahlem I 5962; n.p.; Berlin-Dahlem 1971 no.387. Gold; filigree and granulation; d. 1.7. Decorated with mythical beast.

Belt fittings A : plates 1 : circular

1. BM 1939.3-13.9 ; Nihāvand hoard; Gray 1938 pl.32 centre. Silver; partially gilded; relief decoration; incised and nielloed; d. 3.3, h. 1.5. Circular with base plate, four uprights, and hollow-backed top. Top decorated with tri-lobed design in bevelled style. (Fig. 11)

2. BM 1939.3-13.10; Pair to 1.

3. Hermitage; Chimkent hoard; Spits'n 1906 fig.23, p.253. Silver; d. 3.2. Circular base plate with remains of four uprights.

4. Hermitage; Chimkent hoard; Spits'n 1906 fig.9, p.252. Silver; partially gilded and nielloed; d. 2.5. Circular; two lugs; circular opening in centre; sloping sides. Sides gilded; knot pattern around centre.

5. Hermitage; Chimkent hoard; Spits'n 1906 fig.7, p.252. Silver; relief decoration and gilding; fragment only; d. c.2.5. Various vegetal motifs.

Belt fittings A : plates 2 : square

1. BM 1939.3-13.30; Nihāvand hoard; Gray 1938 pl.32 top centre. Silver; incised and nielloed; 2.7 x 2.7, h. 1.3. Base plate, four uprights, and hollow-backed top. Top decorated with trefoil patterns against niello ground. (Fig. 11)

2. BM 1939.3-13.31. Pair to 1.

Belt fittings A : plates 3 : short, pointed rectangular

1. BM 1939.3-13.22; Nihāvand hoard; Gray 1938 pl.32 top row second or fourth. Silver; incised and nielloed; 2.5 x 1.6, h. 0.7. Short pointed rectangular form; hollow back; two lugs. Decorated with stem and leaf pattern. (Fig. 12)

2.-9. BM 1939.3-13.23-29. As 1.

10. BM 1939.3-13.20; Nihāvand hoard; Gray 1938 pl.32 top left or right. Silver; incised and nielloed; 4.0 x 1.6, h. 0.7. Form as 1, but eye at point with ring attached; back plate and solid sides; slot in end for strap; rivette holes in top and backplate. Decorated with stem and leaf patterns.

11. BM 1939.3-13.21. Pair to 10.

12. Hermitage; Chimkent hoard; Spitsin 1906 fig.11, p.252. Silver; w. 2.5. Wide pointed rectangle; two lugs. Undecorated.

13. Hermitage; Chimkent hoard; Spitsin 1906 fig.14, p.252. Silver; incised and nielloed; 2.0 x 1.3. Narrow pointed rectangle; single rivet hole. Stem design.

Belt fittings A : plates 4 : long, pointed rectangular

1. BM 1939.3-13.11; Nihāvand hoard; Gray 1938 pl.32 middle left or right. Silver; partially gilded; relief decoration; incised and nielloed; 6.0 x 2.0, h. 0.4. Long pointed rectangle with hollow back and two lugs.

Curvilinear bevelled design with central circle. (Fig. 12)

2.- 9. BM 1939.3-13.12-19. As 1.

10. Hermitage; Chimkent hoard; Spits'n 1906 fig.16, p.252. Silver; incised and nielloed; broken; 4.4 x 1.5. Form as 1, but two rivet holes. Vegetal design with bird in medallion.

11. Hermitage; Chimkent hoard; Spits'n 1906 fig.17, p.252. Silver; 4.4 x 1.4. Form as 1. Undecorated.

12. Hermitage; Chimkent hoard; Spits'n 1906 fig.19, p.252. Silver; partially gilded; incised and nielloed; broken; 4.4 x 1.3. Form as 1. Gilded trefoil pattern; niello stem border.

13. Hermitage; Chimkent hoard; Spits'n 1906 fig.20, p.252. Silver; partially gilded; incised and nielloed; 5.6 x 1.3. Form as 1. Bird designs and comma-pattern border.

Belt fittings A : plates 5 : plain rectangular

1. Hermitage; Chimkent hoard; Spits'n 1906 fig.24, p.252. Silver; incised and nielloed; 1.9 x 1.2. Rectangular; base plate and top with two sides. Top decorated with stem against niello ground. (Fig. 12)

Belt fittings A : plates 7 : other forms

1. Hermitage; Chimkent hoard; Spitsyn 1906 fig. 5, p.252. Silver; 1.6 x 1.6. Square but with one side deeply indented to form a V. Undecorated. (Fig. 12)
2. Hermitage; Chimkent hoard; Spitsyn 1906 fig.12, p.252. Silver; 2.1 x 1.4. Hollow surround in form of pair of horns; area between partly filled in, containing bar with hole through it. Undecorated. (Fig. 12)
3. Hermitage; Chimkent hoard; Spitsyn 1906 fig.44, p.253. Silver; 3.1 x 2.0. In form of hare; two lugs on back. Undecorated.
4. Hermitage; Chimkent hoard; Spitsyn 1906 fig.43, p.252. Silver; 2.5 x 1.7. Fragment of a curving plate rim with leaf-shaped protrusions.
5. Dahlem I 889; grave near Tiflis; Pope 1938 p.2499 fig.824, Berlin-Dahlem 1971 no.373. Gold; pierced and incised; w.6.0, h. 7.5. In form of floral medallion; double; one with ring attached at base. Decoration on one two confronted rabbits, on other two griffins, all against vegetal ground; rope-pattern border. (Fig. 12)
6. BM 1937.3-13.39; Nihāvand hoard; Gray 1938 pl.32d. Silver; incised and inlaid with niello; d. 1.4. Ring; hollow back; two lugs. Scroll pattern.

Belt fittings B : buckles 1 : tongued a : with bar attachment

1. BM 1939.3-13.33; Nihāvand hoard; unp. Silver; gilded; tongue broken; 2.5 x 2.4. Oval form with two wing-shaped side-pieces and thin bar. (Fig.12)

Belt fittings B : buckles 1 : tongued b : with plate attachment

1. MMA 20.170.271; from Nīshāpūr Village Tapa; unp. Silver; pin and tongue missing; 2.7 x 1.8. Rectangular body with pin hole and gap for tongue; circular ring. (Fig. 12)

Belt fittings C : rings

1. BM 1939.3-13.34; Nihāvand hoard; unp. Silver; soldered; w. 2.3. Oval.
- 2.- 5. BM 1939.3-13.35-38. As 1 but some almost rectangular.

Bracelets A : round section 1 : open circle with overlapping animal-head terminals

1. Tehrān; Nīshāpūr Qanāt Tapa 2E2; unp. Gold; granulation; half missing; th. 0.3. Terminal in form of snake's head. (Fig. 13)

Bracelets A : round section 2 : open circle with pointed terminals

1. Hermitage; Chimkent hoard; Spits'n 1906 fig.38, p.252. Silver; sheet metal; d. 7.8. Open circle; narrowing evenly towards points. Twisted design with animal heads at points backed with wire. (Fig. 13)
2. Hermitage; Chimkent hoard; Spits'n 1906 fig.39, p.252. Silver; sheet metal; d. 7.2. Form as 1. Decoration similar to 1.
3. Hermitage; nr. Bākū; Anon 1899 fig.262, p.132. Silver; d.c.9.0. Form as 1. Wire wrapped around above ends.
4. Hermitage; nr. Bākū; Anon 1899 p.132. As 3.

Bracelets A : round section 3 : open circle with pointed terminals and hinge

1. Hermitage; Chimkent hoard; Spits'n 1906 fig.65 p.253. Silver; sheet metal; d. 7.8. Open circle narrowing evenly towards pointed terminals; hinged. Undecorated. (Fig. 13)
- 2.- 4. Hermitage; Chimkent hoard; Spits'n 1906 p.253. Fragments of three as 1.

Bracelets A : round section 4 : full circle with hinge and elaborate clasp

1. Louvre 7871(i); Iran; unp. Gold; sheet metal; incised; granulation; d. 7.4. Full circle with hinge and clasp. Spiral body; clasp four domed cylinders with granulation.
2. Louvre 7871(ii). As 1.
3. Freer 58.6; n.p.; unp. Gold; sheet metal; openwork, filigree and granulation; inlaid with turquoises; dimensions unknown. Form as 1. Body with spiralled wire; clasp four openwork domes, two sets of six granulated bosses, four turquoises, and filigree loops for pin. (Fig. 13)
4. Hermitage; Chimkent hoard; Spitsyn 1906 fig.64, p.253. Silver; only half of clasp with two large concentric circle ornaments survives.
5. Hermitage; nr. Bākū; Anon 1899 fig.263. Silver; only clasp with four concentric circle ornaments and part of spiral body survives.
6. Birch colln.; n.p.; Pforzheim 1974 no.100. Silver; sheet metal; granulation, filigree, and niello inlay; d.13.0. Form as 1, but body divided into ball-shaped sections. Some sections decorated with niello; five-domed clasp with smaller bosses around.

Bracelets B : flat section 1 : complete circle with joint

1. Hermitage; Chimkent hoard; Spitsyn 1906 fig.66, p.253. Silver; d. 7.8. Complete circle with joint; broad and flat with ridge along edges and centre. Undecorated. (Fig. 14)
2. Hermitage; Chimkent hoard; Spitsyn 1906 p.253. As 1.

Bracelets B : flat section 2 : made up of hinged curving plates

1. Hermitage; Chimkent hoard; Spitsyn 1906 fig.40, p.252. Silver; nielloed; only two plates survive; lg. of each c.8.2. Each flat plate curved with central ridge; hinged. Each decorated with vegetal designs and herringbone pattern. (Fig. 14)

Bracelets B : flat section 3 : with hinge and clasp

1. MMA 65.61; n.p.; Rosen-Ayalon 1972 fig.1. Gold; sheet metal; work in the round; twisted wire and granulation; d.13.0,w. 4.8. Wide, flat form with hinge and clasp. Elaborately decorated with alternate rows of cones and standing birds.

2. WAG; n.p.; Rosen-Ayalon 1972 figs.2, 34. Gold; sheet metal; work in the round; twisted wire, granulation and incised work; d. 7.8, w. 3.7. Form as 1. Elaborately decorated with alternate rows of cones and standing birds; incised inside name of Zaynab bint 'Alī al-Daylamī. (Fig.14)

3. Freer 58.14; n.p.; Rosen-Ayalon 1972 fig.3. Gold; sheet metal; work in the round; twisted wire and granulation; d. 9.7, w. 5.0. Form as 1. Elaborately decorated with a row of birds either side of clasp pin, and elsewhere with rows of cones.

4. Seattle Art Museum; n.p.; Rosen-Ayalon 1972 figs.4, 36. Gold; sheet metal; work in the round; twisted wire, granulation and incised work; d. 7.0., w. 4.0. Form as 1. Elaborately decorated with five groups of confronted birds with row of cones between; inside incised inscription of good wishes to owner.

Bracelets B : flat section 4 : open circle with triangular boss

1. BM 1958.10-13.2; n.p.; unp. Gold; sheet metal; incised; d. 6.0. Flat open circle with triangular boss. Arms decorated with kufic inscription in cartouches, and vegetal or knot motifs in roundels; boss decorated with two animals and rosette; inscription good wishes. (Fig. 14)
2. BM 1958.10-13.3. Pair to 1.

Bracelets C : triangular section

1. V&A M.32-1957; n.p.; V&A gallery catalogue, case 92/11/E/2. Silver; partially gilded; incised, nielloed and inlaid with precious stones; d. 7.5. Open circle of triangular section with hinge and pyramid boss; animal head terminals on either side of boss, one side fitting into boss as clasp. Decorated with kufic inscriptions of good wishes. (Fig. 14)

Bracelets D : made up of sections of varying forms

1. Freer 50.21; n.p.; unp. Silver; sheet metal; incised, inlaid with niello and originally set with precious stones; d. c. 22.0. Four rectangular sections, two double-circle sections, and two narrow curving sections; all deep with sloping sides originally enclosing precious stones. Sides decorated with kufic inscriptions, reverses with similar inscriptions, or animals, birds, and vegetal motifs in medallions or roundels; inscriptions good wishes. (Fig. 14)

Chain

- 1.- 12. Hermitage; Chimkent hoard; Spits'n 1906 figs.42, 47-9, p.251. Silver; thin twisted wire chain; various lengths and diameters.
13. Hermitage; Chimkent hoard; Spits'n 1906 fig.51, pp.251-2. Silver; d. of each link 2.0-2.5. Chain made of slightly curved circular links, alter

Earrings A : with beads

1. Hermitage; Chimkent hoard; Spitsyn 1906 fig.57, p.249. Silver; d. 2.2. Single bead with twisted wire; hook joint at top of ring. (Fig. 15)
- 2.- 9. Hermitage; Chimkent hoard; Spitsyn 1906 p.249. As 1.
10. PUM RG 8107; Rayy; unp. Gold; sheet metal; granulation and filigree work; d. 2.6. Ring with three beads with wire and granulation; double triangle shape between them. (Fig. 15)
11. Tehrān; Nīshāpūr Qanāt Tapa; unp. Gold; d. 1.0. Ring with two plain beads.
12. MMA 40.170.153; Nīshāpūr Tapa Madrasa; unp. Gold; with garnet; d. 1.4. Ring with one plain gold bead and one garnet. (Fig. 15)
13. Tehrān. Pair to 12.
14. Hermitage; nr. Bākū; Anon 1899 fig.264. Silver; filigree and granulation; d. c.3.5. Ring with three beads with twisted wire and granules, and one with twisted wire and conical bosses. (Fig. 15)
15. Hermitage; nr. Bākū; Anon 1899 fig.265. Silver; filigree and granulation; d. c.3.5. Ring with one bead with twisted wire and granules, and two with twisted wire and conical bosses.
16. Tehrān 8627; n.p.; Washington Smithsonian Institution 1964 no.618. Gold; openwork and filigree; dimensions unknown. Ring with three openwork beads; disc with filigree work between them.
17. Tehrān 8622. As 16.
18. Pope colln.; said to be from Rayy; Pope 1938 p.2665 fig.891a. Gold; granulation and filigree; dimensions unknown. Ring with three beads, two of them faceted; between them a crescent.

19. Pope colln.; ? from Sāva; Pope 1938 p.2665 fig.891c. Gold; granulation; dimensions unknown. Ring with horn-like body with cluster of four small beads with granulation below. (Fig. 15)

20. Boston 65.255; n.p.; unp. Gold; granulation and openwork; dimensions unknown. Ring with three openwork beads with disc between.

21. Dahlem I 5/62; n.p.; Berlin-Dahlem 1971 no.180. Gold; sheet metal with openwork and granulation; d. 2.5. Ring with one large bead with openwork centre and granular bosses, and angular bead on either side.

22. Dahlem I 2/57; n.p.; Berlin-Dahlem 1971 no.181. Gold; openwork and granulation; d. 1.2. Ring with bead consisting of four openwork semi-circles with granular boss below (Fig. 15)

23. WAG; n.p.; unp. Gold; granulation and filigree; inlaid with precious stone; dimensions unknown. Hook with large spherical bead with filigree and granulation; cluster of four small beads with filigree below; standing bird above. (Fig. 15)

24. Pair to 23.

Earrings B : other forms

1. MMA 40.170.154; Nīshāpūr South Horn; unp. Gold; fragment only; d. each sphere 0.3. Set of six gold spheres on a wire.

2. MMA 40.170.155; Nīshāpūr Sabz Pushān; unp. Gold; fragment only; d. 1.5. Hollow crescent with suspension ring on top.

3. PUM RE 2676; Rayy; unp. Gold; sheet metal with filigree; fragmentary; lg. 3.0. Set of five crescents attached to plaited gold wire.

4. Dahlem I 1/57; n.p.; Berlin-Dahlem 1971 no.159. Gold; sheet metal; openwork and filigree; two pendants missing; d. 1.5, h. 5.0. Ring with semi-circular flat body of openwork circles, and three pendants consisting

of plaited wires with four crescents and a star. (Fig. 15)

5. PUM RG 8758; Rayy; unp. Gold; openwork, filigree and granulation; once inlaid; d. 1.3. Ring with oval straight-sided setting for stone at front; openwork bead at back; eye for pendant below and joint above setting. (Fig. 16)

6. Dahlem I 58/65; n.p.; Berlin-Dahlem 1971 no.386. Gold; inlaid with turquoise-coloured stone; filigree and incised decoration; d. 2.9. Ring with stone in setting at front, openwork bead at back, and between them disc with incised bird on it.

7. Kahn colln.; ? from Sāva; Pope 1938 p.2665 fig.891b. Gold; sheet and filigree; dimensions unknown. Ring with three dimensional crescent forms with twisted wire edges.

8. MMA; n.p.; Dimand 1944 fig.76. Gold; openwork with granulation; dimensions unknown. Ring with open crescent bearing openwork tree and confronted birds; ornamental edging.

9. Boston 63.1393 A; n.p.; unp. Gold; openwork, filigree and granulation; dimensions unknown. Ring with pendant openwork and filigree bird with bead in mouth; three openwork beads and three granular beads on ring. (Fig.16).

10. Boston 63.1393 B. Pair to 9.

11. WAG; n.p.; unp. Gold; openwork, filigree and granulation; dimensions unknown. Ring with pendant openwork bird with pearl in mouth; four openwork and one granular bead on ring.

12. Pair to 11.

13. MMA; n.p.; Dimand 1936. Gold; sheet metal; filigree, openwork and granulation; once inlaid; suspension loop missing; dimensions unknown. In form of lion-like animal. Body covered with openwork rosettes and filigree. (Fig.16)

14. Dahlem I 6011; n.p.; Berlin-Dahlem 1971 no.389. Gold; sheet metal; filigree and granulation; once inlaid; d. 2.0. Form as 13. Body covered with filigree and spaces for inlay.
15. Hamburg 1963.69; n.p.; unp. Gold; sheet metal; filigree; inlaid with ? malachite; suspension loop missing; dimensions unknown. Form as 13. Body covered with filigree and inlay.
16. Jerusalem; n.p.; Pope 1938 pl.1344A. Gold; filigree; once inlaid with stones; dimensions unknown; suspension loop missing. Form as 13. Body covered with filigree and inlay settings.
17. Birch colln.; n.p.; Pforzheim 1974 no.125. Gold; filigree; lg. 2.9. Form as 13. Body covered with filigree.
- 18.- 22. As 17, but lg. varying from 2.1-2.9.
23. Hermitage; Chimkent hoard; Spitsyn 1906 fig.4, p.251. Silver; incised and nielloed; h. 2.0. Conical earring pendant. Kufic pattern border in niello. (Fig. 16)
24. Hermitage; Chimkent hoard; Spitsyn 1906 p.251. As 23.
25. Hermitage; Chimkent hoard; Spitsyn 1906 fig.6, p.251. Silver; incised and nielloed; h. 3.5. Conical earring pendant. Vegetal pattern around.
26. Hermitage; Chimkent hoard; Spitsyn 1906 fig.8, p.251. Silver; incised and nielloed; dimensions unknown. Fragment of conical earring pendant. Vegetal design; pearl border.
27. Hermitage; Chimkent hoard; Spitsyn 1906 fig.3, p.251. Silver; incised and nielloed; h. 2.0. Hemispherical earring pendant. Z-pattern design. (Fig. 16)
28. Hermitage; Chimkent hoard; Spitsyn 1906 fig.18 top, p.251. Silver; incised and nielloed; h. 1.7. Fragment of hemispherical earring pendant. Vegetal design.

29. Hermitage; Chimkent hoard; Spitsn 1906 fig.18 bottom, p.251.

Silver; incised and nielloed; fragment only; h. 1.0. Fragment of hemispherical earring pendant. Vegetal design.

30. Birch colln.; n.p.; Pforzheim 1974 no.120. Gold; filigree and openwork; lg. 3.5. Earring pendant in form of bird with small bird hanging from beak and three beads below.

31. As 30.

32. Birch colln.; n.p.; Pforzheim 1974 no.121. Gold; filigree, granulation and openwork; lg. 2.8. Earring pendant in form of bird with bead hanging from beak and three beads below.

33. As 32.

34. Birch colln.; n.p.; Pforzheim 1974 no.74. Gold; granulation; h. 2.7. Earring in form of open crescent. Three rows of granulation along it; protruding granular pyramid below. (Fig. 16)

35. Pair to 34.

36. Birch colln.; n.p.; Pforzheim 1974 no.126. Gold; sheet metal; relief decoration and granulation; w. 4.0. Flat semi-circle; semi-circular ring. Decorated with rosettes in bosses and granules with boss border.

37. Pair to 36.

38. Birch colln.; n.p.; Pforzheim 1974 no.118. Gold; sheet metal; granulation, filigree, garnets and turquoises; h. 4.7. Escutcheon-shape; semi-circular ring. Decorated with two half-beads, rosette pattern and inlays.

39. Pair to 38.

Finger-rings A : flat face

1. PUM RCH 1752; Rayy; unp. Silver; broken; d. 1.3. Rectangular face with bevelled corners.
2. Ashmolean; Sīrāf S.68/9, 502; unp. Silver; cast; incised; d. 1.8. Oval face with remains of incised design. (Fig. 16)
3. PUM RG 7867; Rayy; unp. Silver; broken; d. 1.3. Square face and wide flat shoulders.

Finger-rings B : round narrowing bezel

1. PUM RG 8406; Rayy; unp. Gold; incised; stone missing; d. 1.5. Circular ring; round narrowing bezel with vertical ridges. Shoulders with vegetal design. (Fig. 16)
2. PUM RG 2981; Rayy; unp. Gold; incised; stone missing; d. 1.7. Form as 1, but plain bezel. Crude motifs on shoulders.
3. PUM RCH 3826; Rayy; unp. Gold; set with pink stone; incised; d. 1.2. Form as 1. Shoulders with vegetal motif.
4. MMA 40.170.156; Nīshāpūr Sabz Pushān; unp. Gold; stone missing; d. 1.6. Oval ring; round narrowing plain bezel, with remains of teeth.
5. Tehrān; Nīshāpūr Tapa Madrasa; unp. Gold; d. 2.0. Form as 1 but plain bezel.
6. Hermitage; Chimkent hoard; Spitsyn 1906 fig.61, p.253. Silver; incised and nielloed; d. 2.3. Form as 1. Shoulders with vegetal designs.
7. As 6.

Finger-rings C : flaring bezel

1. MMA 40.170.201; Nīshāpūr Sabz Pushān; unp. Silver; set with carnelian;
d. 2.2. Rectangular flaring bezel with small claws; flattened shoulder.
(Fig. 16)
2. MMA 40.170.202; Nīshāpūr; unp. Silver; turquoise setting; d. 2.5.
Rhomb-shaped flaring bezel with small claws; flattened shoulder.
3. MMA 39.40.124; Nīshāpūr Tapa Madrasa; unp. Silver; stone missing; d.
2.3. Tall oval flaring bezel; flattened shoulder. (Fig. 17)
4. Tehrān; Nīshāpūr Tapa Madrasa; unp. Silver; stone missing; d. 2.1.
Tall oval flaring bezel; flattened shoulder.
5. Tehrān; Nīshāpūr Sabz Pushān; unp. Silver; set with white glass paste;
d. 1.8. Rectangular rounded flaring bezel; rounded shoulder.
6. Birch colln.; n.p.; Pforzheim 1974 no.123. Gold; set with white stone;
h. 2.9. Form as 5. Mouldings on shoulder; kufic inscription on stone.
7. Jerusalem; n.p.; Pope 1938 pl.1344C. Gold; incised; dimensions unknown.
Round flaring bezel; animal head shoulders. Strapwork and vegetal designs.
8. Hermitage; Chimkent hoard; Spitsīn 1906 fig.54, p.253. Silver; incised;
d. 2.8. Hexagonal flaring bezel. Unidentified incised symbols.
9. Hermitage; Chimkent hoard; Spitsīn 1906 fig.60, p.253. Silver; stone
missing; d. 2.3. Oval flaring bezel; overlapping shoulders.
10. Hermitage; Chimkent hoard; Spitsīn 1906 fig.59, p.253. Silver; part
missing. Rectangular flaring bezel.
11. Hermitage; Chimkent hoard; Spitsīn 1906 fig.62, p.253. Silver; bezel
only; incised; 2.0 x 1.6. Hexagonal. Unidentified incised symbols.
12. MMA 40.170.204; Nīshāpūr Qanāt Tapa; unp. Silver; stone missing; d. 1.4.
Low hexagonal bezel; remains of small claws.

13. Tehrān; Nīshāpūr Qanāt Tapa; unp. Silver; d. 2.4. As 12.

Finger-rings D : others

1. MMA 39.40.123; Nīshāpūr Qanāt Tapa; unp. Silver; stone missing; d. 2.6.

Large oval bezel; bases of large claws intact. (Fig.17)

2. PUM RCh 1965; Rayy; unp. Silver; stone missing; d. 2.3. Form as 1.

3. PUM RG 7425; Rayy; unp. Silver; stone missing; d. 1.7. Low oval bezel with undercutting for stone.

4. Birch colln.; n.p.; Pforzheim 1974 no.127. Gold; incised; h. 2.4.

Large oval bezel. Scrolling stem around; stone with angular cuts.

5. Tehrān 3510; n.p.; Washington Smithsonian Institution 1964 no.620. Gold; relief decoration; incised; circumference 8.0. Round face. Decorated with sphinx in relief; naskhi inscription.

Necklaces A : bead

1. Birch colln.; n.p.; Pforzheim 1974 no.106. Gold; granulation and filigree; garnets; lg. 24.0. Twenty gold beads d. 1.5; twenty-one garnets.

2. Birch colln.; n.p.; Pforzheim 1974 no.108. Gold; filigree; lg. 48.0.

Fifteen large beads with filigree and domed bosses, d. 1.9; fifteen small beads with filigree, d. 1.1.

3. Birch colln.; n.p.; Pforzheim 1974 no.107. Gold; granulation and filigree lg. 50.0. Sixteen polyhedral beads, d. 1.5, with hole on each side and granulation and filigree; sixty-six small tubular beads.

4. Birch colln.; n.p.; Pforzheim 1974 no.114. Gold; granulation; lg. 39.0.

Thirty-two pomegranate-like beads on stalks, d. 3.2, and numerous small beads, all with granulated ornament. (Fig.17)

5. Birch colln.; n.p.; Pforzheim 1974 no.115. Gold; filigree, set with garnets; garnets; lg. 55.0. Seventeen gold beads, d. 2.5, each consisting of eight circles with three-petal units inside.

6. Birch colln.; n.p.; Pforzheim 1974 no.116. Gold; filigree, set with garnets; garnets; lg. 51.0. Nineteen gold beads, d. 2.0, slightly flattened, each consisting of eight circles with four-petalled units inside.

7. Birch colln.; n.p.; Pforzheim 1974 no.117. Silver; filigree, set with turquoises; lg. 51.0. Seventeen large beads, d. 2.5, each consisting of eight circles with three-petalled units inside; eighteen small beads with openwork.

8. Birch colln.; n.p.; Pforzheim 1974 no.124. Gold; filigree; lg. 43.0. Ten large and twenty small pendants consisting of filigree bead with attached crescent; sixty-two fluted double-cone beads.

9. Birch colln.; n.p.; Pforzheim 1974 no.119. Gold; filigree; lg. 29.0. Eight pendants consisting of filigree bead with attached crescent; seven pendants consisting of stylised double bird profiles. (Fig. 17)

10. Jerusalem; n.p.; Pope 1938 pl.1344H. Gold; filigree and granulation; dimensions unknown. Twenty-three large gold beads with birds or animals, vegetal and geometric patterns in filigree with granulation; small multiple flat granulated discs between.

11. Tehrān 8365; n.p.; Washington Smithsonian Institution 1964 no.617. Gold; filigree; lg. 32.5. Ten large beads of various forms, together with numerous other items of gold, silver, and stone.

Necklaces B : others

1. Birch colln.; n.p.; Pforzheim 1974 no.111. Gold; filigree and openwork; lg. of units 5.7 and 3.8. One large and eight smaller filigree and openwork capsule-like units with pendant plain beads. (Fig. 17)
2. Birch colln.; n.p.; Pforzheim 1974 no.112. Gold; filigree and openwork; pendant h. 7.5, capsule lg. 3.7. Escutcheon-like pendant with filigree, set with lapis lazuli; six capsule-like units with openwork; four small units with conical ends.
3. Birch colln.; n.p.; Pforzheim 1974 no.113. Gold; openwork; lg. of capsules 3.7. Nine capsule-like units.
4. Cincinatti Art Museum; n.p.; Grabar 1959 no.14. Gold; medallions ? repoussé and incised; beads filigree; lg. 66.0. Five pointed pendant medallions, one with two birds, vegetal design and rosette border, the others with four mounted hawkers; two beads with filigree.

Pendants

1. Tehrān 8520; n.p.; Washington Smithsonian Institution 1964 no.612. Gold; sheet metal; incised; filigree; 12.5 x 12.5. Irregular diamond shape. Two birds and a tree within a band of kufic and pearl border; edged with cones of twisted wire. (Fig. 17)
2. Louvre; n.p.; Migeon 1927 II p.9 fig.214. Gold; sheet metal; repoussé and incised; h. 4.5, w. 5.4. Crescent form. Decorated with two birds either side of a floral vase design; eight beads around edge.
3. Hermitage; Chinkent hoard; Spitsyn 1906 fig.2, p.250. Silver; h. 1.5. Flat triangular plate on wire.
4. Whereabouts unknown; Shahrīstān; Negmatov and Khmel'nitski 1966 pl.22.

Silver; dimensions unknown. Circular disc. Stylised fleur-de-lys pattern.

5. As 4.

6.- 7. Hermitage; Chimkent hoard; Spitsyn 1906 fig.55, p.252. Silver; d. 0.5-1.5. Globular with suspension eye. Number unknown, but some with grains, others with wires.

Pins

1. PUM; Rayy; unp. Silver; half top missing; h. 10.3. Upper shaft twisted; head in form of pierced disc with central hole. (Fig. 18)

II Personal and Cosmetic Articles - (2) Cosmetic Articles

Flasks

1. Hermitage; Perm USSR; Smirnov 1909 pls.79, 80 no.142, van Berchem 1909 p.405. Silver; beaten; relief decoration; incised, punched and nielloed; h. 8.5. Pear-shaped body with narrow mouth fitted for a cap; on either side a ring. Base decorated in relief with three concentric hares against punched ground; body decorated with two bands of kufic inscription and wide band of stems and blossoms against punched ground; upper inscription probably good wishes; lower inscription: "the noble amīr Abū 'Alī al-Ḥasan b. Ya'qūb al-Ṣ. l. ṭavī, client of the commander of the faithful". (Fig. 18)

Rosewater Sprinklers

1. Jerusalem; Harari hoard; Wilson 1931 no.131 Q, Pope 1938 pl.1350, p.2502 fig.827. Silver; incised, partially gilt, and nielloed; h. 22.5, d. 8.0. Globular body; low foot with step at joint with body; double shoulder plate; tall neck with two pairs of projecting flanges, and projecting lip. On neck two kufic inscriptions with scrolling stem between; on lower shoulder plate kufic inscription against tightly scrolled nielloed ground; body decorated with flowering stems, confronted parrakeets and winged animals, against tightly scrolled nielloed ground; inscriptions good wishes.
2. Jerusalem; Harari hoard; Wilson 1931 no.131 R. Pair to 1.
3. Jerusalem; Harari hoard; Wilson 1931 no.131 T. Silver; incised, partially gilt, and nielloed; h. 20.0, d. 7.0. Form as 1, but higher foot and single shoulder plate; domed cover in form of nine-petalled rosette with ring in top. Kufic inscription around top of neck; another round middle of neck between two scrolls; another on shoulder plate; on body four roundels with vegetal designs between two bands of scrolls.
4. Jerusalem; Harari hoard; Wilson 1931 no.131 T. Pair to 3.
5. Jerusalem; Harari hoard; Wilson 1931 no.131 A. Silver; incised, punched and nielloed; h. 22.0, d. 7.0. Form as 1, but single shoulder plate and two pairs and single projecting flange on neck. On neck two bands of kufic inscription with design of scrolling stem in hexagons between; body design similar with cartouches containing kufic inscription against punched ground; inscriptions apparently good wishes.

6. Jerusalem; Harari hoard; Wilson 1931 no.131 G. Silver; incised and nielloed with repoussé work; h.20.0, d.7.5. Form as 1 but single shoulder plate and top flange forms lip of neck. Neck decorated with kufic inscriptions and trefoils in repoussé cartouches; on body repoussé scrolling stem and blossoms with four roundels containing vegetal motifs.

7. Jerusalem; Harari hoard; Wilson 1931 no. 131B. Silver; incised and nielloed with repoussé work; h.18.0, d.7.0. Form as 1. At top of neck band of scroll, and below it two bands of kufic inscription with overlapping leaf pattern between; on body four interlacing cusped medallions with overlapping leaf pattern; panel design above foot.

8. Freer 50.5; n.p.; unp. Silver; partially gilt; incised, punched, nielloed, with repoussé work; h. c.23.0, d. c.11.0. Globular body; tall foot; rounded ridge at base of neck; tall neck with five projecting flanges each in the form of numerous small leaves; cap in form of repoussé rosette with ring in top. On neck band of kufic inscription, and birds in interlacing roundels in relief; on ridge at base of neck pointed leaf pattern; on shoulder kufic inscription in relief; on body animals in interlacing roundel in relief; all relief decoration with fine scrolls against niello; punched ground; inscriptions good wishes to owner. (Analysis Table 21 no.68).

III Fittings

Handles

1. de Unger colln; n.p.; unp. Silver; cast; incised and inlaid with niello; h.4.8, w.3.6 Ring handle with bird finial and projecting beak at rear. Wings and eyes of bird nielloed. (Fig. 18)

Lids

1. Hermitage; Chimkent hoard; Spits'n 1906 fig.13, p.253. Silver; cast; openwork and relief decoration; traces of gilding; d.2.0. Flattened domical form with almost vertical rim; two openings in sides.

Weapon Mounts

1. Tehrān 11625; n.p.; Washington Smithsonian Institution 1964 no.616. Gold; repoussé and incised decoration; h.4.5, d.4.5. Rounded conical form. Decorated with three winged lions, their bodies in relief, their necks and heads in the round. (Fig. 19)

2. BM 1939.3-13.4; Nihāvand hoard; unp. Silver; sheet; incised and nielloed; h.3.2, d.3.2. Cylindrical with soldered band at both ends; bracket on back. Corrupt kufic inscription in niello.

3. BM 1939.3-13.5; Nihāvand hoard; unp. Silver; sheet; incised and nielloed; upper band later; h.3.2, d.3.3. Cylindrical with soldered band at both ends; bracket on back. Corrupt kufic inscription in niello.

4. BM 1939.3-13.3; Nihāvand hoard; unp. Silver; sheet; once inlaid; h.2.8, w.3.4. Pear-form cylindrical body with soldered bands around. Quatrefoil recesses. (Fig. 19)

5. Hermitage; Chimkent hoard; Spits'ın 1906 fig.10, p.253. Silver; partially gilded; incised and nielloed; d. c.3.0. Cylindrical with soldered band at edge. Crudely shaped niello inlays around.

6. Hermitage; Chimkent hoard; Spits'ın 1906 p.253. Silver; incised and nielloed. Details unknown.

IV Unidentified

1. BM 1939.3-13.2; Nihāvand hoard; Gray 1938 fig.1, pp.73-4. Silver; cast; partially gilded; incised and inlaid with niello; h.5.8, w.3.4. Large ring with flat back, inner vertical side with bevelled top, and rounded outer side, attached by hinge to rectangular buckle-type object. Outer side of ring bears name al-ḥājib al-jalīl Abū Shujā' 'Injū-takin. (Fig. 19)

THE COPPERSMITHS' REPERTOIRE

I Household and Business Equipment

(1) Items connected with Food and Drink

Aquamaniles

1. Hermitage; n.p.; Sarre and Martin 1912 pl.135(a). Bronze; cast; handle missing; h. 39.0. Figure of a goose; beak acts as pourer. Undecorated. (Fig. 20).

2. Hermitage; n.p.; Sarre and Martin 1912 pl.135(b). Bronze; cast; lid of filling mouth missing; h. 35.0; lg. 27.0. Figure of a ? deer, with ornamental necklace; handle with filling mouth between neck and back; mouth of animal acts as pourer. Undecorated. (Fig. 20).

3. Hermitage no. AZ.225; n.p.; dated 602 H./1206 A.D.; Dyakonov 1939, Mayer 1959, p.36, Gyuzalyan 1968 pp. 102-5, figs. 3-5. Bronze; cast; lid, cow's right ear and horn missing; incised and inlaid with silver; h. 35.0; lg. 31.0. Figure of zebu cow suckling calf, the handle with filling mouth in the form of a lion attacking the cow's back; mouth of cow acts as pourer. Decorated on neck and head with inscription, and on body with three bands of figures or animals, round-petalled rosettes, and tree forms; inscription reads: "this cow, calf and lion were all three cast at one time with the help of God, the Omnipotent, the Nourisher, by the labour of Rūzba ibn Afrīdūn ibn Barzīn. Blessing to its owner Shāh Barzīn ibn Afrīdūn ibn Barzīn. Work of 'Alī ibn Muhammad ibn Abī'l-Qāsim the decorator". (Fig. 20).

4. Hermitage; n.p.; Sarre and Martin 1912 pl.134. Bronze; cast; incised; h. 35.0; lg. 27.0. Figure of a cock; cylindrical opening above tail; other openings in bottom of legs, in beak and on breast. Wings, legs and neck decorated with various feather patterns; medallions on breast with seated prince and animals, on back with seated figure, and on sides with harpies. (Fig. 20).

Bottles

A. ovoid-bodied 1. with flaring mouth and low foot

1. Kābul 58.2.29; Ghazna (?); Mortimer Rice and Rowland 1971 pl.181. Bronze; h. 14.5. Flaring mouth with small projections; waisted neck; shoulder ridge; ovoid body; low foot. Body decorated with four bands of five two-tier almond bosses. (Fig. 21).

2. BM 1926.3-19.1; n.p.; unp. Bronze; cast in one piece with separate base plate; h. 12.1; d. 7.0. Form as 1 but squatter body and slightly taller foot, and mouth slightly lobed; base plate inserted just above bottom of foot. Decorated with three bands of four two-tier almond bosses; shoulder ridge rope pattern.

3. de Unger colln.; n.p.; unp. Bronze; cast; h. 12.4. Form and decoration as 2.

4. BM Zoh. 48; Tal-i Zuhāk, Fārs; Stein 1936 pl.29 no.34, p.140. Bronze; cast; mouth damaged; foot missing; h. 12.5; d. 7.5. Form originally probably as 1. Decorated with four bands of five two-tier almond bosses.

BottlesA. ovoid-bodied 2. with shallow vertical mouth and low foot

1. ex Kühnel colln.; Ghazna; unp. Bronze; dimensions unknown.

Low vertical mouth with protruding bosses; waisted neck; shoulder ridge; ovoid body; low foot. Body decorated with four bands of five two-tiered almond bosses.

2. V&A M.38-1959; n.p.; unp. Bronze; cast; base plate missing;

h. 15.0; d. 7.5. Form as 1, but lower neck faceted. Decoration as 1.

3. de Unger colln.; n.p.; unp. Bronze; cast; base plate soldered

in; h. 13.3; d. 6.5. Form as 1, but neck more cylindrical. Decoration as 1. (Fig. 21).

BottlesA. ovoid-bodied 3. with shallow vertical mouth and tall foot

1. Dahlem I 1962; n.p.; Berlin-Dahlem 1971 no.177. Bronze;

h. 17.4; d.9.8. Wide but shallow vertical mouth with projecting bosses around; waisted neck; shoulder ridge; ovoid body; tall slightly inward sloping foot. Body decorated with four bands of two-tier almond bosses. (Fig. 21).

BottlesA. ovoid-bodied 4. with tall vertical mouth and tall foot

1. Dahlem I 1628; n.p.; Pope 1938 pl.1277A, Berlin-Dahlem 1971 no.172.

Bronze; cast; incised; h. 24.8; d. 9.8. Neck and mouth in form of animal head, one side flat, the other with protruding horns; ovoid body; tall octagonal foot. Body decorated with two bands of two-tier almond bosses; incised vegetal design on foot. (Fig. 21).

Bottles

B. spherical-bodied 1. with shallow vertical mouth and low foot

1. Louvre; n.p.; unp. Bronze; cast; base plate missing; h. 13.5; d. 8.0. Shallow vertical mouth with protruding bosses around; waisted neck; spherical body; low foot. Undecorated. (Fig. 22).

Bottles

B. spherical-bodied 2. with tall vertical mouth and tall foot

1. Kābul 58.2.26; Ghazna (?); Mortimer Rice and Rowland 1971 pl.182. Bronze; incised and punched; h. 17.2. Tall slightly flaring mouth with protruding bosses; waisted neck and flat shoulder plate; spherical body; tall slightly inward sloping foot. Band of interlace on mouth; band of kufic inscription, birds in roundels, and band of z-pattern on body; remains of punched vegetal design on foot; inscription good wishes. (Fig. 22).

2. Louvre 6160; Sīstān; Marchal 1974 fig. 9, p.15. Quaternary alloy; cast in one piece; incised; h.21.0; d.6.3. Form as 1, but mouth has four triangular openings around and flaring lip. Body decorated with birds in roundels joined by band of z-pattern, below naskhi inscription of good wishes. (Analysis Table 21 no. 16.)

3. Samarqand Museum (?); Afrāsiyāb; Kondrat'eva 1961 pl.3 no.3.

Bronze; dimensions unknown. Form as 1. Undecorated.

4. Dahlem I 6759; n.p.; Erdmann 1961 fig.17, Berlin-Dahlem 1971

no.223. Bronze; incised; h. 13.2; d. 6.6. Form as 1. Crudely incised palmettes on foot.

5. PUM I₂-283; Rayy; unp. Bronze; cast; neck and mouth only;

h. 6.8; d. 3.3. Form as 1.

V.1 de Unger colln.; n.p.; unp. Bronze; cast; base plate not original; h. 16.1; d. 6.5. Mouth, neck and foot as 1, but shoulder hemispherical, and body cuboid with large almond boss on each side. Undecorated. (Fig. 22).

Bottles

B. spherical-bodied 3. with tall vertical mouth and low foot

1. de Unger colln.; n.p.; unp. Bronze; cast; base plate soldered in; h. 15.0; d. 9.0. Tall vertical mouth with projecting bosses around; waisted neck with flat shoulder plate; spherical body; low foot. Body decorated with two naskhi inscriptions and two bands of lancette leaves; inscriptions good wishes. (Fig. 22).

Bottles

B. spherical-bodied 4. with tall vertical mouth and flaring foot

1. Kābul; Ghazna; Scerrato 1959 fig.16, pp. 105-6. Bronze; cast; incised; h. 13.0. Tall vertical mouth with projecting bosses around;

waisted neck with shoulder plate; slightly flattened spherical body; straight flaring foot. Body decorated with leaf-shaped cartouches and vertical panels of kufic inscription; on lower neck vegetal scroll; on foot simple decorative band; inscription good wishes.

V.1 de Unger colln.; n.p.; unp. Bronze; cast; incised; base plate not original; h. 12.8; d. 8.0. Form as 1 but body 12-sided. Decorated with vegetal ornaments and birds in cartouches; interlace band on foot.

V.2 Musée Jacquemart-André 979; n.p.; Melikian-Chirvani 1973 pp.24-5. Bronze; cast; incised and inlaid with silver; h. 15.4; d. 9.6. Form as 1, but curved flaring foot, and body has 24 pentagonal and 12 hexagonal faces. Decorated with 8-petalled rosettes, rosettes with two pointed leaves, bands of leaves, and vegetal motifs; on lower mouth and foot kufic inscriptions; on shoulder naskhi inscription; inscriptions good wishes. (Fig. 23).

Bottles

B. spherical-bodied 5. beaten

1. V&A M.15-1971; n.p.; unp. Bronze; beaten; repoussé work; incised and inlaid with copper and silver; neck and base plate missing; h. 11.0; d. 11.0. Spherical body with shoulder plate and cylindrical neck base; concave sided foot. Around shoulder protruding birds and interlacing scroll pattern; on shoulder plate kufic inscription; on body six roundels with knot patterns, and six knot patterns between; interlace band on foot; inscriptions good wishes. (Fig. 23).

BottlesC. domical-bodied 1. plain

1. MMA 39.40.48; Nīshāpūr Qanāt Tapa; unp. Bronze; cast; incised; h. 15.0; d. 9.0. Flaring mouth; ridge at neck base; domical body; body and neck faceted; separate concave lid with cusped edge and cross-shaped opening; central hole in base d. 4.7, with separate disc soldered in. Body and neck facettes outlined with inverted arcading; band of interlace round mouth. (Fig. 23).

2. MMA 48.101.13; Nīshāpūr purchase; unp. Bronze; cast; incised; no lid; h. 16.0; d. 9.2. Mouth as 1, but with projecting flange near base; body as 1, but more cylindrical; circular hole in base d. 4.5. Body decorated with diagonal rounded mouldings above and below a double band of geometric interlace; on upper shoulder simple scroll band; on neck and mouth rim band of squares.

BottlesC. domical-bodied 2. lobed

1. Dahlem I 57/62; n.p.; unp. Bronze; cast; incised; h. 20.7; d. 11.9. Short flaring mouth; eight-sided neck with two flanges near base; domical body with sixteen sides, alternately flat and rounded; hole in base d. 4.6. On shoulder inscription; on flat sides incised leaf, scroll or strap designs; on four sides of neck scroll ornament; inscription good wishes to owner.

2. Dahlem; n.p.; Erdmann 1931 fig.1, Pope 1938 pl.1311E, Mayer 1959 p.23. Bronze; cast; incised and inlaid with copper; neck and

mouth missing; h. 6.7; d. 8.0. Domical body with sixteen sides, four flat, the rest rounded, with a small ridge between each. On eight of rounded sides a 'vase' with three flowers; on four flat sides kufic inscription of good wishes to owner; on four rounded sides inscription giving names of maker and decorator; on upper shoulder naskhi inscription; on base sphinx against vegetal ground, cartouches and roundels with animals or peacocks; maker 'Abd al-Razzāq al-Nīshāpūrī, decorator Jand ibn Hūs (?).

3. Chicago; n.p.; Erdmann 1931 fig.2, Pope 1938 pl.1311B.

Bronze; incised and inlaid with copper and silver; base missing; h. 12.5. Form as 1, but four sides flat and rest rounded. On flat body sides, top of mouth, and shoulder naskhi inscriptions; incised facetting on body of mouth; inscriptions good wishes. (Fig. 23).

Bottles

D. polyhedral

1. V&A 777-1889; n.p.; Pope 1938 pl.1277D. Bronze; cast; incised; base plate missing; h. 19.0; w. 9.2. Flaring facетted mouth with hexagonal flange near base; perforated slightly concave lid; fourteen-sided body; low foot; small eye projecting from four top body corners. Lid perforated in interlace pattern; interlace on mouth edge; on body variety of knot forms, interlace, z-pattern, or scroll borders, plus palmettes. (Fig. 24).

Bottles

E. flat, circular-bodied

1. BM 83.10-19.7; Rawalpindi, Punjab; Pope 1938 pl.1318, Barrett 1949 pl.9. Bronze; cast in one piece except for base plate; incised and inlaid with silver and copper; h. 31.4; d. 16.0. Flat, circular body with pointed edges; four-sided, inward sloping foot; tall cylindrical neck; ibex handle on each shoulder; base plate at top of foot. On body rope pattern and naskhi inscription; on edges, neck and foot, eight-petal and four-petal rosettes, vegetal motifs, and kufic inscriptions in cartouches; inscriptions good wishes. (Fig. 24).

Bowls

A. hemispherical, high tin bronze, forged

1. ex-Kevorkian colln.; Afghanistan; Ettinghausen 1957 fig.13, p.337, Rice 1958 pl.13, Sotheby & Co. 8/12/70 lot 85, Ivanov 1970 no.4. High tin bronze; forged; incised and punched; h. 16.5; d. 40.5. Plain hemispherical form. Outside design based on six-pointed star, with spaces filled by inscription, pear-shaped cartouches and vegetal motifs; around outside of rim kufic inscription; inside in centre enthroned figure between two attendants, with band of musicians and entertainers around; two bands of kufic inscription on upper part of inside; all decoration against punched ground. (Fig. 24).
2. Kābul 58.2.56; Ghazna; Ettinghausen 1957 figs. 10, 14, Scerrato 1964 p.703 n.130b, Ivanov 1970 no.5. High tin bronze; forged; incised and punched; dimensions unknown. Form as 1. Outside design

based on six-pointed star with spaces filled by pear-shaped cartouches and vegetal motifs; around outside of rim kufic inscription; inside zodiacal and planetary signs, frieze of birds, and kufic inscription; inscriptions good wishes.

3. Kābul; Maimāna; Scerrato 1964 pp.703-5, no.25. High tin bronze (?); details unknown.

4. Kābul; Maimāna; Scerrato 1964 p.702 no.23. High tin bronze (?); incised; fragmentary; dimensions unknown. Inside arabesque design with band of kufic inscription; outside kufic inscription and geometric design.

5. Kābul; Maimāna; Scerrato 1964 p.703 no.24. High tin bronze (?); incised; fragmentary; dimensions unknown. Inside decorated with double lines of circles; on outside same motif with lozenges and triangles alternating on chess-board ground.

Bowls

B. hemispherical, high tin bronze, cast

1. Ettinghausen colln.; n.p.; Ettinghausen 1957 figs.15-17, Ivanov 1970 no.2. High tin bronze; cast; relief decoration and incised; h. 10.8; d. 21.6. Hemispherical form with moulded rim. Outside decorated with arcading in relief, and with disc, dot and circle patterns; inside rotating bird/fish motif in centre, with birds in roundels around, and outer band of fish ornament between dotted circles.

2. Tehrān 4804; n.p.; Ettinghausen 1957 fig.22, Ivanov 1970 no.3, Washington Smithsonian Institution 1964 no.627. High tin bronze; cast; incised; h. 11.5; d. 26.0. Form as 1 but plain rim. Outside decorated with central six-pointed star with geometric patterns around, below animals of the hunt, signs of the zodiac in interlacing roundels, pseudo-herringbone pattern, and naskhi inscription against scrolling stem.
3. Tehrān; n.p.; Ettinghausen 1957 p.339 n.20. Details uncertain, but exterior decorated as 2 with a large number of friezes with circular motifs; central guilloche framed by circular motifs inside.
4. Kevorkian Foundation; n.p.; Wiet 1933 pl.4, Pope 1938 p.2482 fig.811, Ettinghausen 1957 fig.H, Ivanov 1970 no.1. High tin bronze; cast; incised; d. 26.0. Form as 1, but lower body gadrooned and centre of base in form of hexagon. Around outside below rim kufic inscription; inside design of horseman holding sword with animals around; inscription names the maker Abū Naṣr Muḥammad ibn Aḥmad al-Sijzī. (Fig. 24).

Bowls

C. flattened hemispherical, high tin bronze

1. de Unger colln.; n.p.; unp. High tin bronze; cast; incised and inlaid with silver; h. 4.9; d. 11.4. Form slightly flattened hemispherical, the rim beginning to curve inwards, flattened base. Outside of body decorated with scrolling stems with rhomb-shaped leaves and below rim naskhi inscription of good wishes against scrolling stem; base and inside undecorated. (Fig. 25).

BowlsD. rounded, bronze

1. Tehrān; Sīrāf Site B; Whitehouse 1969 pl.5a, p.44. Bronze; incised; d. 14.0. Rounded form. Around outside dot and circle motif in three bands and lower down in triangular groupings. (Fig. 25).
2. PUM I₂-279 (? 271); Rayy; unp. Bronze; fragments only; incised; original d. c. 20.0. Rounded form. Outside decorated with varying sizes of circle in bands.
3. PUM RH 6217; Rayy; unp. Bronze; fragments only; badly corroded; original d. c. 16.0; h. 8.5.

CauldronsA. hemispherical

1. S.C. Welch colln.; n.p.; Mayer 1959 p.24, pl.2, Scerrato 1964 p.689 no.1, figs. 56-7. Bronze; cast; dimensions unknown. Hemispherical body; three small feet; flat rim with four protruding flanges, one with an open spout; semi-circular handle on each side flange. Handles with three-pointed tops and two side protruberances; nicks on flange edges; by spout two roundels with interlace patterns; on side flanges roundels with vegetal motifs; on flange opposite spout name of maker Abū Bakr ibn Ahmad al-Marwazī. (Fig. 25).
2. Louvre MAO 362; n.p.; Scerrato 1964 p.689 no.8. Bronze; cast; h. 17.0; inside d. 39.5. Form as 1. Decoration similar to 1; on flange opposite spout name of maker Mahmūd ibn Abī Bakr Saffār.

3. Louvre MAO 266; n.p.; Scerrato 1964 p.690 no.10. Bronze; cast; h. 15.5, inside d. 37.0. Form as 1. Decoration similar to 1 and 2; on flange opposite spout name of maker Ibrāhīm ibn Ahmad Ṣaffār.

4. V&A 1953.1899; Afrāsiyāb; Scerrato 1964 p.690 no.11, Melikian-Chirvani 1973 pp.42-3 (top fig.). Bronze; cast; h. 28.0, d. 45.0. Form as 1. Side flanges undecorated; on spout flange two rosettes of strapwork, and a medallion with vegetal motif; on flange opposite spout name of maker Muḥammad ibn Husain al-Sālār.

5. Ashmolean 1969.87; n.p.; unp. Quaternary alloy; cast; h. 21.2; d. 47.3. Form as 1. On side flanges triangles and circles with interlace designs; on flange with spout circles with interlace designs and medallion with vegetal design; on flange opposite spout name of maker Khājakī Tūsī. (Analysis Table 21 no. 35.)

6. Kābul; n.p.; Melikian-Chirvani 1973 p.42 (bottom). Bronze; cast; dimensions unknown. Form as 1. Side flanges undecorated; on spout flange two roundels each enclosing four palmettes; on flange opposite spout pseudo-inscription in kufic script; handles with plain tops.

7. East Berlin I 3403; Caucasus; Scerrato 1964 p.690 no.15. Bronze; cast; h. c. 20.0; d. c. 40.0. Form as 1. On rim scrollwork; on spout flange two medallions and on the flange opposite the spout a naskhi pseudo-inscription.

8. BM 1937.3-17.58; n.p.; Scerrato 1964 p.691 no.21. Bronze; cast; h. 27.7; d. 46.0. Form as 1. On one flange two knot patterns and central palmette; on opposite flange name of maker Muḥammad ibn 'Alī Ghāzī (?).

9. Kābul; Maimāna; Scerrato 1964 p.687 no.6, figs. 18-20. Bronze; cast; h. 25.0; d. 35.0. Form as 1. Undecorated.
10. Kābul; Maimāna; Scerrato 1964 p.687 no.7, figs. 21-22, 54-55. Bronze; cast; h. 30.0; d. 40.0. Form as 1. Some notched decoration.
11. ex d'Allemagne colln.; Khurāsān; d'Allemagne 1911 II p.64 (bottom right), Scerrato 1964 p.687 no.14. Bronze; dimensions unknown. Form as 1. Side flanges undecorated; on spout flange two circles enclosing six-pointed stars, and central rosette; scrolling stem on part of rim;; on flange opposite spout name of maker 'Alī ibn Ḥasān (a)l-Ṣaffār.
12. Whereabouts unknown; Kubachi; Shilling 1949 fig.26.1, Scerrato 1964 p.690 no.13. Bronze; dimensions unknown. Form as 1. On rim strapwork; variety of decoration on flanges.
13. Dahlem I 6760; n.p.; Scerrato 1964 p.691 no.26. Bronze; cast; h. 6.0; d. 15.0. Form as 1, but without handles. On side flanges kufic style decoration; on flange opposite spout illegible kufic inscription.

Cauldrons

B. cylindrical

1. Tehrān; Susa; Rosen-Ayalon forthcoming p.120 fig.273a. Bronze; cast; dimensions unknown. Squat cylindrical form; slightly rounded base; three feet; three loops on everted rim with chains attached; ridged exterior. (Fig. 25).

DishesA. with vertical rim 1. bronze

1. Hermitage; Dāghistān; Orbeli and Trever 1935 pl.66. Bronze; beaten; repoussé and incised decoration; d. 60.0. Flat base; upturned rim; central area and part of body damaged. Main design four lobed arches containing plant forms with animals of the hunt between; central design has pearl border; pearl border around edge.
2. Hermitage; Dāghistān; Orbeli and Trever 1935 pl.68. Bronze; beaten; repoussé and incised decoration; d. 74.5. Form as 1. Central large floral 6-pointed rosette with small 8-pointed rosette within; around it a band of 5-leafed plants in roundels within pearl borders, a scrolling stem, and a band of plants within pearl roundels, the whole edged with pearl border.
3. de Unger colln.; n.p.; unp. Bronze; soldered rim; incised and inlaid with silver; d. 30.0; h. 2.7. Form as 1. Central deeply cut rosette with silver inlay; around it interlacing star patterns with spiral scrolls between; border of pseudo-kufic inscription. (Fig. 26).

V.1 Kābul; Maimāna; Scerrato 1964 p.700 no.15 and figs. 42-3; Bronze; beaten; d. 65.5; h. 9.5. Flat bottom; tall slightly inward-sloping sides. Covered with regular pattern of small hammer dents.

DishesA. with vertical rim 2. high tin bronze a. footless

1. Dahlem I 5624; n.p.; Sarre and Martin 1912 pl.137, Berlin-Dahlem 1971 no.119 pl.27. High tin bronze; forged; incised; h. 9.0; d. 64.5. Flat base; rounded upturned rim. In centre a galleried building with three domes, two porticoes and central door; below it a double wing motif and around vegetal designs; around the central area 22 arches forming arcade, each arch and spandrel filled with a vegetal design; scrolling stem border around edge; zig-zag pattern on rim.

2. Michigan 1959/1.110; n.p.; Ettinghausen 1957 figs.28-30. High tin bronze; forged; incised and inlaid with copper and silver; h. 9.2; d. 37.0. Form as 1. Central roundel with vegetal design with criss-cross filling inside band of animals against scrolling stem; band of zodiacal signs in roundels between knot designs; band of animal-headed naskhi inscription; band of facette pattern; interlace pattern on rim; inscription good wishes.

3. V&A M.31-1954; n.p.; Grohmann 1963, Melikian-Chirvani 1974 pp.48-50, fig.19. High tin bronze; forged; incised; h. 4.5; d. 29.3. Form as 1. Central roundel with interlaced six-pointed star with vegetal motif in middle, inside band of kufic inscription against tightly scrolled stems, band of animals against scrolling stems, band of herring-bone pattern, and band of naskhi inscription against scrolling stems; s-pattern on rim; inscriptions good wishes.

4. Tehrān 3495; n.p.; Melikian-Chirvani 1974 pp.42-45, figs.13-15.

High tin bronze; forged; incised; d. 33.8. Form as 1. Central roundel with elaborate knot pattern within band of kufic inscription, band of animals against scrolling stem, band of lancette leaves, band of naskhi inscription against scrolling stem; s-pattern on rim; inscriptions good wishes. (Fig. 26).

5. Louvre 3369; n.p.; Melikian-Chirvani 1973 pp.38-9, 1974 pp.31-42,

figs.1-7, 12. High tin bronze; forged; incised and inlaid with silver; d. 43.0. Form as 1. Central vegetal pattern in roundel, inside band of kufic inscription with elaborate leaf pattern border, band of naskhi inscription against scrolling stem in cartouches with floral lobed roundels between, and band of knot pattern; s-pattern on rim; kufic inscription on outside; inscriptions good wishes.

6. Whereabouts unknown; Semirech'e; Bernshtam 1952 p.176 fig.74

top. High tin bronze; incised; dimensions unknown. Form as 1. Central interlace pattern, inside band of fishes against scrolling stem within s-pattern border and lancette leaf edging; around band of naskhi inscription against scrolling stem; inscription good wishes.

7. Whereabouts unknown; Semirech'e; Bernshtam 1952 p.176 fig.74

bottom. High tin bronze; incised; dimensions unknown. Form as 1. Central interlaced arcade design with vegetal infilling, inside band of human faces in interlaced arches and a band of human-headed naskhi against scrolling stem; scrolling stem on rim (?); inscription good wishes.

8. Welch colln.; n.p.; Ettinghausen 1957 figs.M,21. High tin bronze; incised design; dimensions unknown. Form as 1. In centre four rotating hares; around naskhi inscription divided by four interlacing floral roundels; lancette leaf border; outside vase motifs; inscription good wishes.

9. Ghazna, Rawza Museum; Ghazna; Melikian-Chirvani 1974 fig.17. High tin bronze; forged; d. 25.0. Form as 1. In centre four rotating hares; around kufic inscription with lancette leaf border, and band of naskhi inscription; interlace pattern on rim; inscriptions good wishes.

10. PUM I₂-758; Rayy; unp. High tin bronze; very thin; forged; d. 14.4; h. 3.9. Form as 1. Undecorated.

Dishes

A. vertical-rimmed 2. high tin bronze b . footed

1. Kābul; Maimāna; Scerrato 1964 p.700-1 no.16 figs. 44-5. High tin bronze; forged; incised; d. 45.0; h. 8.0. Flat base; rounded upturned rim; circular foot; in centre a star with rosette in it, surrounded by a kufic inscription reading al-mulk, vegetal ornaments, and band of circle-and-dot design.

2. Kābul; Maimāna; Scerrato 1964 p.701 no.17. High tin bronze; forged; incised; fragmentary. Form as 1. Decorated with interlaced hexagon within a band of kufic inscription; another kufic inscription on outside; inscriptions undecipherable.

3. Kābul; Maimāna; Scerrato 1964 p.701 no.18. High tin bronze; forged; incised; fragmentary. Form as 1. Decorated with interlacing star pattern within a band of kufic inscription; another inscription outside; inscriptions undecipherable.
4. Kābul; Maimāna; Scerrato 1964 p.701 no.19 fig.47. High tin bronze; forged; foot missing; h. 8.0; d.40.0. Form as 1. Undecorated.
5. Kābul; Maimāna; Scerrato 1964 p.701 no.20 figs. 46a-b. High tin bronze; forged; h.7.0; d. 31.0. Form as 1. Undecorated.
(Fig. 26).
6. Kābul; Maimāna; Scerrato 1964 p.701 no.21 figs. 48-9. High tin bronze; forged; foot missing; h. 9.0; d. 45.0. Form as 1. Undecorated.
7. Kābul; Maimāna; Scerrato 1964 p.701 no.22. High tin bronze; forged; fragmentary. Form as 1. Undecorated.

Dishes

B. with narrow horizontal rim 1. footless

1. V&A; n.p.; Pope 1938 pl.1288A. Bronze; incised;d. 47.0. Narrow flat rim; rounded fluted sides; flat bottom. Decorated in centre with griffin against scrolling stem in roundel, and a band of kufic inscription against scrolling stem; inscription appears to be meaningless.

2. Martin colln.; Bukhāra; Martin 1902 pl.30. Bronze; incised; dimensions unknown. Form as 1. Decorated in centre with sphinx against vegetal ground in roundel; around a band of vegetal bordering and a band of lancette leaves.

3. East Berlin I 3564; n.p.; unp. Bronze; incised; d. c. 45.0. Form as 1. Decorated with central sphinx against scrolling stem in roundel, with band of naskhi inscription of good wishes against scrolling stem around.

4. Indjoudjian colln.; n.p.; Pope 1938 pl.1315B. Bronze; incised and inlaid with silver and copper; d.34.0. Form as 1, but wider flat rim. On rim naskhi inscription against scrolling stem in eight cartouches separated by rosettes; on bottom central rosette with almond border surrounded by complex pattern using arches and roundels of horse-shoe shape; small knot pattern above each flute; inscription good wishes. (Fig. 26).

5. Whereabouts unknown; from Semirech'e; Bernshtam 1952 p.177 fig.75. Bronze; incised; dimensions unknown. Form as 4. Decoration almost identical to 4.

6. Hermitage; n.p.; Pope 1935 p.63. Bronze; dimensions unknown; Form as 4 with bird finial attached to top of each flute. Nature of decoration uncertain.

7. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 IV p.158. Bronze; incised and ? inlaid with silver; dimensions unknown. Form as 4,

with central thick rosette. Around rosette interlace band, then interlaced six-pointed star with bands of kufic inscription, and vegetal motifs or rosettes between; on rim kufic inscription in cartouches with roundels.

Dishes

B. with narrow horizontal rim 2. footed

1. BM 1949.2-17.2; Yemen; Barrett 1949 pl.2a. Bronze; cast; incised; foot missing; h. 2.0; d. 22.5. Flat base; narrow flat rim; slightly rounded body; rounded rim edge; central small boss with sunken centre. Base decorated with geometric pattern the spaces filled with palmettes; s-pattern on rim.
2. Louvre 6155; Sīstān; Marchal 1974 no.5 pp.12-13. Quaternary alloy; cast; foot soldered on; incised and inlaid with silver; h. 8.0; d. 31.0. Form similar to 1, but flared foot. In centre interlaced six-pointed stars with six floral horse-shoe medallions around; rim decorated with naskhi inscription in cartouches with floral roundels between; inscriptions good wishes. (Analysis Table 21 no. 12) (Fig. 26).

Dishes

C. with wide horizontal rim

1. Kann colln.; Hamadān; Pope 1938 pl.1313 A, Wilson 1931 no.229 R. Bronze; incised and inlaid with silver; part of base missing; h. 4.0; d. 19.0. Narrow body with flat base and almost vertical sides; wide flat rim. Rim decorated with frieze of huntsmen mounted on an elephant,

a camel, and horses with various animals around; lancette leaf border on inner edge of rim; remains of decoration visible on edge of base.

(Fig. 27)

Dishes

D. polygonal, handled

1. MMA 37.40.30; Nīshāpūr purchase; unp. Bronze; cast; d. 9.5; h. 2.1. Five-sided dish with flat base and sloping sides, the inside corners rounded and indented; horizontal flaring handle with trilobed end. Undecorated. (Fig. 27)

Ewers

α. ovoid-bodied 1. round-mouthed a. pear-shaped, low-footed

1. BM 1959.10-23.1; probably Persia; Pinder-Wilson 1960, 1967. Brass (?); cast in one piece except for soldered base plate; subsequently planished; five original plugs in body; traced and punched decoration; h. 29.6; d. 13.1. Seven-leafed palmette thumb-piece on curved handle with stylised animal-head lower terminal; wide mouth plate; narrow neck; ovoid body; low slightly inward sloping foot; ridge defining division of body and neck. Either side of mouth plate ornamented with silhouetted profile of animal head; at rear of mouth plate incised stems; outlined oval panelling on neck; on either side of body senmurv with acanthus scroll between. (Fig. 27)

2. WAG 54.457; n.p.; Sarre and Martin 1912 pl.130, Ettinghausen 1966 fig.3. Bronze; flat relief decoration; incised and inlaid with broad copper units and silver wires; h. 37.0; d. 17.3. Form as 1, but fluted neck, thirteen-leafed thumb-piece, five half-beads on handle . On either side of mouth plate bird head profile; on neck simple outlining; body relief decoration of gross palmette on front and plants either side; toothed border above and below.

3. Hermitage: Dāghistān; Orbeli and Trever 1935 pl.73. Bronze; flat relief decoration incised and inlaid with copper; thumb piece missing; h. 34.5. Form as 1 but projecting flange on upper neck and plain handle with pointed lower terminal. On either side of mouth plate animal or bird head profile; relief decoration on body of palmette beneath handle, winged palmette on front, cross with trefoil-ended arms within

geometric interlace on either side, all within palmette and toothed borders.

4. V&A 434-1906; n.p.; Pinder-Wilson 1960 p.90, 1967 p.3061.

Bronze; cast; incised and inlaid with copper; h. 44.0; d.18.0. Form as 1, but thirteen-leafed thumb-piece, five half-beads on handle and faceted neck. On neck incised outlines; on either side of mouth plate animal head profile with copper eyes; on mouth plate vegetal ornament; behind palmette inscribed name "Muhammad".

5. Cairo: n.p.; London Burlington House 1931 pl.16a, Pope 1938 pl.1295A and p.2483 fig.813, Marshak 1972 fig.7 (2). Bronze; incised; h. 30.1. Form as 1 but no thumb-piece, very low foot ridge around centre of neck, and half-beads on handle. Bird head profile on either side of mouth plate; on neck and lower body incised panelling; on upper body kufic inscription, medallion with harpie, "vase" motifs and z-ornament; inscription good wishes to owner.

6. de Unger colln.; n.p.; unp. Bronze; cast; incised; h. 35.0; d. 15.0. Form as 1 but slimmer, and thirteen-lobed thumb-piece. Simple mouth plate; on neck band of kufic inscription; on body two bands with "vase" motifs and medallions between; on foot lancette border; either side of handle base dragon head.

7. Detroit; n.p.; Aga-Oglu 1931a fig.1. Bronze; thumb-piece missing; h. 31.7. Form as 1, with six half-beads on handle. Undecorated.

v.1 ex Bobrinski colln.; n.p.; Marshak 1972 fig.15 p.89 n.55.

Bronze; cast (?); flat relief decoration; incised; dimensions unknown. Form as 1, but everted foot, tiered neck, lobed mouth and feline handle. Bird head profile on either side of mouth; body decorated with palmette plant on front and palm tree and plants in roundel on side.

Ewers

A. ovoid-bodied 1. round-mouthed b. pear-shaped, high-footed

1. MMA; n.p.; Ettinghausen 1940 figs. 17, 19 p.115, Pope 1960 pl.39. Bronze; cast; relief decoration; incised and once inlaid; h. 48.9. Feline handle; wide mouth plate; narrow slightly faceted neck; pear-shaped body; rounded foot with narrow stem; ridge round stem and between neck and body. Bird head and beak profile either side of mouth plate; on body four rows of pointed flowers between rounded leaves above single band of pointed flowers and leaves; on foot overlapping leaves. (Fig. 27)

2. V&A M.27-1945; n.p.; unp. Bronze; cast; relief decoration; h. 29.3; d. 12.5. Form as 1, but wide fluted neck, vertical rim with two bands of bosses, and flaring foot with band of bosses. Body decorated with three bands of almond bosses.

Ewers

A. ovoid-bodied 1. round-mouthed c. bulbous

1. Hermitage SA 12745; Samarqand purchase; Marshak 1972 figs.1-2 p.61. Bronze; probably cast in one piece except for base plate, now missing;

plugs in upper neck; incised; h. 38.8. Thirteen-leafed palmette thumb-piece on curved handle with six half-beads and stylised animal head lower terminal; wide mouth plate; narrow neck; bulbous body; tall inward sloping foot; ridge defining division between neck and body. Bird-head profile either side of mouth plate; on mouth plate and lower neck band of scrolling stems; on upper neck band of palmettes. (Fig. 27)

2. Tiflis; made in Basra in the year 69; D'yakonov 1947, Marshak 1972 figs.3-4 pp.65-72. Bronze; cast; traced and punched; dimensions unknown. Form as 1 but facettled body and neck, and curving projections at base of handle. Profile of cock's comb and beak on either side of mouth plate; on rear of mouth plate palmette design and dot and circle motifs; on mouth plate inscription; body and foot decorated with scrolling stems and tendrils; inscription reads: "Blessing. From the work of Abū Yazīd, from among that which was made in Baṣra in the year 69".

3. Lewisohn colln.; n.p.; Pope 1938 pl.1295B, Marshak 1972 figs.5-6 pp.65-9. Bronze; incised and punched; h. 49.5. Form as 1, but fluted neck and lower body, openwork thumb-piece of vegetal design, and six beads on handle. On either side of mouth plate profile of bird head; centre of neck and lower part of body fluted; around body four hunting scenes; on upper body running animals; on upper and lower neck and on foot scrolling stems and tendrils.

4. Samarqand; Shahrīstān; Marshak 1972 fig.7 (1). Bronze; incised; damaged; dimensions unknown. Form as 1 but thumb-piece as 3. On either side of mouth bird head profile; on one side of body roundel with scrolling stems.

5. Kābul 58.2.22; Ghazna (?); Mortimer Rice and Rowland 1971

pl.176. Bronze; traced; thumb-piece missing; h. 29.5. Form as 1, but narrower, with five half-beads on handle, and projections on lower handle. On either side of mouth plate animal or bird head profile; traced facette outlines on neck, and vegetal motifs on foot.

6. ex Martin colln.; Bukhāra purchase; Marshak 1972 fig.7 (3).

Bronze; incised; dimensions unknown. Form as 1, but no thumb-piece, and twelve half-beads on handle. Bird head profile on either side of mouth plate; incised panelling on foot; medallions and naskhi inscriptions of good wishes on body.

7. V&A 1434-1902; n.p.; unp. Bronze; cast; incised; base plate missing; h. 33.0; d. 15.0. Form as 1, but no thumb-piece, sixteen half-beads on handle, and eleven-sided body. On mouth plate crosses in circle, palmettes in triangles, and two projections; on neck two kufic inscriptions of good wishes.

8. de Unger colln.; n.p.; unp. Bronze; cast; incised and punched; h. 40.5; d. 15.0. Form as 1 but with facettled body, thumb-piece as 3, six beads on handle, and vegetal form lower terminal. Bird head profile on either side of mouth plate; on mouth plate dot and circle motifs; on body alternate facettes decorated with vine scroll; on foot palmette forms; on base winged palmette design within dot and circle border.

V.1 Rome; n.p.; Scerrato 1966 pl.4. Bronze; cast; incised; dimensions unknown. Form as 1 but very low foot, three half-beads on handle, and square finial. Incised inverted arcading outline on neck base. (Fig. 28)

EwersA. ovoid-bodied l. round-mouthed d. high-shouldered, squat

1. Baghdād; Baghdād; Hamīd 1967 figs.1-4 pp.146-7. Bronze; incised; h. c. 30.0. Ovoid body with high shoulder; low foot; tall slightly flaring cylindrical neck with round mouth, and flat mouth rim with bird head silhouette either side; curved handle with six beads, pomegranate finial, and pointed base. On mouth rim incised five-leaf plant form; around handle base four trefoils; on neck facetting with band of trefoil-armed crosses in interlacing roundels above and below.
2. MMA 32.66; n.p.; Scerrato 1966 pl.12. Bronze; cast; incised; h. 33.0; d. 14.7. Form as 1, but rounded lip. Body undecorated; band of diamond pattern below lip; band of scrolling stem above and below faceted central neck.
3. MMA 38.40.240; Nīshāpūr Tapa Mādrasa; Marshak 1972 fig.9. Bronze; cast; incised; h. 33.5; d. 16.0. Form as 1, but rounded lip, two silhouetted wings adjoining handle top, and eight beads on handle. On neck band of kufic inscription, and band of interlace, with vertical lines of interlace pattern between; on shoulder naskhi inscription, around body hunting scene against scrolling stems with interlace band above and below; inscriptions good wishes. (Fig. 28)
4. Kābul 58.2.21; Ghazna; Arts Council 1968 pl.12b, Mortimer Rice and Rowland 1971 pl.175. Bronze; cast; traced and punched; h. 29.2. Form as 1 but body taller and neck shorter, rounded lip, and handle with spherical finial, seven beads, and lower end with upturned pyramidal point; two silhouetted wings adjoining handle top. Outlines for slight facettes on neck; punched circles on foot and punched lines at top of body.

5. Hermitage SA 12728; Samarqand; Marshak 1972 p.73. Bronze; details unknown. Form evidently as 1 but handle flat on inside and high foot.
6. Hermitage; n.p.; Marshak 1972 fig.8 (right). Bronze; dimensions unknown. Form as 1, but rounded lip and five beads on handle; bird profile or wings at rear of mouth. Undecorated.
7. de Unger colln.; n.p.; unp. Bronze; cast; incised and punched; plugs in body and neck; h. 30.5; d. 13.5. Form as 1, but rounded lip. Scrollwork band and rosette pattern band above and below neck facetting; foliated handle base with punched decoration around; two bird head profiles at back of mouth plate; crude incising on base and foot.
8. V&A 758-1889; n.p.; unp. Bronze; cast; handle probably soldered on; base of foot later; traced; h. 36.3; d. 16.3. Form as 1, but five beads on handle, and projecting bird's head near handle base. On neck bands of z-ornament, upright rectangles, naskhi inscription and floral medallions; on body bands of triangles, z-ornament, naskhi inscription, floral medallions and birds in roundels, interlace, and lancette leaves; inscriptions good wishes.
9. Louvre AA 59/AA 176; (?) Sīstān; Marchal 1974 fig.10 p.17 (base only shown). Quaternary alloy; cast; incised; body and neck separately mounted combined with other objects; handle missing; h. of body c. 13.0. Form originally as 1; bird head profile at rear of mouth plate. On neck facetting and band of kufic; on body front

medallion with knot pattern and scrolling stems; below handle terminal band of scrolling stems. (Analysis of body Table 21 no.19.) (See also bronze ewer C/3/c/5).

Ewers

A. ovoid-bodied 1. round-mouthed e. high-shouldered, tall

1. MMA; n.p.; Pope 1938 pl.1293. Bronze; incised; neck and handle later replacements; h. 61.0. Ovoid body; high shoulder; small everted foot. Shoulder decorated with two bands of animals and band of kufic against scrolling stems, with border pattern below. (Fig. 28)

Ewers

A. ovoid-bodied 2. spouted a. tubular-spouted

1. Hermitage; Dāghistān; Sarre and Martin 1912 pl.129, Sarre 1922 pl.133, Orbeli and Trever 1935 pl.71, Marshak 1972 fig.14 (2). Bronze; cast; relief decoration; incised; hinged lid missing; h. 43.0. Narrow tubular spout with lidded opening; pear-shaped body; tall splayed foot with annular ridge; curved handle with animal head terminals, fourteen heart-shaped units on its length, and rectangular finial. On sides of finial rosettes; on spout palmette ornament; on neck two winged monsters above scrolling stem; on body piper with winged horse on either side of flowering plant; on lower body pointed leaves; toothed edge to foot.

2. Hermitage; Dāghistān; Orbeli and Trever 1935 pl.70, Marshak 1972 fig.14 (3). Bronze; cast; relief decoration; incised; h. 37.7.

Form as 1 but main part of handle plain. Neck, spout and finial undecorated; on body six-leafed symmetrical plant in roundels on each side and front with scrolling stem above; small bosses projecting from foot edge. (Fig . 28)

3. Hermitage; Dāghistān; Sarre and Martin 1912 pl.128, Sarre 1922 pl.135, Orbeli and Trever 1935 pl.72, Marshak 1972 fig.14 (4), Sourdel-Thomine and Spuler 1973 pl.145. Bronze; relief decoration; incised and inlaid with copper; finial and hinged lid missing; foot probably replacement; h. 39.2. Form as 1, apart from foot; main part of handle plain. On spout animals and scrolling stem; on body bird on either side of palm-tree with stepped base; on lower body petal border.

4. Kiev; n.p.; Marshak 1972 fig.13. Bronze; incised; foot missing; dimensions unknown. Form as 1, with rope form handle and faceted neck. Body decorated with two-tier almond bosses; unidentifiable incised design on spout.

5. Cairo; n.p.; Pope 1938 pl.243B. Bronze; h. 40.0. Form as 1 with tall hinged lid. Undecorated.

6. Tehrān 4800; n.p.; Washington Smithsonian Institution 1964 no.529. Bronze; hinged lid, foot and base missing; h. 25.0. Form as 1 but plain centre to handle, and fluted body. Undecorated.

V.1 Cairo; n.p.; Pope 1938 pl.1309B. Bronze; incised and inlaid with silver; foot and base missing; h. 8.0. Form as 1, but simple handle with single-leaf thumb-piece, protruding disc on upper neck, and bird

head profile projecting from top of spout. Body decorated with scrolling stem and interlace pattern bands; in rectangular cartouche, with circle above, kufic inscription of good wishes.

Ewers

A. ovoid-bodied 2. spouted b. flat-spouted

1. Herāt Museum; Herāt; Ettinghausen 1957 fig.36, D, pp.332-3, Marshak 1972 fig.12 (1). Bronze; incised and inlaid with silver; dimensions unknown. Mouth with flat rimmed spout; pear-shaped body with ridge where neck and body join; slightly everted foot; curving handle with stylised animal head lower terminal and knob thumb-piece. Undecorated except for kufic inscription reading Bakr ibn 'Abd al-'Azīz.

2. Hermitage Kz 5774; n.p.; Marshak 1972 fig.12 (2) p.88 n.43. Bronze; incised; h. 36.0. Form as 1, but lower foot, and animal-head terminals at each end of handle, with square thumb-piece. On front of body arched cartouche with a sphinx; on either side "vase" motif.
(Fig. 29)

3. Louvre 7951; n.p.; Sauvaget 1951 fig.3, Marshak 1972 fig.12 (4) p.88 n.45. Bronze; cast in two pieces, body and handle; incised; h. 34.0; d.16.0. Form as 2. Body decorated with two pairs of drinkers in medallions, with griffins on front and scrolling stems around; above and below a band of animals; on either side of spout an animal; on neck palmette design and kufic inscription; above foot panel border.

4. Dahlem I 3555; n.p.; Sarre and Martin 1912 pl.126, Berlin-Dahlem 1971 no.101, Marshak 1972 fig.12 (3). Bronze; cast; h. 31.0; d. 14.2. Form as 1. Undecorated.

EwersA. ovoid-bodied 2. spouted c. zoomorphic-spouted, small

1. Dahlem I 5699; n.p.; Pope 1938 pl.1277B. Bronze; cast; punched and incised; handle and base plate missing; foot soldered on; h. 17.5; d. 7.5. Pear-shaped body; low foot; spout in form of hollow bovine head with hole at mouth and in forehead, two protruding ears and two horns. On body facetting with punched outlines, divided by band of interlace and band of scrollwork. (Fig. 29)
2. Dahlem I 6177; n.p.; Berlin-Dahlem 1971 no.229. Bronze; cast; incised; horns missing; h. 15.2; d. 7.8. Form as 1 with plain handle. On body facetting divided by two bands, one with pseudo-inscription.
3. Louvre AA 60; Ghazna; Marchal 1974 fig.11. Quaternary alloy; cast; incised; handle and one horn missing; h. 15.5; d. 7.7. Form as 1. On body band of interlacing lines and band of kufic inscription; on upper body inverted arcading; inscription good wishes. (Analysis Table 21 no. 20.)
4. Louvre 6101; n.p.; Marchal 1974 p.16 n.48. Bronze; cast; separate base plate; handle missing; h. 20.5; d. 9.5. Form as 1. Body fluted with band of pseudo-kufic at widest point.
5. V&A M.107-1945; n.p.; unp. Bronze; cast; incised; handle and base plate missing; h. 19.5; d. 9.8. Form as 1 but with lid. Body decorated with large roundel with seated animal and two small roundels with birds; z-pattern band above; interlace band below; palmette on lid.

EwersA. ovoid-bodied 2. spouted d. zoomorphic-spouted, large

1. Chicago; n.p.; Pope 1938 pl.1296B, Pope 1960 pl.62. Bronze; cast in pieces; incised; h. 38.0. Pear-shaped body; tall flaring foot; hollow spout in form of bovine head with protruding ears and horns; simple handle. On foot incised border; on side of spout scrolling stem; on neck inverted arcading above herringbone border; on body medallions with birds and scrolling stems, plus heart-shaped medallions, band of kufic inscription against scrolling stem, and bands of interlace and scrolling stems; inscription good wishes. (Fig. 29)

2. East Berlin I 7013; n.p.; Kühnel 1943 fig.12. Bronze; cast in pieces; incised; handle and one horn missing; h. 31.0. Form as 1. On upper body band of naskhi inscription of good wishes; on lower body band of scrolling stem; around centre of body lobed medallion, sphinxes in roundels, and band of scrolling stem.

3. Frankfurt private colln.; n.p.; Stuttgart Linden-Museum 1972 no.132. Bronze; cast; h. 26.5; d. 10.0. Form as 1, the handle with bird finial. On upper and lower body arcading between bands of scrolling stems; around centre of body vegetal designs; on foot band of scrolling stems.

V.1 BM 1969.1-13.1; n.p.; unp. Bronze; cast; lower foot soldered on; handle missing; h. 26.5; d. 12.3. Form as 1, but body and lower foot divided into twelve lobes. On alternate body lobes vertical line of inscription or scrolling stem; on alternate foot lobes knot motif.

EwersA. ovoid-bodied 2. spouted e. open beak-spouted

1. BM 1956.7-25.1; n.p.; unp. Bronze; cast; base plate separate; handle missing; weighted with lead; h. 13.3; d. 6.3. Pear-shaped body; low foot; open mouth of beak-like appearance with bovine characteristics including ear and horn forms. Facettes on body outlined by three bands of inverted arcading; around centre of body kufic inscription of good wishes. (Fig. 29)
2. Beirut private colln.; n.p.; Beirut 1974 no.133. Bronze; cast; handle missing; h. 21.5. Form as 1. Incised facetting on lower body.
3. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.51 top left. Bronze; dimensions unknown. Form as 1. On upper body band of scrolling stem.

EwersA. ovoid-bodied 2. spouted f. lamp-spouted

1. Louvre MAO 428; n.p.; Sarre and Martin 1912 pl.151, Pope 1938 pl.1309D, Mayer 1959 p.38, Paris Orangerie 1971 no.128. Bronze; cast; incised and inlaid with silver and copper; lid missing; h. 14.8. Pear-shaped body; splayed foot; curving handle; mouth and spout in form of tubular oil lamp with opening in top and at end of spout. On spout sides bird roundels and scrolling stems; on neck arcading; on body bands of naskhi and kufic inscriptions against spiral scrolls with between them animals in cartouches or roundels, and "vase" ornaments; on foot arcading; hole pierced through lower handle terminal; inscriptions good wishes; name of maker 'Alī ibn 'Awf (?) al-Isfarā' inī (?).

2. Louvre 6314; n.p.; dated 586 H./1190-1191 A.D.; Pope 1938 pl.1309A, Paris Orangerie 1971 no.129. Bronze; cast; incised and inlaid with silver and copper; base plate replacement; h. 21.9. Form as 1, but handle shaped according to feline lines. On body various cartouches with animal, bird and vegetal forms of design, a band of scrolling stem, and two bands of inscription, one in plain kufic the other in plain naskhi, both good wishes to owner; on undecorated part of the body incised naskhi inscription giving name of owner, 'Uthmān b. Sulaymān al-Nakhjavānī, and the date. (Fig. 30)

3. MMA 33.96; n.p.; Pope 1938 pl.1309C. Bronze; incised; h. 18.4. Form as 1, but handle in form of a feline with incised scales on neck and vegetal ornament on body. On spout vegetal ornament; on neck inverted arcading and band of interlacing lines; on neck ridge band of scrolling stems; on body band of naskhi and band of kufic good wishes interrupted at front by lobed medallion; on either side a "vase" motif; on foot running animals and roundels; name of owner 'Alī b. 'Abd al-Rahmān b.Ṭāhir al-Adīb al-Sijzī, in naskhi on either side of medallion.

4. Detroit; n.p.; Pope 1938 pl.1296A. Bronze; cast; incised; handle and lid missing; h. 25.4. Form as 1, but joint between neck and body. On spout vegetal motifs; on neck inverted floriated arcading and band of interlacing lines; on body kufic inscription and various bands and roundels of vegetal ornament; on lower body floriated arcading; on foot band of scrolling stem; inscription good wishes.

EwersA. ovoid-bodied 2. spouted g. with cusped spout

1. Hamburg 1960.78; n.p.; unp. Bronze; cast; foot and handle soldered on; h. 19.0. Pear-shaped body; low foot; mouth with open pointed spout with cusped edge; curving handle with knob finial. On lower neck band of shallow dents; two bands of scrolling stem around body. (Fig. 30)

EwersB. spherical-bodied 1. spouted

1. MMA 59.53; n.p.; al-'Ush 1972 pp.188-90, figs. 1-6. Bronze; cast in pieces; relief decoration; incised and inlaid with silver; base plate missing; h. 29.5; d. 18.7. Slightly flattened spherical body; low foot; shoulder plate; cylindrical neck with band near base; flat mouth rim; boss on either side of neck; curved, obliquely rising spout joined to neck by diagonal band; eye underneath spout; lower part of spout covered; on curved handle knob finial, bird head profile projecting low down, and leaf-shaped terminals. On neck and spout vegetal designs; on body relief kufic inscription; other kufic inscriptions on shoulder plate, on foot, and on handle; on shoulder kufic inscription giving name of maker al-Qaṣīr; other inscriptions good wishes. (Fig. 30)

2. Damascus 15381; n.p.; al-'Ush 1972 pp.191-6, figs. 7-13. Bronze; cast in pieces; incised; handle missing; h. c. 35.0; d. c. 20.0. Form as 1 but body squarer, slightly concave foot, and

more curved spout. On body roundels with birds and vegetal designs joined by band of kufic inscription with smaller roundels with vegetal motifs above and below, and smaller cartouches of kufic inscription; on shoulder hexagon with circles inside containing another kufic inscription; on neck and spout vegetal designs and borders; inscriptions good wishes; on base name of maker Hasan.

3. Dahlem I 1598; n.p.; al-'Ush 1972 p.196, fig.14, Berlin-Dahlem 1971 no.429. Bronze; cast; incised; h. 24.0; d. 13.6. Form as 2 with plain handle with knob finial. On body kufic inscriptions with roundels containing six-pointed interlaced stars or vegetal motifs; on neck and spout stylised vegetal motifs; inscriptions good wishes.

4. Private colln.; n.p.; Marchal 1974 fig.12, pp.17-8. Bronze; cast; incised and pierced; h. 39.5; d. 19.0. Form as 2, the handle with lobed finial and eyes at both ends; lower spout cover pierced. On body kufic inscriptions with roundels containing interlace patterns or rhombs; kufic inscriptions and vegetal motifs on neck and spout; inscriptions good wishes, and include maker's name Nāsir.

5. Maimāna (?); Maimāna; Scerrato 1964 pp.696-9 no.9, figs. 25-9. Bronze; beaten; body made in two halves with rivetted joint around middle; handle rivetted on; h. 25.0. Form as 1 but spout and neck join in smooth curve; slight fluting on body. On body diamond medallions; elsewhere crude pseudo-inscriptions, roundels and border patterns.

6. Maimāna (?): Maimāna; Scerrato 1964 p.699 no.10, figs.30-32. Bronze; beaten; body in two halves with castellated joint; handle

riveted on; incised; h. 24.0. Form as 1, but no foot and concave hexagonal base with concave circular central area; plain handle with no eyes on terminals; spout covered; ridge at neck base; rings in neck bosses. Body undecorated; incised ornament on neck and lower spout cover.

7. de Unger colln.; n.p.; unp. Bronze; cast; incised; h. 32.0; d. 18.5. Form as 1, but body consisting of 12 round-faced and 4 flat-faced lobes; rings on neck bosses. On neck and spout crude vegetal designs; on shoulder plate crude kufic pattern; on flat-faced lobes kufic inscription with vegetal ornaments; on middle of each three round-faced lobes knot motif.

Ewers

B. spherical-bodied 2. round-mouthed

1. Kābul 58.2.20; Ghazna; Mortimer Rice and Rowland 1971 pl.198. Bronze; incised; handle missing; h. 24.0. Spherical body; no foot; wide neck with ridge at base; wide flaring mouth with domical hinged lid. On lid, neck, and lower body kufic inscription in cartouches with roundels containing vegetal motifs; on shoulder wide band of naskhi inscription interrupted by roundels below band of interlace; around centre roundels with interlaced star and central bird, and "vase" ornaments. (Fig. 30)

Ewers

C. cylindrical-bodied 1. cast, spouted a. small

1. Dahlem I 86/63; n.p.; Berlin-Dahlem 1971 no.362. Bronze; cast; h. 13.4; d. 6.5. Squat cylindrical body with rounded shoulder and

base; ridges between body and cylindrical neck; on either side of neck projecting knob obliquely rising spout with pair of ornamental birds at end; plain handle. Diagonal ribbing on body.

2. Hamburg; n.p.; unp. Bronze; cast; h. c. 11.5. Form as 1, but simple finial and terminal projections on handle. On body sixteen vertical facettes.

3. de Unger colln.; n.p.; unp. Bronze; cast; handle replacement; h. 15.5; d. 8.2. Form as 1, but pierced cover on lower mouth, and eye on each side of neck and spout end. Ropework pattern ridge on shoulder. (Fig. 31)

Ewers

C. cylindrical-bodied 1. cast, spouted b. large

1. Los Angeles M.73.5.161; n.p.; Pal 1973 no. 304. Bronze; cast (?); incised; h. 40.0. Cylindrical body; flat shoulder; curved handle; cylindrical neck with curved, obliquely rising spout joined to neck by diagonal band; spout large with double cusp at top and ring attached to eye beneath; on either side of neck attached ring, and on top lid. On body kufic inscription in cartouches with roundels, "vase" motifs, and border ornaments; on shoulder naskhi inscription of good wishes; on neck palmette and geometrical patterns; on spout crude scrollwork; on handle interlace. (Fig. 31)

Ewersc. cylindrical-bodied 2. beaten, round-mouthed

1. Tehrān; Nīshāpūr Tapa Madrasa well W.o., deep level; unp. Bronze; beaten; punched and incised; fragmentary; h. 30.2; d. 15.8.

Cylindrical body with sloping shoulder and base, the centre of the base slightly concave; cylindrical neck with round slightly flaring mouth; handle soldered to body and neck; metal strip around neck and handle, from which hangs a ring. Narrow line of hatching and band of circles on shoulder.

2. Tehrān; Nīshāpūr Tapa Madrasa well W.o., deep level; Wilkinson 1973 p.302 (bottom left). Bronze; beaten; punched and incised; fragmentary; h. 30.0; d. 16.4. Form as 1. Three groups of three-petalled flowers in threes alternating with three five-leaved plants on shoulder. (Fig. 31)

3. Tehrān; Nīshāpūr Tapa Madrasa latrine corridor R; unp. Bronze; beaten; punched and incised; h. 26.6; d. 13.8. Form as 1 but handle rivetted to neck. Bands of circles and diagonal lines on shoulder; tri-lobed flattened part of metal strip round neck decorated with punched circles, and apparently rivetted to neck.

4. Tehrān; Nīshāpūr Tapa Madrasa well W.o., deep level; unp. Bronze; beaten; fragmentary; h. 29.0; d. 16.4. Form as 1. Undecorated.

5. Tehrān; Nīshāpūr Tapa Madrasa well W.o., deep level; unp. Bronze; beaten; fragmentary; h. 28.0; d. 19.2. Form as 1, with tri-lobed strip round neck. Undecorated.

6. Tehrān; Nīshāpūr Qanāt Tapa; unp. Bronze; beaten; punched, incised, and tinned; fragmentary; h. 18.4; d. 11.6. Form as 1, but handle and strip rivetted to neck, and strip round neck tri-lobed, with metal eye and ring. On shoulders circles and lines.

7. Tehrān; Nīshāpūr Tapa Madrasa well W.o., deep level; unp. Bronze; beaten; fragmentary; h. 26.6; d. 13.4. Form as 1, but handle rivetted to neck and body; no metal strip. Undecorated.

8. Kābul; Maimāna; Scerrato 1964 pp.699-700 no.11, figs.33-6. Bronze; beaten; incised and punched; h. 33.0. Form as 1, with castellated joint at base of sides and another joint at shoulder; ring attached to base of handle. On shoulder band of herringbone pattern and vegetal ornaments; on body band of punch-marks; near base of handle cross and dot ornament.

9. Kābul; Maimāna; Scerrato 1964 p.700 no.12 figs.37-8. Bronze; beaten; punched and incised; h. 34.4. Form as 1, but body slightly waisted, and eye at base of handle. Decoration on shoulder and body similar to 8.

10. Kābul; Maimāna; Scerrato 1964 p.700 no.13 fig.39. Bronze; beaten; part of strip missing; h. 39.0. Form as 1, with five-lobed strip round neck. Undecorated.

11. Stockholm; Östergötland, Sweden; Oxenstierna 1959 p.89 pl.38 top. Bronze; incised; handle missing; h. c. 25.0. Form as 1. Crude vegetal and linear decoration on shoulder.

v.1 Tehrān (?); Susa; de Mecquenem 1947 fig.7. Bronze; h. 26.0. Form of body as 1, but cylindrical mouth with fitting domical cover; handle rivetted at top to band around neck; metal strip joining neck and middle of handle attached to chain holding cover; pointed finial to handle. Undecorated.

Ewers

C. cylindrical-bodied 3. beaten, spouted a. plain

1. Whereabouts unknown; Kavat-kala (Khwarazm); Tolstov 1959 I p.158 fig.7, IV pp.193-7 fig.1. Bronze; beaten; handle probably cast and rivetted; patch in one side of body with castellated joint; h. 34.0; d. 18.0. Cylindrical body, slightly narrowing towards base; rounded shoulder; cylindrical neck with curving triangular spout attached to one side; curving handle; low foot. Undecorated.

2. Kābul 58.2.18; Ghazna; Rowland 1966 pl.109, Mortimer Rice and Rowland 1971 pl.183-4. Bronze; beaten; incised; repoussé work; h. 31.0. Form as 1 but spout smaller. On either side of neck repoussé lion; at base of neck twelve-pointed repoussé star; on body and shoulder sphinx in cartouche, "vase" motifs and kufic inscription of good wishes. (Fig. 31)

3. Cairo; n.p.; Pope 1938 pl.1282A. Bronze; incised; h. 28.0. Form as 1 but flat shoulder top, double-angled shoulder, flat projecting mouth plate and more curved spout; footless. On shoulder and upper body kufic and naskhi inscriptions of good wishes; on neck and body vegetal motifs in roundels, and on body crude vegetal band.

4. Ani; n.p.; Arekelyan 1956 fig.4. Bronze; incised; dimensions unknown. Form as 3 with spherical finial on handle and foot. On shoulder and neck naskhi inscription of good wishes; on body roundels and bands with crude vegetal designs.

Ewers

C. cylindrical-bodied 3. beaten, spouted b. facetted

1. Louvre 5548; n.p.; Pope 1938 pl.1328, Paris Orangerie 1971 no.130. Bronze; beaten; repoussé work; incised and inlaid with silver; handle missing; h. 39.0. Cylindrical body with twelve slightly concave sides; splayed foot with base plate bent over edge; rounded shoulder edge; flat shoulder with repoussé twelve-pointed star at neck base; cylindrical neck with repoussé lion on each side; obliquely rising spout attached to one side; spout cover with repoussé lion. On neck and spout scrolling stems, naskhi inscription and animals; on shoulder edge horsemen and enthroned figures; on body zodiacal signs with scrolling stems between bands of inscription; on foot animals; various border patterns; inscriptions good wishes.

2. Tehrān Gulistān Palace; n.p.; Pope 1938 pl.1314. Bronze; beaten; incised and inlaid with silver; neck, handle and spout missing; h. 22.0. Form as 1. On shoulder edge horsemen; on body zodiacal signs with bands of animals, vegetal designs, and inscriptions of good wishes.

3. Hermitage; n.p.; Sarre and Martin 1912 pl.143 no.3049. Bronze; beaten; repoussé work; incised and inlaid with silver; lower part

of foot replacement; h. 40.0. Form as 1 with handle. On neck and spout scrolling stems, inscription and animals; on shoulder edge horsemen; on body zodiacal signs and bands of running animals, vegetal motifs, seated drinkers and musicians, and inscriptions; on foot inscription; on handle scrolling stem; inscriptions good wishes.

4. Hermitage; n.p.; Sarre and Martin 1912 pl.142 no.3048. Bronze; beaten; repoussé work; incised and inlaid with silver; handle probably replacement; h. 37.0. Form as 1. On neck and spout scrolling stems and inscriptions; on shoulder edge knot patterns; on body medallions with vegetal designs between inscription bands; on foot inscription; inscriptions good wishes.

5. Hermitage; n.p.; Sarre and Martin 1912 pl.141 no.3050, Pope 1935 fig. on p.63. Bronze; beaten; repoussé work; incised and inlaid with silver and copper; handle probably replacement; h. 37.0. Form as 1, the sides being flat; around shoulder edge twelve pairs of birds in relief. On neck and spout inscription and scrolling stems; on body roundels with vegetal designs, smaller ones with interlace patterns, rosettes, and bands of inscriptions; on foot interlace band; inscriptions good wishes.

6. Dahlem I 3569; n.p.; Sarre 1906 pl.3 no.18. Bronze; beaten; incised and inlaid with silver; body only; h. 14.5. Form as 5 but remounted to make a bucket. On shoulder edge running animals; on body central band of seated musicians with zodiacal signs or other scenes in medallions above and below.

7. Cleveland; n.p.; Pope 1960 pl.60. Bronze; beaten; repoussé; incised and inlaid with silver; h. 29.2. Form as 1. On neck and spout inscription, scrolling stems and leaf patterns; on shoulder inscription; on shoulder edge mythical beast; on body bands of inscription with sphinxes in roundels between, against spiral scroll; on foot inscription; inscriptions good wishes (Fig. 32)
8. Chicago; n.p.; Rice 1958 pp.252-3 pl.16. Bronze; beaten; incised; body only; dimensions unknown. Form as 5 but remounted as part of casket. Decorated with inscription in cartouches with rosettes above and below.

Ewers

C. cylindrical-bodied 3. beaten, spouted c. convex-sided

1. MMA 44.15; n.p.; Pope 1938 pl.1322, Dimand 1945 pp.88-9. Bronze; beaten; repoussé work; incised and inlaid with silver; h. 39.4. Form as C/3/b/1 but twelve-lobed sides, pairs of repoussé harpies on shoulder and repoussé birds round lower body. On neck and spout inscriptions and scrolling stems; on shoulder inscription; on body zodiacal signs and scrolling stems; on foot and handle animals; inscriptions good wishes.
2. BM 1848.8-5.2; n.p.; Pope 1938 pl.1325, Barrett 1949 pls.6-7. Brass; beaten; repoussé work; incised and inlaid with silver and copper; h. 40.0. Form as 1, but no birds on lower body, birds not harpies on shoulder, and repoussé birds around lower neck; filter in top of neck. On neck and spout scrolling stems and inscription; on shoulder inscription; on body zodiacal signs and scrolling stems with bands

of inscription and running animals; on foot inscription; on handle animals; inscriptions good wishes. (Analysis Table 21 no. 8.) (Fig. 32)

3. Hermitage; n.p.; Sarre and Martin 1912 pl.142 no.3051. Bronze; beaten; repoussé work; incised and originally inlaid; handle probably replacement; h. 36.0. Form as 1 but plain shoulder edge, and no birds on lower body. On neck and spout inscription and scrolling stems; on shoulder edge knot patterns; on body bands of inscription, and medallions with vegetal designs; on foot inscription.

4. Kābul 58.2.17; Ghazna; Turin 1961 pl.62, Rowland 1961 pl.106. Bronze; beaten; incised; neck, spout and handle missing; h. 21.0. Form as 1, but without repoussé work. On body sides medallion with stylised bird and kufic inscription of good wishes.

5. Louvre AA 176/AA 59; (?) Sīstān; Marchal 1974 fig.10 shows wrongly mounted neck. Brass; beaten; repoussé; incised; body wrongly mounted; handle missing; dimensions unknown. Form as 1 but twenty-four sides, alternately wide and narrow; no repoussé work on shoulder edge. On shoulder inscription with roundels; on shoulder edge inscription or pear-shaped medallions; on body alternating vertical bands of inscriptions or scrolling stem. (Analysis Table 21 no.19 - neck.) (See also bronze ewer A/1/d/9.)

6. V&A 592-1898; n.p.; unp. Bronze; beaten; repoussé work; incised and inlaid with silver and copper; h. 38.4. Form as 5 but twenty-sided; complete with handle. On neck and spout inscriptions, rosettes and scrolling stems; on shoulder inscription; on shoulder

edge floral medallions; on wide sides of body inscription and floral medallion; on narrow sides inscription; on foot inscription; on handle interlace band; inscriptions good wishes.

7. Tiflis, Georgia State Museum; made in Herāt in Sha‘ban 577

H./ 19 December 1181 - 17 January 1182 A.D.; Gyuzal‘yan 1938. Bronze; beaten; repoussé work; incised and inlaid with silver and copper; handle and bottom of foot later additions; dimensions unknown. Form as 1, but without repoussé work on shoulder, and twenty-four convex sides. On shoulder edge zodiacal signs; on body vegetal motifs and seated figures alternating with strapwork and Persian inscriptions in praise of object and its maker; on neck and foot Arabic inscriptions of good wishes to owner. Inlaid (‘amal-i naqsh) Mahmūd ibn Muḥammad of Herāt.

Ewers

C. cylindrical-bodied 3. beaten, spouted d. alternately convex and triangular-sided

1. BM 1848.8-5.1; n.p.; Pope 1938 pl.1326. Bronze; beaten; repoussé work; incised and inlaid with silver and copper; foot and cap later additions; h. 43.0. Form as C/3/b/1 but with twelve convex and twelve triangular sides, and twenty-four repoussé birds on shoulder edge. On neck and spout inscriptions and scrolling stems; on shoulder inscription; on body vertical bands of inscriptions; inscriptions good wishes to owner.

2. Dahlem I 3568; n.p.; Sarre and Martin 1912 pl.141 no.3046, Berlin-Dahlem 1971 no.27 pl.7. Bronze; beaten; repoussé; incised

and inlaid with silver; h. 37.4. Form as 1 but pairs of repoussé lions on shoulder edge. On neck scrolling stems; on body vertical bands of inscriptions, running animals or scrolling stems; on foot interlace band; inscriptions good wishes. (Fig. 32)

3. Dahlem I 3566; n.p.; Sarre and Martin 1912 pl.142 no.3047, Berlin-Dahlem 1971 no.351. Bronze; beaten; repoussé; incised and inlaid with silver and copper; bottom of foot and handle later; top of spout and neck missing; h. 32.0. Form as 1 but shoulder edge without repoussé birds. On neck inscriptions and scrolling stem; on body vertical bands of scrolling stem and inscriptions; on foot interlace band; inscriptions good wishes.

4. Kābul 58.2.186; Ghazna; Rowland 1966 pl.108, Mortimer Rice and Rowland 1971 pls.177-8. Bronze; beaten; incised; neck, spout, handle and base plate missing; h. 26.5. Form as 1 but no repoussé birds, and ten convex and ten triangular sides. On shoulder inscription; on shoulder edge vegetal motifs; on body vertical bands of running animals and scrolling stems; inscription good wishes to owner.

5. de Unger colln.; n.p.; unp. Bronze; beaten; repoussé; incised and inlaid with silver; h. 38.3. Form as 1 but plain shoulder edge. On shoulder inscription; on shoulder edge rosettes or "vase" motifs; on body rosettes and floral medallions alternating with inscriptions; on handle scrolling stem and interlace pattern; inscriptions good wishes.

Forks

1. Louvre MAO.S.420; Susa; unp. Bronze; incised; handle broken; lg. 12.1. Narrow prongs; broad neck and prong tops; narrow handle. Neck ornamented with hatching and dot and circle pattern.

2. Louvre MAO.S.421; Susa; unp. Bronze; prongs broken; lg. of handle 12.5. Form as 1, with gazelle-head finial. Undecorated. (Fig. 32)

3. Louvre MAO.S.422; Susa; unp. Bronze; prongs broken; lg. of handle 11.8. Uniform thickness; almost circular joint with handle; handle of barley-sugar form with gazelle-head finial. (Fig. 32)

4. PUM I₂-143; Rayy; unp. Bronze; prongs missing; lg. of handle 18.4. Form as 1, but ribbed handle with gazelle-head finial. Dot and circle pattern on neck.

Jugs

A. ovoid-bodied 1. low-shouldered, with flaring mouth, cast

1. de Unger colln.; n.p.; Sotheby & Co. 8/12/70 lot 71. Bronze; cast; h. 16.5. Pear-shaped, rounded body; low foot; flaring neck with ridge at base; curving handle with leaf-shaped lower terminal and spherical finial. Leaf-shaped motif in relief on handle shoulder; rest of object undecorated. (Fig. 33)

JugsA. ovoid-bodied 2. low-shouldered, with flaring mouth, beaten

1. PUM RCH 1152; Rayy; unp. Bronze; beaten; cast handle;
 h. 10.0; d. 10.5. Bulbous pear-shaped body; low foot; wide neck
 and flaring rim; high curving handle with simple finial. Undecorated.
 (Fig. 33)

JugsA. ovoid-bodied 3. low-shouldered, with vertical mouth, cast

1. de Unger colln.; n.p.; unp. Bronze; cast; base plate and
 handle soldered in position; incised; h. 20.5; d. 14.5. Bulbous
 pear-shaped body; flaring foot; rim band; curving handle with lion
 finial. Round body band of animals against scrolling stem; on rim
 band interlace.

2. MMA 41.118; n.p.; Rome Palazzo Brancaccio 1956 pl.66. Bronze;
 cast; incised and inlaid with silver; h. 16.0; d. 14.0. Pear-
 shaped body; flaring foot; almost vertical neck with ridge below it
 and slightly everted lip. On foot band of scrolling stem; on body
 kufic inscription with background of spiralling stems, and above it
 roundels containing vegetal motifs with six-petalled rosettes, and
 leaf and petal motifs between; on neck naskhi inscription against
 spiralling stems; inscriptions good wishes. (Fig

JugsA. ovoid-bodied 4. low-shouldered, with vertical mouth, beaten

1. BM 85.7-11.1; n.p.; Barrett 1949 pls. 8, 29a, Pope 1938 pl.1317B.

Brass; beaten; incised and inlaid with silver; handle missing;

h. 15.3. Pear-shaped body with ten lappets ending just below widest point; splayed foot with ten cusps; ridge at base of slightly everted neck; everted lip; boss on base. Around mouth band of interlacing circles; around neck animated inscription; on neck ridge double-leaf pattern; on each lappet enthroned drinker or musician, birds or animals in cusped roundels, and mounted hunter within double-leaf border; on lower body harpies and kufic inscription; on foot musician or drinker alternating with bird or animal scene; inside foot rosettes; on base interlace; inscriptions good wishes. (Fig. 33)

2. WAG 54.453; n.p.; Ettinghausen 1966 fig.7, Pope 1938 pl.1317A.

Bronze; beaten; incised and inlaid with silver; handle missing;

h. 16.3; d. 12.8. Form as 1. Around neck human-headed inscription; on lappets band of kufic inscription above zodiacal signs in roundels; on lower body interlace patterns in roundels; on foot rosettes; inscriptions good wishes.

JugsA. ovoid-bodied 5. high-shouldered, with flaring mouth, cast

1. ex Martin colln.; n.p.; Sarre and Martin 1912 pl.126 no.2970.

Bronze; cast; h. 17.5. Ovoid body with high shoulder; low foot;

slightly waisted neck; round mouth; leaf form projecting on either side of mouth; handle with pointed finial, ten notches, and terminal at base in form of human head. Undecorated. (Fig. 34)

JugsA. ovoid-bodied 6. high-shouldered, with flaring mouth, beaten

1. Brooklyn 72.86.4; n.p.; unp. Bronze; beaten; handle cast; h. 16.5; d. 14.0. Ovoid body with high shoulder and flaring foot; straight slightly flaring mouth; curved handle with knob finial. Undecorated. (Fig. 34)

2. Tehrān; Nīshāpūr purchase; unp. Bronze; handle (?) missing; h. 9.0; d. 8.4. No foot; high-shouldered body; flaring mouth. Undecorated.

JugsB. bulbous-bodied 1. with vertical mouth, cast

1. Brooklyn; n.p.; unp. Bronze; cast; incised and inlaid with silver; handle missing; h. 14.0. Bulbous angular body; flaring foot; vertical neck with ridge at base and everted mouth. On foot naskhi inscription; on lower body animals; on centre body zodiacal signs amid interlacing; on upper body animals; on neck naskhi inscription above ropework border; inscriptions good wishes. (Fig. 34)

2. V&A 1956.1899; n.p.; Melikian-Chirvani 1973 p.34. Bronze; cast; incised and inlaid with silver; handle missing; h. 17.8; d. 15.3. Form as 1 but centre body with numerous small slightly concave facettes. Around neck band of naskhi inscription of good wishes against scrolling stems.

JugsB. Bulbous-bodied 2. with vertical mouth, beaten

1. Brooklyn 72.86.1; n.p.; unp. Bronze; beaten; incised and punched; handle cast; h. 17.0; d. 15.0. Bulbous body; everted foot; straight slightly flaring neck; plain handle. Neck decorated with stylised lions running against punched ground. (Fig. 34)

JugsC. other forms

1. de Unger colln.; n.p.; unp. Bronze; cast; incised and inlaid with silver; handle missing; h. 13.0; d. 13.5. Shallow body with almost flat base and rounded sides on tall splayed foot; vertical neck with everted rim. On neck naskhi inscription against scrolling stem; on body roundels with vegetal designs and rhomb shaped leaves. (Fig. 35)

MortarsA. rimless 1. round a handleless 2. with almond bosses

1. BM 1938.10-18.1; n.p.; Barrett 1949 pl.2b. Bronze; cast; incised; h. 11.4; d. 12.0. Cylindrical body with slightly smaller foot; five two-tier almond bosses around body. Band of simple scroll work on upper body. (Fig. 35)

2. East Berlin I 988; n.p.; unp. Bronze; cast; h. c. 15.0; d. c. 15.0. Form as 1. Undecorated.

MortarsA. rimless 1. round c two-handled 2. with almond bosses

1. East Berlin I 1486; n.p.; Pope 1938 pl.1280A. Bronze; cast; h. 13.0. Cylindrical body; waisted rim; inward curving rim top; two almond-shaped handles with rings; ten elongated two-tier almond bosses, alternate ones reversed. Undecorated.

MortarsB. with flaring rim 1. round a handleless 2. with almond bosses

1. Dahlem I 1289; n.p.; Pope 1938 pl.1280B, Berlin-Dahlem 1971 no.433. Bronze; cast; incised; h. 15.0; d. 16.8. Cylindrical body and foot; gently flared rim; rounded rim top; ridges around foot; around body twelve three-tiered almond bosses, alternately placed, in two rows of six, the upper ones inverted. Vegetal design at point of each boss; above foot band of interlace; around underside of rim band of naskhi inscription against scrolling stem interspersed with roundels with knot pattern; inscription good wishes. (Fig. 35)

2. Musée des Arts Decoratifs 11 287; n.p.; Melikian-Chirvani 1973 pp.18-19. Bronze; cast; incised; h. 13.6; d. 15.0. Form as 1 but with no ridges round foot, and with plain almond bosses. Around foot band of scrolling stem; around underside of rim band of kufic inscription reading al-mulk.

3. Kābul 58.2.42; Ghazna; Mortimer Rice and Rowland 1971 no.180. Bronze; cast; incised; h. 12.0. Form as 1 but with slight bulge of body above foot; plain bosses. On foot z-pattern; on body triangles between each pair of bosses containing spiralling scroll; on underside of rim pseudo-kufic inscription against scrolling stem interspersed with roundels containing four-leaf form.

4. Hermitage; n.p.; Davidovich and Litvinski 1955 p.113 fig.57 bottom left, Pugachenkova and Rempel 1965 fig.243. Bronze; cast; incised; dimensions unknown. Form as 1 but plain bosses. Interlacing borders, and tightly scrolled stems between; around foot band of z-pattern; around underside of rim remains of kufic inscription.

5. Hermitage; n.p.; Davidovich and Litvinski 1955 p.113 fig.57 bottom right. Bronze; cast; dimensions unknown. Form as 1 but two-tiered bosses. Details of decoration not clear.

6. ex Martin colln.; Bukhāra; Martin 1902 pl.24 right. Bronze; cast; incised; dimensions unknown. Form as 1 with three-tiered almond bosses. Each boss with a bird in a roundel at its point; around foot scrolling stem; around underside of rim naskhi inscription interspersed with birds in roundels; inscription good wishes.

7. Mazār-i Sharīf; Mazār-i Sharīf; Melikian-Chirvani 1973 p.19.

Details not known.

8. Marmilloḍ colln., Lausanne; Herāt; Melikian-Chirvani 1973 p.19.

Details not known.

Mortars

C. with flaring rim and foot 1. round a. handleless 1. without bosses

1. MMA; n.p.; Kühnel 1925 fig.104, Dimand 1947 fig.79. Bronze; cast; incised; dimensions unknown. Slightly swelling cylindrical body with flaring foot and rim. Body decorated with roundels with vegetal motifs and animals against scrolling stem; on underside of rim and foot kufic inscriptions and roundels. (Fig. 35)

Mortars

C. with flaring rim and foot 1. round a. handleless 2. with almond bosses

1. Digby colln.; n.p.; unp. Quaternary alloy; cast; incised; h. 11.0; d. 16.4. Cylindrical body slightly swelling low down; flaring rim and angled projecting foot; around body two alternate rows of almond bosses; four in each row, the lower one reversed. Between the bosses birds against scrolling stems; band of kufic inscription of good wishes above; band of scrolling stems below; on base cartouches with interlace pattern and roundels with leaf forms; on rim top cartouches of vegetal interlace and roundels. (Analysis Table 21 no. 45.)

Mortars

c. with flaring rim and foot 1. round a. handleless 3. with variety of bosses

1. BM 83.10-20.7; n.p.; Pinder-Wilson 1963a, Barrett 1949 pl.11.

Bronze; cast; incised and inlaid with copper and silver; inlay later than object; h. 11.7; d. 13.6. Cylindrical body with flaring foot and rim; around body 12 almond bosses arranged in two aligned rows of six, the upper ones inverted; around middle between each set of four a row of six rhomb-shaped bosses. Ground covered with interlace of strapwork and scrolling stems; on each boss inlay; underside of rim incised naskhi inscription with roundels containing rosettes with six round petals; on foot inlaid pairs of curving lines and roundels; on base inlaid Chinese inscription reading "made to be treasured and used"; on rim top inscription of good wishes.

2. MMA 1971.41; n.p.; Sotheby & Co. 8/12/70 lot 77. Bronze; cast; incised and inlaid with copper; base deformed and holed; h. 14.9; d. 18.2. Form as 1. In gaps between almond bosses and rhombs a knot pattern; between almond bosses triangular medallion forms with scrolling stems; underside of rim and foot decorated with kufic inscription of good wishes in cartouches and vegetal forms in roundels; on rim top remains of inscription and roundels.

3. V&A M.820-1928; n.p.; unp. Bronze; cast; incised; h. 15.0; d. 17.9. Form as 1 but only four bosses in each row. Lancette trefoil at points of each boss; rhombs decorated with knot pattern; around foot naskhi inscription of good wishes; around underside of rim kufic inscription reading al-mulk lillāh.

4. Hermitage; n.p.; Davidovich and Litvinski 1955 p.113 fig.57 (middle bottom). Bronze; cast; dimensions unknown. Form as 1 but appears to have seven bosses in each of three rows. Nature of decoration uncertain.
5. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.34. Bronze; incised; dimensions unknown. Form as 1 but only four bosses in each row. In gaps between almond bosses and rhombs rosettes with six round petals; between the almond bosses triangular medallion forms with animals against scrolling stems; on underside of rim and foot cartouches with inscriptions and roundels.
6. Dahlem I 3558; n.p.; Kühnel 1959 fig.3. Bronze; cast; incised and inlaid with copper; h. 9.8; d. 13.3. Form as 1 but the six bosses in top and bottom rows in the form of lion heads, the lower ones upside down. On rhombs vegetal designs; ground divided into diamond or triangular areas containing vegetal designs, separated by broad bands containing four-petalled rosettes; underside of rim, top of rim and base decorated with cartouches and roundels, the cartouches containing pseudo-kufic forms.

Mortars

C. with flaring rim and foot 1. round b. one-handled 2. with almond bosses

1. V&A M.51-1952; n.p.; unp. Bronze; cast; incised; h. 14.8; d. 18.6. Cylindrical body with single animal head handle, and nine flange-like almond bosses, alternately plain and three-tiered; flared foot and rim. Between the bosses pear-shaped medallions with flower

forms in roundels between; on rounded rim top remains of cartouches with scroll and roundels with rosettes; inscription good wishes.

2. Heeramaneck Galleries; n.p.; Grabar 1959 no.30. Bronze; cast; incised; h. 13.0; d. 18.0. Form as 1, but almond bosses small. On body square s-borders, roundels with knot patterns, and lancette borders for bosses; on foot and underside of rim roundels with vegetal motifs and kufic inscriptions in small cartouches.

Mortars

C. with flaring rim and foot 1. round b. one-handled 3. with variety of bosses

1. BM 1956.7-26.4; n.p.; unp. Bronze; cast; incised; h. 11.1; d. 16.5. Concave-sided body; flaring foot; four rhomb bosses around and a single handle in form of an animal head with a ring through it. Around middle band of large scrolling stems, with different bands of scrolling stems above and below; on rim top four cartouches with two different scrolling stem designs and roundels with knot pattern between.

Mortars

C. with flaring rim and foot 1. round d. four-handled 3. with variety of bosses

1. Tehrān 8638; n.p.; Washington Smithsonian Institution 1964 no.626. Bronze; cast; incised; h. 15.5; d. 22.5. Round body with flaring rim and foot; four bull-head handles with rings; outside divided into eight sections by pilasters; between them cast and applied

wine pourer, flute player, tambourine player and lute player alternate with handles. Crude incised designs around.

Mortars

c. with flaring rim and foot 2. octagonal a. handleless 1. without bosses

1. Amsterdam; n.p.; Pope 1938 pl.1310, Wilson 1931 no.229C, London Burlington House 1931 pl.22 (top). Bronze; cast; incised and inlaid with copper; h. 14.0; d. 20.2. Octagonal with flaring rim and foot. Body decorated alternately with complex interlace square with floral protrusions, and cartouches with a hare against spiral scroll with vegetal design above and below; on foot and rim naskhi inscriptions of good wishes interspersed with roundels with vegetal motifs inside an oriental horseshoe; on underside of rim pseudo-kufic inscription. (Fig. 36)

2. V&A 111-1929; n.p.; unp. Bronze; cast; incised and inlaid with copper; h. 12.9; d. 16.5. Form as 1 with three small ridges where foot and rim join body. Body decorated with human-headed birds in eight-pointed stars facing one another in pairs; between them vegetal designs; scrolling stem border above and below; on foot and underside of rim pseudo-kufic inscription against scrolling stem; on rim kufic inscription of good wishes in cartouches separated by roundels with triangular interlace motifs.

3. Dahlem I 546; n.p.; unp. Bronze; cast; incised and inlaid with copper; h. 16.2; d. 17.2. Form as 1 with gently flaring rim and foot. On underside of rim naskhi inscription against vegetal ground; on body central cartouches with scrolling stems, with triangle between birds and kufic inscription above, and naskhi inscription below;

remains of decoration on foot; inscriptions good wishes.

Mortars

c. with flaring rim and foot 2. octagonal b. one-handled 1. without
bosses

1. Ashmolean 1968.34; n.p.; unp. Quaternary alloy; cast; incised and inlaid with copper; h. 10.8; d. 13.5. Octagonal with flaring rim and foot, and with single stylised animal handle on diamond-shaped mount. Sides decorated with two cartouches of pseudo-kufic inscription. Vegetal motif in oriental horseshoe and diamond cartouche between; on base, underside of rim and rim cartouches of pseudo-kufic inscription separated by roundels with vegetal motifs inside oriental horseshoes, that on the rim being a naskhi inscription of good wishes. (Analysis Table 21 no. 32.)

2. Dahlem I 3557; bought in Tehrān; Sarre 1906 no.6, pl.3. Bronze; cast; incised; deformed base; h. 12.2; d. 17.7. Form as 1. Body decorated with diamond shaped cartouches containing, and surrounded by, scrolling stems; underside of rim and foot have naskhi inscription of good wishes.

Mortars

C. with flaring rim and foot 2. octagonal b. one-handled 2. with
almond bosses

1. Hamburg 1955.6; n.p.; Kühnel 1959 figs.1-2. Bronze; cast; incised; deformed base with hole in it; h. 16.5; d. 17.3. Octagonal with flaring rim and foot; slightly bulging sides; single lion head handle with ring through it and single boss beneath; three two-tier almond bosses on each of other sides alternately grouped. Incised

floriated column on each corner; on underside of rim kufic inscription of good wishes; on foot alternate pairs of birds and running animal against scroll ground.

2. Pharaon colln., Beirut; n.p.; Beirut 1974 no.134. Bronze; cast; incised; h. 12.3; d. 16.3. Form as 1; plain handle with single plain boss beneath; plain boss on each of other seven sides. Each boss with incised border and two spandrels of scrollwork; on underside of rim and foot alternating cartouches of strapwork and scrolling stem; above handle naskhi inscription.

3. V&A 466-'76; Rayy; Pope 1938 pl.1281. Bronze; cast; incised; h. 13.4; d. 18.0. Form as 1, but body bulges above foot; lion handle; single two-tier almond boss on each side, except that opposite handle which has three such bosses. Each side decorated with scrolling stems above band of strapwork; around foot kufic inscription against scrolling stems and roundels with vegetal motifs; on underside of rim naskhi inscription against scrolling stems and roundels with vegetal motifs; rim decorated with stems and roundels; inscriptions good wishes.

4. de Unger colln.; n.p.; unp. Bronze; cast; incised and inlaid with copper; deformed base; h. 12.5; d. 16.0. Form as 1, but with vertical foot; two two-tier bosses below lion handle, three on each of other sides. On underside of rim interlace pattern; otherwise undecorated.

5. MMA 41.160.199; n.p.; unp. Bronze; cast; incised; h. 10.7; d. 14.5. Form as 1; single almond boss on each side. Each boss except that below handle outlined with lancette trefoil; seven sides

decorated with arcade with scrolling stem in spandrels; on underside of rim band of simple scrollwork; on foot alternating bands of two-fold and three-fold interlace; on rim scrolling stem separated by pear-shaped medallions.

Mortars

C. with flaring rim and foot 2. octagonal b. one-handled 3. with a variety of bosses

1. Detroit; n.p.; Aga-Oglu 1931a fig.6. Bronze; cast; incised; dimensions unknown. Flaring rim and foot with concave curving body; one lion handle with ring; seven rhomboid bosses. On each side decoration of scrolling stems and palmettes.

Mortars

C. with flaring rim and foot 2. octagonal c. two-handled. 1. without bosses

1. MMA 91.1.527A; n.p.; unp. Bronze; cast; incised and inlaid with silver; h. 11.0; d. 13.8. Octagonal with flaring rim and foot; double inlaid ridge at base of rim and above foot; diamond-shaped protruding spaces for two handles on two opposite sides. Four harpies around handle spaces; on each of other sides horseman or enthroned figure in floral medallion with four harpies around; on rim naskhi inscription; on underside of rim kufic inscription; on foot kufic inscription; inscriptions good wishes.

Mortars

C. with flaring rim and foot 2. octagonal c. two-handled 2. with almond bosses

1. MMA; n.p.; Pope 1938 pl. 1279A, 1280C. Bronze; cast; incised; h. 15.0. Octagonal with flaring foot and rim; on two opposite sides above small almond boss two animal handles with rings through them; on other six sides single double-tier almond boss. Floriated columns at corners; on underside of rim al-baraka in kufic with trefoils at corners; above handles broken cartouche of scrolling stems; on foot large leafed scroll with trefoils at corners.

2. V&A 207-1892; n.p.; unp. Bronze; cast; incised; base deformed; h. 12.5; d. 15.8. Form as 1, but no bosses under handles. Body decorated with large areas of scrolling stem; on underside of rim cartouches of scrolling stem; rim once decorated; on foot cartouches of pseudo-kufic inscription.

Mortars

C. with flaring rim and foot 2. octagonal c. two-handled 3. with variety of bosses

1. Dahlem I 1288; n.p.; unp. Bronze; cast; incised; h. 14.0; d. 22.0. Octagonal with flaring rim and foot; two handles on opposite two sides, one with ring still intact; on other sides two rows of round-cornered rectangular plaques and two-tiered almond bosses the almond bosses of the upper row reversed. On rim band of scrolling stem.

Mortars

c. with flaring rim and foot 2. octagonal d. four-handled 1. without
bosses

1. MMA 12.33.4; n.p.; Ettinghausen 1970 fig.1. Bronze; cast; incised; h. 15.5; d. 21.5. Octagonal with concave profile; four lion head handles, two large, two small, of different forms. Sides decorated with oriental horseshoe with floral projections in arcading decorated with scrolling stems; above and below a band of simple scroll alternating with kufic inscription; underside of rim and rim decorated with kufic inscription; naskhi inscription around foot; inscriptions good wishes.

2. Louvre 8181; n.p.; unp. Bronze; cast; incised; h. 13.5; d. 19.3. Octagonal with flaring rim and foot; four animal-headed handles. Four roundels with vegetal designs, within floral arcading; on underside of rim and foot alternating vegetal design and naskhi pseudo-inscription.

Mortars

C. with flaring rim and foot 2. octagonal d. four-handled 2. with
almond bosses

1. Louvre; n.p.; unp. Bronze; cast; incised; h. 14.8; d. 21.9. Octagonal with flaring rim and foot; four bull's head handles with rings through them alternating with four plain almond bosses. Around an arcade of scrolling stems; on rim kufic inscription with pear-shaped roundels containing vegetal motif; on foot and underside of rim naskhi inscription with trefoils at corners.

Mortars

c. with flaring rim and foot 3. nine-sided b. one-handled 2. with almond bosses

1. Whereabouts unknown; n.p.; Pope 1938 pl.1279B. Bronze; cast; incised; dimensions unknown. Nine-sided with flaring foot and rim; single animal head handle; on alternate sides single plain almond boss. Arcading of scrollwork around; scrolling stems on foot, underside of rim, and rim, the latter divided by pear-shaped medallions at the corners. (Fig. 36)

Mortars

D. with angular foot and flat rim 1. round a. handleless; 1. without bosses

1. Kābul; Maimāna; Scerrato 1964 p.686 no.4 and fig.16. Bronze; cast; d. 16.8; h. 12.0. Cylindrical body with double ridge around middle; flat projecting rim; angled projecting foot. Undecorated. (Fig. 36)

2. V&A 948-1886; n.p.; unp. Bronze; cast; incised and inlaid with copper; h. 18.1; d. 26.8. Cylindrical body with three projecting ridges around; flat projecting rim with four elongated almond bosses; flat projecting foot with step below body. Foot and body decorated with roundels containing vegetal motif within oriental horseshoe surround; rim decorated with naskhi inscription of good wishes against scrolling stem.

3. Louvre 6438; n.p.; unp. Bronze; incised; h. 17.8; d. 24.8. Form as 1, but rim has six bosses. Body undecorated; on foot kufic inscription against vegetal ground divided by four-petalled rosettes; on rim kufic inscription against vegetal ground; both inscriptions apparently meaningless.

4. Kābul; (?) Ghazna; Scerrato 1964 p.686 n.62. Details unknown.

Mortars

D. with angular foot and flat rim 2. octagonal a. handleless 1. without bosses

1. Los Angeles M.773.5.264a; n.p.; Pal 1973 no.301. Bronze; cast; incised; h. 14.25; d. 20.25. Octagonal with flat slightly cusped foot and rim; double ridge around centre of body. On rim inscription against scrolling stem with roundels; on foot similar but pseudo-inscription; on upper body band of pseudo-kufic with knotted hastae against spiral scroll; on lower body animals in panels against spiral scroll; around middle interlace band.

Mortars

D. with angular foot and flat rim 4. ten-sided a. handleless

1. without bosses

1. Heerameck Galleries; n.p.; Grabar 1959 no.32. Bronze; cast; incised; h. 11.8; d. 19.5. Ten-sided body with flat ten-sided foot and irregularly cusped flat rim. Body decorated with three panels each side, the top and bottom ones with inscriptions and the middle ones with animals against tightly scrolled ground; on rim scrolling stems and name of maker Maḥmūd Aḥmad (?). (Fig. 36)

Pans

1. Tehrān; Nīshāpūr; unp. Bronze; lg. 35.0; d. of pan 20.0.

Circular with handle.

2. Whereabouts unknown; Khwārazm; Tolstov 1959 IV pp.194-7 fig.2.

Bronze; castellated sheet metal; lg. 51.5; d. of pan 29.0; h. 9.0.

Circular with handle; flat bottom; flaring sides. (Fig. 37)

Pestles

1. Louvre D.181; Susa (de Mecquenem 1913-14); unp. Bronze; cast; lg. 21.7. Circular; elongated hemispherical handle; flared end. (Fig. 37)

2. Louvre; (?) Susa; unp. Bronze; cast; lg. 23.6. Form as 1.

3. Louvre; (?) Susa; unp. Bronze; cast; lg. 22.5. Form as 1.

4. PUM RCH 738; Rayy; unp. Bronze; cast; lg. 12.0; d. at base 3.0. Form as 1, but with ovoid handle.

5. PUM RH 5771; Rayy; unp. Bronze; cast; lg. 12.2; d. at base 2.8. Form as 1, but with cuboid handle.

6. PUM RH 6368; Rayy; unp. Bronze; cast; lg. 15.5; d. at base 3.0. Form as 1, but with flattened spherical handle.

7. Tehrān; Nīshāpūr, Qanāt Tapa; unp. Bronze; cast; lg. 11.3;
d. of base 2.4. Form as 1, but spherical handle.

8. Kābul 58.2.42; Ghazna; Mortimer Rice and Rowland 1971 pl.180.
Bronze; cast; incised; lg. 20.5. Form as 1, but with flattened
spherical handle and thick protruding band around shaft. On lower
part incised vegetal design. (Fig. 37)

9. Whereabouts unknown; Kalai Bolo (Farghāna); Davidovich and
Litvinski 1955 p.113 fig.57 (top). Bronze; cast; lg. 20.4.
Form as 8.

10. Hermitage; n.p.; Davidovich and Litvinski 1955 p.113 fig.57
(standing in central mortar). Details not known. Form as 8.

11. East Berlin; n.p.; Pope 1938 pl.1280A (standing in mortar).
No details; lg. appears to be c. 18.5. Form as 8, but with elongated
hemispherical handle.

12. Los Angeles M.73.5.264b; n.p.; Pal 1973 no.301. Bronze; cast;
incised; lg. 23.5. Form as 8. Details of decoration unknown.

Spoons

1. Tehrān; Nīshāpūr Sabz Pushān C Pit; unp. Bronze; lg. 18.2,
lg. of bowl 4.9, w. 3.3. Flat handle widening towards end.

2. Tehrān; Nīshāpūr Village Tapa Place 16C; unp. Bronze; lg. 20.0,
lg. of bowl 5.0, w. 3.4. Nicks across neck; pear-shaped handle end.

3. PUM RH 5810; Rayy; unp. Bronze; incised; broken; lg. 19.4, w. of bowl 4.5. Top of handle in form of bird profile. On upper handle incised double circles; on lower handle cut scoops and lines.

(Fig. 37)

4. PUM RG 8552; Rayy; unp. Bronze; handle missing; lg. of bowl 4.4, w. 3.0. Slightly pointed.

5. Ashmolean; Sīrāf S.69/70, 5198; unp. Bronze; broken; lg. 16.5, lg. of bowl originally c. 6.5, w. c. 4.5. (Fig. 38)

6. Louvre MAO.S.424; Susa; unp. Bronze; bowl only; lg. of bowl 7.2, w. 3.1. Remains of loop neck attached.

7. V&A M.6-1974; n.p.; unp. Bronze; incised; lg. 12.1, lg. of bowl 4.9, w. 4.5. Short handle its end curled upwards to hold a ring. Geometric and vegetal motifs at neck; bowl decorated with picture of seated drinking figure with cup against scrolling stems. (Fig. 38)

8. Banbhore; Banbhore; Khan 1963 fig. on p.49. Bronze; broken; lg. c. 12.0, lg. of bowl c. 5.0.

9. MMA 37.40.33; Nīshāpūr Nasrullah's vineyard; unp. Bronze; lg. 19.0, bowl lg. 3.9, w. 4.8. Squarish handle. Nicks across neck. (Fig. 38)

10. MMA 39.40.108; Nīshāpūr; unp. Bronze; part missing; lg. of handle 14.2, w. of bowl 11.0. Flat handle. Geometric pattern at neck.

11. Dahlem I 4320; n.p.; unp. Bronze; incised; lg. 13.7, lg. of bowl 5.8. Rather angular bowl; flat handle with two projecting points on each side at neck. Naskhi inscription on handle probably good wishes to owner.
12. Dahlem I 5554; n.p.; unp. Bronze; incised; lg. 15.8, lg. of bowl 4.0, w. 5.6. Handle squarish with six bulges at neck. Outside of bowl decorated with central knot pattern, s-border, and naskhi inscription of good wishes.
13. Tehrān; Takht-i Sulaymān; Naumann et al. 1975 fig.27. Bronze; incised; lg. 18.3. Rounded triangular bowl; straight handle with hole through top and hook on either side. Handle decorated with scrolling stem. (Fig. 38)

Stem bowls

A. high tin bronze 1. with rounded body and everted foot

1. Cleveland; "The Wade Cup"; n.p.; Rice 1955, Ettinghausen 1957. High tin bronze; body and foot cast in one piece; separate base plate soldered in; incised and inlaid with silver; h. 10.5; d. 16.5. Everted foot; rounded body; slightly incurving rim. Foot decorated with human and animal headed naskhi inscription between bands of almonds; on body interlacing bands bearing animals against scrolling stems, the spaces between the bands filled with zodiacal signs or vegetal motifs; around the rim animated inscription; inside rim kufic inscription; in centre four sphinxes in wheel pattern with band of fishes around and twelve radiating vegetal ornaments; inscription inside consists of the word al-baraka, those outside good wishes. (Fig. 39)

2. MMA 91.1.543; n.p.; Rice 1955 pl.14c. High tin bronze; body and foot cast in one piece; separate perhaps modern base plate soldered in; incised and inlaid with silver; dimensions unknown. Form as 1. On foot naskhi inscription against scroll ground; on body twelve roundels with almond band borders containing zodiacal signs; between them vegetal motifs; around rim human-headed naskhi inscription against stems; inscriptions good wishes to owner.

3. BM 1950.7-25.1; "Vaso Vescovali"; n.p.; Pinder-Wilson 1951, Rice 1955 pls. 16, 17a, 18a, Hartner 1973. High tin bronze; body and foot cast in one piece; separate base plate soldered in; lid cast in one piece, except for finial; incised and inlaid with silver; h. 21.5; d. 18.0. Form as 1. On foot human-headed naskhi inscription between almond bands; on body frieze of huntsman, wide band containing roundels with signs of the zodiac, and around rim band of musicians and drinkers; on cover eight roundels bearing complex astronomical symbols, the interstices filled with huntsmen, human-headed birds or addorsed birds; on finial animal and almond bands; inscription on foot good wishes; inside decorated with interlaced six-pointed star with fishes and circles, within band of radiating leaves.

4. V&A 572-78; n.p.; Melikian-Chirvani 1973 pp.26-7. High tin bronze; body and foot cast in one piece; separate base plate; incised and inlaid with silver; h. 10.5; d. 18.0. Form as 1. On body floral arcade design with roundels as footings, each arch containing a six-petalled rosette the lower petal almond-shaped; around rim naskhi inscription against scrolling stem; around lower body and foot kufic inscriptions; inscriptions good wishes.

5. ex Herzfeld colln.; n.p.; Ettinghausen 1957 fig. 1. Form as 1; details not known. On body relief arcading; around plain rim naskhi inscription against arabesque ground.

Stem bowls

A. high tin bronze 2. with rounded body and tall knopped foot

1. Naples 112114; n.p.; Lettieri 1839, Rice 1955 pl.12, Scerrato 1967 no.2 figs. 2-3. High tin bronze; cast; incised and inlaid with silver; h. 13.3; d. 17.4. Tall foot with annular knop; rounded body with small everted lip. Traces of decoration on knop; lower body decorated with floral medallions and rosettes; upper body has human-headed naskhi inscription against scrolling stems; inscription good wishes; incised on side of body bi-rasm Khalīf ibn al-Jūlakī.

2. Florence; n.p.; Rice 1955 pl.13. High tin bronze; cast; incised and inlaid with silver; h. 12.0; d. 16.8. Form as 1. Foot decorated with inscription, herringbone and interlace bands, and strapwork band with lancette leaves; on body three tiers of rosettes surrounded by strapwork; around upper body naskhi inscription of good wishes against scrolling stem; on rim band of circles; inside interlaced six-pointed star pattern within almond band, with round-petalled rosettes, floral medallions and interlace band around. (Fig.39)

3. BM 1969.9-24.1; n.p.; unp. High tin bronze; cast; incised and inlaid with silver; base of foot missing; h. 9.6; d. 18.0. Form as 1. On knop herringbone pattern; above it band of strapwork

with lancette leaves; on body two rows of rosettes and one row of round-leaved rosettes surrounded by strapwork; below lip naskhi inscription with human and animal heads against scrolling stems; inside central roundel with vegetal design; inscription good wishes. (Analysis Table 21 no. 10.)

Stem bowls

A. high tin bronze 3. with shallow rounded body and everted foot

1. Landau colln.; n.p.; Rice 1955 pl.14b, Wiet 1965 pp.655-9 and pl.1. High tin bronze; incised and inlaid with silver; dimensions unknown. Low flaring foot; flattened rounded body with plain rim; around outside below rim a band of naskhi inscription against scrolling stems in the name of the sadr of Khurāsān Amīrānshāh son of the sadr ‘Alā al-Dīn ‘Alī son of Husain al-Fātimī. (Fig.39)
2. Ghazna; (?) Ghazna; Melikian-Chirvani 1973 p.28 (bottom). High tin bronze; incised and inlaid with silver; dimensions unknown. Form as 1. Around outside below rim a band of naskhi inscription of good wishes against scrolling stems.
3. de Unger colln.; n.p.; unp. High tin bronze; cast in three pieces; incised; h. 10.3; d. 18.0. Form as 1. Around outside below rim band of naskhi inscription of good wishes against scrolling stem.

Stem bowlsA. high tin bronze 4. with inward-curving body and flaring foot

1. Naples 112117/1144; n.p.; Scerrato 1967 no.3 fig.4. High tin bronze; cast; incised and originally inlaid with silver; h. 7.6; d. 11.3. Straight sided flaring foot; strongly flaring lower body, rounding towards the top and curving in below short vertical rim. On lower body three medallions with enthroned figure; on upper body band of pseudo-inscription against stylised scrolling stem. (Fig.39)

Stem bowlsA. high tin bronze 5. with flaring body and vertical foot

1. Bologna; n.p.; Rice 1953 pp.232-238 pls. 3-8. High tin bronze; cast in two pieces; incised and inlaid with silver; h. 10.5; d. 20.9. Tall vertical foot; slightly upward sloping base to body; straight flaring sides. Outside decorated with naskhi inscription divided by four cusped medallions containing hunting scenes; above and below inscription four petalled rosettes and floral motifs; around foot naskhi inscription; inside near rim band of kufic inscription with four roundels containing seated figures above friezes of scrolling stem and lancette leaves; central hunters and animals against scrolling stems, surrounded by border of lancette leaves; outside inscription gives name of owner Najm al-Dīn 'Umar al-maliki al-Badrī; inscription on foot good wishes to owner. (Fig 40)

Stem bowls

A. high tin bronze 6. with shallow rounded body and vertical foot

1. V&A 634-72; n.p.; Pope 1938 pl.1319B, Melikian-Chirvani 1973 pp.28-9. High tin bronze; cast; incised and inlaid with silver; d. 19.3; h. 8.9. Almost vertical foot with base plate at bottom; flaring body curving upwards to an indented rim with slight everted lip. Around upper body naskhi inscription of good wishes against scrolling stems; on lower body four floral medallions and kufic inscription giving name of owner Yūsuf ibn Ahmad al-tājir al-tabrīzī; on rim interlacing circle pattern; on inside two pairs of incised circles. (Fig.40)

Stem bowls

B. bronze 1. with tall knopped foot

1. WAG; n.p.; Rice 1955 pl.14d. Bronze; incised and inlaid with silver; h. 12.5; d. 17.0. Tall stem with flat foot and annular knop, narrowing towards top; flattish rounded body with everted lip. Body decorated with naskhi inscription against scrolling stems divided into sections by rosettes, and below it roundels with strapwork, bands of strapwork and rosettes. (Fig.40)

2. V&A 543-1911; n.p.; Melikian-Chirvani 1973 p.59. Bronze; cast in two pieces; incised and inlaid with silver originally; h. 13.5; d. 17.3. Form as 1. Body decorated with naskhi inscription divided into sections by double Y's in hexagons; below it four interlacing lobed medallions containing musicians and drinkers, all against swastika ground; inscription good wishes.

Stem bowlsB. bronze 2. with flaring body and low foot

1. Louvre 3622; n.p.; unp. Bronze; cast; incised and inlaid with silver; h. 8.9; d. 19.2. Low foot ring; flat base; curved flaring body; slightly upturned rim. Inside central four-leafed sun disc with almond rays; on inside of rim naskhi inscription of good wishes above lancette leaf border. (Fig.40)

2. de Unger colln.; n.p.; unp. Bronze; cast; incised; h. 9.4; d. 19.9. Form as 1. Double incised line on rim.

Stem bowlsB. bronze 3. with rounded body and everted foot, cast

1. Ashmolean 1971.39; n.p.; unp. Quaternary alloy; cast in two pieces; incised and inlaid with tin; h. 10.6; d. 16.5; rounded body with fifteen facettes; plain slightly incurving rim. Around rim naskhi inscription of good wishes against scrolling stem. (Analysis Table 21 no. 36.) (Fig.41)

Stem bowlsB. bronze 4. with rounded body and everted foot, beaten

1. Kābul 52.8.64; n.p.; Mortimer Rice and Rowland 1971 pl.194. Bronze; beaten; repousse and incised decoration; h. 12.0. Everted foot; deep, rounded body divided into two rows of ten polygonal repousse panels; vertical rim. On foot vertical ridges in relief; on body birds, seated figures or mythical beast; on rim scrolling stem; all decoration against punched ground. (Fig.41)

Stem bowlsB. bronze 5. with shallow rounded body and low foot

1. V&A 1366-1904; n.p.; unp. Bronze; beaten; incised; h. 5.0;
d. 16.6. Base at bottom of foot; vertical foot; shallow rounded
body. Outside of body decorated with lancette leaf design; on outside
of base bird in roundel; z-pattern above foot. (Fig. 41)

(2) Ablutions equipmentBasins

1. Qandahār; Gazab; Scerrato 1959 pp.102-3 no.4 and figs.9-11.
Bronze; beaten and incised; d. 52.0. Flat bottom; rounded sides and everted rim with ridge lip; sixteen lobes. Around rim a naskhi inscription reading al-ta'yīd wa'l-dawāma; on bottom inside a central rosette in relief surrounded by bands of kufic and naskhi inscriptions interspersed with small roundels containing scrolling stems, birds or animals, all within a lancette leaf border.
2. Qandahār; Gazab; Scerrato 1959 p.103 no.5 and figs.12-13.
Bronze; beaten and incised; h. 12.0; d. 45.0. Form as 1 but flat lip and twelve lobes. Around rim naskhi inscription in cartouches reading al-ta'yīd; on bottom inside a central rosette surrounded by two bands of kufic inscription interspersed with scrolling stem medallions.
3. Tehrān; n.p.; Pope 1938 pl.1289A. Bronze; incised; d. c. 45.5.
Form as 2 with 15 lobes. Around rim inscription; on bottom inside central rosette, interlacing bands containing kufic inscriptions interspersed with floral roundels within lancette leaf border. (Fig. 41)
4. d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.63 bottom.
Bronze; incised; dimensions unknown. Form as 1 with everted rim and 16 lobes. Around rim pseudo-kufic inscription; on bottom inside central rosette surrounded by interlace geometric pattern containing zodiacal signs within borders of kufic inscription and lancette leaves.

5. Louvre AA 175; Afghanistan; Marchal 1974 n.39. Brass; beaten; incised and inlaid with silver; damaged; d. 48.5; h. 12.7. Form as 1 with fourteen lobes. Central rosette in relief with band of kufic around, then two eight-pointed interlacing stems, and another kufic inscription with vegetal designs in roundels; on rim naskhi inscription; inscriptions good wishes. (Analysis Table 21 no.26)

Buckets

A. cylindrical, cast

1. Ashkhabad; Marv; Ettinghausen 1943 fig.6. Bronze; incised; cast handle; dimensions unknown. Flat base; cylindrical slightly concave body; small rim at top; two vertical flanges on rim to hold semi-circular handle originally with a central knob. Body decorated with roundels containing knot pattern between two bands of kufic inscription; on handle cast line and diamond decoration. (Fig. 42)

Buckets

B. rounded, cast 1. with straight-sided upper body

1. Hermitage; n.p.; Pope 1938 pl.1291A p.2479 fig.807. Bronze; incised; bottom of bucket replacement; h.13.0. Rounded lower and straight-sided upper body; thickened rim with two flanges holding handle; on handle geometric cast pattern in centre with two holes; outer parts of forks in form of tails. Body decorated at top with band of naskhi inscription against scrolling stem, round centre with interlacing medallions containing harpie, birds and vegetal designs against a ground of scrolling stems, and below with band of interlace.

2, Kelekian colln.; n.p.; Ettinghausen 1943 fig.7. Bronze; incised; dimensions unknown. Form as 1; finial on handle. Nature of decoration uncertain, except for stem and leaf design on rim. (Fig. 42)

Buckets

B. rounded, cast 2. bulbous-bodied

1. Curtis colln.; n.p.; Migeon 1927 II fig.230. Bronze; incised; dimensions unknown. Bulbous body; thickened rim with two upstanding flanges for handle; splayed foot; handle with geometric patterns and projections above forks. Body decorated near top with band of naskhi inscription against scrolling stem; around middle with running animals against scrolling stem, and on lower body with band of kufic inscription.
2. Ashkhabad; Sultān Qal'a, Marv; Cohn-Wiener 1941 fig.10, Ettinghausen 1943 fig.8. Bronze; incised; dimensions unknown. Form as 1 but no foot; knob finial on handle. Body decorated below rim with band of naskhi inscription against scrolling stem, around centre with harpie and animals against scrolling stem, and near base with small band of scrolling stem.
3. de Unger colln.; n.p.; Pope 1938 pl.1291B. Bronze; incised; h. 18.1; d. 19.3. Form as 1 but no foot; on handle trefoil ring attached to knob finial, and griffin heads above forks. Body decorated with narrow band of naskhi inscription against scrolling stem, wide band of sphinxes with bird in cusped medallion, and narrow band of palmettes; inscription good wishes.

4. Musée des Arts Decoratifs 26.749; n.p.; Melikian-Chirvani 1973 pp.20-21. Bronze; cast; incised; handle missing; h. 15.5; d. c. 17.0. Form as 1 but no foot. Below rim band of naskhi inscription against scrolling stem; around centre of body four roundels each containing a bird against vegetal ground.

5. St. Louis; n.p.; Grabar 1959 no.22. Bronze; cast; incised; h. 14.9; d. 20.7. Form as 1 but no foot, and narrow rim. On body narrow band of naskhi inscription against scrolling stem above wide band of animals against scrolling stem; interlace border below; inscription good wishes. (Fig. 42)

6. Whereabouts unknown; Shāh-Sanam, Khwārazm; Tolstov 1952 II p.416 fig.14; Marshak 1972 fig.11. Bronze; incised; h. 15.0; d. 16.0. Form as 1 but with three small feet, on handle knob finial. On upper body band of naskhi inscription against scrolling stem; around centre kufic inscription against scrolling stem with roundels containing sphinxes; on lower body a band of stem and leaf design; inscriptions good wishes.

Buckets

B. rounded, cast 3. spherical-bodied

1. Hermitage; made in Herāt in 559/1163; Veselovski 1910, Pope 1938 pl.1308, Ettinghausen 1943, Rice 1958 p.251, Mayer 1959 pp.61-2. Bronze; cast; incised and inlaid with copper and silver, the silver inlaid with niello; h. 18.0. Splayed foot; spherical body with thick everted lip and two upstanding flanges for handle.

On handle animal faces near centre and animal head protruding from each fork; on handle top inscription giving date "in the month of Muharram of the year five hundred and fifty-nine"; on sides of handle naskhi inscription of good wishes; on rim top a Persio-Arabic naskhi inscription giving name of patron, makers, place of manufacture, and owner; on side of rim pairs of confronted birds; five main registers of decoration on body - at top naskhi inscription of good wishes with human torsos and human and animal heads separated by roundels showing enthroned figure, next band of genre scenes, next kufic inscription of good wishes with interlaced hastae, next band of horsemen, next band of naskhi inscription of good wishes the hastae with limbs and faces; above the foot a border of lancette interlace above running animals; under the foot a rosette on a flat boss with lancette leaf border; ordered by al-Rahmān b. 'Abd Allāh al-Rashīdī; cast (ḍarb) by Muḥammed b. 'Abd al-Wāhid; made ('amal) by ḥājib Mas'ūd b. Ahmad al-naqqāsh; made for its owner the exalted khwāja Rukn al-dīn the glory of the merchants, the trustee of the Muslims, the ornament of the pilgrims, and of the two holy cities Rashīd al-dīn 'Azizī b. Abū l-Husain al-Zanjānī. (Fig. 42)

2. Hermitage; n.p.; Pope 1938 pl.1306A. Bronze; incised and inlaid with copper; handle and flanges missing; h. 18.0. Form as 1. Body decorated around top with naskhi inscription interspersed with seated figures in roundels against scrolling stem; around middle narrow band of kufic inscription against spiral scroll cut by roundels with star patterns and medallions with scrolling stem patterns; below a band of kufic inscription against spiralling scroll cut by roundels with birds; above foot band of interlacing stems and trefoils; on foot band of narrow facetting; inscriptions good wishes.

3. BM 1885.10-10.10; n.p.; Pope 1938 pl.1307 and p.2489 fig.821, Barrett 1949 pl.10. Bronze; cast; incised and inlaid with copper; h. 21.0. Form as 1; handle with knob finial, dragon heads in pairs, and bird heads at forks. On body at top band of naskhi inscription against scrolling stem interspersed with roundels containing vegetal designs; around the middle a narrow band of kufic inscription cut by medallions with seated human figures and with others containing vegetal designs; below a band of kufic inscription and roundels; on foot narrow facetting; inscriptions good wishes.
4. BM 1958.10-13.1; n.p.; Pinder-Wilson 1961 pl. 16, 18, Baer 1965 pl.50. Quaternary alloy; cast; incised and inlaid with copper; patch in one side; h. 20.5. Form as 1; handle with cast geometric pattern and bosses at forks. On body at top naskhi inscription against scrolling stem; in middle band of zodiacal signs in roundels with spiralling scrolls between; below band of kufic inscription interspersed with roundels. (Analysis Table 21 no. 11.)
5. Whereabouts unknown; Tadzhikistan; Gafurov and Litvinski 1963 II p. 261, fig. (left). Bronze; incised; dimensions unknown. Form as 1; handle with knob finial, cast geometric decoration, and two heads above forks. Around upper body naskhi inscription; around middle medallions; another decorative band lower down.
6. Hermitage; n.p.; Mayer 1959 p.71 and pl.10, Grube 1966 pl.42. Bronze; inlaid; handle finial missing; h. 25.5. Form as 1; handle with animal and dragon heads in pairs, and projecting animal heads at forks. Lower outside of rim decorated with confronted birds, or

seated figures; body design of rectangular vertical panels, alternately with knot pattern roundel with birds and animals above and below, and figure of eight band of kufic with horsemen in top and bottom spaces; on foot a band of animals and a vegetal band; made by Muḥammed b. Nāsir b. Muḥammed al-Harawī.

7. MMA; n.p.; Ettinghausen 1943 fig.9. Bronze; incised and inlaid; dimensions unknown. Form as 1, but no foot; handle with two pairs of dragon head mouldings and a protruding bird's head above each fork; handle finial missing. Body decorated with band of naskhi inscription against scrolling stem, and lower down a band of z-ornament.

8. Whereabouts unknown; n.p.; Paris Hôtel Drouot 20/11/74 p.41. Bronze; incised and inlaid with copper; handle finial missing; d. of mouth 15.1; h. 17.4. Form as 1, handle with cast diamond forms and crude animal head form above fork. On upper body band of naskhi inscription against scrolling stem divided by roundels containing simple vegetal device; around middle signs of zodiac grouped in threes in interlacing roundels, each group in a cartouche the cartouches separated by floral medallions with small cartouches of kufic inscriptions above between two small roundels; on lower body band of kufic inscription divided by roundels; foot decorated with narrow facetting.

9. de Unger colln.; n.p.; unp. Bronze; cast; incised; handle and one flange missing; h. 20.5; d. 20.5. Form as 1. On rim two cartouches of kufic inscription and four roundels; on body band of naskhi inscription with roundels against scrolling stems, and signs of zodiac in interlacing roundels against scrolling stems; on foot incised facetting; inscriptions good wishes.

10. de Unger colln.; n.p.; unp. Bronze; cast; incised and inlaid with copper; handle missing; h. 20.2; d. 21.3. Form as 1. On body band of naskhi inscription against scrolling stems, band of medallions with birds, roundels with interlaced stars, and cartouches with kufic inscriptions, and low down band of kufic inscription; on foot incised facetting; inscriptions good wishes.

11. Tehrān 4356; n.p.; Washington Smithsonian Institution 1964 no.625. Bronze; cast; incised and inlaid with copper; handle replacement (?); h. 17.5; d. 18.5. Form as 1. On rim inscription and roundels; on body naskhi inscription against scrolling stems, zodiacal signs against interlace ground, and kufic inscription, with borders of scrolling stems and animals; on foot interlace pattern; inscriptions good wishes.

Buckets

B. rounded, cast 4. spherical-bodied, angular

1. Cairo; n.p.; Pope 1938 pl.1292B. Bronze; incised; h. 16.5. Angular spherical body with flat everted rim; splayed foot; two upright flanges on rim for handle; handle with knob finial and cast geometric patterns, and animal heads above forks. Upper body decorated with band of naskhi inscription against tightly wound spiral scrolls; around middle roundels and medallions with sphinxes; lower down band of naskhi inscription against vegetal ground with roundels above a border of lancette leaves; narrow facetting on foot; inscription good wishes.

2. East Berlin I 6982; n.p.; Kühnel 1943 fig.11. Bronze; inlaid with copper and incised; handle missing; h. 22.0. Form as 1. On rim kufic inscriptions in cartouches separated by roundels; on upper body naskhi inscriptions in cartouches separated by roundels containing birds; around middle roundels and medallions with sphinxes and harpies; lower down band of kufic inscriptions in cartouches with roundels; on foot narrow facetting; inscriptions good wishes.

3. Whereabouts unknown; Tadzhikistan; Gafurov and Litvinski 1963 II p.261 fig. (right). Bronze; incised; handle missing; dimensions unknown. Form as 1. On rim cartouches with inscriptions alternating with roundels; similar design on upper body and lower body; around middle cartouches with interlacing roundels alternating with roundels; band of ornament on foot.

4. Whereabouts unknown; n.p.; Christie's 4/7/'72 lot 122 pl.9. Bronze; incised; handle missing; h. 21.5. Form as 1; on upper body cartouches containing naskhi inscription against tightly scrolled ground alternating with roundels; around middle cartouches with interlacing roundels containing harpies alternating with roundels containing sphinxes; lower down cartouches with kufic inscriptions alternating with roundels above a band of vegetal design; narrow facetting on foot; inscriptions good wishes.

5. WAG 54.523; n.p.; Pope 1960 pl.64, Baer 1965 pl.51. Bronze; incised and inlaid; d. 20.6. Form as 1 but with thick rim; handle with square finial, geometric ornament and animal heads above forks. On

upper body naskhi inscription interrupted by roundels; around middle roundels containing zodiacal signs joined by intricate knot patterns; on lower body kufic inscription and animals interspersed with roundels above a band of lancette leaves; on foot two bands of narrow facetting; inscriptions good wishes.

6. Ashmolean 1969.8; n.p.; Ashmolean Museum 1969 pl.16a.

Quaternary alloy; cast; incised and inlaid with copper; handle finial missing; h. 21.7; d. 19.0. Form as 1; handle with geometric cast decoration and lion heads above forks. On rim kufic inscriptions in cartouches alternating with roundels; on upper body naskhi inscription against scrolling stems with roundels; around middle interlacing octagons containing zodiacal signs interspersed with floral medallions; below band of cartouches with kufic inscriptions and roundels above a band of vegetal design; on foot a band of vegetal motifs between z-ornament; inscriptions good wishes. (Analysis Table 21 no. 34.) (Fig. 43)

7. de Unger colln.; n.p.; Pope 1938 pl.1292A. Bronze; cast; incised; handle missing; h. 19.2; d. 20.5. Form as 1 but no foot. On rim kufic inscriptions in cartouches and roundels; on upper body naskhi inscription against scrolling stems with roundels; around middle roundels with sphinxes or harpies alternating with "vase" motifs; below a band of kufic inscription interspersed with roundels above a lancette leaf border; inscriptions good wishes.

8. Martin colln.; Bukhāra; Martin 1902 pl.22 (b). Bronze; incised; handle missing; dimensions unknown. Form as 1. On upper body cartouches with naskhi inscriptions alternating with birds in roundels; on middle register cartouches with birds in interlacing medallions alternating with medallions containing birds; below kufic inscription in cartouches alternating with floral roundels.
9. ex Heeramanek Galleries; n.p.; Grabar 1959 no.23. Bronze; cast; incised; h. 17.8; d. 21.6. Form as 1; handle with trefoil ring attached to finial. On body band of naskhi inscription in cartouches with birds in roundels, then band of birds in interlacing roundels in three's and harpies in medallions, then band of kufic inscription in cartouches and roundels; on foot incised facetting; inscriptions good wishes.
10. Los Angeles M.73.5.321; n.p.; Pal 1973 no.300 p.163. Bronze; incised; h. 20.25; d. 20.25. Form as 1, but with thick rim; handle with knob finial and heads at fork tops. On upper body naskhi inscription against scrolling stem; around middle cusped arcading with vegetal designs; on lower body band of kufic inscription with roundels; narrow facetting on foot; inscriptions good wishes.

Buckets

C. beaten

1. Kābul; Maimāna; Scerrato 1964 p.700 no.14 figs.40-41. Bronze; beaten; iron handles; lid missing; h. 44.0; d. 38.5. Slightly concave cylindrical body; rounded base with large central depression; narrow

flat shoulder and vertical rim; two large iron ring handles rivetted to shoulder edge; made out of three sheets of metal soldered together with castellated joints. (Fig. 43)

(3) Lighting equipmentCandlesticksA. beaten, with truncated conical body

1. Louvre 6315; n.p.; Paris Orangerie 1971 no.131. Bronze; beaten; repoussé; incised and inlaid with copper and silver; dimensions unknown. Truncated conical body; flat shoulder edge; sunken inner shoulder with fluting continuing up neck; socket truncated cone with embossed pyramid forms around. Around body two bands of repoussé lions and a band of three rows of polygonal bosses bearing rosettes separated by bands of inscriptions and rosettes; on shoulder edge a row of birds in the round; on socket knot patterns and scrolling stem; inscriptions good wishes.

2. Cairo; n.p.; Pope 1938 pl.1321. Bronze; beaten; repoussé; incised and inlaid with silver; h. 40.0. Form as 1. Around body two bands of repoussé lions and a band of three rows of repoussé hexagons bearing rosettes, separated by bands of inscription; below shoulder edge thin band of scrolling stem; on shoulder edge row of birds in the round; double-leaf pattern on neck flutes; leaf patterns and scrolling stem on socket; inscriptions good wishes.

3. Freer 51.17; n.p.; unp. Bronze; beaten; repoussé; incised and inlaid with silver and copper; h. c. 53.0; d. c. 60.0. Form as 1 but plain cylindrical neck. Around body two bands of repoussé lions and a band of three and two half rows of repoussé hexagons bearing vegetal devices or kufic inscriptions, separated by narrow bands of scrolling stem or kufic inscription; on neck scrolling stems; around socket band of kufic inscription, inscriptions good wishes. (Fig. 43)

4. ex Bobrinski colln.; n.p.; Sarre and Martin 1912 pl.144 no.3044.

Bronze; beaten; repoussé; incised and inlaid with copper; socket and inner shoulder missing; h. 21.0; d. 33.5. Form as 1. Around body at top band of repoussé birds and at base band of repoussé lions, with central band of three rows of repoussé hexagons bearing rosettes; two bands of kufic inscriptions and rosettes between; on shoulder kufic inscription; inscriptions good wishes.

5. V&A 247-1902; n.p.; unp. Bronze; beaten; repoussé; incised and inlaid in copper; inner shoulder and socket missing; h. 21.7; d. 32.0. Form as 1. On body at top band of repoussé birds, at base band of repoussé lions, with band of three rows of repoussé hexagons between with rosettes; between bands of inscription of good wishes.

6. Copenhagen 27/1971; n.p.; Leth 1975 p.71. Bronze; beaten; repoussé; incised; h. 33.0. Form as 1 but more conical. On body at top band of repoussé lions seated, at base band of repoussé lions walking, and between two and two half rows of repoussé hexagons bearing birds, animals or palmettes; double-leaf borders; on socket animals between leaf borders.

Candlesticks

B. beaten, with concave sides, octagonal

1. V&A 1438-1902; n.p.; unp. Bronze; beaten; incised and inlaid with silver; part of socket missing; h. 18.5; d. 23.0. Octagonal

body with vertical edge at base, concave inward sloping lobed sides leading to lobed shoulder edge; flat shoulder with slightly depressed inner shoulder; short cylindrical neck; truncated conical socket. Around foot and shoulder edge naskhi inscriptions; on body sides scrolling stems in fours with rhomb-shaped leaves; on inner shoulder varieties of rosettes; on neck rosettes and knotted stems; on socket interlace band and kufic inscription; inscriptions good wishes.

(Fig. 43)

Candlesticks

C. cast, with concave sides, round, with projecting shoulder

1. V&A 775-1892; n.p.; Melikian-Chirvani 1973 pp.48-51. Bronze; cast; incised and inlaid with silver; h. 19.5; d. 19.0. Cylindrical body flaring towards the base surmounting vertical-sided base with small everted rim; flat projecting shoulder edge; sunken inner shoulder; cylindrical neck; socket of similar shape to body but with rounded lip. On body two bands of kufic inscription with rosettes with band of zodiacal signs in interlacing medallions between; similar bands of inscription on base and socket; on shoulder edge double-leaf pattern; on inner shoulder inscription; inscriptions good wishes. (Fig. 44)

Candlesticks

D. cast, with concave sides, octagonal

1. Freer 54.128; n.p.; Melikian-Chirvani 1973 p.51. Bronze; cast; incised and inlaid with silver; dimensions unknown. Form as 1 but octagonal body and socket, and cusped shoulder edge with bosses on the points. On base kufic inscription; on body sides enthroned figures

in interlacing medallions; on outer shoulder, neck and socket vegetal designs; on inner shoulder inscription below interlace band and band of leaves. (Fig. 44)

Candlesticks

E. cast, with concave sides, round, plain

1. Istanbul 2556; n.p.; Rice 1957 pl.7d. Bronze; cast; incised and inlaid with silver; dimensions unknown. Concave-sided body with vertical base and small everted base rim; flat shoulder; cylindrical neck; socket of same shape as body. Body, socket and neck decorated with eight-petalled rosettes against an interlace ground; around base naskhi inscription of good wishes divided by swastikas in roundels; on socket base and base rim interlace. (Fig. 44)

Candlesticks

F. with nine concave sides and polygonal faces

1. Tehrān, Gulistān Palace; found near Hamadān 1908; Pope 1938 pl.1316. Bronze; incised and inlaid with silver; h. 26.0. Nine-sided; lower body slightly inward sloping; main body divided into two sets of interlocking polygonal surfaces; shoulder with nine points and cusps; inner shoulder sunken with cusped edge; sloping nine-sided neck; socket as body but with simple concave sides. Around foot human-headed naskhi inscription against scrolling stems; on body single figures or pairs of figures against scrolling stems; on shoulder naskhi inscription; on neck vegetal motifs and interlace band; on socket band of interlacing circles, and vegetal patterns; inscriptions good wishes. (Fig. 44)

LampsA. round-bodied, spouted 1. with open spout of triangular profile

1. MMA 38.40.133; Nīshāpūr Village Tapa; unp. Bronze; cast probably in two pieces, body and handle; lg. 15.2; h. 5.3. Rounded body with open projecting spout of triangular profile; body with central opening with low rim running into spout; ridge where spout joins body on either side; ring handle with long diagonally projecting thumb-piece widening out into a three-leafed form; low ring foot. Undecorated. (Fig. 45)

2. Brooklyn 73.52.2; n.p.; unp. Bronze; probably cast in two pieces, body and handle; lg. 18.0; h. 8.2. Form as 1; small projection on either side of body; central lobe of trilobe ending to handle in form of two facing birds' heads; small projection on either side of spout top. Undecorated.

3. Louvre 6158; Sīstān; unp. Quaternary alloy; probably cast in two pieces, body and handle; lg. 16.0; h. 5.5. Form as 1, but two spouts, with rounded shoulders; small projection on either side of spout tops and triangular shape to body metal where it joins spouts; ring handle with diagonally projecting tri-lobed flaring thumb-piece. Undecorated. (Analysis Table 21 no. 15.)

4. ex Kühnel colln.; near Herāt; unp. Bronze; dimensions unknown. Form as 1 but body curling inwards at front where it joins spout; small double projection on either side of spout top; ring handle with thumb-piece bearing almond boss; four legs with reversed knees and rounded feet. Undecorated.

5. MMA 39.40.50; Nīshāpūr; unp. Bronze; cast; lg. 6.0; w. 4.5; h. 1.7. Form as 1 but with three small feet; projection on each side of body; ring handle with small knob finial; small hole in left side of spout end. Undecorated.

Lamps

A. round-bodied, spouted 2. with partially covered spout of triangular profile

1. Louvre 6159; Sīstān; unp. Quaternary alloy; probably cast in two pieces, body and handle; handle broken; lg. 13.1; h. 4.5.

Rounded body with central circular opening with low rim; projecting spout with flat open top and curving lower profile; small projection either side of top; tri-lobed projection either side of body; ring handle with diagonally projecting thumb-piece. Undecorated. (Analysis Table 21 no. 27.) (Fig. 45)

2. Tehrān; Nīshāpūr; unp. Bronze; handle broken; lg. c. 11.5. Form as 1 with round projections on sides of body. On base of thumb-piece diamond design between two horizontal lines.

Lamps

A. round-bodied, spouted 3. with spade-shaped mouth

1. Whereabouts unknown; Shahrīstān, Kakhkakh III; Negmatov and Khmel'nitski 1966 pl.24 and p.181. Bronze; incised; handle missing; lg. 11.0; h. 5.7; w. 7.5. Rounded body with central circular opening; hinged conical lid; on either side of body a small lobed projection;

spout partially covered with curved lower profile and wide spade-shaped mouth. Side projections incised with three circles.

2. BM 1939. T-19.8; n.p.; unp. Bronze; cast; handle missing; lg. 9.4; d. 7.8; h. 2.9. Form as 1 but no lid; around central opening four inward protruding small flanges; on either side of body castellated projecting flange. Traces of decoration on either side of spout.

3. Ashkhabad; Dandānqān; Pugachenkova 1967 pl.121. Bronze; lid missing; dimensions unknown. Form as 1 but two spouts; ring handle with flat thumb-piece (? broken). Undecorated. (Fig. 45)

4. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.49 middle top. Bronze; incised; nature or existence of handle unknown; dimensions unknown. Form as 3 but no side flanges. On front between spouts a roundel containing a vegetal design; on shoulder a (?) naskhi inscription.

5. BM 1956.7-26.10; n.p.; unp. Bronze; cast; incised; handle, foot and lid missing; lg. 20.5; h. 8.0. Form as 3. On shoulder naskhi inscription of good wishes; on spout edges z-pattern; on spout covers knot pattern; on body and spout sides roundels, pear-shaped medallions and cartouches with vegetal designs.

6. Louvre; n.p.; Pope 1938 pl.1287A. Bronze; cast; pierced and incised; lid missing; h. 21.5. Double-spouted lamp with form as 3 on cuboid stand; stand with slightly sloping sides, four feet with bird

heads above, animal head at top of each corner, and pierced sides; stand joined to lamp by cylindrical foot. Stand decorated with interlocking palmettes below kufic inscription; on lamp opening band of scrollwork; elaborate thumb-piece with standing figure holding reins of two horses.

7. V&A I.S.131-1954; n.p.; unp. Bronze; cast; incised and pierced; base, handle and lid missing; h. 7.0; lg. 20.5. Form as 3. Pierced covers to upper spouts; on front on body lancette leaf in relief; around body pear border in relief with leaf form in middle of each side; near spouts two protruding bird heads.

8. V&A M.112-1909; n.p.; unp. Bronze; cast; incised; lg. 15.5; h.10.8. Form as 3, with three angular legs; ring handle and large thumb-piece; two trefoil projections on body; lid in form of feline head. Thumb-piece decorated with two birds in roundel; on upper body and spout covers scrolling stem.

Lamps

A. round-bodied, spouted 4. with flat top and spade-shaped mouth

1. Dahlem I 5360; n.p.; unp. Bronze; body cast; separate top; incised; hinged lid missing; lg. 10.7; h. 3.0. Rounded body; flat base; two spouts with spade-shaped mouths; boss on either side of body; flat top covering body except for central opening, and spouts except for ends. Crude incised designs around opening.

2. Dahlem I 2024; n.p.; unp. Bronze; body cast; separate top and hinged lid; w. 13.6; h. 2.2. Straight-sided body with flat base; three spouts with spade-shaped mouths and double lip; slightly sloping top covering body except for central opening and a little of each spout; hinged hexagonal lid with finial. Undecorated. (Fig. 45)

3. Dahlem I 6763; n.p.; unp. Bronze; body cast; top and lid missing; w. 13.8; h. 2.5. Form as 2.

4. East Berlin I 2326; n.p.; unp. Bronze; w. c. 14.0. Form as 2.

5. BM 1914.5-15.1; Egypt; Barrett 1949 pl.4a. Bronze; cast in pieces; foot, three birds and handle missing; damaged; d. 18.4. Form as 1, but six spouts; domical centre to flat top with domical lid; originally six bird finials attached to flat top. Undecorated. (cf. Lampstand B/11 and Lampstand shaft 7)

V.1 Louvre 6164; Sīstān; unp. Quaternary alloy; cast in three pieces, body, flat top and lid; foot ring and handle missing; lg. c. 10.0. Body with curved sides and rounded base; two plain spouts curving away from each other joined to body at shoulder; flat top with central opening, covering all but spout ends; hexagonal hinged lid with finial. Undecorated. (Analysis Table 21 no. 28.)

LampsA. round-bodied, spouted 5. with round-mouthed tubular spout

1. Kābul; Maimāna; Scerrato 1964 p.696 no.8 and figs.23-24. Bronze; ring foot, handle and hinged lid missing; lg. 14.7; w. 7.8. Rounded body with central circular opening with slight rim; two hinges for lid; triangular projection on each side of body; tubular spout with upturned trumpet-shaped mouth; ridge where spout joins body. Undecorated.

2. Kābul 58.2.37; Ghazna; Mortimer Rice and Rowland 1971 pl.199. Bronze; incised; handle and lid missing; h. 6.5. Form as 1 but spout less tubular; band in relief half way along spout; in centre of body side a boss with snaking ridge attached which runs round the back to the other side. On body roundels with knot patterns. (Fig. 46)

3. Kābul 58.2.36; Ghazna; Auboyer 1968 pl.114b. Bronze; incised; lid missing; lg. 12.0; h. 8.0. Form as 2, but no ridge round spout and more tightly scrolled snaking ridge on body; appears to have fitting for portable handle at rear. Knot pattern in a roundel on each shoulder and stylised vegetal design above spout.

LampsA. round-bodied, spouted 6. with pointed-mouthed tubular spout

1. Louvre CL 13561; n.p.; Melikian-Chirvani 1973 pp.14-15. Bronze; cast in at least three pieces, body, handle and Zāl figure; lid missing;

lg. 19.3; h. 14.6. Rounded body with flat bottom; narrowing to central circular opening at top with pair of hinges for lid; boss with pierced strapwork on each side; handle ringform with flat top and projection below giving impression of bird's head and beak; three legs with reverse knees; three tubular spouts with almond shaped mouths ending in projecting trefoil; small eye projects under each spout. Attached to front of body a plaque showing heraldic eagle with human figure, perhaps the simurgh and Zāl.

2. Louvre 7958; n.p.; unp. Bronze; cast in one piece except for handle and lid; one spout and lid finial missing; greatest d. 24.0; h. 8.5. Form as 1 but with six tubular spouts; hinged lid in form of feline mask. Body decorated with stylised vegetal design.

3. Dahlem I 4915; n.p.; unp. Bronze; cast in three pieces, body, handle and lid; lg. 14.5; h. 10.0. Form as 1 but with two tubular spouts. Undecorated. (Fig. 46)

Lamps

A. round-bodied, spouted 7. with flat top and pinched spout

1. Cairo; n.p.; Pope 1938 pl.1312A. Bronze; pierced; incised and inlaid with silver and copper; h. 8.5. Rounded, elongated body with spade-mouthed spout; flat top with narrow opening and hinged lid; double boss on either side of body; tall oval handle with bird finial; octagonal foot with narrow stem. Handle with pierced infilling; on body inscription; on foot scrolling stem and piercing.

2. de Unger colln.; n.p.; Pope 1938 pl.1312C. Bronze; incised and inlaid with silver; lid missing; h. 15.0; lg. 16.5. Form as 1 but with hexagonal foot and small boss on lower angle of spout. On body double bosses form heads of birds; sides also decorated with cusped roundels containing hawk and animal, and scrolling stems; vegetal motifs on foot. (Fig. 46)

3. Louvre 6157; Sīstān; Marchal 1974 fig.1. Quaternary alloy; cast; incised; lid missing; h. 8.9; lg. 15.0. Form as 2. On body single boss forms head of incised lion; vegetal designs on foot. (Analysis Table 21 no. 14.)

4. Chicago; n.p.; Baer 1965 pl.16 no.27. Bronze; incised; lid missing; dimensions unknown. Form as 2 but more rounded shoulder. On body single boss forms heads of two animals; scrolling stem decoration.

5. V&A 1532-1903; n.p.; Milikian-Chirvani 1973 p.30. Bronze; cast; incised and inlaid with silver; lid missing; h. 14.6; lg. 12.8. Form as 4. On top naskhi inscription of good wishes; on body scrolling stems and single boss forming head of two lions; on foot birds or rosettes.

6. Qandahār; Ghazna; Scerrato 1959 p.106-7 no.9 and fig.18. Bronze; incised; handle and lid missing; h. 8.0. Form as 2. Remains of inscription on body; vegetal designs in cartouches on foot.

7. Kābul 58.2.32; Ghazna; Scerrato 1959 p.107 n.53. No details known.

8. Kābul 58.2.34; Ghazna; Scerrato 1959 p.107 n.53. No details known.

9. ex Garnier colln.; n.p.; Sarre and Martin 1912 pl.151 no.3037.

Bronze; incised and inlaid with copper; handle missing; h. 8.5.

Form as 4. On body scrolling stem, and single boss forming head of two animals; foot with three horizontal ridges round middle, decorated with disc rosettes and roundels; naskhi inscription of good wishes on flat top.

10. Dahlem I 2158; n.p.; unp. Bronze; incised and inlaid with copper; handle and lid missing; h. 11.0; lg. 12.0. Form as 4, but octagonal foot. On top inscription of good wishes divided by roundels; sides decorated with sphinxes and scrolling stems; foot decorated with two ridges around middle and vegetal motifs.

11. Dahlem I 6/56; n.p.; Berlin-Dahlem 1971 no.424. Bronze; incised; h. 17.0; lg. 17.0. Form as 1 but round foot. On top inscription of good wishes; on body single boss forming head of lion; otherwise body decorated with birds in roundels; on foot band of scrolling stem; bird handle on lid.

12. Hamburg; n.p.; unp. Bronze; incised; lid missing; h. 13.9. Form as 11. On body single boss forming head of bird; on body elsewhere scrolling stem and running animals; on foot bands of scrolling stem interlace and inverted arcading; handle finial apparently in form of elephant plus howda.

13. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.49 top left.

Bronze; incised; lid missing; dimensions unknown. Form as 2. On body single boss forming lion head; knot pattern on front area of body; foot decorated; ridge between stem and foot.

14. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.49 top right and lower right. Bronze; cast; incised; dimensions unknown. Form as 2. On body two bosses on each side forming heads of two animals; vegetal decoration near spout; decorated foot; finial geometric form of bird; lid with bird handle.

15. Karachi Museum (?); Udegram castle, Swat; Anon 1968 pl.56a, pp.134-5. Bronze; incised; handle and lid missing; dimensions unknown. Form as 11. On top inscription; on foot scrolling stem.

16. V&A M.67-1922; n.p.; unp. Bronze; cast; incised and inlaid with copper; handle missing; h. 8.2; lg. 9.5. Form as 1. On body two bosses on each side forming animal heads; elsewhere naskhi inscription in cartouches; on foot z-ornament, and vegetal motifs in roundels or triangles; on top kufic inscription; on lid interlace.

17. V&A 386-1897; n.p.; unp. Bronze; cast; incised; handle, lid, and foot missing; later hanging attachments; h. 4.0; lg. 11.0. On top scrolling stem; on sides naskhi inscriptions, scrolling stems and palmettes in roundels.

18. V&A M.68-1922; n.p.; unp. Bronze; cast; incised; lid missing; h. 7.7; lg. 11.1. Form as 1 with socket for handle. On top kufic inscription; on body wide boss forming heads of pair of birds, and kufic inscriptions in cartouches and vegetal triangles; on foot vegetal triangles.

19. BM 1947.7-14.1; n.p.; unp. Bronze; cast; incised and inlaid with copper; lid and foot missing; h. 6.0; lg. 15.1. Body form as 1 with socket for handle. On body single boss on each side forming head of lion; around body two double-headed serpents, and elsewhere sphinxes in roundels and vegetal designs in cartouches; on top naskhi inscription and roundels.

20. BM 1956.7-26.9; n.p.; unp. Bronze; cast; incised; lid missing; h. 14.3; lg. 16.3. Form as 2. On top cartouches with vegetal designs; on body single boss forming head of animal on each side, with knot or vegetal patterns in triangles; on foot polygons containing trefoils or triangles; on stem pear-shaped medallions.

21. de Unger colln.; unp. Bronze; cast; incised and inlaid with copper; lid missing; h. 15.1; lg. 16.1. Form as 2, with bird finial on handle. Single bosses on body forming heads of crude lions; on body inscriptions and vegetal designs in rectangular or triangular cartouches; on foot vegetal designs or rosettes.

Lamps

A. round-bodied, spouted 8. with spherical body and pinched spout

1. Dahlem I 4316; n.p.; unp. Bronze; cast; incised; lid and foot missing; lg. 11.0; h. 8.5. Spherical body with vertical ribbing;

hinge for lid at rear of circular central opening; bulky spout with oval mouth and boss beneath; boss on either side of body; rectangular handle with bird finial. Below mouth and on either side of spout scrolling stems; other incised motifs on body and finial. (Fig. 46)

2. Dahlem I 4317; n.p.; unp. Bronze; cast; lid missing; lg. 9.2; h. 11.0. Form as 1 but with rounded foot with vertical ribbing. Undecorated.

Lamps

A. round-bodied, spouted 9. with stem and dish base

1. Boston 35.909; Rayy; unp. Bronze; dimensions unknown. Spherical body with protruding spout and hinged lid standing on baluster stem attached at base to flat dish with vertical rim; handle between rim and rear of lamp; knob finial. Undecorated. (Fig. 47)

Lamps

B. pear-shaped

1. MMA 40.170.117; Nīshāpūr, Tapa Madrasa; unp. Bronze; cast; lg. c. 11.0. Boat-shaped with pointed spout, the apparently rounded body formed by four flat horizontal faces; ring handle with bird on top.

2. Tehrān; Nīshāpūr; unp. Bronze; lg. 15.0. Rounded pear-shaped body with slightly thickened rim; flat handle in form of five-leaf plant.

3. Kābul; Maimāna; Scerrato 1964 pp.684-6 no.3 and figs.14-15 and 53. Bronze; cast; lg. 21.0; h.9.5. Rounded pear-shaped body with rim; ring handle with vertical seven-lobed palmette thumb-piece; three legs in form of booted human ones. (Fig. 47)

4. Dahlem I 3158; n.p.; unp. Bronze; cast; lg. 9.5; h. 2.9. Pear-shaped rounded body with circular foot; flat three-lobed handle; wide rim with four lobes.

5. Dahlem I 3638; n.p.; unp. Bronze; cast; dimensions unknown. Form as 4 but circular handle and trefoil flanges on rim.

Lamps

C. dish-shaped

1. Ashmolean; Sīrāf S.68/9, 340; unp. Copper-lead alloy; cast; h. 2.7; d. 5.3. Rounded dish-shaped body; two small projecting spouts, externally three-faced; foot ring with central internal knob; ridges round spouts at joints with body. Undecorated. (Analysis Table 21 no. 47.) (Fig.47)

2. Louvre MAO S.135; Susa G.S.182; unp. Bronze; cast; h. 2.7; d. 13.5. Form as 1 but with five large triangular spouts with vertical ridge between; three peg feet. Undecorated.

3. Dahlem I 2325; n.p.; unp. Bronze; cast; h. 2.9; d. 9.2. Form as 1 but with six small triangular spouts connected to interior by holes through sides; spouts equidistant from one another except for larger gap on one side. Undecorated.

4. Banbhore; Banbhore; Khan 1963 p.49 (middle top). Bronze; damaged; d. c. 10.5. Form as 1 but with five or more spouts. Undecorated.

Lamps

D. zoomorphic

1. Hamburg; n.p.; unp. Bronze; cast; incised; two legs, lid and finial missing; lg. 12.0. Rounded animal body with ring handle in place of tail; open, pointed mouth below face with nose and two ears; originally four straight legs; boss on either side of body; pear-shaped opening in back with double hinge at rear. On sides band of pseudo-inscription in naskhi in cartouche above cartouches with interlace and scrolling stem. (Fig.47)
2. ex Ackerman colln.; n.p.; Pope 1938 p.2487 fig.820. Bronze; incised; lg. 9.0. Form similar to 1 but sunken face, upturned mouth, handle in form of curving tail, legs with knees. On sides scrolling stems in cartouches.
3. Jerusalem; n.p.; unp. Bronze; cast; incised; lid and handle missing; legs broken; lg. c. 10.0. Form similar to 1 but more pointed mouth, stouter body, trefoil flanges on sides. Band around neck; scrolling stems around upper body.
4. de Unger colln.; n.p.; unp. Bronze; cast; incised; handle missing; lid replacement; lg. 10.8; h. 10.0. Form similar to 1 but very stylised, and legs with knees. On body kufic inscription in cartouches, and vegetal designs in cartouches and roundels.

LampsE. hanging

1. Chicago 25.439; n.p.; Pope 1938 pl.1276A, Rice 1955a pl.8 pp.212-4. Bronze; sheet metal; pierced; lower ring part of another lamp; d. of body 25.0, of upper ring 21.0. Flattened spherical body with flaring upper part. All-over piercing with kufic inscription around centre and another on upper part; first reads baraka min allāh al-rahmān al-rahīm, second waqf 'alā (ashāb) masjid al-jadīd.
2. Chicago; n.p.; Rice 1955a pl.12 nos. 8-11. Fragments of various pierced bronze lamps.
3. (?) Tehrān; Rayy; Rice 1955a pl.9b. Bronze; pierced; fragmentary; dimensions unknown. Form as 1. Shield-shaped solid area for suspension fitting.
4. (?) Tehrān and PUM; Rayy; Rice 1955a pl.9c. Bronze; pierced; part missing; dimensions unknown. Form as 1. Piercing in form of palmette patterns; shield-shaped solid area for suspension fitting. (Fig.48)
5. Chicago and PUM; Rayy; Rice 1955a pl.12 nos.1-6, pl.13. Fragments of various pierced bronze lamps.

LampstandsA. three-footed, convex-bodied l. with cylindrical shaft

1. Detroit; n.p.; Aga-Oglu 1930, Pope 1938 pl. 1284A, 1285.
Bronze; cast; pierced and incised; tray missing; h. 47.5. Lampstand consisting of base with convex body, horizontal rim, cylindrical top and three legs with small protrusion either side of top, and shaft with cylindrical centre and one spherical-bodied unit above and below. Base decorated with pierced vegetal designs and three sphinxes; shaft decorated with two harpies in medallions and pierced vegetal designs.
2. Boston 31.767; n.p.; Pope 1938 pl.1284B. Bronze; cast; pierced and incised; tray missing; h. 46.5. Form as 1. On base pierced ducks in roundels between portions of kufic; around edge incised bird heads and scrolling stems; on shaft pierced roundels with ducks or kufic letters; on units pierced vegetal patterns.
3. Louvre; n.p.; Wilson 1931 no.77R, Pope 1938 pl.1284C. Bronze; cast; pierced and incised; tray missing; h. 52.0. Form as 1. On base pierced griffins in lobed medallions amongst vegetal designs; around edge scrolling stems; on shaft griffins in lobed medallions amongst vegetal designs between two bands of naskhi inscription of good wishes; on units pierced vegetal patterns.
4. Brooklyn; n.p.; unp. Bronze; cast; pierced and incised; h. c. 58.0. Form as 1, the protrusion by leg tops being in form of bird heads; midway between legs protruding palmettes; legs with "tendons"; on top flat tray with vertical pierced rim and downward

sloping edge. On base roundels and pierced strapwork; on shaft pierced strapwork between two bands of kufic inscription; on upper unit pierced strapwork; on lower unit pierced interlacing palmettes; on tray inscription in cartouches with roundels on edge. (Fig.48)

5. Kābul; Maimāna; Scerrato 1964 p.684 no.2 and figs.11-13.

Bronze; cast; h. 53.3. Form as 1 with tray as 4, the latter with beaded rim; protrusions half way between leg tops. Undecorated.

6. Ashkhabad; Dandānqān; Pugachenkova 1967 pl.120. Bronze; tray missing; dimensions unknown. Form as 1. Undecorated.

7. Whereabouts unknown; Afrāsiyāb; Kondrat'eva 1961 pl.3 no.6. Bronze; tray missing; dimensions unknown. Form as 1 with very tall thin cylindrical shaft surmounting uneven pair of ring-bodied units.

8. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.50 middle. Bronze; incised; dimensions unknown. Form as 1 with tray as 4, but cylindrical shaft surmounting two units, one spherical-bodied, other hexagonal-bodied. Base decorated with cartouches and roundels with crude rosettes.

9. ex Martin colln.; Bukhāra; Martin 1902 pl.25. Bronze; tray missing; dimensions unknown. Form as 1, body protrusions being bird heads. Undecorated.

10. BM 1969.2-13.1; n.p.; unp. Bronze; cast; pierced and incised; h. 64.4. Form as 1 with tray as 4, but protrusions on either side of leg tops bird heads. On base pierced vegetal designs in cartouches and incised ones in roundels; on shoulder band of kufic; on shaft pierced kufic inscription at top and bottom and incised name of maker in middle; on units pierced strapwork, palmettes or vegetal designs; on tray vegetal design on edge; name of maker Muhammad.

11. BM 1954.2-16.1; n.p.; unp. Bronze; cast; incised; tray missing; h. 64.0. Form as 1, but legs with "tendons". On base edge dot and circle motifs; on body twelve pointed panels alternately almost plain and decorated with vegetal design or naskhi inscription of good wishes beneath a bird; spiral shaft; on each unit triangles in relief and sunken oval.

12. Rabenou colln.; n.p.; Grabar 1959 no.41. Bronze; pierced and incised; h. 60.4. Form as 1, tray as 4, but protruding palmettes midway between legs. On body pierced vegetal designs; on shaft pierced birds in roundels; on units pierced vegetal designs.

13. ex Heeramaneck Galleries; n.p.; Grabar 1959 no.36. Bronze; pierced and incised; h. 38.8. Form as 1, tray as 4, but protrusion midway between legs; legs with "tendons" and rings attached; no unit on lower shaft; upper unit partially concave, partially cylindrical. On base and shaft pierced birds in roundels; on base edge interlace; on tray edge inscription.

LampstandsA. three-footed, convex-bodied 2. with hexagonal shaft

1. Kābul 58.2.76; Ghazna; Turin 1961 no.162, Rowland 1966 no.104. Bronze; incised and pierced; tray missing; h. 70.0. Form of base as A/1/1, with double-leaf protrusion midway between legs; hexagonal shaft with spherical-bodied unit above and below. On base pierced palmette and strapwork design and narrow band of kufic inscription; on shaft and units pierced palmette and strapwork design; on top and bottom of shaft kufic inscription.

2. Jacks colln.; n.p.; Pope 1938 pl.1283A. Bronze; incised and pierced; tray missing; feet and part of body missing; h. 72.4. Form as 1. On base pierced interlace; on units pierced strapwork; on shaft pierced interlacing and strapwork on alternate faces.

LampstandsA. three-footed, convex-bodied 3. with lobed body and lobed shaft

1. Kābul; Maimāna; Scerrato 1964 pp.678-684 no.1 and figs. 1-10. Bronze; cast in five pieces; incised; h. 70.0. Form of base and shaft as A/1/1 but body of base and centre of shaft lobed; trefoil protrusion midway between legs; tray as A/1/4. On base lobed roundels with knot design alternate with bands of kufic inscription; on shaft and units same design; on tray knot pattern, scrolling stem band, and kufic inscription.

LampstandsA. three-footed, convex-bodied 4. shaft style unknown

1. Dahlem I 1765; n.p.; unp. Bronze; cast; incised; h. 12.2. Form as base of lampstand A/1/1 but with protruding palmettes midway between legs; legs with tendons. On body narrow band of kufic inscription; above each leg roundel with knot pattern. (cf. Unit 1)
2. Jerusalem private colln.; n.p.; Rosen-Ayalon 1972 fig.26. Bronze; pierced and incised; dimensions unknown. Form as 1. Decorated with bands of scrolling stems, pierced cartouches and incised roundels with vegetal designs. (cf. Unit 9, Shaft 4.)
3. ex Heeramaneck Galleries; n.p.; Grabar 1959 no.38. Bronze; pierced and incised; dimensions unknown. Form as 1, with spherical-bodied unit attached. Pierced palmettes on body and unit. (cf. Lampstand shaft 5.)
4. Copenhagen 16/1970; n.p.; Leth 1975 p.85. Bronze; incised; dimensions unknown. Form as base of lampstand A/1/1. Decorated with naskhi inscription and scrolling stem border. (Cf. Lampstand unit 10 and Lampstand tray 1)
5. Detroit; (?) Rayy; Aga-Oglu 1931a figs.3-4. Bronze; cast; incised and pierced; h. 31.8. Form as 1, the protrusions on either side of leg tops being bird heads. Incised strapwork on body with kufic inscription above.

LampstandsB. three-footed with concave lobed body

1. BM 1905.11-10.10; Bukhāra; Pope 1938 pl.1283D, Barrett 1949 pl.3. Bronze; cast; incised; tray and part of shaft missing; h. 27.7. Base consisting of six-lobed body with sloping edge and cylindrical top; three legs with "tendons"; protruding hooks midway between legs; two unit shaft, one spherical-bodied, the other of faceted baluster form. On base vegetal motifs in roundels or triangles and kufic inscriptions in cartouches; on leg tops stylised rosettes; similar motifs on units.

2. Dahlem I 3559; Tehrān; Sarre 1906 p.6 no.8, fig.2. Bronze; cast; incised; tray and part of shaft missing; h. 20.0; d. 19.0. Form as 1. On base edge kufic inscription; on leg tops rosettes; on base lobes birds or circular scrolling stems; on top interlace band; on spherical-bodied unit kufic inscription and roundels; on baluster unit vegetal designs; inscriptions good wishes.

3. Hermitage; n.p.; Gyuzal'yan 1968 figs.7-8 p.107. Bronze; incised and inlaid with copper and silver; shaft and tray missing; dimensions unknown. Form as 1 but base only. On edge naskhi inscriptions; on lobes scrolling stems; around top kufic inscription above naskhi inscription giving name of maker Pāydār ibn Marzabān al-Qāyini.

4. Los Angeles M.73.5.308; n.p.; Grabar 1959 no.35, Pal 1973 no.278. Bronze; incised; tray missing; h. 50.75. Form as 1, the shaft consisting of two spherical-bodied and two faceted baluster

units; hooks and leg tops in form of faces. On base edges kufic inscriptions and interlace; on lobes roundels, scrolling stems and knot patterns; on units vegetal designs. (Fig. 48)

5. Ashmolean 1974.8; n.p.; unp. Quaternary alloy; cast in three pieces; incised; tray replacement; h. 53.7; d. 21.3. Form as 1, the shaft consisting of two spherical-bodied and three baluster units. On lobes of base birds or palmettes in roundels and between lobes palmettes; units decorated with band of interlace. (Analysis Table 21 no. 37.)

6. Dahlem I 1501; n.p.; Berlin-Dahlem 1971 no.503. Bronze; cast; incised; h. 39.0; d. 12.5. Form as 1, the shaft consisting of three spherical-bodied units and two rounded octagonal ones, the tray flat with vertical pierced rim and sloping edge. On body and units vegetal designs or kufic inscriptions in cartouches; on tray kufic inscriptions in cartouches with roundels and scrolling stems.

7. Dahlem I 2323; n.p.; unp. Bronze; cast; incised and inlaid with copper; shaft and tray missing; h. 14.0; d. 16.7. Form of base as 1, the "tendons" with rings attached. Lobes decorated with sphinxes in roundels; on edge kufic and naskhi inscriptions; on upper body kufic inscription; on leg tops vegetal designs; inscriptions good wishes.

8. Dahlem I 3693; n.p.; unp. Bronze; cast; incised; shaft and tray missing; h. 9.0; d. 15.5. Form of base as 1. Vegetal motifs on lobes.

9. V&A I.S. 132-1954; n.p.; unp. Bronze; cast; incised; shaft and tray missing; h. 17.0; d. 20.5. Form of base as 1, with twelve-sided top. On edge kufic inscriptions in cartouches; on rest of body vegetal motifs.
10. V&A M.2-1943; n.p.; unp. Bronze; cast; incised; part of shaft and tray missing; h. 24.0. Form of base as 1, with single faceted spherical-bodied unit; midway between legs projecting bulls' heads. On edge kufic inscription in cartouches; lobes decorated with birds in pear-shaped roundels, with knot-patterns between; on unit kufic inscriptions alternate with palmettes.
11. BM 1914.5-15.1; Egypt; Barrett 1949 pl.4a. Bronze; cast; incised; shaft and tray missing; h. 11.3; d. 20.5. Form of base as 1. On leg tops and projections palmettes; on each lobe vegetal motif. (cf. Lamp A/4/5 and Lampstand shaft 7.)
12. de Unger colln.; n.p.; unp. Bronze; cast; incised; inlaid with silver; h. 32.7. Form as 1 but with shaft consisting of two spherical-bodied units and one octagonal baluster unit. On edge of base kufic inscription; on base lobes birds and animals in roundels; on leg tops roundels; on spherical-bodied units kufic inscriptions; on baluster unit vegetal designs in roundels or cartouches; on tray central sphinx with kufic inscription around and lancette border; on edge kufic inscription in cartouches with rosettes.

LampstandsC. footless, convex-bodied

1. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.50 right.

Bronze; incised; dimensions unknown. Base with rounded shoulder above two steps; hexagonal shaft with spherical-bodied unit above and below; tray with downward sloping edge and pierced vertical rim. On body lower step roundels; on shoulder two bands of inscription in cartouches.

2. Kabul 58.2.83; Ghazna; Turin 1961 no.164, Rowland 1966 pl.107, Mortimer Rice and Rowland 1971 pl.205. Bronze; cast and incised; applied ornament; shaft and tray missing; h. 25.7; d. 30.5. Form as base of 1, but with three steps, and applied bulls' heads and lions. On steps various vegetal designs, kufic inscriptions and animals; on top step arches; on shoulder roundels with horsemen, cartouches with animals and naskhi inscriptions; around top vegetal band; inscriptions good wishes. (Fig. 48)

3. BM; n.p.; unp. Bronze; cast; incised; h. 12.5; d. 20.3. Form as base of 1. On steps s-ornament; on edge crude vegetal designs; on shoulder cartouches of kufic inscription, triangles with vegetal motifs and triangular bosses; on upper shoulder three cartouches of kufic.

Lampstand shafts

1. Dahlem I 2324; n.p.; Bronze; cast in one piece; h. 33.3. Square shaft with spherical-bodied unit at each end. Undecorated.
2. East Berlin; n.p.; unp. Bronze; cast in one piece; dimensions unknown. Cylindrical shaft with spherical-bodied unit at each end. Undecorated.
3. Dahlem; n.p.; unp. Bronze; cast; incised; h. 25.5; d. 4.7. Barley-sugar shaft with plain ends. Ends decorated with pseudo-kufic inscriptions.
4. Jerusalem private colln.; n.p.; Rosen-Ayalon 1972 fig.26. Bronze; incised; dimensions unknown. Shaft consisting of three spherical-bodied units with square top. Decorated. (cf. Lampstand A/4/2 and Lampstand Unit 9.)
5. ex Heeramanneck Galleries; n.p.; Grabar 1959 no.38. Bronze; incised; dimensions unknown. Hexagonal shaft with spherical-bodied unit at top and bottom. Incised with name of maker Ahmad ibn Muhammad ibn Hārūn al-Harawī. (cf. Lampstand A/4/3.)
6. BM 1956.7-26.3; n.p.; unp. Bronze; cast; incised; h. 34.5. Hexagonal shaft with spherical-bodied unit at each end. On shaft kufic inscription; on one unit vegetal motif in roundel and stylised rosette.

7. BM 1914.5-15.1; Egypt; Barrett 1949 pl.4a. Bronze; cast; incised; h. 31.0. Cylindrical shaft with spherical-bodied unit at each end. At top and bottom of shaft kufic inscription; around centre three roundels with vegetal motifs. (cf. Lamp A/4/5 and Lampstand B/11.)

Lampstand units

1. Dahlem I 1765; n.p.; unp. Bronze; cast; incised; h. 8.5; d. 5.0. Spherical-bodied unit. Knotted design around middle.

2. Dahlem I 6769; n.p.; unp. Bronze; cast; incised; h. 6.8; d. 5.0. Spherical-bodied unit. Kufic inscription around middle.

3. Dahlem I 6768; n.p.; unp. Bronze; cast; h. 8.0; d. 5.5. Spherical-bodied unit. Undecorated.

4. Dahlem I 6767; n.p.; unp. Bronze; cast; incised and pierced; h. 10.0; d. 6.7. Spherical-bodied unit. Strapwork and piercing around middle.

5. Dahlem I 6766; n.p.; unp. Bronze; cast; incised; h. 14.0; d. 9.2. Spherical-bodied unit. Kufic inscription around middle.

6. East Berlin I 5521; n.p.; unp. Bronze; cast; incised and pierced; h. 9.0; d. 5.7. Spherical-bodied unit. Pierced interlace pattern around middle.

7. Dahlem I 6770; n.p.; unp. Bronze; cast in one piece; incised; h. 15.2; d. 5.2. One spherical-bodied and one octagonal unit. On spherical-bodied unit pseudo-kufic inscription around middle; octagonal one undecorated.

8. Dahlem I 3693; n.p.; unp. Bronze; cast separately; incised; h. of spherical-bodied ones 5.5, of baluster units 7.0. Three spherical-bodied units, three of faceted baluster form. On two of spherical-bodied units inscriptions; on third vegetal design; other units undecorated. (cf. Lampstand B/8.)
9. Jerusalem private colln.; n.p.; Rosen-Ayalon 1972 fig.26. Bronze; pierced and incised; dimensions unknown. One spherical-bodied unit with pierced and incised geometric pattern. (cf. Lampstand A/4/2 and Lampstand shaft 4.)
10. Copenhagen 16/1970; n.p.; Leth 1975 p.85. Bronze; incised; dimensions unknown. Two polyhedral units with six-faced cylinder between. Vegetal patterns. (cf. Lampstand A/4/4 and Lampstand tray 1.)

Lampstand trays

1. Copenhagen 16/1970; n.p.; Leth 1975 p.85. Bronze; incised; dimensions unknown. Circular tray with horizontal rim. In centre interlace pattern with vegetal infilling within lancette border; on rim scrolling stem. (cf. Lampstand A/4/4 and Lampstand unit 10.)
2. BM; n.p.; unp. Bronze; cast; incised and pierced; h. 2.5; d. 17.2. Circular tray with vertical rim and sloping edge. Bird in roundel with inscription and vegetal motifs; on edge cartouches of inscription and roundels.

3. de Unger colln.; n.p.; unp. Bronze; cast; incised and inlaid with silver; h. 1.5; d. 13.0. Form as 2. On edge scrolling stem; on inside seven large rosettes with scrolling stem with rhomb-shaped leaves around.

Polycandela

1. WAG 54.2363; n.p.; Ettinghausen 1957 fig.38. Bronze; cast; incised and inlaid with copper and silver; d. 49.7. Central ring with six rings around for holding glass lamps; at the edge three pairs of facing birds, and three small plaques with bird-head ends. On latter naskhi inscription of good wishes. (Fig. 49)

(4) Measuring equipmentBalance pans

1. Louvre AA 64; Ghazna; Marchal 1974 pp.10-12 no.4. Brass; beaten; incised; d. 23.0; h. 6.0. Shallow hemi-spherical form with three holes pierced near rim. Decorated with central sphinx, a frieze of animals around, then a band of zodiacal signs in interlacing roundels, and finally band of naskhi inscription, all against spiral scroll; inscription good wishes. (Analysis Table 21 no.30.)

2. Kābul 58.2.61; Shahr-i Ghulghula (medieval Bāmiyān); Rowland 1966 pl.103. Bronze; beaten; incised; d. 23.6. Form as 1. Decoration virtually identical with 1.

WeightsA. Balance weights 1. square

1. MMA 40.170.280; Nīshāpūr; unp. Bronze; cast; $1.2^2 \times 0.4$; 6 gr.

2. Ashmolean; Sīrāf S.69/70, 5142; unp. Bronze; cast; $1.1^2 \times 0.4$; 3.230 gr.

3. Ashmolean; Sīrāf S.69/70, 5129; unp. Bronze; cast; $0.5^2 \times 0.4$; 0.532 gr.

4. Ashmolean; Sīrāf S.69/70, 5160; unp. Bronze; cast; $3.3^2 \times 0.7$; 58.964 gr.

5. Ashmolean; Sīrāf S.70/71, 2412; unp. Bronze; cast; $0.5^2 \times 0.3$;
0.506 gr.
6. Ashmolean; Sīrāf S.70/71, 2451; unp. Bronze; cast; $0.5^2 \times 0.2$;
0.506 gr.
7. Ashmolean; Sīrāf S.70/31, 131; unp. Bronze; cast; $0.5^2 \times 0.2$;
0.519 gr.
8. Ashmolean; Sīrāf S.69/70, 3159; unp. Bronze; cast; $1.0^2 \times 0.4$;
2.844 gr.
9. Ashmolean; Sīrāf S.69/70, 5155; unp. Bronze; cast; $1.4^2 \times 0.7$;
13.687 gr.
10. Ashmolean; Sīrāf S.67/68, 1059; unp. Bronze; cast; $1.0^2 \times 0.4$;
2.964 gr.
11. Ashmolean; Sīrāf S.69/70, 2473; unp. Bronze; cast; $1.0^2 \times 0.4$;
3.040 gr.
12. Ashmolean; Sīrāf S.69/70, 2473; unp. Bronze; cast; $0.8^2 \times 0.6$;
2.978 gr.
13. Ashmolean; Sīrāf S.69/70, 2473; unp. Bronze; cast; $0.7^2 \times 0.4$;
1.511 gr.

14. Ashmolean; Sīrāf S.69/70, 2473; unp. Bronze; cast;
 $0.7^2 \times 0.3$; 0.949 gr.

15. Ashmolean; Sīrāf S.69/70, 2473; unp. Bronze; cast;
 $0.6^2 \times 0.3$; 0.955 gr.

16. Ashmolean; Sīrāf S.69/70, 2473; unp. Bronze; cast;
 $0.6^2 \times 0.3$; 1.030 gr.

17. Ashmolean; Sīrāf S.69/70, 2473; unp. Bronze; cast;
 $0.5^2 \times 0.3$; 0.635 gr.

18. Ashmolean; Sīrāf S. 69/70, 140; unp. Bronze; cast;
 $1.2^2 \times 0.4$; bevelled edges; 2.847 gr.

A. Balance weights 2. rectangular

1. Ashmolean; Sīrāf S.70/71, 168; unp. Bronze; cast; $1.1 \times 0.9 \times 0.6$; 5.884 gr.

2. Ashmolean; Sīrāf S. 69/70, 3178; unp. Bronze; cast; $1.4 \times 1.1 \times 0.4$; 3.458 gr.

3. Ashmolean; Sīrāf S. 69/70, 5159; unp. Bronze; cast;
 $0.8 \times 0.6 \times 0.4$; 1.566 gr.

4. Ashmolean; Sīrāf S.69/70, 3155; unp. Bronze; cast;
 $1.2 \times 1.0 \times 0.6$; 5.906 gr.

A. Balance weights 3. circular

1. Ashmolean; Sīrāf S.69/70, A 6546; unp. Bronze; cast; h. 0.3; d. 0.7; 0.653 gr.

A. Balance weights 4. octagonal

1. PUM RE 3429; Rayy; unp. Bronze; cast; h. 0.9; d. 1.2.
Dot-and-circle ornament.

A. Balance weights 5. triangular

1. Ashmolean; Sīrāf , 1333; unp. Bronze; cast; 1.4^3 x 0.4.

A. Balance weights 6. cuboid

1. MMA 39.40.138; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; 0.9^3 . Serrated edges.
2. Tehrān; Nīshāpūr; unp. Bronze; cast; 1.3^3 . Serrated edges.
3. Tehrān; Nīshāpūr; unp. Bronze; cast; dimensions unknown.
4. PUM RH 6099; Rayy; unp. Bronze; cast; 2.0^3 .

A. Balance weights 7. polyhedral

1. PUM RH 5210; Rayy; unp. Bronze; cast; d. 2.5. Sphere with flat face top and bottom.
2. Ashmolean; Sīrāf S.68/69, 317; unp. Bronze; cast; d. 1.9; 28.045 gr. Eight curving convex faces; two octagonal faces.
3. MMA 40.170.281; Nīshāpūr; unp. Bronze; cast; d. 2.0; 29.5 gr. Fourteen faces.
4. Tehrān; Nīshāpūr; unp. Bronze; cast; d. c. 1.5. Fourteen faces.
5. MMA 39.40.137; Nīshāpūr Qanāt Tapa; unp. Bronze; cast; d. 1.7. Twenty-six faces.
6. Ashmolean; Sīrāf S.69/70, 5176; unp. Bronze; cast; d. 1.9; 29.418 gr. Twenty-six faces.
7. MMA 40.170.282; Nīshāpūr; unp. Bronze; cast; d. 1.4. Thirty-four faces.

Weights

B. Others

1. MMA 40.170.183; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; originally probably filled with lead; h. 3.5; d. 2.6. Ringed cylindrical form with knob at top.

2. Tehrān; Nīshāpūr Tapa Madrasa; unp. Form as 1.

3. Hermitage; Central Asia; D'yakonov 1940 pls.1-2. Bronze; cast; h. 5.5; d. 7.5; 690 gr. Truncated conical shape with slightly concave sides. Inscription gives name of amīr Isma'īl ibn Ahmad and of Muhammad ibn 'Alī.

4. Hermitage; Central Asia; D'yakonov 1940 p.169. Bronze; cast; h. 2.5; d. 3.2; 67.4 gr. Form as 1.

(5) Writing equipmentInkwellsA. with cylindrical body, flaring base and rim*

1. BM 1968.7-22.3; n.p.; unp. Bronze; cast; incised and inlaid with silver; domical top to lid missing; h. 8.5. Slightly bulging cylindrical body with flaring base and rim; cusped horizontal inner rim and vertical ridge to fit lid; lid with flat shoulder and concave edge, once crowned by domical top; three cylindrical shafts running through body coinciding with three holes in lid. Body decorated with two bands of kufic inscription of good wishes to owner; on lid shoulder kufic inscription reading: "sāhiba hādhihi 'l-dawāt tāj al-'ālimāt wa najm al-wā'idhāt (?) umm al-faḍl 'Ālima bint Ibrāhīm munajjim". (Fig.50)

InkwellsB. with plain cylindrical body 1. with lid with almost spherical top

1. de Unger colln.; n.p.; unp. Bronze; cast; incised; body missing; h. 5.8; d. 10.8. Flat lid with vertical edge; almost spherical top soldered onto centre; three holes around; cuboid finial. On shoulder three cartouches with kufic inscription of good wishes; on dome "double-bow" motif, and rosettes.

* For forms of loops, backplates and handles as given in the catalogue, see Fig.50.

InkwellsB. with plain cylindrical body 2. with lid with conical top

1. de Unger colln.; n.p.; Pope 1938 pl.1311C. Bronze; cast; incised and inlaid with silver and copper; three feet missing; h. 11.0; d. 8.5. Slightly inward sloping cylindrical body; flat base; horizontal inner rim; vertical ridge to fit lid; flat lid with vertical edge and soldered conical top. On base central harpie with leaf border and three knot forms; on body zodiacal signs in interlacing roundels in groups of four with knot forms between; on inner rim inscription in cartouches; on inside of lid three pointed rosettes; on lid edge running animals in cartouches; on shoulder naskhi inscription in cartouches with seated figures in roundels; on cone interlace pattern; inscriptions good wishes. (Fig.50)
2. Louvre 3372; n.p.; Pope 1938 pl.1311F. Bronze; cast; incised and inlaid with silver; lid loops broken; h. 10.5; d. 8.3. Form as 1. On base central floral device and three cartouches of scrolling stem; on body band of scrolling stem with kufic inscription below and naskhi inscription above; on inner rim band of scrolling stem; on lid edge kufic inscription in cartouches; on shoulder naskhi inscription; on cone vegetal motif; inscriptions good wishes.

InkwellsB. with plain cylindrical body 3. with lid with six-lobed conical top

1. Copenhagen 32/1970; n.p.; Pope 1938 pl.1311A, Mayer 1959 pp.82-3 pl.13, Leth 1975 p.82. Bronze; cast; incised and inlaid with

silver and copper; h. 10.0. Form as B/2/1, but cone with six petal-shaped lobes; three A-type backplates on body, remains of three A-type loops on lid edge. On body seated figures and cartouches with vegetal designs between a band of kufic and a band of naskhi inscription interspersed with six-segmented roundels; on lid edge animals in cartouches; on shoulder naskhi inscription in cartouches and name of maker in roundels; on lobes of cone vegetal designs; inscriptions good wishes to owner; name of maker Shāh Malik.

2. ex Kofler colln.; n.p.; Sotheby & Co. 6/12/71 lot 56 and pl.7, Baer 1972 figs.1-5. Bronze; cast; incised and inlaid with silver; one loop handle and one loop missing; h. 13.0. Form as 1; loop handles type B, backplates type A, loops type A. Body decorated with cartouches containing seated figures above naskhi inscription in cartouches, and between birds in roundels; on lid edge kufic inscription; on shoulder kufic inscription naming owner, and birds in roundels; on cone lobes vegetal motifs; inscriptions good wishes; name of owner al-shaikh al-'amīd mu'tamid al-dawlat amīn al-mulk badr al-hadratain 'Alī b. Muhammad b. 'Alī al-Mushrif.

3. WAG 54.514; n.p.; Mayer 1959 p.65, Ettinghausen 1966 fig.9; Bronze; cast; incised and inlaid with silver and copper; loop handles and loops partially damaged; h. 10.5; d. 8.0. Form as 1; loop handles type A, backplates type A, loops type B. Body decorated with kufic inscription of good wishes between scrolling stems; on lid edge name of maker; on cone vegetal motifs and bands; maker Muhammed b. bī'l-Sahl al-Harawī.

4. MMA 48.108; n.p.; Aga-Oglu 1946 fig.1, Dimand 1948 p.139 (bottom), Mayer 1959 p.23. Bronze; cast; incised and inlaid with copper and silver; loops and loop handles missing; h. 10.0; d. 8.0. Form as 1; backplates type A. Body decorated with band of horsemen with kufic inscription below and naskhi inscription above, both of good wishes, with rosettes in roundels; on lid edge interlace pattern; on shoulder three groups of four zodiacal signs in roundels with kufic inscription of good wishes and name of maker between; on cone vegetal designs; on base central rosette with alternating cheetahs and kufic inscriptions around, and lancette leaf border; name of maker 'Abd al-Razzāq b. Mas'ūd al-Nīshāpurī.

5. MMA 35.128; n.p.; Dimand 1947 fig.82, Mayer 1959 pp.67-8. Bronze; cast; incised and inlaid with copper and silver; loop handles missing; h. 10.3; d. 8.0. Form as 1; backplates type A; loops type A. Body decorated with cartouches with scrolling stems, vase motifs and roundpetalled rosettes in roundels above a naskhi inscription in three sections; on lid edge scrolling stem; on shoulder naskhi inscription in three cartouches with name of maker in roundels between; on cone rosettes; maker Muhammad al-bayyā ; inscriptions good wishes.

6. Whereabouts unknown; Munchaq Tapa;

Esin 1970 fig.10. Bronze; incised and inlaid; dimensions unknown. Form as 1, but no handles, backplates or loops. Body decorated with figure in roundel with four figures around, in three decorative areas; on cone figures and vegetal motifs; decoration on rest of lid unclear.

7. Kābul; Ghazna; Scerrato 1959a fig.38 p.39. Bronze; incised and inlaid with copper and silver; dimensions unknown. Form as 1. Decorated with figures framed by arches and kufic inscriptions of good wishes.

8. Rome; Ghazna; Scerrato 1959a fig.38 p.39, Scerrato 1966 pl.16. Bronze; decoration incised and nielloed on silver plates soldered to surface of object; dimensions unknown. Form as 1, with three low feet, and three holes pierced through shoulder. On body round applied medallions with birds; on lid three applied cartouches with kufic inscriptions; on three lobes applied lozenge with vegetal motif.

9. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.72 (bottom). Bronze; incised and inlaid with silver; backplates, handles and loops missing; dimensions unknown. Form as 1. On body cartouches and roundels bearing various vegetal designs or naskhi inscriptions of good wishes; on lid edge kufic inscription of good wishes in cartouches; on cone vegetal designs.

10. Cairo; n.p.; Pope 1938 pl.1311D. Bronze; cast; incised and inlaid with silver; one loop handle at least broken; h. 11.0. Form as 1; backplate type A; loops type A. On body zodiacal signs in roundels, the ground around covered with strapwork; on lid edge kufic inscription of good wishes; on shoulder another inscription; on cone lobes alternate strapwork and seated figure above interlace band.

11. Louvre; n.p.; unp. Bronze; cast; incised and inlaid with copper and silver; handles and backplates missing; three holes pierced through lid; h. 9.7; d. 8.0. Form as 1 with areas for backplates type A and loops type A. On base three hunting animals in cartouches; on body band of seated figures and medallions between band of naskhi inscription below and kufic inscription above, both interspersed with roundels; decoration on lid badly corroded.

12. V&A 746.1889; n.p.; unp. Bronze; cast; incised and inlaid with copper and silver; handles, backplates and loops missing; h. 10.7; d. 8.2. Form as 1. On base central bird in roundel and three cartouches with scrolling stem around; on body two bands of naskhi inscription against scrolling stem, with band of kufic against punched ground between; on lid edge kufic inscription; on shoulder naskhi inscription; inscriptions good wishes.

13. Louvre AA 65; Ghazna; Marchal 1974 fig.3. Quaternary alloy; cast; incised and inlaid with silver; body missing; h. 4.5; d. 7.9. Form as 1; loops type A. Frieze of animals of the hunt round edge; naskhi inscription of good wishes on shoulder; on lobes of dome seated figures above band of interlace. (Analysis Table 21 no. 24.)

14. BM 85.10-10.9; n.p.; unp. Bronze; cast; incised and inlaid with silver and copper; body missing; h. 5.0; d. 8.3. Form as 1; loops type A. On edge kufic inscription in cartouches; on shoulder naskhi inscription; on cone lobes trefoils or interlace; inscriptions good wishes.

InkwellsB. with plain cylindrical body 4. with lid with eight-lobed conical top

1. BM 1939.6-20.1; n.p.; Barrett 1949 pl.5b. Bronze; cast; incised and inlaid with silver and copper; two loop handles missing; h. 9.8; d. 8.3. Form as B/2/1 but cone eight-lobed; backplates type C; loophandle type A; loops type A. On body band of curvilinear and rectilinear knot patterns between bands of naskhi and kufic inscriptions; on lid edge scrolling stem; on shoulder naskhi inscription; on lobes remains of decoration; on base central bird with three running animals in cartouches and pear-shaped roundels around; inscriptions good wishes.

2. V&A 1435-1902; n.p.; Melikian-Chirvani 1973 pp.22-3. Bronze; cast; incised and inlaid with silver; backplates, loops and handles missing; hinge and clasp not original; domical top possibly not either; h. 10.8; d. 8.6. Form as 1 but body and lid with slightly concave profile; eight-lobed dome held in position by circular plate fitted inside lid; three almond feet. On base central rosette and three vegetal motifs and cartouches of scrolling stem; on body and lid merlon pattern and six-petal rosettes in roundels; on inner shoulder of lid curvilinear Y-motif instead of rosettes; on dome geometrical ornament; on plate inside lid band of circles and lancette leaf border; pear-shaped spaces on body for backplates; pointed spaces on lid edge for loops.

3. Kābul; Ghazna; Mortimer Rice and Rowland 1971 pls. 200-1.
Bronze; cast; incised and inlaid with silver; body missing;
inside d. 9.0. Form as 1; loops type A. Inside naskhi inscription;
on edge kufic inscription; on shoulder zodiacal signs in
roundels; on lobes vegetal motif above band of small discs; on finial
geometric pattern; inscriptions good wishes to owner.

Inkwells

B. with plain cylindrical body 5. with lid with zoomorphic top

1. Minassian colln., New York; n.p.; Aga-Oglu 1946 figs.3-4, Mayer 1959
p.76. Bronze; cast; incised and inlaid with copper and silver;
h. 10.0; d. 7.5. Form as B/2/1, but lid with central dome consisting
of three crouching sphinxes in openwork and relief; form of backplates
not clear, but loop handles and loops both type A. Around body two
interlacing bands with naskhi inscriptions; in intervening spaces two
standing figures; on edge of lid kufic inscription; on shoulder
anthropomorphic naskhi inscription with ducks in roundels; body
inscription Persian (undeciphered); shoulder inscription good wishes
to owner; lid edge inscription gives name of maker Nāsir b. As'ad
al-Nīshāpurī.

Inkwells

B. with plain cylindrical body 6. with lid top of unknown form

1. MMA 44.131; n.p.; Dimand 1945 p.90. Bronze; cast; incised
and inlaid with copper and silver; loophandles, backplates and lid

missing; h. 6.0. Form as B/2/1; lobed area for backplates.

Decorated with zodiacal signs and other pictures in three groups of five roundels, with animal-headed leaf and stem designs between.

2. Cairo; n.p.; Rice 1952 pls.9a, 10a. Bronze; incised and inlaid with silver; loophandles, backplates and lid missing; h. 6.0; d. 8.3. Form as 1; lobed areas for backplates. Decorated with band of kufic inscription of good wishes with band of drinkers, musicians and gamers above and band of mounted warriors below.

3. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.77 (top right). Bronze; incised and inlaid with silver; lid missing; dimensions unknown. On base central knot pattern with lancette leaf border; on sides vegetal designs with three roundels; rest of decoration unknown.

4. V&A; n.p.; unp. Bronze; cast; incised; clasps damaged; lid missing; h. 5.7; d. 7.5. Form as 1; backplates type B; loophandles type B; originally had three feet. On base three cartouches containing interlace pattern, and central roundel; on sides three lobed medallions with musicians against spiral scrolls; below each handle cartouche with kufic inscription of good wishes; above each handle two roundels with vegetal motifs; on inner rim dot and double circle motif.

5. Dahlem I 3667; n.p.; unp. Bronze; cast; incised; lid missing; h. 7.1; d. 9.4. Form as 1. Decorated with two bands of naskhi inscription of good wishes.

6. Dahlem I 46/63; n.p.; unp. Bronze; cast; incised and inlaid with silver; loop handles, backplates and lid missing; h. 6.0; d. 8.1. Form as 1; lobed areas for backplates. Decorated with band of naskhi inscriptions between two bands of musicians and drinkers; on inner rim kufic inscription; on base three cartouches with knot patterning or scrollwork; inscriptions good wishes to owner.
7. Jerusalem M.13-68; n.p.; Sotheby & Co. 5/6/40 lot 68, Baer 1972 fig.12. Bronze; cast; incised, and originally inlaid; lid missing; h. 6.4. Form as 1. Decorated with three zones, containing "seated figures, medallions of birds, and floral arabesques"; on base vegetal design in roundel with three cartouches containing animals around.
8. Hermitage; Kazan area; Anon 1899 p.119 fig.227. Bronze; loop handles and lid missing; d. c. 8.0; h. c. 5.5. Form as 1; backplates type A. Decorated with band of rosettes in interlacing roundels between two bands of naskhi inscription of good wishes against scrolling stem; band of scrolling stem on horizontal inner rim; on base central vegetal motif in roundel and three cartouches containing scrolling stems around.

Inkwells

C. bulbous-bodied

1. Tehrān; Nīshāpūr; unp. Bronze; lid missing; d. 3.2. Cylindrical body, bulbous at bottom; horizontal inturned rim with vertical ridge for lid; three small projecting handles on body and three small feet. Undecorated. (Fig. 50)

Pen-casesA. rectangular

1. Hermitage; n.p.; dated 542/1148; Gyuzal'yan 1968, Mayer 1959 p.87. Bronze; cast; incised and inlaid with silver and copper; both lids missing; corner of body damaged; lg. 19.0; w. 3.5; h. 2.5. Rectangular with an opening at one end of upper side and another opening in end wall at opposite end of case. On upper side central naskhi inscription of good wishes with naskhi inscription around: "For its owner 'Alī b. Yūsuf b. 'Uthmān al-Hājǰ, made by 'Umar b. al-Faḍl b. Yūsuf al-bayyā, dated on the 20th dhū'l-qa'dah of the year 542"; on either side twin cartouches containing naskhi inscription and three roundels with birds, the inscriptions containing four poetic verses and the name of the maker; inscription on two ends in kufic script giving name of owner; on underside vegetal border, and later incised inscription of poetic verses. (Fig. 51)

Pen-casesB. pointed

1. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.73 III p.234, Grohmann 1967 II pl.60 no.1. Bronze; inlaid with silver and incised; dimensions unknown. Shallow body of rectangular section, narrowing along its length, and ending in a rounded point; separate lid for three quarters of length; other details of construction uncertain. On sides of body naskhi inscriptions; on underside of body bands of naskhi or kufic inscriptions with floral medallions between; on lid vegetal pattern all over; inscriptions good wishes. (Fig. 51)

2. de Vasselot colln.; n.p.; Pope 1938 pl.1317C and D, Mayer 1959 p.91. Bronze; incised and inlaid with silver; lg. 22.8. Form as 1, but with trefoil point to body, and cover with circular opening for upper end of case top. On latter cover enthroned figure with attendants; on lid naskhi inscription naming maker, and four roundels with various human or animal scenes with vegetal designs between; on underside kufic inscription at top and then various geometric designs; maker's name Yūsuf ibn Ya'qūb (?).

3. V&A 1175-1903; probably from Bukhāra; Pope 1938 pl.1288B. Bronze; soldered sheet metal; lids missing; lg. 24.9. Form as 1, but with lobed wide end, and internal dividing strip. On sides naskhi inscription against spiral scroll; on underside harpie and hunt animals against spiral scroll; on sides of lobed end kufic inscription against spiral scroll; inscriptions good wishes.

4. de Unger colln.; n.p.; unp. Bronze; soldered sheet metal; incised and inlaid with silver; lids and ends missing; lg. 20.9. Form as 1, with remains of internal dividing strip. On underside vegetal design; on sides naskhi inscriptions of good wishes.

5. de Unger colln.; n.p.; unp. Bronze; sheet metal; incised and inlaid with silver and gold; lids and ends missing; lg. 23.0. Form as 1. On underside two bands of kufic inscription with floral medallions between; on sides human-headed naskhi inscriptions and roundels; inscriptions good wishes.

6. de Unger colln.; n.p.; unp. Bronze; sheet metal; incised and perhaps originally inlaid; lid not original; lg. 20.1. Form as 1, but upper side of body not removable; small square opening near wide end only. Traces of vegetal decoration; on lid vegetal design and silver inlay.
7. de Unger colln.; n.p.; unp. Bronze; sheet metal; lg. 19.5. Form as 1, but with lid on wide end and no other openings; circular recess in upper side near lobed narrow end. Undecorated.
8. WAG 54.509; n.p.; Pope 1938 pl.1333B. Bronze; incised and inlaid with silver; only body original; lg. 25.0. Form as 1, but narrow end with concave sides coming to a point. Body sides decorated with inscription in kufic with plaited hastae.

Pen-cases

C. rectangular with rounded ends

1. WAG 54.450; n.p.; unp. Bronze; cast in pieces; incised and inlaid in silver; lg. c. 30.0. Rectangular with rounded ends; upper side consisting of two lids, the larger taking about three quarters of the space, the shorter the rest; two double hinges and a double catch, each rivetted on. Ends of hinges and catch decorated with pierced vegetal work; top of lids decorated with four small cartouches containing naskhi inscription of good wishes against spiral scroll, and two large roundels with geometric interlacing.

2. Freer 36.7; Bukhārā; dated 607/1210; Herzfeld 1936, Mayer 1959 p.82. Bronze; incised and inlaid with silver and copper; hinges and clasp missing; lg. 31.3; w. 6.3; h. 4.8. Form as 1, but with single full-length lid originally held with two hinges and clasp; traces of fixture inside. Top decorated with animal-headed scroll work with naskhi inscription around giving full names and titles of the owner Majd al-mulk al-muzaffar; on sides of lid frieze of animals and kufic inscription giving name of maker and date; on sides of body naskhi inscription of good wishes with human and animal-headed hastae; on base floral medallions and scrolling stem border; name of maker Shādhī al-naqqāsh.

3. Ashmolean 1967.122; n.p.; unp. Quaternary alloy; incised and once inlaid; fittings replacements; lg. 19.0. Sides and lid decorated with naskhi inscriptions, on the lid human-headed, and roundels containing seated figures; on base three rosettes; inscriptions good wishes. (Analysis Table 21 no.31.)

(6) FurnitureBoxesA. circular 1. plain cylindrical

1. BM 1967.7-24.1; n.p.; unp. Bronze; cast; incised and inlaid with copper; lid finial, two hinges and two clasps missing; h. 16.8; d. 23.4. Cylindrical box slightly narrowing towards the top; flat base; flat topped lid slightly narrowing towards the bottom. Lid and body covered with bands of kufic and naskhi inscriptions against scrolling stems, but main band round body zodiacal signs in interlacing roundels.
2. Detroit; n.p.; Aga-Oglu 1931a fig.5. Bronze; incised; remains of one hinge and clasp; dimensions unknown. Form as 1. Decoration similar to 1, but main band of body decoration inscription within interlacing lines. (Fig. 52)

BoxesA. circular 2. cylindrical with bevelled lid

1. Louvre 3446; n.p.; unp. Bronze; incised and inlaid with silver and copper; hinge, clasp and lid missing; h. 7.2; d. 10.0. Cylindrical body with slightly thickened rim; flat base. On upper body band of naskhi against scrolling stems, on lower body band of kufic, and around middle eight polo-players; break in design for hinge and clasp fittings.
2. de Unger colln.; n.p.; unp. Bronze; incised and inlaid with silver; lid missing; h.7.0; d.10.0. Form as 1, with small inner vertical rim. Decorated with band of pairs of figures in lobed medallions with scrolling stems around and band of scrolling stems above and below; remains of central vegetal design and vegetal border on base.

3. V&A; n.p.; unp. Bronze; incised and inlaid with silver; lid later; h. 7.0; d. 10.7. Form as 2. Decorated with kufic inscription in two repeats interspersed with figures in roundels with pearl borders; scrolling stem above; frieze of sphinxes and harpies below.

4. de Unger colln.; n.p.; unp. Bronze; cast; incised; top (?) later; h. 10.2; d. 10.7. Form as 2, but with flat topped lid with bevelled shoulder and vertical edge, and double-bar hinge fittings. Lid top decorated with leaf motifs within interlacing circles; on upper body crude band of kufic against scrolling stem. (Fig. 52)

Boxes

A. circular 3. very shallow

1. BM 1969.9-24.3; n.p.; unp. Bronze; cast; incised and inlaid with silver; part of lid missing; h. 2.1; d. 14.0. Flat base; inward sloping sides; small flat rim; flat lid. Lid decorated with central fishes, lancette leaves within interlacing bands, and plaited border; on rim interlacing circle pattern; on outside of body kufic inscription; on inside bands of different leaf forms around eight-segmented circle with leaves. (Fig. 52)

Boxes

B. octagonal

1. Whereabouts unknown; n.p.; Grabar 1959 no.62. Bronze; incised, pierced, and inlaid with silver; clasp and feet missing; h. 12.9; d. 11.8. Octagonal slightly inward sloping body; slightly flared shoulder

to flat edged lid with central pierced dome and double-cone finial. Body decorated with stem and leaf pattern, leaving spaces for legs; on shoulder naskhi inscription against scrolling stem; crude incised work on dome; inscription good wishes. (Fig. 52)

Boxes

C. rectangular 1. with flat half lid

1. Boston 55.113; n.p.; dated 593/1197; Wiet 1933 no.27 and pl.4, Pope 1938 pls.1303A and B; Bronze, with bronze fittings, figures in relief and incised decoration; lg. 21.0; h. 18.0. Four flattened spherical feet; rectangular body, half the top forming a hinged lid with a combination lock consisting of four dials on it; all edges of body held with L-shaped clamps. Front of body decorated with three standing figures in relief; top decorated with geometric patterns, lid with inscriptions, a naskhi one of good wishes, and a kufic one giving date of manufacture. (Fig. 53)

2. Private colln.; n.p.; Rice 1958 pp.227-236 and pls.1-3b and 5. Bronze; cast; traced and inlaid with silver; lg. 13.5; w. 10.0; h. 12.0. Four small feet; rectangular body; originally a handle at each end; hinged lid 6.2 cms. wide now lost; on two corners of solid top remains of boss finials. Decorated on base with roundel containing seated drinking figure; on top two lions; on front medallion with seated figure between griffins with naskhi inscription around; on back two seated figures in roundel with kufic inscription around; at each end roundel with enthroned figure below a rosette and animal, with kufic inscription around; inscription good wishes, but on front inscription includes name of maker Ṣā'id ibn Aḥmad al-Faqīh.

Boxesc. rectangular 2. with full, bevelled lid a. footless

1. ex Heeremaneck colln.; n.p.; Rice 1958 pp.236-9 and pl.6.
Bronze; beaten; incised and inlaid with niello; clasp missing;
lg. 15.5; w. 11.5; h. 9.5. Rectangular body; flat top with
bevelled shoulders and vertical edges, undecorated hinge bars. Front
decorated with two revellers within kufic inscription border, the
back with sphinx within kufic inscription border, the ends with musicians
within kufic inscription borders; top decorated with musicians,
animals of the hunt, and mythical beast; inscriptions good wishes.
(Fig. 53)

2. BM 1956.7-26.13; n.p.; unp. Bronze; cast; incised and
inlaid with silver; base plate, hinges and clasp later; lg. 7.8;
w. 4.9; h. 5.5. Form as 1. Top of lid decorated with lion; rest
of object decorated with hastae against leaves and scrolls within
diamond pattern borders.

Boxesc. rectangular 2. with full, bevelled lid b. footed

1. Stockholm 60/1899; n.p.; Martin 1902 pl.19. Bronze; lid
missing; hinges later; clasp missing; incised, and inlaid with
silver; dimensions unknown. Rectangular with four feet, each in form
of a right angle; protruding boss where each foot joins body;
vertical rim to fit inside lid. Decorated at either end with lobed
medallion with knot pattern between knot designs within border of
inscription; on back similar medallion with vase ornament each side
within similar border; on front two medallions with knot patterns within
similar border; inscriptions good wishes.

2. de Unger colln.; n.p.; unp. Bronze; cast; incised and inlaid with silver; lid missing; hinges and clasp missing; lg. 15.0; w. 9.7; h. 9.3. Form as 1. Ends and sides decorated with mythical beasts or human figures in roundels with scrolling stems and leaves around, within kufic inscription borders; inscriptions good wishes.

Boxes

C. rectangular 3. with sloping sides

1. Cairo; n.p.; Pope 1938 pl.1305A. Bronze; incised; hinges later; clamps partially broken; lid missing; lg. 22.5. Truncated pyramidal form; two clamps on each corner joint; vertical rim to fit lid. Side decorated with central band showing two roundels with enthroned feasting figures and vegetal designs, with above and below a band of stylised pseudo-inscription with roundels showing enthroned human and bird figures. (Fig. 53)

Boxes

D. Semi-circular

1. Cairo; n.p.; Pope 1938 pl.1305C and p.2528 no.16. Bronze; incised; hinges missing; lg.21.3. Semi-circular flat box, with spaces for two hinges on straight side and clasp on middle of curve. Inscription round body of box; scrolling stems round lid edge; box top decorated with two confronted sphinxes amid foliage within border of naskhi inscription; inscriptions include signature of craftsman Nūshirvān ibn Muḥammad. (Fig. 53)

Braziers

1. BM 1956.7-26.6; n.p.; d'Allemagne 1911 III p.110. Bronze; cast; pierced and incised; h. 11.7; w. 13.0. Square brazier with four feet in form of stylised animal heads, and four finials in form of cones with pierced palmette designs. In centre of flat base open-work circle pattern; pierced palmettes on sides; pierced interlace on inturned rim; scrolling stem design on corners. (Fig. 54)

Chairs

1. Tehrān private colln.; n.p.; Kurtz 1972 fig.3. Bronze; seat, two feet and one bar missing; dimensions unknown. Folding chair consisting of two pairs of legs in form of an X with curved ends; disc feet; five cross bars, the centre one bearing large spherical boss; smaller bosses on other bars and legs. Remains of vegetal decoration on large boss. (Fig. 54)

Incense-Burners

A. round-bodied 1. with cover and handle

1. Dahlem I 1078; n.p.; Kühnel 1919 fig.94, Berlin-Dahlem 1971 no.259; Bronze; cast; cover missing; handle may be from another object; lg. 12.5. Round flat-bottomed body with two-tier almond bosses in two alternating rows; hinge and catch for lid; three legs with flat pointed feet; cylindrical handle with lion end.

2. Dahlem I 1503; probably from Rayy; Kühnel 1919 fig.93, Pope 1938 pl.1278B, Aga-Oglu 1945 fig.4, Berlin-Dahlem 1971 no.219. Bronze; cast; finial not original; lg. 14.0. Form as 1, the cover formed by arches of bronze with finial in form of harpie with dragon tail; three legs with flat feet; handle rectangular in section with triangular piercings.

3. Brooklyn 70.98.2; n.p.; unp. Bronze; cast; no handle; h. 15.3; d. 10.8. Form as 1; domical cover with pomegranate top finial. Cover pierced to show flowering stem between two bands of toothing and one of alternating diagonal leaves.

4. East Berlin; n.p.; Kühnel 1919 fig.89. Bronze; pierced; handle missing; dimensions unknown. Form as 1; domical cover with finial resembling a pomegranate top. On sides pierced vegetal design; on cover pierced scrolling stem.

5. Brooklyn L.63.9.65; n.p.; unp. Bronze; cast; handle missing; h. 25.4; d. 10.3. Form as 1; three legs with reverse knees; three projecting pieces to hold cover in place; cover in form of bulbous dome with tall pointed finial above broad bulbous band. Decoration on body interlacing circles, on cover circles and pierced holes, and on upper band interlace with piercings.
6. Louvre; Shāpūr; Ghirshman 1938 pl.9 no.5 and p.13, Aga-Oglu 1945 fig.3. Bronze; dimensions unknown. Form as 1; everted sides; domical cover; bird finial; handle shaft semi-circular in profile with end resembling turned wood. Incised dot and circle motifs and piercing on cover. (Fig. 55)
7. Whereabouts unknown; Shāpūr; Ghirshman 1938 p.13. Form as 6.
8. V&A M.862-1927; n.p.; unp. Bronze; cast; pierced; incised; h. 12.0; d. 7.9. Form as 1, but no handle or feet; domical cover with five-pointed star finial. On base bird in roundel; on sides interlace band; incised and pierced work on cover.

Incense-burners

A. round-bodied 2. with half-cover, handleless

1. Boston 46.1135; n.p.; Aga-Oglu 1950. Bronze; cast; pierced, incised and inlaid with silver and gold; one bird's head missing; h. 27.2; d. 11.8. Low cylindrical body; pierced semi-domical cover

with three openings in front and protruding bird's heads; cock finial; three legs. On body two bands of kufic inscription, animals in cartouches, and roundels; on legs scrolling stems; on cover naskhi inscription, pierced interlacing stems, and kufic inscription naming maker Abū'l-Munīf ibn Mas'ūd.

2. Cairo; n.p.; Pope 1938 pl.1299A. Bronze; cast; pierced and incised; h. 26.0. Form as 1, with single opening in cover front and bird finial. On body inscription between bands of interlace; on legs simple interlace; on cover front incised bodies of birds with projecting heads.

3. Demotte colln.* (?); n.p.; Pope 1938 pl.1299B. Bronze; cast; pierced and incised; h. 31.5. Form as 1 with pear-shaped opening in front cover and bird finial. On body interlacing roundels between bands of z-ornament; on legs interlace; around edge of pierced cover band of kufic.

4. Indjoudjian colln.; n.p.; Pope 1938 pl.1299C. Bronze; cast; pierced and incised; finial missing; h. 21.0. Form as 1. On body naskhi inscription and roundels between interlace bands; on legs incised lines; on cover scrolling stem, running animals, harpies and naskhi inscription.

* The identity of 3 and 5 is confused by the fact that the descriptions given in Pope 1938 pls.1299B and D do not coincide with those of London Burlington House 1931 pl.15 left and right. Moreover, Berlin-Dahlem 1971 no.358 has a mistaken bibliography.

5. Whereabouts unknown*; n.p.; London Burlington House 1931
pl.15 left, Pope 1938 pl.1299D. Bronze; cast; pierced and incised;
h. 26.0. Form as 1 with pear-shaped opening in cover front, bird
with erect tail finial, and pyramidal bosses on leg tops. On body
kufic inscription and roundels; on cover scrolling stem; on cover
front two birds.

6. Dahlem I 1291; n.p.; Kühnel 1919 fig.98, London Burlington
House 1931 pl.15 right, Berlin-Dahlem 1971 no.358. Bronze; cast;
pierced and incised; h. 26.3; d. 12.0. Form as 1 with pear-shaped
opening in cover front and with bird finial. On body inscription in
cartouches with roundels; on cover kufic inscription; on cover front
spiralling stems. (Fig. 55)

7. Hamburg; n.p.; unp. Bronze; cast; pierced and incised;
finial missing; h. 13.0. Form as 1 but four feet and no bird head
protrusions. On body four indented diagonal crosses with knot
patterns and vertical scrolls between; on cover vegetal designs;
on cover front two facing lions.

8. Louvre 6156; Sīstān; Marchal 1974 fig.2. Quaternary alloy;
cast in sections; incised; h. 13.7; d. 7.8. Form as 1 with
diamond-shaped boss finial. On body four roundels with double-bow
pattern between four vertical bands of palmettes; on cover edge band
of scrolling stem; crudely lobed cover front. (Analysis Table 21
no.13.)

9. Ashmolean 1968.35; n.p.; unp. Quaternary alloy; cast; pierced
and incised; finial missing; h. 9.5. Form as 1 but no cover front

or bird head protrusions. On body cartouche with naskhi inscription of good wishes; on cover vegetal design. (Analysis Table 21 no.33.)

10. Kābul 58.2.41; Ghazna; Rowland 1966 no.105, Turin 1961 no.161 pl.63. Bronze; cast; pierced, incised and inlaid with copper; two legs modern; finial missing; h. 14.6. Form as 1, but no protruding bird heads. On body naskhi inscription of good wishes with bands of interlace and scrolling stems; on cover two sections of vegetal design with vertical interlace band between.

11. Whereabouts unknown; n.p.; d'Allemagne 1911 III pp.98, 233. Bronze; pierced; incised and inlaid with silver; dimensions unknown. Form as 1, but four legs, bird finial, and no protruding bird heads; cover front open roundels. On body vertical bands of scrolling stem and roundels; on cover pierced scrollwork and kufic inscription.

12. V&A M.78-1957; n.p.; unp. Bronze; cast; pierced and incised; h. 19.5; d. 9.5. Form as 1 but with four feet, lobed cover front and bird finial. On body vertical band of kufic inscription or strapwork above each foot with roundels between; on cover crude vegetal and geometric design with strapwork border.

13. de Unger colln.; n.p.; unp. Bronze; cast; pierced and incised; h. 27.3; d. 11.3. Form as 1 with pear-shaped opening in cover front and bird finial. On body naskhi inscription in cartouches with roundels; on cover two triangular areas of scrolling stem with two vertical bands of vegetal design and one of kufic inscription; on cover front two birds.

14. de Unger colln.; n.p.; unp. Bronze; cast; pierced and incised; h. 11.0; d. 4.3. Form as 1. On body double-bow pattern in roundel.

15. BM 1956.7-26.7; n.p.; unp. Bronze; cast; incised; finial missing; h. 13.0; d. 7.5. Form as 1, with three-lobed feet. On body palmette design in roundel and cartouche of kufic inscription; on cover pierced palmette and stem design.

Incense -burners

B. square-bodied

1. Dahlem I 1301; n.p.; Pope 1938 pl.1278C, Berlin-Dahlem 1971 no.242. Bronze; cast; pierced and incised; lg. 31.0; h. 24.0. Square body with corners in form of plain pilasters and pierced interlace work on sides; lower half of hinged lid identical with body; upper half of lid spherical with piercing around; four legs with reverse knees and outward curving thighs; handle square in section terminating in diamond-faced cube and pomegranate-top end. Pierced scrolling stems on sides of handle. (Fig. 55)

2. Gävle Museum; Gästrikland, North Sweden; Oxenstierna 1959 p.90 pl.39. Bronze; cast; pierced; h. 40.0; lg. of handle 26.0. Square body; square lower lid; domical upper lid with pomegranate top finial; four curving legs; long square handle; around top of lower lid band of crenellation. Body and lid decorated with pierced palmette forms; handle decorated with scrolls and piercing.

3. Qandahār; probably from Qandahār; Scerrato 1959 pp.99-101 no.1 and figs.1-5. Bronze; pierced and incised; cover, clasps, catch, handle and three feet missing; one remaining leg riveted to body; h. 6.7. Square; originally with four animal type legs, one in middle of each side; base separate sheet of metal with circular depression in centre. Sides decorated with band of kufic inscription of good wishes between two bands of pierced vegetal work; central convex pierced star motif in base.

4. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.71 top. Bronze; pierced and incised; dimensions unknown. Shallow square body and lower lid with pyramidal upper lid; bird finial at top and one on each corner of lid; four feet; cylindrical handle with bird finial at end. Pyramidal part of cover pierced with rosette pattern; on lower cover and handle geometric patterns.

Incense-burners

C. hexagonal

1. Tehrān 3463; n.p.; Washington Smithsonian Institution 1964 no.623. Bronze; pierced and incised; h. 14.0; w. 9.9. Hexagonal; body and low lid both with flat foot and rim; flat lid top with central dome with interlaced cuboid finial; three holes pierced through lid. Dome pierced; on each side of body pierced scrollwork above scrolling stem; on lid inscription. (Fig. 56)

Incense-burnersD. ovoid-bodied 1. pear-shaped

1. BM 1968.12-24.2; n.p.; unp. Bronze; incised and pierced; h. 28.2; d. 14.8. Pear-shaped body; splayed foot; domical hinged lid with bird finial. On body wide band of pierced palmette and interlace pattern with interlace above and below; on upper body three roundels containing pierced knot pattern form with pierced vegetal designs between; interlace band below mouth; pierced lid and foot.

2. Rabenou colln.; n.p.; Grabar 1959 no.25. Bronze; pierced and incised; h. 28.7; d. 19.2. Pear-shaped body with tall splayed foot and flaring mouth; neck ring. On foot pierced scrolling stem design; on body pierced palmette design; on upper body pierced roundels with vegetal designs. (Fig. 56)

3. ex Heeramanek Galleries; n.p.; Grabar 1959 no.29. Bronze; pierced and incised; h. 18.4; d. 16.1. Form as 1 but small splayed foot. On body pierced kufic inscription below pierced roundels or medallions; on neck ring scrolling stem; on mouth floriated kufic inscription; in body medallions 'Umar or 'amal.

Incense-burnersD. ovoid-bodied 2. high-shouldered

1. Kelekian colln.; n.p.; Pope 1938 pl.1290A. Bronze; pierced and incised; h. 15.0. Ovoid body; high shoulder; small everted foot.

shoulder decorated with kufic inscription of good wishes; on body large interlacing roundels containing bird or animal forms with z-pattern borders and piercing; above foot band of arcading. (Fig. 56)

Incense-burners

E. zoomorphic 1. lion-bull

1. MMA 37.47; n.p.; Pope 1938 pl.1298A, Ettinghausen 1970 fig.17. Bronze; cast; incised and pierced; one leg missing; h. 17.4; lg. 13.0. Incense-burner in form of lion-bull; horns; four straight legs; square hole in chest. On neck pierced interlace pattern; on back pierced knot pattern; on leg tops pierced four-petalled rosettes in interlace surrounds in roundels; interlace border on chest. (Fig. 56)

Incense-burners

E. zoomorphic 2. lion

1. MMA 51.56; Tayābād, Khurāsān; Dimand 1952 figs. on pp.151-2; dated 577 or 579 H./1181-2 or 1183-4 A.D. Bronze; head, body, lower legs, tail and bosses all cast separately; tail broken; h. 83.7; lg. 79.2. Incense burner in form of lion; head joined to body by bayonet lock; straight legs. Body and neck covered in half-palmettes within interlace pattern, and separate framed area of same on upper rear legs; on chest and shoulder boss with good wishes in kufic script; around chest boss and lower neck kufic inscription against vegetal ground with name of patron; above right front leg in kufic script the date; above left front leg name of maker; various roundels

with vegetal designs on legs and head; on ears and nose vegetal ornament; maker Ja'far b. Muhammad b. 'Alī; patron al-amīr al-'ādil al-'ālim saif al-dunyā wa'l-dīn Muhammad al-mawardī (the rose-water seller).

2. Louvre AA 19; n.p.; Pope 1938 pl.1297, Paris Orangerie 1971 no.127, Melikian-Chirvani 1973 pp.16-17. Bronze; cast in three pieces - body, tail and head; pierced and incised; eyes inlaid with turquoise paste; h. 28.2; lg. 32.0. Form as 1; head attached to body by bronze bayonet lock; inside front of body compartment for burning incense; legs with reverse knees. On upper neck roundels with palmettes; on lower neck, upper back legs, and upper body pierced interlaced patterns; around chest band of kufic inscription of good wishes; tail with rectangular piercings.

3. Cleveland 48.308; n.p.; Shepherd 1957, Grabar 1959 no.46. Bronze; legs, tail, head and body cast separately; incised and pierced; h. 36.0; lg. 33.8. Form as 1; head attached to body by bronze bayonet lock; straight legs. Body and neck covered in pierced palmettes in ogival frames; on ears and nose incised palmettes; on upper legs incised vegetal designs within interlace borders; along back and where neck joins body bands of kufic inscription quoting Sura 62 vv.9-10; tail with angular piercings and incised bands.

4. Hermitage; n.p.; Pope 1938 pl.1304A & B, Mayer 1959 p.37. Bronze; pierced, incised and inlaid with copper; lg. 47.0. Form as 1; legs with reverse knees. On body and neck pierced palmettes in interlacing geometric frames; border of kufic inscription or interlacing roundels; on chest kufic inscription in name of Alī b. Muhammad al-Tājī.

5. Tehrān; n.p.; Dimand 1950 p.148 fig. on left, Dimand 1952 fig. on p.153. Bronze; incised and pierced; h. c. 30.5. Form as 1. Body and neck covered in pierced trefoils in geometric or ogival frames; vegetal motifs on ears; around chest a band of kufic inscription; incised mane on back of neck; on upper limbs interlace borders; tail with angular piercings.

6. Dahlem I 1173; n.p.; unp. Bronze; incised, pierced and inlaid with turquoise paste eyes; head and neck only; h. 9.0. Form as 1; single hinge at base of rear. On neck pierced palmettes in ogival frames.

7. Tehrān; Nīshāpūr Qanāt Tapa; unp. Bronze; incised and pierced; head and neck only; h. c. 4.5. Form as 1. On neck pierced decoration.

8. V&A M.115-1966; n.p.; unp. Bronze; cast; pierced and incised; head and neck only; h. 8.9. Form as 1. Pierced scrolling stem work around neck.

9. Whereabouts unknown; n.p.; Grabar 1959 no.48. Bronze; pierced and incised; head and neck only; h. 11.5; w. 9.5. Form as 1. Pierced scrolling stem with incised border around neck; palmettes on ears.

10. de Unger colln.; n.p.; unp. Bronze; cast; pierced and incised; head and neck only; h. 15.5. Form as 1; bayonet lock at base. Pierced palmette design on neck; incised pseudo-kufic inscription around base.

11. de Unger colln.; n.p.; unp. Bronze; cast; pierced and incised; head and neck only; h. 6.7. Form as 1. Pierced area on either side of neck.

12. Copenhagen 1/1973; n.p.; Leth 1975 p.70. Bronze; cast; pierced and incised; head and neck only; h. 12.6. Form as 1. On ears palmettes; on neck bands of strapwork and interlace.

V.1 Hamburg; n.p.; unp. Bronze; cast in one piece; pierced; lg. c. 6.5. In form of lion with solid base. On neck and back pierced interlace pattern; some piercing on chest; four legs with almond bosses at top and reverse knees.

Incense-burners

E. zoomorphic 3. partridge

1. MMA 49.60.1; n.p.; Dimand 1952 fig. on p.150. Bronze; incised and pierced; body and legs separately cast; h. 18.7; lg. 13.5 Partridge; square hole cut in chest and two small holes near each top corner. Open eye with pearl border; on neck and back pierced interlacing trefoil pattern; on wing rosette of seven interlacing circles, thin band of herringbone pattern and area of scaling; on tail scaling.
2. Cairo; n.p.; Wilson 1931 no.77, O, Pope 1938 pl.1298B. Bronze; incised and pierced; h. 13.5; lg. 13.0. Form as 1. Decoration almost identical to 1, with band of kufic good wishes above tail. (Fig. 57)

3. Frankfurt, private colln.; n.p.; Stuttgart Linden-Museum 1972 no.146. Bronze; cast; incised and pierced; h. 17.0; lg. 18.6. Form as 1, but chest hole with a square cover with small ring handle. Incised eye with pearl border; on neck and back double row of pierced holes; on wing interlacing six-pointed star, band of two directional cross hatching, and scale pattern; on tail scaling; at each corner of chest hole incised vegetal motif.

4. de Unger colln.; n.p.; unp. Bronze; cast; incised and pierced; tray not original; h. 18.7; lg. 16.5. Form as 1, with tray fitting into hole in chest. Decoration almost identical to 1.

5. St. Louis; n.p.; Grabar 1959 no.47. Bronze; incised and pierced; h. 17.8. Form as 1 with tray inside. Decoration almost identical to 1.

V.1 MMA 1972.87; n.p.; unp. Bronze; cast; pierced and incised; h. 17.7; lg. 14.0. Partridge-like bird with round head and beak which follows line of lower head; rounded body with two legs near front with reverse knees, and with feet in form of pins for a fitting; tail formed into third leg with foot; square hole in chest. Pierced eye; incised water-pattern round neck; pierced scroll work on lower neck, palmette on back, and knot pattern on wing with incised water pattern; piercing under belly.

Incense-burnersE. zoomorphic 4. bird-form with handle

1. Tehrān 8385; n.p.; Washington Smithsonian Institution 1964 no.621.

Bronze; cast; pierced, incised and punched; h. 19.5; lg. 22.0.

Rounded open lower body with horizontally projecting splayed tail as handle; two feet joined by two toes; domical upper body in form of bird's neck and head. On legs birds; on lower body feather pattern below running animals; on neck pierced palmette design. (Fig. 57)

2. Brooklyn 70.98.1; n.p.; unp. Bronze; cast; pierced and incised; h. 26.7; lg. 29.2. Form as 1 but square handle shaft with rosette finial and three legs with reverse knees; crest on bird's head. Body, neck and handle decorated with pierced vegetal designs.

Incense-burnersE. zoomorphic 5. with three zoomorphic legs

1. Louvre MAO 357; n.p.; unp. Bronze; cast; pierced and incised; h. 16.0; d. 22.0. Central rounded body with flat base and circular opening at top; three supports in form of forequarters of lions. Chests of lions decorated with palmette pierced designs; between them birds in cartouches.

2. St. Louis; n.p.; Grabar 1959 no.52. Bronze; incised; h. 18.8.

Form as 1. Decorated with scrolling stem in panels.

3. Rabenou colln.; n.p.; Grabar 1959 no.24. Bronze; pierced and incised; h. 36.2; w. 21.7. Base as 1; above it a pear-shaped lower shaft and spherical upper shaft topped by large bird. Palmette piercing throughout. (Fig. 57)

v.1 BM 1956.7-26.8; n.p.; unp. Bronze; cast; pierced and incised; h. 7.3; d. 8.6. Central circular body with flat inturned rim and flat base; three feet in form of forequarters of lions. Around body circular piercing within heart-shaped surround; on lion chests palmettes.

Incense-burners

F. dish-shaped 1. with vertical sides and flat rim

1. MMA 37.40.29; Nīshāpūr purchase. unp. Bronze; cast; decoration in low relief; h. c. 4.5; d. 17.7. Flat base; circular; three short rounded feet; low vertical sides; flat rim with cusped edge. Inside base decorated with concentric circles with squares between in centre and band of confronted birds against leafed stem divided by roundels with stylised palmette forms around; on rim scrolling stem and kufic inscription alternating with plain roundels between. (Fig. 58)

2. Kelekian colln.; n.p.; Pope 1938 pl.129OB. Bronze; decoration in low relief; d. 18.0. Form as 1; nature of feet unknown. Inside base decorated with central sphinx; band of confronted birds against leafed stem divided by four roundels with stylised palmette form or knot motif around; on rim alternating vegetal or geometric patterns and kufic inscriptions with plain roundels between.

3. Dahlem I 4314; n.p.; unp. Bronze; cast; incised decoration; h. 6.0; d. 16.2. Form as 1, but legs with annular knop. Inside in centre a four-centred scroll, around naskhi inscription of good wishes with human-headed and hatted hastae and animal and bird heads; on rim cartouches of kufic script alternating with cartouches of interlace, with knot pattern roundels between.

4. V&A M.863-1927; n.p.; unp. Bronze; cast; incised and inlaid with copper; h. 7.5; d. 18.2. Form as 1 but 9-sided. Inside base interlace pattern with copper discs and band of scrolling stem; on rim vegetal design with copper discs at corners.

Incense-burners

F. dish-shaped 2. with inward sloping sides and flat rim

1. Louvre AA 62; Shahr-i Ghughula (Bāmiyān); Marchal 1974 fig. 6a. Quaternary alloy; cast; incised decoration; h. 2.3; d. 15.6. Footless; circular; flat base; inward sloping sides; flat everted rim. Inside in central roundel a sphinx; on rim cartouches with scrolling stems separated by roundels outside naskhi inscription of good wishes in cartouches separated by roundels; with vegetal motifs; on base remains of central roundel with vegetal motif. (Analysis Table 21 no. 22.) (Fig. 58)

2. Whereabouts unknown; Afrāsiyāb; Kondrat'eva 1961 fig.4.4. Bronze; incised; legs missing; dimensions unknown. Form as 1, originally with three small legs. Decoration on outside roundels with vegetal motifs.

3. Qandahār; Ghazna; Scerrato 1959 p.106 no.8 and fig.17. Bronze; cast; incised; d. 18.7. Form as 1; nature of feet unclear. Inside decorated with sphinx in roundel, with round it, on rim and on outside, cartouches with kufic inscription of good wishes separated by roundels.

4. Widmaier colln., Düsseldorf; n.p.; unp. Bronze; cast; d. 15.0. Form as 1 with three feet in form of harpies supporting the dish on small flanges projecting from their backs. On outside cartouches with kufic inscription alternating with roundels; on rim scrolling stem in cartouches alternating with roundels; traces of interlace design in centre inside.

5. ex Martin colln.; Bukhāra; Martin 1902 pl.33(a). Bronze; incised; dimensions unknown. Form as 1. In centre inside a sphinx in a roundel with scroll ground and vegetal border; on the rim cartouches with kufic inscriptions alternating with roundels containing vegetal designs.

6. Louvre 7187; n.p.; Migeon 1922aI no.41 pl.14. Bronze; cast; incised and inlaid with copper; h. 10.7; d. 19.6. Form as 1, with three large feet in the form of seated lions. Inside in centre interlace pattern with copper discs in relief bearing knot patterns or rosettes; around a band of animals of the hunt against a tightly wound spiral scroll, between line and triangle border patterns; on rim six cartouches with alternate scrolling stem designs and six roundels; outside six cartouches of naskhi good wishes in two different styles and six roundels with vegetal motif.

7. Stoclet colln.; said to have been found at Hamadān; Pope 1938 pl.1287B. Bronze; incised; d. 18.0. Form as 1, with three large feet in form of elephants with riders. On outside cartouches with naskhi inscription against spiralling stem alternate with roundels containing vegetal motif.

8. Digby colln.; n.p.; unp. Quaternary alloy; incised and inlaid with copper; d. 18.2; h. 3.7. Form as 1. Inside three revolving sphinxes against spiral scroll within lancette leaf border; on rim cartouches with kufic inscriptions alternating with roundels; on outside cartouches with naskhi inscription alternating with roundels containing vegetal motifs; on base bird in roundel with pairs of concentric circles around. (Analysis Table 21 no. 44.)

9. Dahlem I 6761; n.p.; unp. Bronze; cast; incised; h. 3.1; d. 7.6. Form as 1, with three boot-like feet. Around outside incised circles; on rim incised lines; in centre inside and outside simple knot pattern.

10. d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.71 bottom left. Bronze; incised and inlaid with copper; d. c. 15.0. Form as 1. In central roundel a sphinx; lancette leaf border; on rim kufic inscriptions in cartouches alternate with roundels containing vegetal motif.

11. BM 1956.7-26.12; n.p.; d'Allemagne 1911 II p.71 bottom right. Bronze; incised and inlaid with copper; h. 2.5; d. 18.2. Form as 1. In central roundel four hares joined by their ears; around three

cartouches bearing naskhi inscriptions of good wishes and three roundels with vegetal motifs; on rim kufic inscription in cartouches separated by roundels with vegetal motifs.

12. V&A M.32-1954; n.p.; unp. Bronze; cast; incised and inlaid with copper; h. 3.0; d. 18.0. Form as 1. Inside base central sphinx with lancette leaf border; on rim kufic inscription in cartouches with roundels; outside naskhi inscription in cartouches with roundels; on base outside vegetal design in circle; inscriptions good wishes.

13. V&A 768-1889; n.p.; unp. Bronze; cast; incised; feet missing; h. 3.4; d. 18.1. Form as 1. Inside base four concentric hares in roundel; on rim and sides naskhi or kufic inscriptions in cartouches with roundels; on base outside vegetal motif in roundel within concentric circles.

14. V&A 537-'76; n.p.; unp. Bronze; cast; incised and inlaid with copper; h. 3.0; d. 18.3. Inside base three hares with naskhi inscription in cartouches with roundels around; on rim and side kufic inscriptions in cartouches with roundels.

15. de Unger colln.; n.p.; unp. Bronze; cast; incised; h. 3.0; d. 18.4. Form as 1. Inside base three hares in roundel with lancette leaf border; on rim and sides kufic or naskhi inscription in cartouches with roundels.

16. de Unger colln.; n.p.; unp. Bronze; cast; incised, and inlaid with copper; h. 2.4; d. 15.5. Form as 1. Inside base griffin in roundel.

Incense-burnersF. dish-shaped 3. with inward sloping sides and thickened rim

1. Louvre, AA 63; Ghazna; Marchal 1974 fig.6b. Lead brass; cast; incised; h. 2.6; d. 19.5. Flat base; circular; inward sloping sides with thickened rim; no feet. Inside in centre concentric circles in relief with naskhi inscription in three cartouches divided by roundels with vegetal motifs around; outside kufic inscriptions in cartouches with ducks in roundels between; inscriptions good wishes. (Analysis Table 21 no. 23.) (Fig. 58)

Incense-burnersF. dish-shaped 4. with concave sides

1. Digby colln.; n.p.; unp. Quaternary alloy; relief cast body; three cast legs soldered on; d. 16.3; h. 5.3. Flat base; circular; horizontal ridged rim; concave sides; three ball feet. Inside base decorated with central design of four scrolling stems and around it a band of naskhi good wishes, the letters with human, animal or bird heads at top or bottom or both. (Analysis Table 21 no. 43.) (Fig. 58)
2. Dahlem I 3543; n.p.; Kühnel 1919 fig.97. Bronze; cast body; six cast feet soldered on; incised and inlaid with copper; d. 20.0; h. 8.5. Form as 1, with six feet alternately in form of standing bull or seated lion. On rim alternate cartouches of naskhi and kufic script separated by roundels; outside band of seated drinking figures; underneath crude roundel style of ornament; naskhi inscriptions good wishes.

3. Dahlem I 3561; n.p.; unp. Bronze; cast body; three cast animal legs; incised; d. 17.7; h. 7.8. Form as 1 with three feet in form of unidentified featureless animal. Inside around edge a band of lancette leaves; outside alternate cartouches with inscriptions and sphinxes separated by roundels with birds.

Incense-burners

F. dish-shaped 5. beaten

1. Kābul; Ghazna; Mortimer Rice and Rowland 1971 pl.179. Bronze; beaten, repoussé and incised; h. c. 7.0; d. 17.5. Flat base; circular; slightly rounded vertical sides; flat inturned rim; handle fitting on one side. Decorated with three rows of repoussé almond bosses; between top row cartouches with naskhi inscriptions; between middle row cartouches with animals; between bottom row cartouches with kufic inscriptions. (Fig. 59)

Incense-burners

F. dish-shaped 6. handled

1. PUM RCH 85; Rayy; unp. Bronze; cast; lg. 19.0; d. 7.8; h. 1.2. Circular dish; flat bottom; vertical sides; handle-end leaf-form; triangular nicks at ends of shaft. (Fig. 59)

Incense-holders

1. Demotte colln.; n.p.; Wilson 1931 no.229 S, London Burlington House 1931 pl.7 (top left). Bronze; incised; h. 15.0; lg. 12.5. Partridge with hinged upper beak. Incised eye with pearl border; roundels with vegetal borders on back and chest; on wing vegetal motif in roundel with vegetal border, band of two directional cross-hatching, and scaling; scaling on tail. (Fig. 59)
2. Louvre 7819; n.p.; unp. Bronze; cast; incised; part of beak missing; h. 14.8; lg. c. 13.0. Form as 1; circular hole under tail. Incised eye with pearl border; on chest and back knot pattern in roundel with vegetal border; on wings pattern of two double leaves and a circle in a roundel with vegetal border, and scaling; same scaling on tail.
3. Copenhagen 24/1968; n.p.; Leth 1975 pp.65-6. Bronze; cast; incised; h. 17.0. Form as 1. Incised eye with pearl border; arcade pattern on neck; roundel with interlacing circles on chest; knot pattern in roundel and feather lines on wings.
4. Cleveland; n.p.; Grabar 1959 no.57. Bronze; cast; incised; h. 17.5; lg. 17.5. Form as 1. Incised eye with pearl border; on neck roundels with scroll; on chest, back and wings roundels with interlacing circles, and elsewhere on wings hatching and feather pattern.

5. de Unger colln.; n.p.; unp. Bronze; cast; incised and punched, and inlaid with faience; h. 12.5; lg. 9.0. Form as 1 with plugged hole in chest and faience eye. On wings feather pattern and curvilinear hatching.

V.1 Dahlem I 5700; n.p.; unp. Bronze; cast; incised; hinged upperbeak missing; h. 12.0; lg. 12.0. Form as 1 but with smaller wing and more pronounced tail; hole in belly. On back roundel with knot pattern; on wing scale and feather patterning.

V.2 Demotte colln.; n.p.; Wilson 1931 no.229 P, London Burlington House 1931 pl.7 (top right), Pope 1938 p.2485 fig.817. Bronze; incised; one leg missing; h. 10.0. Form as 1 but body much contracted and no sign of hinged upper beak. Wing ornamented with scale patterning, plain band, and palmette.

Stands

A. cylindrical

1. Qandahār; Qandahār; Scerrato 1959 p.101 no.2, figs.6-7. Bronze; incised; h. 10.0; d. 18.5. Truncated conical body with splayed foot, and flat everted rim. Rim decorated with kufic inscription of good wishes against spiral scroll, with three roundels each containing floral knot pattern; around body band of naskhi inscription of good wishes against spiral scroll, with three roundels each containing a bird. (Fig. 60)

2. ex Martin colln.; n.p.; Martin 1902 pl.32. Bronze; incised; dimensions unknown. Form as 1. Rim decorated with four running animals against spiral scrolls, with four roundels between; around body band of kufic inscription of good wishes against spiral scrolls, with roundels between sections.

Stands

B. octagonal

1. V&A 1436-1902; n.p.; Pope 1938 pl.1286. Bronze; cast; incised; d. 25.6; h. 15.1. Octagonal truncated conical body; cusped splayed foot; wide, slightly sloping, cusped rim. Rim decorated with eight roundels containing four-petalled rosettes, plus four roundels with human faces and four birds against spiral scrolls, between geometric pattern borders; on body wide band of criss-cross lines with dots, two narrow lines of z-ornament, two of scrolling stems, and a wide band with alternating eight-petalled rosettes in roundels and pseudo-kufic inscription against spiral scroll; on base pear-shaped medallions at corners and pseudo-kufic inscription against spiralling stems between. (Fig. 60)

2. V&A 1439-1902; n.p.; unp. Bronze; cast; incised and inlaid with copper; d. 23.6; h. 14.5. Form as 1. Rim decorated with pear-shaped medallions with spiralling scrolls at corners and knot patterns in between; on body wide band with alternating four-lobed rosette form containing a palmette in each lobe, and naskhi inscription, with band of copper inlay above and below; on base kufic inscription of good wishes against spiral scroll with palmettes at each corner.

3. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II p.64 top.

Bronze; incised; dimensions unknown. Form as 1. Rim decorated with four-petalled rosettes in roundels with vegetal ornaments and geometric pattern borders; on body alternating rosettes with four rhomb-shaped petals in roundels and inscriptions; on base kufic inscriptions with pear-shaped medallions at corners.

4. Samarqand; n.p.; Pugachenkova and Rempel 1965 fig.242. Bronze;

incised; dimensions unknown. Form as 1. Rim decorated with eight roundels containing rosettes with four rhomb-shaped petals; on body band of vertical lines, band of interlace, band of z-ornament, wide band of kufic inscription of good wishes against spiral scroll ground alternating with roundels containing rosettes with rhomb leaves, band of z-ornament; on foot pseudo-kufic inscription against spiralling stems with pear-shaped medallions at corners.

5. ex Bobrinski colln.; n.p.; Sarre and Martin 1912 pl.152 no.3031.

Bronze; beaten, incised and inlaid with copper; d. 27.0; h. 15.0. Form as 1. Rim decorated with eight roundels each enclosing a rosette with eight circular petals alternating with harpies against background of scrolling stems; floral stem and roundel borders; body decorated with wide band of inscription on background of scrolling stems interspersed with roundels.

Table-topsA. square 1. with sides

1. Louvre; n.p.; Pope 1938 pl.1315A. Bronze; beaten; incised and inlaid with silver; w. 21.9. Square; eight-lobed diamond-shaped sunken centre; raised border; vertical sides. Central duck between fishes with vegetal and oriental horseshoe motifs around, and band of kufic inscription; in each sloping lobe wall a knot pattern between harpies; on upper area vegetal motifs and border of naskhi inscription with corner palmettes; inscriptions good wishes. (Fig. 61)
2. Ashmolean 1974.9; n.p.; Ashmolean Museum 1973 pl.12. Brass; beaten; incised and inlaid with copper and silver; w. 22.8; h. 4.1. Form as 1. Undecorated sides; central roundels with strapwork; knot patterns and rosettes on lobe walls; on upper area floral motifs and border of naskhi inscription of good wishes with double almond pattern at each corner. (Analysis Table 21 no.38.)
3. MMA 56.144; n.p.; Anon 1957 p.50, Dimand 1958 fig.229; Bronze; beaten; incised and inlaid with silver; w. 21.7; h. 4.4. Form as 1. Decoration almost identical to 1, but on sides central enthroned ruler between birds and kufic inscription of good wishes against spiral scroll ground.
4. de Unger colln.; n.p.; unp. Bronze; beaten; incised and inlaid with silver; w. 22.5; h. 3.5. Form as 1. In centre four scrolling stems in a circle with eight rosettes around; on cusped walls rosettes or roundels; on outer area vegetal designs within border of naskhi inscription of good wishes with human-headed hastae with pear-shaped medallions at corners; undecorated sides.

Table-topsA. square 2. without sides

1. V&A 181-1951; n.p.; unp. Bronze; beaten; incised; w. 19.0; h. 2.0. Form as A/1/1 but without sides. In centre harpie against scrolling stems in circle; on outer area four triangles with vegetal motifs within border consisting of four cartouches with kufic inscription of good wishes with pear-shaped medallions at corners.

2. V&A Circ 188-1951; n.p.; unp. Bronze; beaten; incised; w. 19.0; h. 3.0. Form as 1. In centre sphinx; other decoration as 1.

Table-topsB. rectangular 1. with octagonal centre

1. BM 1968.12-24.1; n.p.; unp. Brass; beaten; incised and inlaid with silver; 29.5 x 17.5. Rectangular; octagonal central sunken area with bevelled sides. In centre rosette with almond-leaf border; cartouche of naskhi inscription on either side; on upper area vegetal designs within border of inscriptions in cartouches divided by rosettes in roundels; inscriptions good wishes. (Analysis Table 21 no. 9.) (Fig. 61)

2. Kabul; Ghazna; Ettinghausen 1957 fig.32. Bronze; beaten; repoussé; incised and punched; dimensions unknown. Form as 1. In centre a rosette between sphinxes within border of facettes; on sloping walls running hares and two palmettes; on upper area vegetal motifs and border of naskhi inscription of good wishes with roundels or pear-shaped medallions

bearing vegetal motifs; punched ground.

3. de Unger colln.; n.p.; unp. Bronze; beaten; repoussé; incised and punched; 30.0 x 19.0; h. 1.5. Form as 1. In centre geometricised rosette between sphinxes within border of facettes; on sloping walls palmettes; on upper area vegetal motifs and border of naskhi inscription of good wishes with rosettes at corners; punched ground.

Table-tops

B. rectangular 2. with double octagonal centre

1. Louvre AA 61; Ghazna; Marchal 1974 fig.7. Brass; incised; traces of plaster or cement attached to back; 29.0 x 18.0; h. 2.0. Rectangular; sunken area consisting of two joining octagons with protruding side at each end; raised border; no sides. In centre of each octagon bird in roundel, one being reversed; diamond of scrolling stem between; on upper area triangles of scrolling stem with border of cartouches with kufic inscription al-mulk lillāh separated by roundels or pear-shaped medallions with vegetal motifs. (Analysis Table 21 no. 21.) (Fig. 61)

i

Table-tops

B. rectangular 3. with lobed centre

1. WAG; n.p.; Ettinghausen 1957 figs. 31, 33-4. Bronze; incised and inlaid with silver and (?) copper; dimensions unknown. Rectangular;

elongated central sunken area with lobed ends. In centre roundel with four walking sphinxes against scrolling stem; cartouche of kufic inscription against scrolling stem on either side; on upper area vegetal motifs within border of cartouches of naskhi inscription divided by rosettes in roundels or pear-shaped medallions; inscriptions good wishes.

(Fig. 61)

2. Minassian colln., New York; n.p.; Ettinghausen 1957 p.343 n.29.

Details not known.

(7) Ornamental ObjectsMiniature vesselsA. bowls

1. PUM RH 4904; Rayy; unp. Bronze; part of rim missing;
h. 2.3; d. 5.6. Rounded body; flared rim; low foot. Undecorated.
2. PUM RH 4601; Rayy; unp. Bronze; h. 4.0; d. 9.5. Rounded
body; flared rim; no foot. Undecorated.
3. PUM RH 6208; Rayy; unp. Bronze; foot missing; h. 2.2; d. 3.5.
Rounded body with slightly incurving rim; spiral base. Undecorated.
4. PUM RH 6100; Rayy; unp. Bronze; h. 2.5; d. 8.0. Thick
rounded body with flat base and outward turned rim. Undecorated.
5. PUM RH 5369; Rayy; unp. Bronze; h. 1.2; d. 2.8. Rounded
body; low foot; no rim. Undecorated.
6. PUM RG 7562; Rayy; unp. Bronze; h. 1.5; d. 3.5. Form as 5.
7. PUM RG 7722; Rayy; unp. Bronze; h. 1.7; d. 4.4. Flat base;
concave flaring sides. Undecorated. (Fig. 62)
8. PUM I₂-591; Rayy; unp. Bronze; h. 1.3; d. 4.9. Form as 7.

9. PUM Rei 6777; Rayy; unp. Bronze; h. 1.6; d. 6.4. Rounded body; no rim; slightly humped base. Undecorated.

10. MMA 40.170.266; Nīshāpūr Falakī; unp. Bronze; incised; h. 1.6; d. 2.7. Rounded body; base ring with three feet. Three incised lines around outside.

11. Tehrān; Nīshāpūr Village Tapa; unp. Bronze; d. 2.5. Circular; flat base; four feet; protrusions from flat rim.

12. Tehrān; Nīshāpūr Sabz Pushān; unp. Bronze; d. 2.2. Rounded body; flat base.

13. Tehrān; Nīshāpūr Tapa Madrasa; unp. Bronze; h. c. 3.0. Shallow rounded bowl on stem with everted foot and annular knop. Undecorated.

14. Dahlem; n.p.; unp. Bronze; h. 1.8; d. 6.2. Low foot; wide flat body with rounded sides. In centre vegetal design in roundel; around it band of cartouches with fleur-de-lys pattern separated by roundels with three stems.

15. Dahlem I 4319; n.p.; unp. Bronze; incised; h. 3.0; d. 6.7. Rounded body; flat base; slight rim. Base originally decorated with incised bird; outside of body decorated with arcading, with remains of kufic inscription above.

16. Dahlem I 4318; n.p.; unp. Bronze; h. of bowl 2.0; d. of bowl 3.0. Bowl with slightly flaring sides and flat base on three legs in form of lion forequarters. Undecorated.

17. Kābul; Maimāna; Scerrato 1964 p.686 no.5 and fig.17. Bronze; d. 8.0. Hemispherical body with wide rim. Undecorated.

Miniature vessels

B. buckets

1. Boston RH 5877; Rayy; unp. Bronze; h. 4.8; d. 6.3. Cylindrical form with semi-circular handle. Undecorated.

Miniature vessels

C. covered bowls

1. PUM RCH 977; Rayy; unp. Bronze; h. of bowl 2.8; h. of cover 3.1; d. 7.2. Bowl with low foot ring and flaring rounded sides; cover rounded with central opening surrounded by vertical rim. Undecorated. (Fig. 62)

Miniature vessels

D. dishes

1. PUM RG 3335; Rayy; unp. Bronze; h. 2.0; d. 5.0. Flat bottom; vertical sides; flaring rim; three plain legs. Undecorated.

Vases

1. Qandahār; Qandahār (?); Scerrato 1959 p.102 no.3 fig.8. Bronze; incised; foot missing; h. 16.8; d. 11.2. Pear-shaped body with wide splayed mouth; neck ring; short stem at base. Around body naskhi inscription in arcade with floral roundels and lancette border; below a band of scrolling stem and lancette border; around neck ring kufic inscription; around inside of mouth kufic inscription in cartouche separated by roundels.

2. de Unger colln.; n.p.; unp. Bronze; cast in two pieces; incised and once inlaid; h. 20.0; d. 14.6. Form as 1 but octagonal with cusped rim, lappets around body, and cusped foot. On neck ring geometric pattern; on each lappet roundel with knot motif; on foot interlace band. (Fig. 62)

II Personal and Cosmetic Articles

.) Personal articles

Amulet cases

1. Louvre; Susa; unp. Bronze; beaten; traces of gilding; incomplete; lg. 3.2; h. 1.8. Cylindrical body with flat end with central knob and suspension ring above; two other bands round body with suspension rings attached.

Appliqués

1. PUM RE 3411; Rayy; unp. Bronze; cast; part missing; 5.1 x 3.0. Rectangular; central parrot; three openwork areas around; narrow border; single pin hole. (Fig. 63)

2. de Unger colln.; n.p.; unp. Bronze; cast; traces of gilding; 6.2 x 5.0. Rectangular; heraldic eagle design in openwork surround; single pin hole with rivet still in position.

3. de Unger colln.; n.p.; unp. Bronze; cast; traces of gilding; 6.3 x 6.3. Square; two confronted animals rampant in openwork surround; single pin hole.

4. Frankfurt 13280; n.p.; Stuttgart Linden-Museum 1972 no.157. Bronze; traces of gilding; 6.3 x 5.0. Rectangular; heraldic eagle design in openwork surround; pins in position.

5. Frankfurt private colln.; n.p.; Stuttgart Linden-Museum 1972 no.157. Details evidently as 4.

6. MMA 37.40.9; Nīshāpūr purchase; unp. Bronze; cast; gilded; originally inlaid; d. 3.7. Circular; central boss with three radiating palmette arms, the end of each joined by outer band. (Fig. 63)

7. MMA 40.170.275; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; d. 3.6. Ten-petalled rosette with flat back, rounded front, and central hole. (Fig. 63)

Beads

1. Ashmolean; Sīrāf S.69/70, 185; unp. Bronze; beaten and gilded with wire filigree; d. 3.3. Spherical. Decorated with wire circles and c-shapes.

Bells

A. rounded

1. MMA 40.170.421B; Nīshāpūr; unp. Bronze; h. 2.4; d. 1.8. Flattened pear-shape; split opening in lower body; ring handle aligned with split.

2. MMA 40.170.421C; Nīshāpūr; unp. Bronze; h. 2.3; d. 1.6. Spherical; split opening in lower body aligned with ring handle. (Fig. 63)

3. MMA 40.170.421A; Nīshāpūr; unp. Bronze; h. 2.8; d. 2.1. Oval; ridge around centre; split opening in lower body misaligned with ring handle.

4. PUM RG 8513; Rayy; unp. Bronze; h. 2.4; d. 2.5. Flattened spherical; split opening in lower body aligned with ring handle.
5. PUM RCH 218; Rayy; unp. Bronze; h. 2.2; d. 1.8. Flattened spherical; hole in lower body; ring handle.
6. PUM RG 7396; Rayy; unp. Bronze; handle missing; d. 1.7. Spherical; split opening in lower body.
7. Ashmolean; Sīrāf S.68/69; unp. Quaternary alloy; h. 1.7. Squashed spherical; split opening in lower body, at right angles to ring handle.
(Analysis Table 21 no. 61.)
8. Ashmolean; Sīrāf S.68/69, 6018; unp. Quaternary alloy; ring handle broken; d. 2.8; h. 3.5. Spherical; split opening in lower body.
(Analysis Table 21 no. 60.)
9. Ashmolean; Sīrāf S.67/68, 668; unp. Bronze; h. 3.0; d. 2.8.
Upper half hemispherical with small ring handle; lower half made by bending inwards triangular pieces.
10. PUM RH 6020; Rayy; unp. Bronze; h. 2.4; d. 2.3. Lower body split in two; squashed spherical; ring handle at right angles.
11. PUM RE 3393; Rayy; unp. Bronze; h. 2.0; d. 1.5. Pear-shaped with split opening in bottom and ring handle.
12. Banbhore; Banbhore; Khan 1963 fig. on p.49. Bronze; h. c. 2.0. Spherical; split in body at right angles to ring handle.

BellsB. conical

1. PUM RG 8158; Rayy; unp. Bronze; h. 4.3; d. 3.8. Conical with pinched top with hole through it; open base.
2. PUM I₂-147; Rayy; unp. Bronze; h. 2.8; d. 1.4. Conical with ring handle and internal bar for clapper; open base.
3. Whereabouts unknown; from Kalai-Bolo (Farghāna); Davidovich and Litvinski 1955 p.144 fig.58(4). Bronze; h. c. 2.0; d. c. 1.0. Conical with wide ring handle; open base.
4. Ashmolean; Sīrāf S.70/71, 169; unp. Quaternary alloy; h. 1.7. Conical with wide ring handle; open base. (Analysis Table 21 no. 62.)
(Fig.63)

Belt fittings

A. plates 3. short pointed rectangular

1. MMA 40.170.257; Nīshāpūr Tapa Madrasa, below top floor; unp. Bronze; cast; gilded; two lugs; 2.6 x 1.8. Short pointed rectangle. Moulded lyre-shaped palmette pattern.
2. MMA 40.170.255; Nishapur Tapa Madrasa; unp. Bronze; cast; gilded; two lugs; 2.9 x 2.2. Rectangle with small point. Design suggests two wings and head.
3. MMA 40.170.214; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; gilded and incised; four lugs; 2.9 x 1.8. Round-pointed rectangle with protrusions. Bears al-mulk lillāh in kufic script.
4. MMA 40.170.215; from Nīshāpūr Tapa Madrasa; unp. Bronze; cast; gilded and incised; one lug; 2.9 x 1.7. Form as 3. Bears pseudo-kufic inscription.
5. Tehrān; Nīshāpūr; unp. Bronze; dimensions unknown but apparently a pair to 4. Form and design as 4.
6. Tehrān; Nīshāpūr Tapa Madrasa; unp. Bronze; 3.0 x 1.8. Pointed rectangle with approximately square area cut out above a trefoil design.
7. Ashmolean; Sīrāf S.69/70,3167; unp. Bronze; cast; three lugs; rounded end; 3.2 x 2.9. Undecorated.

8. MMA 40.170.277; Nīshāpūr Village Tapa; unp. Bronze; cast; two lugs; 3.7 x 2.0. Circular ring cast with pointed rectangular body. Body decorated with vegetal scrolls.

9. Tehrān. Pair to 8.

10. PUM I₂-121; Rayy; unp. Bronze; cast; part missing; 3.5 x 2.8. Rectangular with rounded end and openwork central areas. Undecorated.

Belt fittings

A. plates 5. plain rectangular

1. MMA 40.170.210; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; gilded; two lugs; 3.0 x 2.6. Rectangular. Design of a flower with four leaves and two symmetrical stems.

2. MMA 40.170.208; Nīshāpūr Tapa Madrasa; unp. Bronze; once gilded; cast; two lugs; 2.5 x 1.7. Irregular rectangle. Vegetal design with four round bulges and two leaf-like ones.

3. Tehrān; Nīshāpūr; unp. Bronze; dimensions unknown. Form and design as 2.

4. MMA 40.170.207; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; once gilded; three lugs; 4.6 x 1.4. Irregular rectangle. Vegetal design with two round bulges alternating with two double-leaf ones.

5. Tehrān; Nīshāpūr Tapa Madrasa well 2; unp. Bronze; incised; 1.5 x 0.8; Rectangular. Simple geometric pattern.

6. Tehrān; Nīshāpūr Tapa Madrasa well 2; unp. Bronze; incised; 1.5 x 0.8. Rectangular. Simple geometrical pattern of two diamonds with dots.

7. Tehrān; Nīshāpūr Tapa Madrasa T area lower level; unp. Bronze; incised; 2.2 x 2.1. Rectangular with indented lower side and rounded protrusion on upper. Plant design with two pairs of leaves and central stem.

Belt fittings

A. plates 6. cordiform

1. Tehrān; Nīshāpūr Tapa Madrasa T area middle level; unp. Bronze; gilded; incised; 2.0 x 1.8. Cordiform. Vegetal motif.

2. Tehrān; Nīshāpūr Tapa Madrasa well 2; unp. Bronze; incised; 1.7 x 1.3. Cordiform. Trefoil design.

3. Pair to 2.

4. MMA 40.170.209; Nīshāpūr Tapa Madrasa; unp. Bronze; once gilded; cast; one lug; 1.8 x 1.8. Irregular cordiform; two pear-shaped bulges above two double-leaf ones.

5. Hermitage; Samarqand area; Arne 1914 fig.192. Bronze; incised; dimensions unknown. Cordiform. Trefoil design.

6. Hermitage; Samarqand area; Arne 1914 fig.193. Bronze; incised; dimensions unknown. Cordiform. Leaf-form within stem border. (Fig. 63)

7. Tehrān; Nīshāpūr Tapa Madrasa T area middle level; unp. Bronze; gilded; incised; 2.4 x 2.1. Cordiform but lobed with flat base. Design of two birds.

Belt fittings

A. plates 7. others

1. MMA 40.170.144; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; gilded; two lugs; 4.4 x 2.5. Rectangular with large trefoil protrusion at end of one side and indentation alongside. Faint vegetal design. (Fig. 63)
2. MMA 40.170.256; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; gilded; two lugs; top part missing; 2.7 x 2.5. Originally probably irregular rectangular. Fore-legs of animal amid open-work within linear border.
3. MMA 40.170.254; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; gilded; three lugs; 3.6 x 3.0. Irregular concave-sided diamond shape. Central boss with bird design. (Fig. 64)
4. PUM RG 3439; Rayy; unp. Bronze; cast; two lugs; d. 4.0. Inverted crescent shape. Two peacocks in relief. (Fig. 64)
5. PUM RH 5809; Rayy; unp. Bronze; cast; one lug; 5.0 x 3.0. Rounded with point at base and two horizontal protrusions across top. Undecorated.

Belt fittings

B. buckles 1. tongued a. with bar attachment

1. PUM RCH 513; Rayy; unp. Bronze; cast; incomplete; tongue missing; 3.0 x 2.9. Rounded; strap slot with rounded ends and protrusions.

2. Tehrān; Nīshāpūr, Village Tapa; unp. Bronze; tongue missing;
3.0 x 2.4. Slightly pointed with rectangular strap slot.
3. Ashmolean; Sīrāf S.68/9, 2980; unp. Quaternary alloy; cast;
3.1 x 2.1. Pointed form; rectangular strap slot; decorated with circles
and cuts. (Analysis Table 21 no.54.)

Belt fittings

B. buckles 1. tongued b. with plate attachment

1. PUM RGQ 2026; Rayy; unp. Bronze; sheet metal body; cast ring and
tongue; 4.3 x 2.5. Leaf-shaped body made of sheet of metal folded over
side of ring and then riveted.
2. PUM RG 8219; Rayy; unp. Bronze; cast; 6.3 x 3.8. Long body with
pointed end; shallow rounded opening.
3. Hermitage; Samarqand area; Arne 1914 p.150. Bronze; dimensions
unknown. Rounded form with lugged body.
4. Whereabouts unknown; Kalai-bolo; Davidovich and Litvinski 1955
p.114 fig.58 (1). Bronze; tongue missing; 3.0 x 2.5. Rectangular plate
form.
5. Whereabouts unknown; Kalai-bolo; Davidovich and Litvinski
1955 p.144 fig.58 (2). Bronze; tongue missing; 2.5 x 2.3. Square plate
form with rounded corners.

Belt fittingsB. Buckles 2. other forms

1. Tehrān; Nīshāpūr, Tapa Madrasa C 9 well 2; unp. Bronze; 4.7 x 1.6. Two pieces each with approximately rectangular strap slot; one has projecting boss which fits through circle projecting from other. (Fig. 64)

Buttons

1. PUM RG 3268; Rayy; unp. Bronze; d. 1.6. Circular, hollow-backed disc with bar across inside. (Fig. 64)

Finger-ringsA. flat face

1. PUM RCH 223; Rayy; unp. Bronze; d. 2.2. Slight widening to form face.
2. PUM Rei 3561; Rayy; unp. Bronze; incised; d. 1.8. Oval face with geometric pattern.
3. PUM RH 6443; Rayy; unp. Bronze; d. 1.7. Square face.
4. PUM RF 3413; Rayy; unp. Bronze; d. 1.9. Rectangular face.
5. PUM RG 7782; Rayy; unp. Bronze; pierced; d. 2.1. Square face; five holes in each shoulder.

6. PUM RG 8551; Rayy; unp. Bronze; incised; d. 2.4. Rectangular face with lines.
7. PUM CT 79; Rayy; unp. Bronze; d. 2.0. Oval face.
8. PUM RG 8361; Rayy; unp. Bronze; d. 1.8. Rectangular face; slight widening below shoulders.
9. PUM RF 3475; Rayy; unp. Bronze; d. 1.8. Round face.
10. Whereabouts unknown; Shamshir Ghar; Dupree 1958 p.264 fig.90f. Bronze; 0.9 x 0.6. Ovoid face.
11. Stockholm; Shāh Tapa; Arne 1945 p.332 no.1 pl.81 fig.671a. Bronze; d. 2.3. Round face with Arabic inscription.
12. Stockholm; Shāh Tapa; Arne 1945 p.332 no.2 pl.81 fig.671b. Bronze; d. 1.55. Round face with Arabic letters.

Finger-rings

B. pear-shaped with round narrowing bezel

1. Tehrān; Nīshāpūr; unp. Bronze; stone missing; d. 2.5. Oval ring with round narrowing bezel. Plain.
2. MMA 39.40.125; Nīshāpūr Qanāt Tapa; unp. Bronze; d. 1.9. Ring circular inside, angular outside; round narrowing bezel. Plain.

3. Stockholm; Shāh Tapa; Arne 1945 p.332 no.3 pl.81 fig.671c. Bronze; with stone setting; d. 2.1.

Finger-rings

C. with flaring bezel

1. PUM Rei 6758; Rayy; unp. Bronze; d. 2.0. Flaring solid face. Undecorated.
2. Ashmolean; Sīrāf S.68/9, 371; unp. Bronze; green stone; part missing. Tall flaring bezel; pointed shoulder. Undecorated.

Finger-rings

D. Others

1. PUM RB 988; Rayy; unp. Bronze; d. 2.0. Conical prominence on top. Undecorated.
2. PUM RCH 1995; Rayy; unp. Bronze; d. 1.6. Rectangular protruding face. Undecorated.
3. Ashmolean; Sīrāf S.69/70, 3110; unp. Bronze; d. 2.3. Oval bezel; protrusions on shoulder.
4. Ashmolean; Sīrāf 2928; unp. Bronze; set with white stone; d. 2.0. Large tall bezel. Undecorated.

5. Tehrān; Nīshāpūr Qanāt Tapa; unp. Bronze; red glass setting;

d. 1.8. Round bezel.

6. Tehrān; Nīshāpūr; unp. Bronze; d. 2.1. Circular protruding

face. Undecorated.

7. Banbhore; Banbhore; Khan 1963 fig. on p.49. Bronze; d. c. 2.0.

Stone in round setting.

Needles

1. Ashmolean; Sīrāf S.70/71, 191; unp. Bronze; lg. 12.2. Eye at top.

(Fig. 64)

2. Ashmolean; Sīrāf S.70/71, 196; unp. Bronze; top broken; lg. c. 11.5.

Eye at top.

3. Ashmolean; Sīrāf 2934; unp. Bronze; broken; lg. 9.2. Eye at

top.

4. Ashmolean; Sīrāf 2978; unp. Bronze; half missing.

5. Ashmolean; Sīrāf 2198; unp. Bronze; half missing.

6. Tehrān; Nīshāpūr Qanāt Tapa; unp. Bronze; h. 3.8. Turned form

with pointed end and eye top.

7. Banbhore; Banbhore; Khan 1963 fig. on p.49. Bronze; lg. c. 7.5.

Eye at top.

PendantsA. crescent-shaped

1. PUM RCH 499; Rayy; unp. Bronze; cast; d. 3.6. Complete circle with off-centre hole. Undecorated. (Fig. 65)
2. PUM RG 8757; Rayy; unp. Bronze; cast; d. 3.7. As 1. Undecorated.
3. Washington private colln.; n.p.; EI₂ hilāl fig.10 and p.381. Bronze; dimensions unknown. Open circle with heart-shaped inner form. Decorated with confronted winged beasts.
4. MMA 40.170.278; Nīshāpūr Sabz Pushān; unp. Bronze; cast; one eye missing; d. 2.2. Open crescent form with suspension eyes at two points; six facettes. Undecorated.
5. MMA 39.40.142; Nīshāpūr Qanāt Tapa; unp. Bronze; cast; w. 2.6. Form as 4, with cube shaped suspension eyes, projecting trefoil at base, and five facettes. Undecorated. (Fig. 65)
6. Whereabouts unknown; Khwārazm; Field and Prostov 1948 fig.12. Bronze; dimensions unknown. Form as 4.
7. PUM RH 4299; Rayy; unp. Bronze; cast; one suspension eye missing; w. 2.2. Form as 4, with five facettes. Undecorated.
8. PUM RH 5997; Rayy; unp. Bronze; cast; d. 3.1. Open crescent without suspension rings; four facettes. Undecorated.

9. Boston RG 7590; Rayy; unp. Bronze; cast; d. 4.4. Closed crescent with naskhi inscription.

Pendants

B. circular

1. PUM RCH 1976.1; Rayy; unp. Bronze; cast; d. 3.7. Circular. Interlace pattern on one side.
2. MMA 40.170.245; Nīshāpūr; unp. Bronze; cast; d. 2.4. Circular, one side with four bosses and central ridge. On other side incised leo and scorpio with pseudo-inscription. (Fig. 65)
3. Boston RCH 1976; Rayy; unp. Bronze; cast; d. 3.9. Circular. Interlace pattern on one side.

Pendants

C. pear-shaped

1. PUM RG 7868; Rayy; unp. Bronze; cast; lg. 5.0; w. 2.2. Flat pear-shaped with eye at top and projection at base. Crude vegetal design on one side.
2. PUM RE 3141; Rayy; unp. Bronze; cast; lg. 8.6; w. 4.7. Form as 1 with eye at base and trefoil at top above pear-shaped hole. Incised inscription and star in circle.

3. MMA 40.170.273; Nīshāpūr Qanāt Tapa; unp. Bronze; cast; lg. 5.2; w. 2.4. Form as 1 with pear-shaped hole near base. Vegetal design on one side. (Fig. 65)
4. Tehrān; from Nīshāpūr Sabz Pushān; unp. Bronze; cast; lg. 5.7; w. 2.0. Form as 1. Incised band across.

Pendants

D. others

1. PUM RA 870; Rayy; unp. Bronze; cast; lg. 2.5. In form of animal (? feline) with hole through back. (Fig. 65)
2. Tehrān; from Nīshāpūr Falakī; unp. Bronze; h. 3.7. In form of a boot. (Fig. 65)
3. BM 1921.2-20.23; n.p.; unp. Bronze; cast; h. 3.6. Similar to 2.
4. BM 1909.2-16.21; Qazvīn; unp. Bronze; cast; w. 2.9. Six-sided with pointed faceted ends and tubular suspension socket. Undecorated. (Fig. 65)

Pins

A. with bird finials

1. MMA 39.40.139; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; h. 9.7. Bird with wings folded. (Fig. 66)

2. PUM RCH 749; Rayy; unp. Bronze; cast; end of pin broken;
h. c. 9.0. Bird with erect tail and head.

3. MMA 37.40.32; Nīshāpūr Nasrullah's vineyard; unp. Bronze; cast;
pin broken; h. 6.4; lg. 4.7. Bird of faceted form with erect tail and
bulbous cheeks.

4. MMA 40.170.261; Nīshāpūr Sabz Pushān; unp. Bronze; cast; pin
broken; h. 2.1; lg. 3.9. Bird with bulbous head and flat tail.

5. Tehrān; Nīshāpūr Qanāt Tapa; unp. Bronze; pin broken; h. 4.6.
Bird with erect tail.

6. Tehrān; Nīshāpūr Sabz Pushān; unp. Bronze; pin broken; h. 3.9;
w. 2.5. Bird with flat tail.

7. PUM RE 3312; Rayy; unp. Bronze; pin broken; h. 2.7; lg. 2.7.
Stylised bird with long beak and erect tail on conical foot.

8. PUM RCH 559; Rayy; unp. Bronze; pin broken; h. 2.7; w. 2.1.
Crudely designed cockerel.

9. PUM I₂ 550; Rayy; unp. Bronze; pin broken; h. 3.0; d. 1.6.
Badly corroded bird with erect tail.

10. BM 1909.2-16.58; Qazvīn; unp. Bronze; cast; pin broken; lg. 3.6.
Bird with flat tail.

11. BM 1909.2-16.55; Qazvīn; unp. Bronze; cast; pin broken; h. 3.5.
Bird sitting upright.

12. BM 1909.2-16.59; Qazvīn; unp. Bronze; cast; pin broken; h. 3.1.
Bird with erect tail and head.

13. BM 1909.2-16.53; Qazvīn; unp. Bronze; cast; part of pin broken;
h. 6.0. Bird with curved tail.

14. BM 1909.2-16.54; Qazvīn; unp. Bronze; cast; part of pin broken;
h. 4.3. Highly stylised bird.

15. BM 1909.2-16.60; Qazvīn; unp. Bronze; cast; pin broken; h. 2.5.
Bird with closed wings.

16. BM 1909.2-16.50; Qazvīn; unp. Bronze; cast; pin broken; h. 3.2.
Bird with erect tail and long neck.

17. BM 1909.2-16.51; Qazvīn; unp. Bronze; cast; pin broken; h. 2.3.
Tail-less bird.

18. BM 1909.2-16.49; Qazvīn; unp. Bronze; cast; pin broken; h. 3.0.
Bird with erect tail joined to head crest.

19. BM 1909.2-16.48; Qazvīn; unp. Bronze; cast; pin broken; h. 2.8.
Harpie with flat oval tail.

20. Whereabouts unknown; Mujnābād; Stein 1928 II p.900, III pl.116 no.011. Bronze; pin broken; h. 5.0; lg. 4.0. Bird with tri-lobed erect tail, and pointed crest.

21. Whereabouts unknown; Khwārazm; Field and Prostov 1948 fig.12. Bronze; dimensions unknown. Bird with erect tail and head.

22. Whereabouts unknown; Khwārazm; Field and Prostov 1948 fig.12. Bronze; dimensions unknown. Bird with short tail and neck.

23. Whereabouts unknown; Sār u tār in Sīstān; Stein 1928 II p.942, III pl.116 Sar 04. Bronze; h. 1.7; lg. 2.5. Bird with closed wings.

Pins

B. with ring tops

1. PUM RB 905; Rayy; unp. Bronze; lg. 6.4. Ring-top. (Fig. 66)
2. Louvre; probably Susa; unp. Bronze; lg. 4.0. As 1.
3. Louvre; probably Susa; unp. Bronze; lg. 4.2. As 1.
4. Louvre; probably Susa; unp. Bronze; lg. 5.3. As 1.

Pins

C. with other tops

1. PUM RN 6943; Rayy; unp. Bronze; with black stone or bitumen; h. 7.1. Facetted black cube head.

2. Louvre; probably Susa; unp. Bronze; cast; h. 8.9. Inverted boar at head.

3. PUM RF 3466; Rayy; unp. Bronze; cast; h. 10.6. Tall squared top with circle and interlace pattern.

4. Ashmolean; Sirāf S.72/3, 447; unp. Bronze; cast; broken; h. 5.0. Three-pronged head.

5. PUM RCH 1407; Rayy; unp. Bronze; cast; lg. 11.6. Conical head.
(Fig. 66)

Seals

1. MMA 40.170.213; Nīshāpūr Village Tapa; unp. Bronze; cast; ring at top broken; h. 2.3; base d. c. 2.3. Circular base with protruding seal pattern of curves; conical shaft topped by ring. (Fig. 66)

2. Tehrān; Nīshāpūr; unp. Bronze; base d. c. 3.0. Circular base with protruding stylised leaf pattern; other details unknown.

3. MMA 39.40.135; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; incised; h. 2.5; base d. 2.3. Circular base with incised cross and radiating lines; bodywaisted with sloping shoulder and knob on top. (Fig. 66)

4. BM 1909.2-16.62; Qazvīn; unp. Bronze; cast in two halves; h. 3.3. Hinged at top; each side consisting of geometric forms with flaring foot. Lines at right angles on base. (Fig. 66)

5. BM 1909.2-16.63; Qazvīn; unp. Bronze; cast; incised; one half missing; h. 2.3. Form as 4. Inscribed kufic on inner side and on base.

6. BM 1909.2-16.54; Qazvīn; unp. Bronze; cast; h. 2.9. Circular base with floral design in three lines; conical foot, narrow short shaft surmounted by stylised animal with ring above back. (Fig. 66)

2) Cosmetic articlesCosmetic mortars

1. Ashmolean; Sīrāf S.69/70, 3197; unp. Lead bronze; cast; lg. 9.5; d. 6.0; h. 2.2. Hemispherical body; narrow, horizontal spout; lobed handle and side flanges; low ring foot. Ornamented with dot and circle motifs. (Analysis Table 21 no.49.) (Fig. 67)
2. Ashmolean; Sīrāf S.69/70, 5195; unp. Bronze; cast; heavily encrusted; lg. 11.0; d. 5.8; h. 2.3. Form as 1.
3. Louvre MAO.S.417; Susa; unp. Bronze; cast; lg. 14.6; d. 5.9. Form as 1, with oval handle and side flanges bearing almond-shaped bosses.
4. Louvre (?); Susa; Rosen-Ayalon forthcoming p.72 fig.159. Bronze; dimensions unknown. Form as 1, but side flanges circular. Dot and circle motifs.
5. BM Zoh. 53; Tal-i Zuhāk; Stein 1936 pl.29 no.47 p.140. Bronze; cast; handle and one side flange missing; lg. 10.0; d. 5.4; h. 2.4. Form as 1 but three small boss feet.
6. BM Zoh. 51; Tal-i Zuhāk; Stein 1936 pl.29 no.57 p.140. Bronze; cast; spout and one side flange missing; d. of body 6.2, but originally c. 12.4; h. 2.9. Form as 1, but handle and side flange angular with trilobed projections and joined together by right angle of metal. Handle decorated with part of naskhi inscription of good wishes and vegetal designs; on side flange vegetal design; on rim z-ornament.

7. PUM I₂-274; Rayy; unp. Bronze; spout broken; lg. 10.0; d. 7.3; h. 1.8. Form as 1, but pointed handle with five-lobed end and a pierced hole on either side; trilobed side flanges.

8. PUM RCH 1711; Rayy; unp. Bronze; handle, one side flange and spout broken; lg. 6.0; d. 4.6; h. 2.0. Form as 1, but trefoil side flange and flat bottom.

9. MMA 39.40.100; Nīshāpūr; unp. Bronze; cast; lg. 13.5; d. 8.4; h. 2.7. Form as 1, but three-sided handle, angular side flanges and three small boss feet. Decorated with whirling rosettes, protruding bosses and stem and leaf designs.

10. MMA 39.40.51; Nīshāpūr; unp. Bronze; handle broken; lg. 8.0; d. 6.0; h. 2.4. Form as 1, but no foot, and crudely lobed side flanges. Dot and circle motifs.

11. Tehrān; Nīshāpūr Tapa Madrasa; unp. Bronze; lg. c. 11.0. Form as 1. Dot in circle motifs on handle.

12. Tehrān; Nīshāpūr; unp. Bronze; lg. c. 11.0. Form as 1, but oval handle and side flanges. Decorated with almond-shaped and circular ornaments.

13. BM Soc. 82/131163; n.p.; unp. Bronze; cast; handle and side flanges missing; lg. 8.9; d. 5.6; h. 2.3. Form as 1.

14. BM 81.7-1.3403/131162; n.p.; unp. Bronze; cast; lg. 10.9; d. 6.5; h. 1.9. Form as 1, but polylobed handle, rounded side flanges, and flat base. Dot in circle motifs.
15. BM 82.7-4.4450/131165; n.p.; unp. Bronze; cast; badly corroded and broken; d. 5.6; h. 2.7. As 14.
16. BM 1956.7-26.11; n.p.; unp. Bronze; spout broken; lg. 14.3; d. 6.5; h. 3.4. Form as 1, but long oval handle with four circles cut out of edge, rounded side flanges with two circles cut out of edge, and three tall peg legs. Palmette ornament on handle.
17. Dahlem I 2025; n.p.; unp. Bronze; cast; lg. 16.8; h. 2.2. Form as 1, but polylobed handle with two irregular holes cut through it; trilobed side flanges.
18. Dahlem I 5629; n.p.; unp. Bronze; cast; lg. 16.5; h. 3.3. Form as 1, but handle in form of palmette, the lower two leaves on each side in form of a pair of birds' heads; trilobed side flanges, the side lobes also in form of birds' heads.
19. Dahlem I 1491; n.p.; unp. Bronze; cast; lg. 15.1; h. 2.0. Form as 1, but handle in form of a crescent with oval disc between the two points. Kufic inscriptions around rim.
20. Dahlem; Constantinople; Wulff 1909 I no.1059 pl.53. Bronze; cast; handle and spout broken; d. 10.0. h. 2.9. Form as 1, but three small boss feet and angular side flanges. Stem and leaf designs.

21. East Berlin; n.p.; unp. Bronze; cast; lg. 15.0; d. 9.0. Form as 1, but pointed lobed handle and side flanges. Handle and flanges filled with stem designs of similar forms; kufic inscription of good wishes around rim.
22. Louvre; n.p.; unp. Bronze; foot or feet and one side flange missing; lg. 10.9; d. 6.4; h. 2.0. Form as 1, but polylobed handle and round side flange. Dot in circle motifs.
23. Louvre AA276; n.p.; unp. Bronze; base missing; lg. 15.2; d. 6.8. Form as 1, but oval handle and round side flanges. Handle with kufic inscription of good wishes on edge and seated figure in centre.
24. d'Allemagne colln.; n.p.; d'Allemagne 1911 I p.87 (middle). Bronze; dimensions unknown. Form as 1, but trilobed handle and side flanges.
25. V&A M.132-1929; n.p.; unp. Bronze; cast; lg. 15.0; d. 5.9. Form as 1, but flat base, spade handle and side flanges. On rim z and dot ornament; on handle almond boss and scrolling stem; on flanges bud in roundel.
26. V&A M.133-1929; n.p.; unp. Bronze; cast; lg. 13.9; d. 6.5; h. 2.5. Form as 1, but spade handle and side flanges. Remains of kufic inscription of good wishes on rim; vegetal designs on handle and flanges.
27. de Unger colln.; n.p.; unp. Bronze; cast; lg. 16.1; d. with flanges 10.4; h. 2.1. Form as 1.

28. de Unger colln.; n.p.; unp. Bronze; cast; broken; lg. 9.9;
d. with flanges 8.5; h. 2.5. Form as 1.

v.1 V&A 1533-1903; n.p.; unp. Bronze; cast; incised; lg. 10.8;
d. 8.0; h. 2.5. Hemispherical body with flat base and three knob feet;
handle in form of flat human head; side flanges in form of wings; flange
either side of spout in form of tail. On wings and tail feather pattern.
(Fig. 67)

Kohl-sticks

1. Ashmolean; Sīrāf S.69/70, 3189; unp. Lead brass; lg. 13.0.
Decorated centre. (Analysis Table 21 no.50.) (Fig. 67)

2. Ashmolean; Sīrāf S.70/71, 2445; unp. Bronze; lg. 13.2. Undecorated.

3. Ashmolean; Sīrāf 369; unp. Bronze; lg. 12.4. Undecorated.

4. PUM I₂-235; Rayy; unp. Bronze; lg. 11.0. Decorated centre.

Plus: numerous broken examples from Sīrāf, decorated and undecorated;
three broken examples from Rayy, undecorated.

Mirrors

A. undecorated

1. PUM RCH 1580; Rayy; unp. Bronze; d. 6.3. Undecorated.

2. Ashmolean; Sirāf S.72/3, 485; unp. One side high tin bronze, the other low zinc brass; two sheets soldered around edge; one third missing; d. 11.5. Incised circles on one side. (Analysis Table 21 no. 46.) (Fig. 68)

3. Louvre G.S.386/MAO.S.139; Susa; unp. Bronze; three sheets soldered together; part missing; d. 10.5. Two concentric double circles incised on one side around central square area.

Mirrors

B. relief cast 1. design 1*

1. MMA, 40.170.265; Nīshāpūr; unp. Bronze; cast; d. 6.0. Central pierced boss; low rim. Decorated with moulded 6-petalled rosette pattern.

2. BM 1921.2-20.2; n.p.; unp. Bronze; cast; d. 5.4. Decoration as 1 but with border of ? inscription.

3. Dahlem I 919; n.p.; unp. Bronze; cast; d. 8.0. As B/1/2.

V.1 Dahlem I 5643; n.p.; unp. Bronze; cast; d. 7.9; lg. of handle 2.5. As B/1/2, but with slightly waisted handle.

* for this and subsequent designs see Table 22.

MirrorsB. relief cast 2. design 2

1. Tehrān; Nīshāpūr, Bāzār Tapa, pit at level of piers; unp. Bronze; cast; d. 10.7. Central boss. Inner zone of decoration with four running hares; outer zone of decoration badly corroded.

MirrorsB. relief cast 3. design 3

1. Leipzig; Isfahān; Bräunlich 1931 p.148. Bronze; cast; d. 10.8. Central boss. Decorated with sphinxes within kufic inscription of good wishes.
2. BM 66.12-29.76; Ardabīl; Barrett 1949 pl.5a. Bronze; cast; d. 11.1. As 1.
3. ex d'Allemagne colln.; probably Iran; d'Allemagne 1911 IV p.184. Bronze; cast; dimensions unknown. As 1.
4. Tirmid; Tirmid; Melikian-Chirvani 1973 p.37. Evidently as 1.
5. Minusinsk (?); Minusinsk; Loubo-Lesnitchenko 1973 p.58. Bronze; Dimensions unknown. As 1.
6. Minusinsk (?); Minusinsk; Loubo-Lesnitchenko 1973 p.58. Bronze; dimensions unknown. As 1.

7. Tomsk 6201; Narym; Loubo-Lesnitchenko 1973 p.58 and n.62. Bronze; dimensions unknown. As 1.

8. Hermitage; Semirech'e; Bernshtam 1952 fig.69, Pugachenkova and Rempel 1965 fig.229. Bronze; cast; handle probably later; central boss missing; dimensions unknown. As 1.

Mirrors

B/3 with unknown provenances or provenances west of Iran

BM 66.12-29.77; n.p.; unp.

Cairo 1731; n.p.; Mahrzaz 1953 fig. 1.

Cairo; n.p.; Pope 1938 pl.1302F.

Copenhagen I/1965; n.p.; Leth 1975 p.72.

Detroit; Tokat; Aga-Oglu 1931 fig.2.

Dahlem 90/36; n.p.; unp.

Dahlem I 3636; Istanbul; Bräunlich 1931 p.149.

Donsk 1940; Donsk; Krachkovskaya 1960 fig.1.

Gotha; n.p.; Bräunlich 1931 p.147. (x 2)

Hamburg; n.p.; unp.

Lebanon, private colln.; n.p.; Beirut 1974 no.140.

Louvre; n.p.; Kühnel 1925 fig.102, Bräunlich 1931 p.148.

Louvre; n.p.; unp.

Munich 11487; n.p.; Bräunlich 1931 p.149.

Munich Münzkabinett; n.p.; Bräunlich 1931 p.149.

Musée des Arts Decoratifs 14.918; n.p.; Melikian-Chirvani 1973 pp.36-7.

Tiflis; n.p.; Krachkovskaya 1960 p.356 n.3.

V&A 928-1886; n.p.; unp.

V&A 442-1887; n.p.; unp.

von Oppenheim-Stiftung colln.; Khābūr; Bräunlich 1931 fig.2 p.139.

von Oppenheim-Stiftung colln.; Urfa; Bräunlich 1931 pp.139-40.

von Oppenheim-Stiftung colln.; Aleppo or Damascus; Bräunlich 1931 p.140.

Whereabouts unknown; Egypt; Bräunlich 1931 p.146.

Whereabouts unknown; Tāq-i Kisrā; Bräunlich 1931 p.147.

Whereabouts unknown; n.p.; Bräunlich 1931 p.147.

Whereabouts unknown; Middle Volga; Bräunlich 1931 p.147.

Whereabouts unknown; Cairo; Bräunlich 1931 p.148.

Mirrors

B. relief cast 4. design 4

1. Messerschmidt colln.; Samarova; Loubo-Lesnitchenko 1973 fig.48.

Bronze; cast; boss missing; dimensions unknown. Central lobed boss surround.

Band of vegetal design around, then band of six animals of the hunt moving right against scrolling stem, then band of kufic inscription against scrolling stem; inscription good wishes to owner.

2. MMA 42.136; n.p.; unp. Bronze; cast; d. 19.4; h. of rim 1.1. As 1, but complete.

Mirrors

B. relief cast 5. design 5

1. Louvre 6090; n.p.; Pope 1938 pl.1302A. Bronze; cast; d. 14.0.

Central lobed boss with lobed surround. Two pairs of animals of the hunt moving left against scrolling stem, between narrow pearl borders; kufic inscription of good wishes around. (Fig. 68)

2. Musée des Arts Decoratifs 14.919; n.p.; Melikian-Chirvani 1973 p.35. Bronze; cast; d. 14.0. As 1.

v.1 Lyon; n.p.; Melikian-Chirvani 1973 p.35. No details known, but inscription apparently different from above.

v.2 Dahlem I 1615; n.p.; unp. Bronze; cast; d. 9.0. As 1 but with different naskhi inscription.

v.3 Dahlem I 5155; n.p.; unp. Bronze; cast; d. 9.6. As 1 but thin central boss; nature of inscription not clear.

v.4 Dahlem I 5641; n.p.; unp. Bronze; cast; d. 5.3. As 1 but tall boss in centre.

Mirrors

B. relief cast 6. design 6

1. Donsk; Donsk; Krachkovskaya 1960 fig.2. Bronze; cast; d. 14.0. Six-lobed boss and surround in centre. Band of four different animals of hunt between narrow pearl borders against scrolling stem; kufic inscription of good wishes around.

2. Detroit; n.p.; Aga-Oglu 1931 fig.1. Bronze; cast; d. 14.0. As 1.

3. BM 66.12-29.75; n.p.; unp. Bronze; cast; d. 13.9. As 1.

4. Louvre; n.p.; Migeon 1922a I pl.16. Bronze; cast; dimensions unknown. As 1.

5. Baghdād A.820; n.p.; unp. Bronze; cast; d. 14.7. As 1 but two animals in relief within lobed surround in centre.

Mirrors

B. relief cast 7. design 7

1. BM 1959.12-18.1; n.p.; unp. Bronze; cast; cut through rim for handle probably later; d. 13.5; h. at rim 0.5. Rounded rim; central boss with sun-ray and dot surround. Decorated with lion, dog, fox and hare against scrolling stem.

2. V&A 382-1897; n.p.; unp. Bronze; cast; boss missing; d. 13.4; h. at rim 0.4. As 1 but plain centre.

3. Cairo; n.p.; Pope 1938 pl.1302C. Bronze; cast; boss missing; d. 12.5. As 1 but plain centre.

- V.1 Lebanon, private colln.; n.p.; Beirut 1974 no.135. Bronze; cast; d. 10.7. Central knob with plain area around. Two huntsmen on foot and two animals against scrolling stem fill ground.

Mirrors

C. relief cast with handle 1. design 8

1. Minusinsk; Starye Knysi; Loubo-Lesnitchenko 1973 fig.47. Bronze; cast; one third broken off; attached to rim edge originally probably had handle; d. 10.0. No knob. In central zone mounted huntsman with cheetah, hawk and hare; pearl border; in outer zone kufic inscription of good wishes.

MirrorsC. relief cast with handle 2. design 9

1. Hermitage; Kazakhstan S.S.R.; Balashova 1940. Bronze; cast; d. 14.2; h. with handle 20.6. Flat, square-ended handle attached to rim edge. Central decorated zone with mounted huntsman surrounded by animals; pearl border; outer zone with kufic inscription in four sections separated by crescents each section reading 'amina man'amana bi'llāh; rope pattern border around edge. (Fig. 68)

MirrorsD. relief cast with triangular handle space

1. V&A 1059-'69; n.p.; Pope 1938 pl.1301C. Bronze; cast; d. 21.8. Central conical pierced boss; tall rim. In central field a mounted falconer against vegetal background with hunting dog and hare; around a band of animals of the hunt; outer band of kufic inscription of good wishes with undecorated triangular space at the bottom. (Fig. 68)

SpatulasA. flat-bladed

1. PUM RD 2213; Rayy; unp. Bronze; broken; lg. 3.9; blade 1.3 x 1.2.
2. PUM RH 4808; Rayy; unp. Bronze; lg. 12.3; blade 1.2 x 0.9.
Crudely decorated centre. (Fig. 69)
3. PUM RH 5473; Rayy; unp. Bronze; broken; lg. 4.6; blade 1.6 x 1.2.
4. PUM RH 5833; Rayy; unp. Bronze; broken; lg. 7.2; blade 1.3 x 1.4.
5. PUM RH 4176; Rayy; unp. Bronze; lg. 10.0; blade 1.0 x 1.2.
6. PUM RG 7973; Rayy; unp. Bronze; broken; lg. 7.8; blade d. 1.2.
7. PUM I₂-1105; Rayy; unp. Bronze; lg. 9.7; blade 0.8 x 0.8.
8. Ashmolean; Sīrāf S.69/70, 6931; unp. Bronze; broken; blade 2.1 x 1.9.
9. Ashmolean; Sīrāf S.68/69, 354; unp. Lead brass; broken;
blade 0.8 x 1.0. (Analysis Table 21 no. 65.)
10. Louvre MAO.S.423; Susa; unp. Bronze; broken; lg. 9.0; blade
2.6 x 1.8. Decorated neck. (Fig. 69)
11. Banbhore; Banbhore; Khan 1963 fig. on p.49. Bronze; lg. c. 12.7.

SpatulasB. spoon-bladed

1. PUM RCH 1060; Rayy; unp. Bronze; lg. 9.6, bowl 2.4 x 1.5.
Downward curving neck. Ornamental end. (Fig. 69)
2. PUM RCH 144; Rayy; unp. Bronze; broken; lg. 5.4, bowl 1.6 x 1.1.
3. PUM RG 3264; Rayy; unp. Bronze; lg. 3.7. Twisted handle; eye at top.
4. PUM I₂-137; Rayy; unp. Bronze; lg. 9.7, bowl 1.9 x 0.9. Downward curving neck of square and oval form. (Fig. 69)
5. Louvre MAO.S.425; Susa; unp. Bronze; broken; lg. 7.2, bowl 1.3 x 1.1. Neck of square and oval form.
6. Louvre MAO.S.426; Susa; unp. Bronze; lg. 13.0, bowl 1.3 x 1.1.
Neck of square and oval form.
7. Louvre MAO.S.427; Susa; unp. Bronze; lg. 13.0, bowl 1.7 x 1.1.
Neck of square and oval form.
8. Louvre MAO.S.428; Susa; unp. Bronze; lg. 15.5, bowl 2.0 x 1.8.
Neck in form of cross. (Fig. 69)
9. Ashmolean; Sirāf S.67/68, 129; unp. Quaternary alloy; broken;
lg. 3.3, bowl 2.0 x 1.8. (Analysis Table 21 no. 64.) (Fig. 69)

10. PUM RG 8132; Rayy; unp. Bronze; broken; lg. 4.9, bowl 2.0 x 1.8.

11. PUM RC 144; Rayy; unp. Bronze; broken; lg. 5.4, bowl 1.6 x 1.1.

Spatula blades

1. Ashmolean; Sirāf S.70/71, 2453; unp. Lead bronze; lg. 2.9, w. 1.0. Triangular blade with tang. (Analysis Table 21 no. 55.)
(Fig. 70)

Toilet dishes

1. Frankfurt private colln.; n.p.; Stuttgart Linden-Museum 1972 no.136. Bronze; cast; incised; lg. 7.3; w. 5.2. In the form of a bird, the body hollowed out to form receptacle, the head acting as handle; pierced eye. Incised roundel with rosette and floral extension inside; incised lines on flat rim. (Fig. 70)

2. de Unger colln.; n.p.; unp. Bronze; cast; incised; lg. 8.0. Form as 1, but eye solid. Decoration as 1.

Toilet flasks

A. square-bodied

1. V&A 528-76; probably Iran; unp. Bronze; cast; incised; h. 7.4; w. 2.0. Tall square body with three short angular legs; flat shoulder; octagonal neck and round mouth. On body al-daw(la) in kufic script at top of each side with a roundel containing trefoil below; incised "s" on each side of neck. (Fig. 70)

2. Dahlem I 2256; n.p.; unp. Bronze; cast; incised; h. 7.5; w. 2.3.

Form as 1. On each side of body remains of kufic script around top with four-centred vegetal scroll below.

3. Dahlem I 3651; n.p.; unp. Bronze; cast; incised; h. 6.4;

w. 1.6. Form as 1. Undecorated except for some lines on neck.

Toilet flasks

B. pear-shaped

1. Tehrān; Nīshāpūr South Horn; unp. Bronze; h. 6.8; d. 2.4.

Elongated conical body with rounded profile and vertical ribbing; sloping shoulder; cylindrical neck; small rim. Undecorated.

2. Cairo; n.p.; Pope 1938 p.2527 fig.842. Bronze; h. 10.2. Flattened pear-shaped body with trefoil finial; concave neck and convex mouth.

Decorated with seven-centred vegetal design beneath an inscription, which includes the name Muḥammad b. Irānshāh.

3. MMA 40.170.272; Nīshāpūr; unp. Bronze; cast; one half of a two piece flask; h. 5.7; w. 2.8. Body pointed with facettes and leaf-like protrusions; sloping shoulder; collar and neck with three facettes. (Fig. 70)

Toilet flasks

C. zoomorphic 1. bird-shaped

1. Cairo; n.p.; Pope 1938 pl.1312B. Bronze; incised and inlaid with silver and copper; top missing; lg. 13.5. Hollow body in form of a reclining bird with flat base, crossed wings, and rim at top of neck.

Neck decorated with feather pattern, chest with naskhi inscription of good wishes, sides with wing-shaped medallion with harpie in roundel, upper body and tail with vegetal designs, and wings with rosettes in roundels.

2. Dahlem I 1500; n.p.; unp. Bronze; cast; incised and inlaid with silver; top missing; lg. 14.2; h. 5.0. Form as 1. Neck decorated with two harpies, chest with two birds and two sphinxes, sides with wing-shaped medallion with harpie in roundel, upper body with pair of harpies, back with pair of human figures, upper tail with hare and wings with rosettes in roundels.

3. V&A; n.p.; unp. Bronze; cast; incised and inlaid with silver; lg. 14.4; h. 6.1. Form as 1; top consists of bird head with curved spatula attached. Neck decorated with double leaf pattern and two animals, chest with two horsemen, sides with wing-shaped medallions with seated figure in roundel and hare, upper body with pair of birds, back, tail and wings with feather patterns, and a single animal; hole in centre of base, and small holes in top end of each wing. (Fig. 71)

4. Whereabouts unknown; n.p.; Grabar 1959 no.44. Bronze; incised and inlaid with silver; top missing; lg. 13.7; h. 4.4. Form as 1. Neck decorated with interlace, sides with birds, upper body with leaf forms, wings with rosettes and feather patterns, base of tail with inscription.

Toilet flasksC. zoomorphic 2. animal-shaped

1. Frankfurt private colln.; n.p.; Stuttgart Linden Museum 1972

no.144. Bronze; cast in two pieces; incised; lg. 13.3; h. 7.0.

In the form of an animal, with feline head and rounded body with flat base, and fish-tail; ridge on either side and two short ridges on back; hole in mouth of head. Decorated with naskhi and kufic inscriptions in cartouches, and various vegetal motifs in a variety of medallion forms. (Fig. 71)

Toilet flasksC. zoomorphic 3. fish-shaped

1. BM 1969.3-19.1; n.p.; unp. Bronze; cast; incised and inlaid with copper and silver; top missing; tail broken; lg. 10.6; h. 3.8. Body in form of fish with two side fins and dorsal fin; thick rim at top of neck. Base decorated with sphinx in roundel, tail with scale pattern, and body with two harpies and a sphinx in roundels, and 4 pear-shaped medallions with vegetal motifs. (Fig. 71)

TweezersA. simple

1. Tehrān; Nīshāpūr Tapa Madrasa; unp. Bronze; lg. 4.0. Made of single piece of bronze. Undecorated.

TweezersB. adjustable

1. MMA 39.40.70; Nīshāpūr Vineyard; unp. Bronze; lg. 9.8; w. 0.6.
Made of single piece of bronze; squared grip area; adjustable sliding
piece for altering opening distance. Undecorated.

2. Ashmolean; Sīrāf S.69/70, 3195; unp. Lead brass; broken;
lg. 7.3; w. 1.7. Form as 1; sliding piece missing. Dot and circle
ornament on grip area. (Analysis Table 21 no. 53.) (Fig. 71)

III Scientific Instruments

Astrolabes

1. Oxford HSM; signed Ahmad and Muhammad ibnā Ibrāhīm al-Isfahānī; dated 374/984-5 or 394/1003-4; Gunther 1932 I pp.114-116, pls.22-3, Mayer 1956 p.36, Gibbs et al. 1973 no.3. Brass; cast rim and kursī; soldered back plate; ankabūt; alidade; three tables; pin and wedge; suspensory ring and shackle; d. 13.2. High kursī ornamented with 29 crescentic perforations.

2. Brioux colln.; signed Hāmid ibn al-Khidr al-Khujandī; dated 374/984-5; Brioux 1973 pp.10-13, 2 pls., Gunther 1932 I p.245, Mayer 1956 p.45, Gibbs et al 1973 no.111. Brass; ankabūt; alidade; pin and wedge; suspensory ring and shackle; dimensions unknown. High kursī ornamented with two half-palmettes with animal-headed tendrils, the latter with pierced surround; ankabūt includes bird-head and half-palmette indicators.

3. Florence, Museo di Storia della Scienza; signed Muhammad ibn Abī'l-Qāsim ibn Bakrān al-Najjār al-Isfahānī al-Sālihānī; dated 496/1102; Mayer 1956 p.59 and pl. 4a, Bonelli 1955 p.77 top left, Gibbs et al. 1973 no.122. Brass; pin and wedge; suspensory ring and shackle; dimensions unknown. High kursī with six holes and cusped edge.

4. Munich, Klustermann colln.; signed Hibbat Allāh al-Baghdādī; dated 518/1124; Gibbs et al. 1973 no.3633. Details unknown; d. 29.0.

5. Chicago, Adler Planetarium A-84; signed Hibbat Allāh ibn al-Husain; dated 525/1131; made for Mughis al-Dunyā wa'l-Dīn Abū 'l-Qāsim Mahmūd ibn Muhammad ibn Malikshāh; Chamberlain 1973 pp.21-2, Gibbs et al. 1973 no.2557. Brass; ankabūt; pin and wedge; suspensory ring and shackle; six plates; d. 13.3. High kursī of lobed, half-palmette form; ankabūt includes curving indicators.

6. Washington National Museum of History and Technology no.28; signed Ḥamid ibn Mahmūd al-Isfahānī; dated 547/1152-3; Gunther 1932 I pl.24, Mayer 1956 p.46; Gibbs et al. 1973 no.4. Brass; ankabūt; alidade; pin and wedge; d. 13.3. High kursī of lobed form with pierced scrollwork design.

7. Tehrān; signed Muḥammad ibn Ḥamid al-Isfahānī; dated 553/1158 or 558/1163; Mayer 1956 p.67 no.II, Gibbs et al. 1973 no.1211. Brass; ankabūt; alidade; pin and wedge; shackle and ring; dimensions unknown. High kursī with pair of pierced scrolling stems within lobed border.

8. Brophy colln.; signed Muḥammad ibn Ḥamid ibn Mahmūd al-Isfahānī; undated; Gibbs et al. 1973 no.3532. Brass; ankabūt; ring and shackle; dimensions unknown. Lobed kursī.

9. Istanbul, Topkapi Saray; signed Muḥammad ibn Ḥamid ibn Mahmūd al-Isfahānī; undated; Mayer 1956 p.67 no.I, and pl.5, Gibbs et al. 1973 no.1177. Brass; ankabūt; alidade; ring and shackle; pin and wedge; dimensions unknown. Lobed kursī has on one side interlacing tendrils, and on the other a peony-like flower with stems and leaves.

10. Oxford HSM; signed Muḥammad ibn Abī Bakr ibn Muḥammad al-Rāshidī al-Ibarī al-Isfahānī; dated 618/1221-2; Gunther 1932 I pls.25-6, Gibbs et al. 1973 no.5. Brass; cast pin and kursī; ankabūt; pin and wedge; ring and shackle; two plates; geared calendar movement inside; inlaid with silver; d. 18.6; th. 1.8. High kursī decorated with pierced intertwined stems and leaves with bird heads; edge of astrolabe decorated with zodiacal signs in roundels separated by warriors, all inlaid with silver.

Celestial globes

1. Destombes colln.; signed Yūnus ibn al-Husain; dated 539/1144; Destombes 1958. Brass; made as two hemispheres; mount not original; incised and inlaid with silver; d. 17.5.

Quadrants

1. MMA 36.20.54; Nīshāpūr purchase; signed Muḥammad ibn Maḥmūd; Mayer 1956 p.71. Brass; cast; incised; h. 7.3; w. 6.5. Quadrant with two large eyes protruding at either end of base.

IV Tools, Weapons and Musical Instruments

(1) Tools

Tools: Chisels

1. PUM RCH 1364; Rayy; unp. Bronze; lg. 3.5; d. 0.5. Square section; flat, cold-chisel end. (Fig. 72)

Tools: Nails

A. with domed heads

1. PUM PT 31; Rayy; unp. Bronze; lg. 4.5. Round body; domed head. (Fig. 72)
2. As 1, lg. 4.6.
3. As 1, lg. 3.8.

Tools: Nails

B. with flat heads

1. PUM RH 5814; Rayy; unp. Bronze; lg. 7.1. Square body; flat head. (Fig. 72)
2. PUM I₂-132; Rayy; unp. Bronze; lg. 4.5. As 1.

Tools: Nails

C. others

Numerous fragments from Sīrāf, unpublished.

Tools: Saws

1. Brooklyn (loan); n.p.; unp. Bronze; incised; lg. 34.3; h. 10.2.
straight blade with rounded end; handle in form of lion with flat body and three-dimensional head and feet, the latter in form of bird's head. Beak and part of body decorated with alternate groups of curved lines. (Fig. 72)

(2) Weapons

Weapons: Dagger-handles

1. de Unger colln.; n.p.; unp. Bronze; cast; incised; h. 10.2; w. 3.3. Hollow; seven-sided with two wide sides, two slightly rounded, and three narrow ones; slit at lower end; bevelled tip. On one wide side lion and deer; on three narrow sides naskhi and two kufic inscriptions of good wishes. (Fig. 72)

Weapons: Mace-heads

1. Cairo; n.p.; Pope 1938 pl.1289B. Bronze; cast; incised; h. 17.8. Cylindrical shaft; hemispherical tip; eight concave sides separated by projecting flanges. On shaft inscription against scrolling stem and band of interlace; on each side cartouche of kufic inscription of good wishes between a roundel and a pear-shaped medallion containing vegetal designs or birds. (Fig. 73)
2. Tehrān; Nīshāpūr; unp. Bronze; cast; incised; h. c. 21.0. Short cylindrical shaft; eight-sided body widening towards pointed tip. On sides alternately a vegetal design and a pseudo-kufic inscription; around shaft inscription.

3. BM 83.8-8.9; n.p.; unp. Bronze; cast; originally gilded; h. 7.4; d. 9.2. Cylindrical shaft with six projecting flanges, each flange in form of two confronted seated lions. (Fig. 73)

4. ex Heeramanek colln.; n.p.; Grabar 1959 no.55. Bronze; cast; incised; h. 15.3. Lion head with gaping jaw on long vertical neck. Incised mane; traces of indecipherable inscription of ownership. (Fig. 73)

Weapons: Sheath fittings

See p. 865 sword no.1

Weapons: Shield bosses

1. Tehrān; Nīshāpūr purchase; unp. Bronze; d. c. 20.0. Central flattened hemispherical boss surrounded by two rounded areas. On inner area kufic inscription of good wishes.

Weapons: Sword pommels

1. de Unger colln.; n.p.; unp. Bronze; cast; d. 3.8; h. 1.5. Hollow; circular; twelve cusps around; horizontal slit through one cusp. Decorated on one side with lion, on other with bird; vegetal motifs in cusps. (Fig. 73)

Weapons: Sword quillons

See p.865 sword no.1

(3) Musical Instruments

Musical Instruments: Cymbals

1. BM 1969.11-9.1; n.p.; unp. Bronze; cast; incised; d. 18.9; h. 5.3. Central hemispherical boss with central hole surrounded by two flat areas separated by a step; low rim. On outer area naskhi inscription of good wishes and large formalised rosettes; on inner area sphinxes alternating with large rosettes with whirling centres.
2. BM 1969.11-9.1. Pair to 1.
3. Louvre 6162; Sīstān; unp. High tin bronze with lead; cast; incised; d. 15.5. Form as 1, but no rim. On outer area strapwork in cartouches separated by rosettes in roundels; on inner area naskhi inscription of good wishes in cartouches separated by rosettes in roundels. (Analysis Table 21 no. 18.) (Fig.)
4. Louvre 6161. Pair to 3 but quaternary alloy, d. 15.7. (Analysis Table 21 no. 17.)
5. ex Martin colln.; Bukhāra; Martin 1902 pl.23. Bronze; cast; incised; dimensions unknown. Form as 1, but with extra step at base of boss. On outer and inner areas cartouches with kufic or naskhi good wishes and birds or vegetal motifs in roundels; on boss crude inscription.
6. ex Martin colln. Pair to 5.

V Horse-harness

Ornaments

1. MMA 39.40.144; Nīshāpūr Qanāt Tapa; unp. Bronze; cast; d. 3.1.

An openwork trefoil with central rivet hole. (Fig. 75)

2. MMA 40.170.212; Nīshāpūr Tapa Madrasa; unp. Bronze; silvered;

cast; 3.6 x 3.8. A pair of horns with small plate attached with rivet hole. (Fig. 75)

3. MMA 40.170.253; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; gilded;

3.6 x 2.7. A pointed double leaf with central open diamond attached to simple double leaf form by bar with central rivet hole. (Fig. 75)

4. Tehrān; Nīshāpūr; unp. Bronze; cast; gilded; 4.9 x 3.2.

A palmette with openwork surround inside a cordiform border with attached plate at base with rivet hole, and rivet hole in top. (Fig. 75)

5. Tehrān; Nīshāpūr Tapa Madrasa; unp. Bronze; 3.5 x 3.1. Cordiform

with remains of floral design and dotted border with broken protrusion at one end and rivet hole at other.

6. Tehrān; Nīshāpūr Qanāt Tapa; unp. Bronze; 5.4 x 4.0. Floriated

rectangular form with trilobed protrusion at one end, three areas of openwork, two leaf forms and single rivet hole.

7. MMA 40.170.211; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; gilded; broken; 5.8 x 4.1. Floriated rectangular form with trilobed protrusion at one end, four areas of openwork, four pointed leaf forms, and two rivet holes.

8. MMA 39.40.136; Nīshāpūr Qanāt Tapa; unp. Bronze; cast; gilded; 8.1 x 4.7. Floriated rectangular form with eleven areas of openwork and two rivet holes. (Fig. 76)

9. Tehrān; Nīshāpūr Qanāt Tapa; unp. Bronze; 6.5 x 5.6. Approximately square with accentuated corner areas, protrusion at one end and knob at other; four rivet holes with two rivets in position.

10. Tehrān; Nīshāpūr Tapa Madrasa U6; unp. Bronze; 3.3 x 3.2. Approximately square with design showing central palmette and two flower forms; two rivet holes. (Fig. 76)

11. PUM RG 8502; Rayy; unp. Bronze; sheet metal; 3.8 x 2.7. Cut as elongated openwork rosette with central rivet hole.

12. PUM RD 2354; Rayy; unp. Bronze; cast; incomplete; 4.4 x 4.3. Crude curvilinear form with two openwork areas.

13. PUM RF 3219; Rayy; unp. Bronze; cast; incomplete; 3.3 x 3.5. Diamond form with central openwork and three rounded protrusions.

14. PUM RH 5003; Rayy; unp. Bronze; cast; incomplete; 2.4 x 1.1. Geometrical form.

15. PUM I₂-730; Rayy; unp. Bronze; hollow cast; 1.6 x 1.6. Flat pyramid form with one or possibly two rivet holes.

16. PUM RE 3421; Rayy. unp. Bronze; cast; half missing; d. 5.7. Originally circular with cross bars, each arm with trefoil end. (Fig. 76)

17. Tehrān; Nīshāpūr Village Tapa; unp. Bronze; 2.9 x 2.9. Floriated square form with central open area and semblance of spiral around.

18. Tehrān; Nīshāpūr Tapa Madrasa; unp. Bronze; gilded; incomplete; 3.0 x 2.6. Approximately circular with two openwork areas and protrusion.

19. Tehrān; Nīshāpūr Village Tapa; unp. Bronze; incomplete; 2.9 x 1.8. Approximately rectangular with one open-work area and remains of two others; two leaf-shaped bulges.

20. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 p.264. Bronze; d. 4.1. Circular with small stud on one side.

Stirrups

A. with flat base

1. Kābul 58.2.85; Ghazna; Mortimer-Rice and Rowland 1971 pls.195-6. Bronze; cast; traces of red paint; h. 14.0. Angular thong holder surmounting arch decorated with two protruding animal heads and two birds; wide base and lower sides, decorated with cusping, the sides pierced and embossed; scrolls joining arch to corners of lower sides. (Fig. 76)

2. Qandahār; Ghazna; Scerrato 1959 p.107 no.10, figs.19-21. Bronze; cast; h. 12.5; base 6.0 x 12.0. Form as 1, the arch with two embossed scrolls, the base with central ridge beneath.

Stirrups

B. with rounded base

1. Louvre; Susa; unp. Bronze; cast; h. 9.7; d. 9.0. Oval arch and base form; base wider than arch; thong holder consisting of hollow rectangle surmounting an H-piece with sloping sides. Undecorated.
(Fig. 76)

VI Architectural, Furniture and Object Fittings

Box fittings A : Appliqués

1. Dahlem I 4324; n.p.; Pope 1938 p.2481 fig.81Oc. Bronze; hollow cast; gilt; h. 10.0. Appliqué in form of standing crowned figure; two rivet holes.

2. Dahlem I 4325; n.p.; unp. Bronze; hollow cast; gilt; h. 8.3. Appliqué in form of standing drinking figure; two rivet holes.

3. Dahlem I 2029; n.p.; Pope 1938 p.2481 fig.81Ob. As 2.
(Fig.77)

4. Dahlem I 4326; n.p.; Pope 1938 p.2481 fig.81Od. Bronze; hollow cast; gilt; h. 5.3. Appliqué in form of standing drinking figure; four rivet holes.

5. Dahlem I 4323; n.p.; Pope 1938 p.2481 fig.81Oa. Bronze; solid cast; h. 3.7. Appliqué in form of seated figure.

6. New York private colln.; n.p.; Pope 1938 pl.1278A. Bronze; cast; h. 21.0. Tall shaft with narrow neck surmounted by bird with long beak and pointed wings. Wing decorated with half-palmette.
(Fig. 77)

Box fittings B : hinges, clasps and clamps

1. MMA 40.170.274; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; lg. 2.3; w. 2.0. Trapezium-shaped plaque with two projecting rings for hinge. (Fig. 77)
2. PUM RB 942; Rayy; unp. Bronze; lg. 3.1; w. 0.9. Rectangular plaque with point on one side; projecting ring for hinge; three rivet holes. (Fig. 77)
3. PUM RH 5472; Rayy; unp. Bronze; lg. 4.4; w. 2.0. Crudely cusped rectangular form; cylindrical hinge holder; two rivet holes.
4. PUM RF 3219; Rayy; unp. Bronze; hinge holder missing; lg. 5.3; w. 2.2. Crudely cusped form with pear-shaped end; two rivet holes.
5. PUM I₂-409; Rayy; unp. Bronze; cast; 3.1 x 3.1. Trapezium-shaped plaque; bosses at bottom corners; projecting pin at top.
6. Ashmolean; Sīrāf S.70/71, 2458; unp. Quaternary alloy; cast; lg. 4.5; w. 2.6. Pear-shaped plaque; trefoil-shaped point with rivet hole; projecting ring for hinge. (Analysis Table 21 no. 56.) (Fig. 77)
7. PUM RG 8058; Rayy; unp. Bronze; cast; lg. 6.8; w. 0.8. Long narrow three-faced piece; six flattened projecting rivet holes; remains of hinge ring at one end. (Fig. 78)
8. Ashmolean; Sīrāf S.70/71, 2410; unp. Lead brass; part missing; lg. 6.2; w. 0.8. Rectangular plaque; banded neck near each end. (Analysis Table 21 no. 59.)

9. Ashmolean; Sīrāf S.67/68, 1270; unp. Quaternary alloy; part missing; lg. 1.7. Heart-shaped end of a plaque. (Analysis Table 21 no. 57.)
10. Ashmolean; Sīrāf S.69/70, 3196; unp. Quaternary alloy; part missing; lg. 5.4; w. 3.4. Pear-shaped plaque; central rivet hole attached to strip of metal. (Analysis Table 21 no. 58.)
11. Ashmolean; Sīrāf S.67/68, 2881; unp. Bronze; one pin broken; lg. 1.7; h. 1.5. Clamp (?) with hole at one end and two pins at other. (Fig.78)
12. MMA 40.170.259; Nīshāpūr; unp. Bronze; relief cast; gilded; lg. 5.5; w. 2.4. Clamp with pointed centre and two angled pear-shaped ends; rivet hole in each end. Vegetal decoration. (Fig. 78)
13. PUM RE 2850; Rayy; unp. Bronze; cast; part missing; lg. 7.8; w. 0.6. Curving hollow bar with pear-shaped terminal; rivet hole in centre; hinge at top connecting it with remains of another bar.

Chains

1. PUM RG 8235; Rayy; unp. Bronze; cast in sections; total lg. of surviving pieces c. 30.0. Five sections of openwork chain, consisting of plaques of varying shapes enclosing stylised blossom designs and held together by links.
2. PUM RG 8525; Rayy; unp. Bronze; lg. of each unit 1.7. Seven units, alternating round wire and flat wire shaped into figure S and sometimes soldered.

3. PUM RG 7845; Rayy; unp. Bronze; w. c. 0.5. Two short lengths of chain each link consisting of a turn and a half of bronze wire.

4. Louvre; probably Susa; unp. Bronze; lg. 9.0. Two S-shaped links attached to remains of iron ring at one end and an "omega" shaped bronze piece at other.

Chair bosses

1. PUM RF 2990; Rayy; unp. Bronze; cast; pierced and incised; d. 6.7. Spherical with hole at top and bottom. Design around of four interlacing circles, each enclosing four converging fleur-de-lys in inverted heart-shaped borders. (Fig. 79)

Covers

1. ex Heeramanek Galleries; n.p.; Grabar 1959 no.27. Bronze; cast; pierced and incised; h. 27.3; d. 13.1. Octagonal lower part with flat rim at base and rounded top; above it two spheres topped by a crested bird with erect tail. Palmette and interlace piercing throughout; incised geometric patterns on bird. (Fig. 79)

Door fittings A : plates

1. BM 1969.9-24.5; n.p.; unp. Bronze; cast; lg. 15.6. Door plate with raised central bar, one round flat end, and one trapezium-shaped flat end with stylised bird-head profiles protruding from sides; two rivet holes. (Fig. 79)

2. As 1.
3. As 1.
4. BM 1969.9-24.5; n.p.; unp. Bronze; cast; lg. 17.0. Door plate with raised central bar, and bar protruding from flat disc at one end; other end flat and pear-shaped with projecting bird-head profiles; two rivet holes. (Fig. 79)
5. As 4, but half missing.
6. BM 1969.9-24.5; n.p.; unp. Bronze; cast; lg. 15.8. Door plate with flat central lobed area with ring at one end, and raised bar at other leading to ornamented square flat area with central hole. (Fig. 79)
7. BM 1969.9-24.5; n.p.; unp. Bronze; cast; lg. 18.7. Door plate with flat central lobed area with double ring at one end, and raised bar at other leading to pear-shaped flat area; two rivet holes. (Fig. 79)
8. Agra, Red Fort; Ghazna; Pope 1938 pl.1462. Bronze; dimensions unknown. Set of 64 brackets with long flat bodies and double pear-shaped ends decorated with projections often resembling bird-heads in profile; four rivets in each bracket.

Door fittings B : pins

1. Dahlem I 5967; n.p.; unp. Bronze; ring missing; lg. 14.8.

Lion head with hole through it; baluster neck; round pin.

2. V&A M.48-1959; n.p.; unp. Bronze; cast; lg. 16.8. Form as

1, with ring through hole in head; four-sided pin. (Fig.80)

Finials A : cocks

1. Dahlem I 6/60; n.p.; Berlin-Dahlem 1971 no.366. Bronze; cast; pierced and incised; h. 8.5; lg. 8.5. Cock-like bird with round head, downward curving beak ending in a disc, and comb; rounded chest; pointed tail; wings joining above back surmounted by large palmette; boss under body. Pierced chest; palmette on each wing.

2. Frankfurt private colln.; n.p.; Stuttgart Linden-Museum 1972 no.152. Bronze; cast; h. 8.3; lg. 7.2. Form as 1 but with single leg, tiny almond-shaped wings, and upward curving tail with deer's head end.

3. Dahlem I 27/59; n.p.; unp. Bronze; cast; incised; h. 17.0; d. 14.0. Form as 1 but large comb and beak, longer tail, and two legs; hole in belly, chest and between wings. On chest and tail roundel with knot pattern.

4. Hamburg; n.p.; unp. Bronze; cast; pierced and incised; h. 10.0. Form as 3, but smaller comb and beak; hole underneath tail. Piercing on neck, wing ends, chest and back; incised square on tail.

5. ex Heeramanek Galleries; n.p.; Grabar 1959 no.56. Bronze; incised; h. 19.7; lg. 15.2. Form as 3 with wing tips surmounted by large palmette. Incised vegetal designs. (Fig. 80)

Finials B : other bird forms

1. Kābul 58.2.88; probably Ghazna; Mortimer Rice and Rowland 1971 pl.204. Bronze; cast; h. 6.5. Standing bird with small tail and flat head; bulbous eye ring. Undecorated.

2. MMA 39.40.49; Nīshāpūr; unp. Bronze; cast; incised and inlaid with silver; lg. 7.1; h. 2.4. Bird with square head, folded wings, and flat splayed tail. Decorated with palmettes and inlaid silver discs. (Fig. 80)

3. Dahlem I 3648; n.p.; Berlin-Dahlem 1971 no.371. Bronze; cast; incised; h. 4.7; lg. 6.5. Harpie with projecting wings and erect tail.

4. Private colln.; n.p.; Rosen-Ayalon 1972 fig.33. Bronze; cast; pierced and incised; dimensions unknown. Bird on conical foot with fanned tail.

5. MMA 40.170.270; Nīshāpūr; unp. Bronze; cast; incised; tail missing; h. 3.5; lg. c. 5.0. Bird with parrot beak on slightly rounded foot. (Fig. 80)

6. Hamburg; n.p.; unp. Bronze; cast; pierced; h. 10.2. Bird with long pierced neck, large hollow eye, and curved beak ending in a small boss; two pointed wings joining over back; two legs; downcurving tail; hole underneath tail. Some piercing on chest, back and wing tips.

Finials C : others

1. PUM RG 7709; Rayy; unp. Bronze; cast; h. 5.2; d. 2.5.
Conical with six faces; on broken pin. (Fig.80)
2. PUM RGQ 8624; Rayy; unp. Bronze; cast; h. 2.8. Three ribs forming hollow oval on a hollow neck.
3. Louvre; probably Susa; unp. Bronze; cast; h. 4.3. Lion with solid flat base.
4. PUM RG 8555; Rayy; unp. Bronze; cast; h. 5.2; w. 3.5.
Bull's head with cylindrical hollow neck fitting. (Fig. 81)
5. Whereabouts unknown; from Sār u tār (Sīstān); Stein 1928 II p.942, III pl.116 Sar 03. Bronze; h. 2.6. Spherical knob on splayed base.
6. BM 1909.2-16.56; Qazvīn; unp. Bronze; cast; h. 4.0. Stylised animal/bird form on splayed foot.
7. BM 1966.7-28.1; n.p.; unp. Bronze; cast; incised; h. 13.8; lg. 11.5. Ibex; holes in belly and ears. Stem pattern on back and sides; quarter bows in roundel on chest; ring-pattern on head, ears, and horns. (Fig. 81)

Handles A : horizontal

1. MMA 40.170.244; Nīshāpūr; unp. Bronze; cast; lg. 14.5;
d. 1.5. Rectangular horizontal handle; eight-sided with two pear-shaped plates, each with three protruding pins behind.
2. Tehrān; Nīshāpūr Sabz Pushān; unp. Bronze; cast; lg. 17.0;
d. 2.8. Rounded rectangular form with two pear-shaped plates and central knop. (Fig. 81)
3. Louvre; probably Susa; unp. Bronze; cast; lg. 10.5. Form as 2 with large central knop.
4. Louvre; probably Susa; unp. Bronze; cast; lg. 12.3. Form as 3.
5. Copenhagen 2/1964; n.p.; Leth 1975 p.67. Bronze; cast; incised; h. 11.5. In the form of a human figure, the feet forming pear-shaped plates, the knees the curving handle, the body, arms and head protruding upward. Incised scrollwork on back.

Handles B : drop

1. Louvre; probably Susa; unp. Bronze; cast; lg. 11.6. Approximately semi-circular with pivot pin at either end. (Fig. 82)
2. Louvre; probably Susa; unp. Bronze; cast; lg. 11.3. Rectangular with pivot pin at either end.

3. Louvre; probably Susa; unp. Bronze; cast; lg. 7.4. Oval ring hinged to central round-headed rivet.

Handles C : ring

1. PUM RG 7504; Rayy; unp. Bronze; cast; lg. 4.8; h. 3.4. Ring handle with stylised bird-head protruding from lower rear. (Fig. 82)
2. PUM Rei 7338; Rayy; unp. Bronze; cast; lg. 3.8; h. 5.6. Plain ring with tall, diamond-shaped plate.
3. PUM I₂-656; Rayy; unp. Bronze; cast; lg. 4.8. Ring handle with beak protruding from lower rear; splayed thumb-plate.

Handles D : oval

1. PUM RE 8101; Rayy; unp. Bronze; cast; h. 13.0; d. 2.8. Tall oval handle with four faces; half bands at corners; pointed finial at base; bird finial at top. (Fig. 82)

Handles E : open, curved

1. Tehrān; Nīshāpūr Tapa Madrasa; unp. Bronze; cast; upper terminal missing; h. 13.0. Open, curved handle; pointed protrusion below shoulder; double-cone finial. (Fig. 82)
2. PUM RG 8106; Rayy; unp. Bronze; cast; h. 23.8. Form similar to 1; flat with oval terminals; a step above upper terminal. Geometrically incised finial; geometric pattern on lower handle.

3. PUM RF 3174; Rayy; unp. Bronze; cast; h. 13.0. Form similar to 1; slightly rounded; two ridges on central part; bulbous finial.
4. PUM RE 3422; Rayy; unp. Bronze; cast; part missing; h. 10.0. Form similar to 1, but more rounded; very stylised bird finial.
5. Louvre; probably Susa; unp. Bronze; cast; h. 15.1. Form similar to 1; rounded; heavy terminals; double-cone finial.
6. Louvre; probably Susa; unp. Bronze; cast; h. 8.6. T-shaped with strongly bowed body; forked top; oval lower terminal; remains of rivettes in terminal plates.

Handles F : double-hooked

1. Ashmolean; Sīrāf S.72/73, 2742; unp. Quaternary alloy; cast; part missing; original lg. c. 8.0. Double-hooked handle; flat centre with wire loop finial and ring; conical terminal. (Analysis Table 21 no. 51.)
2. Ashmolean; Sīrāf S.68/69, 318; unp. Bronze; cast; lg. 10.0. Form as 1; narrow with four faces; plain. (Fig. 82)

Handles G : flat

1. PUM RCH 859; Rayy; unp. Bronze; cast; incised; h. 4.1. Pear-shaped plate; break line at base. Incised scrollwork.
2. PUM RC 1084; Rayy; unp. Bronze; cast; incised; h. 2.8. Lobed pear-shaped plate; break line at base. Incised border and remains of naskhi inscription.

3. Ashmolean; Sīrāf S.67/68, 1305; unp. Bronze; cast; incised;
h. 3.8. Irregularly-lobed, pear-shaped plate; break line at base.
Four dot and circle motifs. (Fig. 83)

4. Louvre G.S.350; Susa; unp. Bronze; cast; incised; h. 4.3
Approximately rectangular plate with lobed top and protruding bird-
head profiles at sides; break line at base; base end curved. Four
holes and numerous dot and circle motifs.

5. PUM RH 6005; Rayy; unp. Bronze; cast; h. 5.7. Irregularly-
lobed, pear-shaped plate; break line at base. Undecorated.

Handles H : lion

1. Kābul 53.2.89; Ghazna; Mortimer Rice and Rowland 1971 pl.202-3.
Bronze; cast; h. 5.8. In form of leaping lion, its forepaws originally
attached to an object. (Fig. 83)

2. Louvre G.S.103/c; Susa; unp. Bronze; cast; parts missing;
lg. 9.0. As 1, but only body and head intact.

Handles J : rectangular mirror-type

1. MMA 40.170.252; Nīshāpūr, Sabz Pushān; unp. Bronze; gilded;
cast; h. 3.3; lg. 8.3. Rectangular handle; two flat feet; stylised
animal head protruding from each corner with tooth-like protrusion
behind. (Fig. 83)

Handles K : long-shafted

1. BM 96.5-15.2; n.p.; Rice 1958 p.236 fig.9 pl.3c. Bronze; cast; incised and inlaid with silver; lg. 16.0. Long square shaft with flat plate at one end and spherical-bodied unit with pomegranate top at other end. On three sides kufic inscriptions in cartouches between roundels, two good wishes, the third giving name of maker Sā'id al-Faqīh al-Mar (?) or al-Maw (?). (Fig. 83)
2. Tehrān; Nīshāpūr; unp. Bronze; pierced; one end missing; lg. 27.5. Long octagonal shaft with flat plate at one end. Decorated with interlace pattern and piercing.

Handles L : unidentified fragments

1. Ashmolean; Sīrāf 320; unp. Bronze; cast; lg. 6.0. Rounded with bulge.
2. Ashmolean; Sīrāf 1269; unp. Bronze; cast; h. 3.5. Curved with lobed profile and round rivet terminal.
3. Ashmolean; Sīrāf 1281; unp. Bronze; cast; incised; h. 5.5. Curved. Incised geometric pattern.
4. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 p.264 fig.90e around. Bronze; h. c. 5.0. Curved.
5. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 p.264 fig.90e centre. Bronze; h. c. 3.2. Curved.

6. Ashmolean 1974.24; n.p.; unp. Quaternary alloy; cast; h. 5.3. straight shaft with two hooks with bird finials on one side and a small hook on other. (Analysis Table 21 no.41.) (Fig. 83)

Hooks A : wall-hooks

1. Louvre; probably Susa; unp. Bronze; cast; h. 7.1. Slightly flaring arm with semi-circular hook ending in pointed head; faceted bird finial with flat tail. (Fig. 84)

2. - 8. As 1.

9. Louvre; probably Susa; unp. Bronze; cast; h. 6.5. Form as 1, but finial bird with erect tail.

10. - 11. As 9, but h. 7.3.

12. Louvre; probably Susa; unp. Bronze; cast; h. 7.4. Form as 1, but with pear-shaped finial.

13. - 16. As 12.

17. - 18. As 12, but no pointed head on hook.

19. Louvre; probably Susa; unp. Bronze; cast; h. 8.6. Form as 1, but with three-lobed finial on curved stem.

20. MMA 40.170.279; Nīshāpūr Sabz Pushān; unp. Bronze; cast; arm and hook broken; h. 6.5. Form as 1, but finial in form of slightly faceted bird with flat body and tall curved neck.

Hooks B : suspension hooks

1. PUM RG 8236b; Rayy; unp. Bronze; cast; eye broken; lg. 11.5.
Crude hook with eye at top.

2. Louvre; probably Susa; unp. Bronze; cast; lg. of hook
10.2. Hook attached to a length of chain, consisting of flat openwork
rectangular plates with eyes at either end held together by links.

3. Louvre; probably Susa; unp. Bronze; cast; lg. of hook 11.8.
Hook attached to a length of chain, consisting of flat openwork round-
ended plates with eyes at either end held together by links. (Fig. 84)

Keys

1. PUM RH 5459; Rayy; unp. Bronze; h. 5.3. Key with flat lower
half terminating in stirrup-shaped piece with central hole; flat upper
half at right angles to lower half with small hole in top.

2. MMA 39.40.134; Nīshāpūr Qanāt Tapa; unp. Bronze; cast;
h. 7.8. Key with flat lower half terminating in flat disc with two
square holes in it and square indentation; square-section upper half
with ring attached through hole. Upper half and ring with geometric
patterns. (Fig. 84)

Lids A : domical

1. PUM RCH 86; Rayy; unp. Bronze; cast; d. 5.5; h. 1.2.
Shallow domed centre; flat rim. Undecorated.

2. Ashmolean; Sīrāf S.69/70, 177; unp. Bronze; cast;
d. 6.0; h. 1.2. Form as 1, but with central hole.
3. Ashmolean; Sīrāf 4890; unp. Bronze; cast; broken; original
d. c. 6.0; h. c. 2.0. Domed body; small flat rim; conical centre
with hole. Undecorated.
4. Whereabouts unknown; Nād-‘Alī (Sīstān); Stein 1928 II p.940,
III pl.116 Nād Ali Ol4. Bronze; one point or hinge missing; d. 2.5.
Domed; five points protruding from edge; central (?) loop. Undecorated.
(Fig. 85)
5. PUM RCh 736; Rayy; unp. Bronze; cast; d. 4.3; h. 2.8. Domed
but with cusps forming six-pointed star; inset hinge and small nick
at opposite side; bulbous finial. (Fig. 85)
6. Tehrān; Nīshāpūr Sabz Pushān; unp. Bronze; finial missing;
d. 10.4. Octagonal; cusped domed body in form of 8-petalled rosette.
7. Tehrān; Nīshāpūr Tapa Madrasa W 15 latrine N. corner; unp.
Bronze; d. 8.7. Cusped domed body in form of 8-petalled rosette; tall
cylindrical lower fitting. (Fig. 85)
8. PUM RG 8159; Rayy; unp. Bronze; beaten; d. 7.9; h. 5.0.
Cusped domed body; wire handle in central hole. Undecorated.
9. MMA 39.40.140; Nīshāpūr Tapa Madrasa; unp. Bronze; cast;
incised; h. 3.0; lg. 4.6. Slightly oval form; conical body on
vertical edge; flat rim; inset hinge; plain cylindrical finial.
Some incised work. (Fig. 85)

10. Tehrān; Nīshāpūr; unp. As 9, but slightly smaller.

11. Whereabouts unknown; Sār u tār (Sīstān); Stein 1928 II p.942, III pl.116 Sar O2. Bronze; h. 3.5; d. 2.0. Form as 9 but with bird finial.

12. MMA 40.170.276; Nīshāpūr; unp. Bronze; cast; h. 6.1; d. 5.3. In the form of two intersecting arches; rosette on each shoulder; finial in form of bird with folded wings. (Fig. 86)

Lids B : sunken

1. V&A M.872-1927; n.p.; unp. Bronze; beaten lid; cast finial; lid incised and inlaid with silver; h. 7.8; d. 11.0. Flat rim; sunken body; domed centre; finial in form of bird with erect tail, and protruding animal heads below. On rim interlace pattern; on body human-headed naskhi inscription of good wishes; on domed centre knotted vegetal design. (Fig. 86)

2. de Unger colln.; n.p.; unp. Bronze; incised and inlaid with copper and silver; h. 4.5; d. 9.8. Form as 1. On body naskhi inscription of good wishes.

3. de Unger colln.; n.p.; unp. Bronze; incised and inlaid with silver; h. 4.5; d. 10.0. Form as 1. On body naskhi inscription of good wishes; on centre palmette design.

4. Whereabouts unknown; Nād-'Alī (Sīstān): Stein 1928 II p.940, III pl.116 Nad Ali O15. Bronze; d. 2.5; h. 0.5. Flat rim; sunken body; knob in centre. Undecorated.

Locks

1. PUM Rei 4127; Rayy; unp. Bronze; lg. 10.3; w. 1.7. Hollow cylinder with long arm attached to one side and protruding at opposite end. (Fig. 86)
2. Ashmolean 1974.25; n.p.; unp. Quaternary alloy; cast; lg. 5.7; h. 4.0. One half of lock in form of lion. Central area decorated with naskhi inscription of good wishes. (Analysis Table 21 no. 42.) (Fig. 86)
3. V&A M.19.1971; n.p.; unp. Bronze; cast in two halves; lg. 6.5; h. 5.1. Lock in form of lion with double hole at rear, single side-ways slit in front and in right shoulder, and hole behind neck. On side vegetal design.

Rings A : circular section

1. PUM CT 107; Rayy; unp. Bronze; d. 3.7.
2. PUM RCH 1664; Rayy; unp. Bronze; broken; d. 1.5.
3. PUM RCH 1947; Rayy; unp. Bronze; broken; d. 1.9.
4. PUM RCH 1677; Rayy; unp. Bronze; attached to iron nail; d. 5.3.
5. PUM Rei 3564; Rayy; unp. Bronze; d. 2.5.
6. PUM RH 6830; Rayy; unp. Bronze; d. 5.0.

7. As 6, d. 2.7.
8. As 4, d. 2.6.
9. PUM I₂-210; Rayy; unp. Bronze; d. 4.1.
10. PUM I₂-156; Rayy; unp. Bronze; d. 2.9.
11. Ashmolean; Sīrāf S.69/70, A 7002; unp. Bronze; d. 1.1.
(Fig. 87)
12. Ashmolean; Sīrāf 5402; unp. Bronze; d. 2.1.
13. As 12.
14. As 12.
15. Ashmolean; Sīrāf S.69/70, 3134; unp. Bronze; d. 2.1.
16. MMA; Nīshāpūr; unp. Bronze; attached to bronze nail;
d. 2.3.
17. -(?) Ashmolean; Sīrāf; unp. Bronze. Numerous fragments up
to d. 3.5.

Rings B : triangular section

1. PUM RH 5815; Rayy; unp. Bronze; d. 2.5.

2. Ashmolean; Sīrāf 6029; unp. Bronze; d. 2.0.

3. MMA 40.170.203; Nīshāpūr; unp. Bronze; d. 2.2. Dot and circle pattern on two faces. (Fig. 87)

Spouts

1. Ashmolean; Sīrāf S.68/69, 2968; unp. Lead bronze; cast; 9.1 x 8.9. Central channel; flat sides. Sides decorated with dot and circle ornament. (Fig. 87)

Support fittings A : zoomorphic 1. complete animals

1. Dahlem I 48/63; n.p.; unp. Bronze; hollow cast; lg. 14.0. Lion standing on back legs, its front legs holding bayonet fixing. Undecorated.

2. Hermitage; n.p.; Sarre and Martin 1912 pl.136 no.2994. Bronze; cast; incised; centre portion of saddle replacement; h. 36.0; lg. 41.0. Figure of a horse with saddle and trappings, its tail ending in disc and bayonet joint. Chest decorated with lute players in interlaced roundels, neck with figures amidst interlaced roundels, haunches with animals and lute players, all against ground pattern of stems and blossoms; on saddle four-petal rosette pattern with stem and blossom border; dotted ground throughout. (Fig. 88)

Support fittings A : zoomorphic 2. animal forequarters a. with bayonet fixing

1. Brooklyn L.63.9.68; n.p.; unp. Bronze; cast; incised; h. 18.2. Forequarters of a gazelle with bayonet fixing protruding from back; hollow. Lower chest decorated with knot pattern in roundel, forehead with palmette, and ears with stem pattern. (Fig. 88)

2. Dahlem I 1160; n.p.; unp. Bronze; cast; incised; h. 17.0. Form as 1. Knot pattern in roundel on chest.

3. Brooklyn L.63.9.67; n.p.; unp. Bronze; cast; incised; h. 15.9. Form as 1, but without horns. Crude diamond and stem motif in roundel on chest.

Support fittings A : zoomorphic 2. animal forequarters b. with flat projecting ledge

1. Tehrān; Nīshāpūr; unp. Bronze; cast; h. 6.0. Forequarters of a lion with flat projecting ledge at rear; hollow back.

2. Hamburg; n.p.; unp. Bronze; solid cast; h. c. 7.0. Forequarters of an animal with stylised human face and flat projecting ledge at rear. (Fig. 88)

3. Dahlem I 34/61; n.p.; unp. Bronze; cast; h. 5.8. Forequarters of a harpie with splayed wings, two rivet holes, and flat projecting ledge at rear; hollow back.

4. Dahlem I 7/55; n.p.; unp. Bronze; cast; h. 4.3. Forequarters of a harpie with splayed wings and flat projecting ledge at rear; hollow back.

5. BM 1921.2-20.33; n.p.; unp. Bronze; cast; h. 5.3. Forequarters of lion, almost flat in profile, with flat projecting ledge at rear.

6. East Berlin I 4531; n.p.; unp. Bronze; cast; h. c. 5.0. Forequarters of lion with flat projection at rear, ending in a point.

7. de Unger colln.; n.p.; unp. Bronze; solid cast; h. 8.3. Form as 6.

Support fittings A : zoomorphic 2. animal forequarters c. with concave projection

1. MMA 40.170.258; Nīshāpūr; unp. Bronze; cast; h. 6.3. Forequarters of a lion with concave projection at rear; hollow back.

2. Tehrān; Nīshāpūr; unp. Bronze; incised; h. 20.0. Forequarters of lion with rounded projection at rear. Stem and leaf design on leg tops.

3. Hamburg; n.p.; unp. Bronze; cast; pierced; h. c. 5.5. Forequarters of lion with pierced eyes, mouth and chest, and concave projection at rear; hollow back. (Fig. 88)

Support fittings A : zoomorphic 2. animal forequarters d. with other fixings

1. East Berlin I 6961; n.p.; unp. Bronze; solid cast; lg. c. 9.0. Stylised forequarters of a lion with large head and ball feet; bar ending in triangular fitting projecting from rear. (Fig. 89)
2. Dahlem I 4359; n.p.; unp. Bronze; cast in two halves; lg. of base 8.0. Stylised forequarters of lion; oval form; sloping slit in rear half of either side. (Fig. 89)
3. Dahlem I 989; n.p.; unp. Bronze; cast; h. 10.5. Forequarters of bird on ball foot once attached at the rear to larger object. (Fig. 89)
4. Ashmolean 1974.23; n.p.; unp. Quaternary alloy; cast; lg. 6.9; h. 5.3. Forequarters of lion with curved pin with triangular end projecting from rear. (Analysis Table 21 no. 40.)

Support fittings A : zoomorphic 2. animal forequarters e. nature of fixing uncertain

1. Tehrān; Nīshāpūr; unp. Bronze; h. 6.0. Forequarters of a lion.
2. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II opp. p.72. Bronze; dimensions unknown. Forequarters of a crowned harpie.

3. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II opp. p.72.

Bronze; dimensions unknown. Forequarters of a harpie.

4. ex d'Allemagne colln.; n.p.; d'Allemagne 1911 II opp. p.72.

Bronze; upper part missing; dimensions unknown. Animal forequarters.

5. de Unger colln.; n.p.; unp. Bronze; pierced and incised;

faience eyes; h. 19.9. Forequarters of a lion. Pierced strap work on chest; incised vegetal designs on ears.

Support fittings A : zoomorphic 3. animal legs

1. Louvre; probably Susa; unp. Bronze; solid cast; lg. 9.3;

h. 6.3. Three-toed foot attached to leg with hole through knee; point on knee top; fan-shaped upper end. (Fig. 89)

2. PUM I₂-273; Rayy; unp. Bronze; cast; h. 5.5. Stylised animal foot and leg, the top in the form of a lobed medallion originally attached to object at rear. (Fig. 90)

3. PUM RCH 728; Rayy; unp. Bronze; cast; h. 5.0. Stylised animal foot and leg with straight hollow back.

4. PUM RH 5806; Rayy; unp. Bronze; cast; h. 3.0. Stylised animal foot and leg with slight facetting. (Fig. 90)

5. Louvre GS 290; Susa; unp. Bronze; cast; mould joint visible; h. 3.5. Form similar to 4, but no facetting.

6. MMA 40.170.268; Nīshapūr; unp. Bronze; cast; h. 9.6.

Stylised animal or human leg with heavy foot decorated with two small bosses; leg hollow-backed; projections either side of knee; remains of circular object attached at top. (Fig. 90)

Support fittings B : non-representational 1. ball feet

1. PUM RG 7447; Rayy; unp. Bronze; solid cast; h. 5.2; d. 3.9.

Ball foot; five bands around; flat area above. (Fig. 90)

2. Louvre G.S.364/MAO.S.136; Susa; unp. Bronze; hollow cast;

h. 8.9; d. 4.1. Plain ball foot; waisted leg; right angled fitting area in upper part.

3. Louvre G.S.269/MAO.S.140; Susa; unp. Bronze; solid cast;

h. 9.3. Plain ball foot; double angled leg; open-angled fitting area in upper part.

Support fittings B : non-representational 2. baluster legs a. for thrones

1. Rabenou colln.; n.p.; Pope 1938 pl.1294. Bronze; incised and pierced; h. c. 51.0. Throne leg; pedestal base with slightly concave sides; above it five units with convex sides alternating with five units with concave sides. On convex sides alternately pierced kufic inscription and animals against vegetal scrolls, on concave sides pierced strapwork; on base two bands of strapwork with pierced kufic inscription against vegetal scroll between; inscriptions apparently good wishes. (Fig. 91)

Support fittings B : non-representational 2. baluster legs b. for objects

1. PUM RG.3263; Rayy; unp. Bronze; cast; h. 4.5; d. 0.6.

Baluster leg with flattened area of half-thickness off-centre.

2. PUM RH 6548; Rayy; unp. Bronze; cast; h. 4.3; d. 0.6.

Form as 1.

3. MMA 40.170.269; Nīshāpūr Sabz Pushān; unp. Bronze; cast;

h. 11.2; d. 1.8. Form as 1, but more elaborate. (Fig. 91)

4. Louvre; probably Susa; unp. Bronze; cast; h. 13.0; d. 2.0.

Form similar to 3.

Support fittings B : non-representational 3. circular bases

1. MMA 37.40.31; Nīshāpūr South Horn; unp. Bronze; cast; h. 2.3;

d. 8.1. Eight-lobed domical base with slightly rounded protruding top. Undecorated. (Fig. 91)

2. BM 1934.4-17.8; n.p.; unp. Bronze; cast; incised; top addition later; h. 4.6; d. 18.4. Form as 1. Each lobe decorated with stem and circle motif.

Taps

1. Dahlem I 1/55; n.p.; unp. Bronze; cast; h. 29.0; lg. 30.0.

Slightly flaring pipe; lion-head spout; central cruciform unit; bird handle with erect tail.

2. Dahlem I 2182; n.p.; ["]Kühnel 1925 fig.99, Berlin-Dahlem 1971 no.237. Bronze; cast; h. 10.5; lg. 15.0. Pipe; bull-head spout; lion handle.
3. Louvre; n.p.; unp. Bronze; cast; pipe missing; h. 7.5; lg. 7.0. Bull-head spout on long neck; waisted central unit; lion handle.
4. Louvre; n.p.; unp. Bronze; cast; lg. c. 55.0. Long pipe; lion-head spout; bird handle.
5. ex Heeramaneck Galleries; n.p.; Grabar 1959 no.45. Bronze; h. 28.5; lg. 30.0. Pipe with ring around end; cruciform central unit; lion-head spout; bird handle with erect tail. (Fig. 91)

VII Unidentified Objects

Unidentified objects A

1. Cairo; n.p.; Pope 1938 pl.1306B. Bronze; incised; front paws missing; lg. 13.5. In the form of a reclining lion, its face turned to left. Back decorated with naskhi inscription of good wishes against scrolling stem; on sides floral medallion, and roundels and a cartouche with floral motifs; on chest inscription in cartouche; scalloped double collar. (Fig. 92)

2. Cairo; n.p.; Pope 1938 pl.1306C. Bronze; incised; one front paw missing; lg. 13.5. Form as 1. Back decorated with pair of harpies and rosette; on side kufic inscription of good wishes in cartouche, and harpie in floral medallion; on chest roundel; ropework collar.

3. Frankfurt private colln.; n.p.; Stuttgart Linden Museum 1972 no.133. Bronze; cast; incised; lg. 18.0; h. 8.5. Form as 1. Back decorated with scrolling stem in cartouche; on rump scrolling stem in medallion; on side kufic inscription in cartouche, three roundels with vegetal motif, and vegetal design in cartouche.

4. Louvre AA 269; n.p.; unp. Bronze; cast; incised and inlaid with copper; lg. c. 13.0. Form as 1, but oval hole in back, and cartouche-shaped opening in base; pierced eyes, mouth, nose and ears. Decorated on chest with vegetal design between two birds; on sides knot pattern and vase motif; on back kufic inscription in cartouche and medallions with vegetal motifs; on rump ducks in roundels.

5. Louvre 7800; n.p.; Melikian-Chirvani 1973 p.31. Bronze; cast in two pieces; lg. 16.0. Form as 1, but looking right; with upper front legs in relief; holes pierced through ears. On reverse side of body cartouche with kufic inscription and two medallions with vegetal designs; on front side vegetal design in a cartouche, vegetal motif and rosettes; on shoulder and leg vegetal motif; on chest harpie.

Unidentified objects B

1. ex Martin colln.; Tashkent; Martin 1902 pl.22a. Bronze; incised; dimensions unknown. Rectangular base with sloping sides; on top reclining lion with head facing left. Lion decorated with vegetal motifs; on top of base naskhi inscription and roundels; on sides of base band of running animals against scrolling stems.

2. de Unger colln.; n.p.; unp. Bronze; cast; incised; lg. 15.7; h. 5.8. Rectangular base with sloping side; on top fish with protruding pierced loop on back; hole pierced through each corner of base top; base plate with central hole. On base plate knot pattern and remains of circle of kufic inscription; on sides zodiacal signs in interlacing roundels; on base top kufic inscriptions within interlace borders; on fish scale pattern; inscription good wishes. (Fig. 92)

Unidentified objects C

1. Louvre AA 100; Ghazna; Melikian-Chirvani 1973 p.41. Brass; beaten; repoussé decoration; incised and punched; d. 20.35. Circular disc; large central hemispherical boss with hole in top. On

flat part naskhi inscription of good wishes against scrolling stem between two bands of facette pattern; on boss four lions walking left against a punched ground; central hole surrounded by facette pattern border. (Analysis Table 21 no. 25.) (Fig. 92)

2. V&A M.15-1971; n.p.; unp. Bronze; beaten; repoussé decoration; incised and punched; d. 26.0; h. 6.8. Form as 1, but with flat rim. On rim "v" and dot design; on body naskhi inscription of good wishes divided by four florally-decorated bosses with dotted edges; borders of dots; on boss four hares running left; central hole surrounded by facette pattern border.

3. Kābul; Melikian-Chirvani 1973 p.41. Details unknown.

Unidentified objects D

1. MMA 40.170.116; Nīshāpūr Tapa Madrasa; unp. Bronze; relief cast; probably once inlaid; h. 4.5; d. 7.4. Cylindrical object with slightly splayed base; plain upper edge. Outside decorated with kufic inscription in the name of mawlā al-amīr ‘Abdallāh ibn al-Ḥasan Pārsī backed by scrolling stems. (Fig. 92)

Unidentified objects E

1. de Unger colln.; n.p.; unp. Bronze; cast; incised and inlaid with silver; h. 11.2; d. 3.8. Octagonal; circular rim at base; above it on one side pinhole; body widening towards high shoulder then narrowing to knob finial; on one side downward-curving projection with end in form of "v"; main part hollow. Alternate sides decorated with inscriptions and animals. (Fig. 93)

Unidentified objects F

1. Boston 65.1286; n.p.; unp. Bronze; cast in five pieces; pierced and incised; h. c. 95.0. Base section with convex rounded body above large step foot, and with narrow neck at top; second section pear-shaped with flaring foot; third section pear-shaped with spherical top; fourth section similar to third; finial in form of two crossed crescents meeting at top, with projecting bird-heads on lower sides. On base section pierced interlace and birds in roundels; on second section pierced palmette pattern, birds in roundels and kufic inscription; on third section pierced interlace and palmettes and incised interlace band; on fourth section pierced interlace. (Fig. 93)

VIII Lead ObjectsLead objects A : Utility objects

1. MMA 37.40.36; Nīshāpūr; unp. Lead; d. 18.8; h. 8.5. Bowl with flaring rounded upper body and flaring mouth. Undecorated.
2. Dahlem I 4160; n.p.; unp. Lead; d. 5.6; h. 0.5. Dish; flat bottom; wide flat rim. Central rosette; rim decorated with circles, vegetal designs, and baraka in kufic.
3. MMA 48.101.15; Nīshāpūr; unp. Lead; h. 1.8; d. 3.1. Miniature dish; hexagonal; three legs and everted rim. Dots and lines on body.
4. PUM RH 4592; Rayy; unp. Lead; lg. 4.2; w. 4.0. Cosmetic mortar with hemispherical body, spout and remains of two handles; hole at one corner. Dotted rim ornament.
5. PUM Rei 4031; Rayy; unp. Lead; part of blade missing; lg. 9.5. Spatula with circular blade.
6. Kābul; Maimāna; Scerrato 1964 p.705 no.31 and fig.50. Lead; d. 8.0. Dish with flat base, vertical sides, and wide rim. Incised circles on base; scale pattern and medallions on rim. (Fig. 93)

Lead objects B : ornaments

1. PUM RH 6553; Rayy; unp. Lead; d. 3.6. Circular pendant with rounded central ridge and two holes. Undecorated.

2. MMA 40.170.260; Nīshāpūr Tapa Madrasa; unp. Lead; cast;
d. 3.2. Circular pendant with two suspension eyes at top; blue glass setting in centre. Dot and circle ornament around.
3. MMA 40.170.246; Nīshāpūr Tapa Madrasa; unp. Lead; d. 1.9. Circular pendant with suspension eye at top. On one side pseudo-Arabic inscription, on the other a lion, scorpion and stars plus another such inscription. (Fig. 93)
4. PUM Rei 4082; Rayy; unp. Lead; lg. 3.4; h. 3.3 Flat pendant in form of horseman. (Fig. 94)
5. PUM RGQ 8626; Rayy; unp. Lead; lg. 2.1; h. 1.2. Belt ornament. Remains of kufic inscription on front and two projecting pins in hollow back.
6. PUM RH 6190; Rayy; unp. Lead; h. 5.0. Finial in form of closed crescent attached to hollow conical socket. Decorated with dot and circle ornament. (Fig. 94)
7. Whereabouts unknown; Shamsīr Ghar; Dupree 1958 p.292. Pewter; cast; fragment only; lg. 3.2. Part of shank of clasp, pin or fibula. (Analysis Table 21 no. 67.)

Lead objects C : weights

1. MMA 40.170.250; Nīshāpūr Villaga Tapa; unp. Lead; d. 2.4. Flat disc; central hole. (Fig. 94)

2. MMA 40.170.247; Nīshāpūr Qanāt Tapa; unp. Lead; d. 2.3.

Flat disc with rim; central hole.

3. MMA 40.170.249; Nīshāpūr Villaga Tapa; unp. Lead; d. 2.0.

Flat disc; tall central hole.

4. MMA 40.170.248; Nīshāpūr Tapa Madrasa; unp. Lead; h. 1.2;

d. 2.4. Conical with central hole; four vertical ribs with remains of ornament between. (Fig. 94)

5. PUM RGQ 2004; Rayy; unp. Lead; d. 2.1. Flat disc with knobs around edge; central hole.

THE IRONSMITHS' REPERTOIREI WeaponsArrow-heads

1. Ashmolean; Sīrāf S.70/1, 2321; unp. Iron; lg. with broken tang 3.5, w. 1.5. Three thin flanges protruding from central spine.
2. Ashmolean; Sīrāf S.70/1, 358; unp. Iron; badly corroded; lg. with broken tang 4.0, w. 1.2. Apparently of rounded form. (Fig. 95)
3. Ashmolean; Sīrāf S.69/70, 4968; unp. Iron; lg. with tang 7.7, w. 1.5. Three thin flanges projecting from stout central spine. (Fig. 95)
4. Ashmolean; Sīrāf S.68/9, 2566; unp. Iron; badly corroded; lg. 12.0, w. 6.0, th. 2.5. Apparently of stout, rounded form.
5. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 pp.260-1, pl.32i. Iron; lg. 9.6. Forked. (Fig. 95)
6. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 pp.261-2, pl.32j. Iron; lg. 7.4, w. 0.7. Hollow-sided; three-bladed; round-section tang with studs.
7. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 pp.261-2, pl.32m. Iron; broken; lg. 3.5, w. 1.3. Hollow-sided; three-bladed.
8. As 5.
- 9.- 12. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 pp.261-2. Fragmentary; form as 6.

Dagger blades

1. Tehrān; Nīshāpūr Tapa Madrasa, X 14; unp. Iron; heavily corroded; tang broken; lg. 17.2, w. 3.3. Double-edged; widest at shoulder, narrowing evenly towards point.
2. Tehrān; Nīshāpūr; unp. Iron; broken tang; lg. 25.0. Widest at shoulder narrowing to long point.
3. PUM CT-2; Rayy; unp. Iron; heavily corroded; tip of blade missing; lg. 13.8, w. 2.6. Upper blade straight; lower blade curved round almost to a right angle; square iron boss protruding on one side of blade below shoulder; short tang.
4. Ashmolean; Sīrāf S.68/9, 3511; unp. Iron; broken at both ends; lg. 10.0, w. 2.0, th. 0.35. One edge straight; other edge slightly curved.
(Fig. 96)
5. Ashmolean; Sīrāf S.69/70, 4967; unp. Iron; bent; broken at tang end; lg. 13.5, w. 2.6, th. 0.3. Straight back; curved cutting edge.(Fig. 96)
6. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 p.263 fig.90b. Iron; broken; lg. 9.0 . Curved blade of tapering cross-section with tang.
7. Ashmolean; Sīrāf S.66, 619; unp. Iron; both ends broken; lg. 6.6, w. 2.4, th. 0.3.
8. Ashmolean; Sīrāf S.67/8, 1744; unp. Iron; both ends broken; lg. 7.3, w. 3.1, th. 0.3.
9. Ashmolean; Sīrāf S.69/70, 652; unp. Iron; tang broken; lg. 8.0, w. 1.7, th. 0.15. Slightly curved.
10. Ashmolean; Sīrāf S.69/70, 4934; unp. Iron; tang end broken; lg. 7.3, w. 1.4, th. 0.3. One edge slightly curved.
11. Ashmolean; Sīrāf S.69/70, 4954; unp. Iron; remains of wood attached at handle end; lg. 7.5, w. 2.0, th. 0.2. End of blade curved (Fig. 96)

12. Ashmolean; Sīrāf S.68/9, 2546; unp. Iron; bronze ring in position around remains of tang; lg. 5.7, w. 1.5, th. 0.2. Almost straight back and edge; rounded point; blade narrowing towards handle. (Fig. 96)
13. Ashmolean; Sīrāf S.68/9, 419; unp. Iron; broken at tang end; lg. 5.9, w. 1.5, th. 0.25. Almost straight edges; slightly curving point.
14. Ashmolean; Sīrāf S.68/9, 5623; unp. Iron; both ends broken; remains of bronze ring around tang end; lg. 5.0, w. 1.8, th. 0.4.
15. Stockholm; Shāh Tapa; Arne 1945 p.333, pl.82 fig.675c. Iron; broken; lg. 20.2. Single edged.
16. Stockholm; Shāh Tapa; Arne 1945 p.333. Iron; lg. 8.5.

Spear-heads

1. PUM RG 8064; Rayy; unp. Iron; lg. 10.3, including broken tang lg. 2.0, w. at base 1.8. Flat with parallel sides.
2. PUM RCH 114; Rayy; unp. Iron; remains of head plus broken tang lg. 5.7, w. of blade 2.8. Flat with slight swelling where blade meets tang.
3. Ashmolean; Sīrāf S.68/9, 3523; unp. Iron; tip broken; lg. 11.3, including tang lg. 3.3; w. of blade 3.5. Blade almost flat; tang flat but at right angles to blade. (Fig. 97)
4. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 pp.262-3, fig.89i. Iron; blade broken; lg. 7.5. Leaf-shaped; elliptical cross-section.

Swords

1. MMA 40.168-170; Nīshāpūr Tapa Madrasa, Y2, 1939; unp. Iron blade; remains of wooden sheath with gilt bronze fittings; gilt bronze quillon; relief decoration; hilt and most of scabbard missing; lg. of blade 71.5; w. of quillon 9.7; w. of blade 3.5. Straight double-edged blade; quillon two pieces of bronze riveted together round blade tang, each half having a narrow neck before broadening out into cinquefoil terminal; gilt bronze scabbard point and top; small bronze fitting half way along blade. Terminals and centre of quillon with leaf forms in relief; scabbard point with trefoils in relief; within outer border of square scabbard top a band of twelve trefoils in relief pointing inwards. (Fig. 74)

2. Tehrān; Nīshāpūr Tapa Madrasa, drain in S4 annex; unp. Iron blade; broken; original lg. unknown; present lg. 42.0, w. 6.0, th. 0.7; tang lg. 4.0. Double-edged, the edges parallel throughout existing length.

Other objectsAdze blades

1. Tehrān; Nīshāpūr Sabz Pushān; unp. Iron; lg. 15.0, w. 5.5. Adze head with almost straight flat blade at right angles to thick head with central hole for handle. (Fig. 97)

2. Tehrān; Nīshāpūr Sabz Pushān SF; unp. Iron; lg. 11.0, w. 4.3. Double-bladed adze head, one blade flat, the other of axe-blade form; central hole for handle.

3. Stockholm; Shāh Tapa; Arne 1945 p.333, pl.82 fig.678. Iron; lg. 16.0. Narrow flaring flat adze blade with two embracing wings for handle. (Fig.97)

Bells

1. Ashmolean; Sīrāf S.68/9, 4558; unp. Iron; h. 7.8, d. 6.4. Bell with

rectangular handle, flat shoulder, outward sloping upper body, and lower body of inward bent triangular flanges; corroded clapper ball inside.

(Fig. 98)

Dishes

1. Stockholm; Shāh Tapa; Arne 1945 p.333, pl.81 fig.674. Iron; d. 25.3 - 27.4, h. 7.2. Rounded body and base. (Fig. 98)

Hooks (see p.452)

Horse-shoes

1. Ashmolean; Sīrāf S.68/9, 2566; unp. Iron; part missing; original d. c. 12.0; hole d. 4.0. Originally probably consisted of full circle with off-centre hole. (Fig. 98)
2. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 p.260, pl.32aa. Iron; fragment; w. 2.5. Part of horseshoe with four nail holes.
3. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 p.260. Iron; fragment; dimensions unknown.

Keys

1. Ashmolean; Sīrāf S.72/3, 831; unp. Iron; lg. 12.5, w. 1.7. Key with thick, slightly flattened body; long neck, flattened at right angles to body; head in form of "H", one side being slightly curved on outside, the other having a nick in centre. (Fig. 98)

Knives (see Dagger blades above)

Nails (see p.452)

Rings (see p.452)

Scissors

1. Stockholm; Shāh Tapa; Arne 1945 p.333, pl.82 fig.675b. Iron; broken; lg. 17.0. Scissors with short pointed blades, rounded handles, and circular thumb and finger pieces. (Fig. 99)

2. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 p.260, fig.89a. Iron; lg. c. 9.0. Form as 1.

3. Whereabouts unknown; Shamshīr Ghar; Dupree 1958 p.260. Iron; fragmentary; dimensions unknown. Form as 1.

Shovel blades

1. Tehrān; Nīshāpūr Sabz Pushān Z-1-Z 3X; unp. Iron; h. 47.5, w. 18.0. Shovel blade of rounded form with rounded end; slightly inward curving edges and shoulders; hollow socket. (Fig. 99)

Sickle blades

1. Stockholm; Shāh Tapa; Arne 1945 p.333. Iron; half missing; lg. 15.3.

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* where no reference for the source of the drawing is given it is based on a photograph or drawing in my own collection.

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37. Pan 2 - Tolstov 1959 IV p.194 fig.2. Pestle 1; 8 - Mortimer Rice and Rowland 1971 pl.180. Spoon 3.
38. Spoon 5; 7; 9; 13 - Naumann 1975 fig.17
39. Stem bowl A/1/1 - Rice 1955 pl.2; A/2/2 - Rice 1955 pl.13a; A/3/1 - Rice 1955 pl.14b; A/4/1 - Scerrato 1967 fig.4.
40. Stem bowl A/5/1 - Rice 1953 pl.4; A/6/1 - Melikian-Chirvani 1973 p.28 top; B/1/1 - Rice 1955 pl.14d; B/2/1.
41. Stem bowl B/3/1; B/4/1 - Mortimer Rice and Rowland 1971 pl.194; B/5/1. Basin A/3 - Pope 1938 pl.1289A
42. Bucket A/1 - Ettinghausen 1943 fig.6; B/1/2 - Ettinghausen 1943 fig.7; B/2/5 - Grabar 1959 no.22; B/3/1 - Ettinghausen 1943 fig.1.
43. Bucket B/4/6; C/1 - Scerrato 1964 fig.41. Candlestick A/3; B/1.
44. Candlestick C/1 - Melikian-Chirvani 1973 p.48; D/1 - Melikian-Chirvani 1973 p.51; E/1 - Rice 1954 pl.7d; F/1 - Pope 1938 pl.1316.
45. Lamp A/1/1; A/2/1; A/3/3 - Pugachenkova 1967 fig.121; A/4/2.
46. Lamp A/5/2 - Mortimer Rice and Rowland 1971 pl.199; A/6/3; A/7/2 - Pope 1938 pl.1312C; A/8/1.
47. Lamp A/9/1; B/3 - Scerrato 1964 fig.14; C/1; D/1.
48. Lamp E/4 - Rice 1955a pl.9c. Lampstand A/1/4; B/4 - Grabar 1959 no.35; C/2 - Mortimer Rice and Rowland 1971 pl. 205.
49. Polycandelon 1 - Ettinghausen 1957 fig.38.
50. Inkwell fittings. Inkwell A/1; B/2/1 - Pope 1938 pl.1311C; C/1.

BRONZE

51. Pen-case A/1 - Gyuzal'yan 1968 fig.1 ; B/1 - Grohmann 1967 II pl.60 no.1; C/1.
52. Box A/1/2 - Aga-Oglu 1931a fig.5; A/2/4; A/3/1; B/1 - Grabar 1959 no.62.
53. Box C/1/1; C/2/a/1 - Rice 1958 pl.6 bottom; C/3/1 - Pope 1938 pl.1305A; D/1 - Pope 1938 pl.1305C.
54. Brazier 1. Chair 1 - Kurtz 1972 fig.3.
55. Incense-burner A/1/6 - Ghirshman 1938 pl.9 no.5; A/2/6 - London Burlington House 1931 pl.15 right; B/1 - Pope 1938 pl.1278C.
56. Incense-burner C/1 - Washington Smithsonian Institution 1964 no.623; D/1/2 - Grabar 1959 no.25; D/2/1 - Pope 1938 pl.1290A; E/1/1 - Pope 1938 pl.1298A.
57. Incense-burner E/2/3 - Grabar 1959 no.46; E/3/2 - Pope 1938 pl.1298B; E/4/1 - Washington Smithsonian Institution 1964 no.621; E/5/3 - Grabar 1959 no.24.
58. Incense-burner F/1/1; F/2/1 - Marchal 1974 fig.6a; F/3/1 - Marchal 1974 fig.6b; F/4/1.
59. Incense-burner F/5/1 - Mortimer Rice and Rowland 1971 pl.179; F/6/1. Incense-holder 1 - London Burlington House 1931 pl.7 top left.
60. Stand A/1 - Scerrato 1959 fig.6; B/1 - Pope 1938 pl.1286B.
61. Table-top A/1/1 - Pope 1938 pl.1315A; B/1/1; B/2/1 - Marchal 1974 fig.7; B/3/1 - Ettinghausen 1957 fig.31.
62. Miniature vessel A/7; C/1. Vase 2.
63. Appliqué 1; 6; 7. Bell A/2; B/4. Belt fitting A/6/6 - Arne 1914 fig.193; A/7/1.
64. Belt fitting A/7/3; A/7/4; B/2/1. Button 1. Needle 1.
65. Pendant A/1; A/5; B/2; C/3; D/1; D/2; D/4.
66. Pin A/1; B/1; C/5. Seal 1; 3; 4; 6.
67. Cosmetic mortar 1; V.1. Kohl-stick 1.
68. Mirror A/2; B/5/1 - Pope 1938 pl.1302A; C/1/2 - Balashova 1940; D/1 - Pope 1938 pl.1301C.
69. Spatula A/2; A/10; B/1; B/4; B/8; B/9.
70. Spatula blade 1. Toilet dish 1 - Stuttgart Linden Museum 1972 no.136. Toilet flask A/1; B/3.
71. Toilet flask C/1/3; C/2/1 - Stuttgart Linden Museum 1972 no.144; C/3/1. Tweezers B/2.

BRONZE

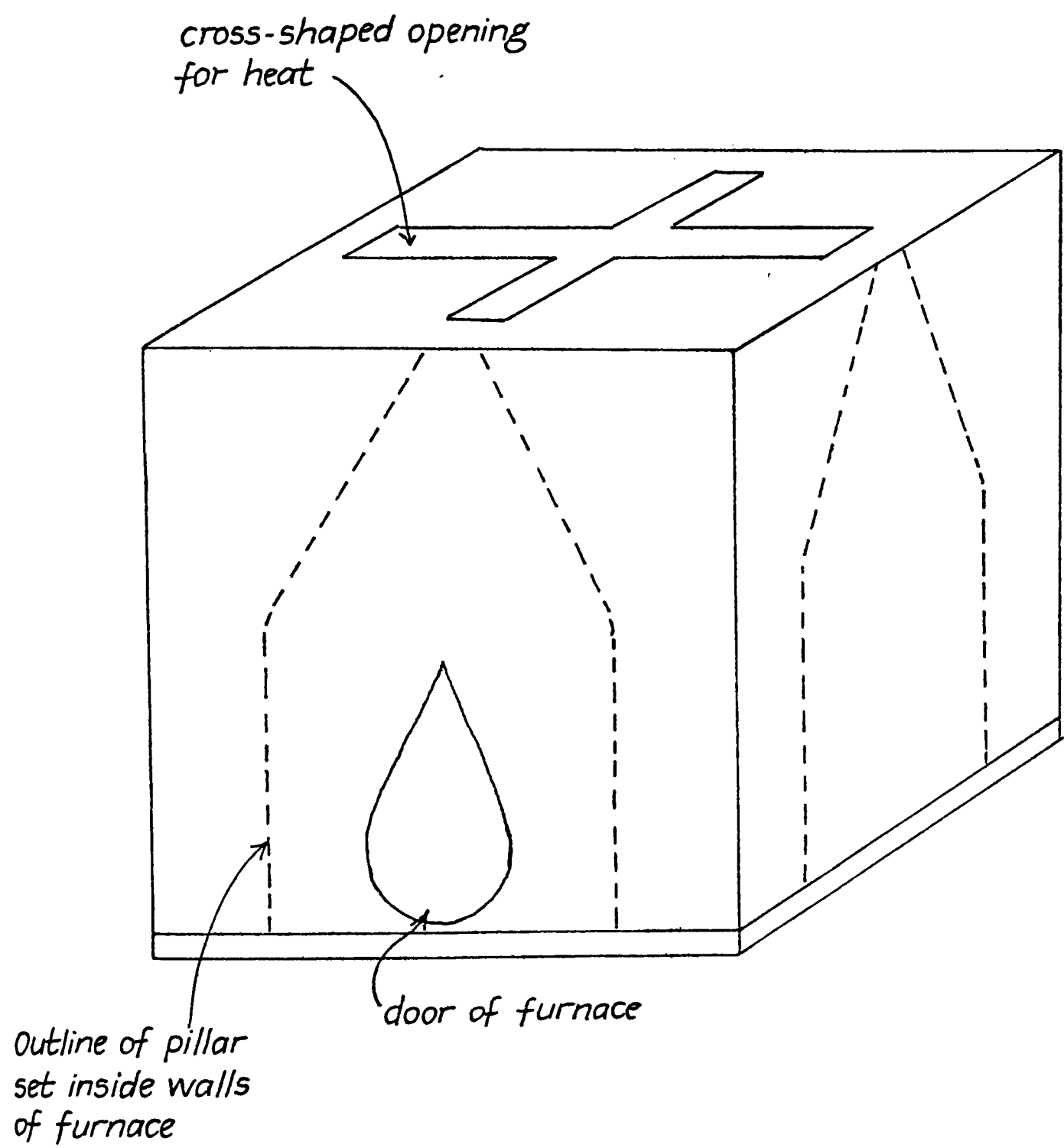
72. Chisel 1. Nail A/1; B/1. Saw 1. Dagger-handle 1.
73. Mace-head 1 - Pope 1938 pl.1289B; 3 - BM photograph;
4 - Grabar 1959 no.55. Sword pommel 1.
74. Sword 1 - Wilkinson tracing.
75. Cymbal 3. Horse-harness ornament 1; 2; 3; 4.
76. Horse-harness ornament 8; 10; 16. Stirrup 1 -
Mortimer Rice and Rowland 1971 pl.196; 3.
77. Box fitting A/3 - Pope 1938 p.2481 fig.810b; A/6 -
Pope 1938 pl.1278A; B/1; B/2; B/6.
78. Box fitting B/7; B/10; B/11; B/12.
79. Chair boss 1. Cover 1 - Grabar 1959 no.27.
Door fitting A/1; A/4; A/6; A/7.
80. Door fitting B/2. Finial A/5 - Grabar 1959 no. 56;
B/2; B/5; C/1.
81. Finial C/4; C/7. Handle A/2; B/1.
82. Handle C/1; D/1; E/1; F/2.
83. Handle G/3; H/1 - Mortimer Rice and Rowland 1971
pl.203; J/1; K/1 - Rice 1958 pl.3c; L/6.
84. Hook A/1; B/3. Key 2.
85. Lid A/4 - Stein 1928 pl.116 Nad Ali 014; A/5; A/7; A/9.
86. Lid A/12; B/1. Lock 1; 2.
87. Ring A/11; B/3. Spout 1.
88. Support fitting A/1/2 - Sarre and Martin 1912 pl.136
no.2994; A/2/a/1; A/2/b/2; A/2/c/3.
89. Support fitting A/2/d/1; A/2/d/2; A/2/d/3; A/3/1.
90. Support fitting A/3/2; A/3/4; A/3/6; B/1/1.
91. Support fitting B/2/a/1 - Pope 1938 pl.1294; B/2/b/3;
B/3/1. Tap 5 - Grabar 1959 no.45.
92. Unidentified object A/1 - Pope 1938 pl.1306B; B/2; C/1 -
Melikian-Chirvani 1973 p.41; D/1.
93. Unidentified object E/1; F/1. Lead object A/6 - Scerrato
1964 fig.50; B/3.
94. Lead object B/4; B/6; C/1; C/4.
95. Arrow-head 2; 3; 5 - Dupree 1958 pl.32i.
96. Dagger-blade 4; 5; 11; 12.

97. Spear-head 3. Adze blade 1; 3 - Arne 1945 pl.82 fig.678 BRONZE
98. Bell 1. Dish 1 - Arne 1945 pl.81 fig.674. Horseshoe 1.
Key 1.
99. Scissors 1 - Arne 1945 pl.82 fig.675b. Shovel blade 1.
100. a Linear inlay in table-top B/1/1 and stem bowl A/2/3
b Linear inlay in bucket B/3/4
c Linear inlay in ewer C/3/c/2
d Spatial inlay in table-top B/1/1 and stem bowl A/2/3
e Spatial inlay in table-top B/1/1
f Spatial inlay in ewer C/3/c/2
- Hughes report drawings.

List of Plates

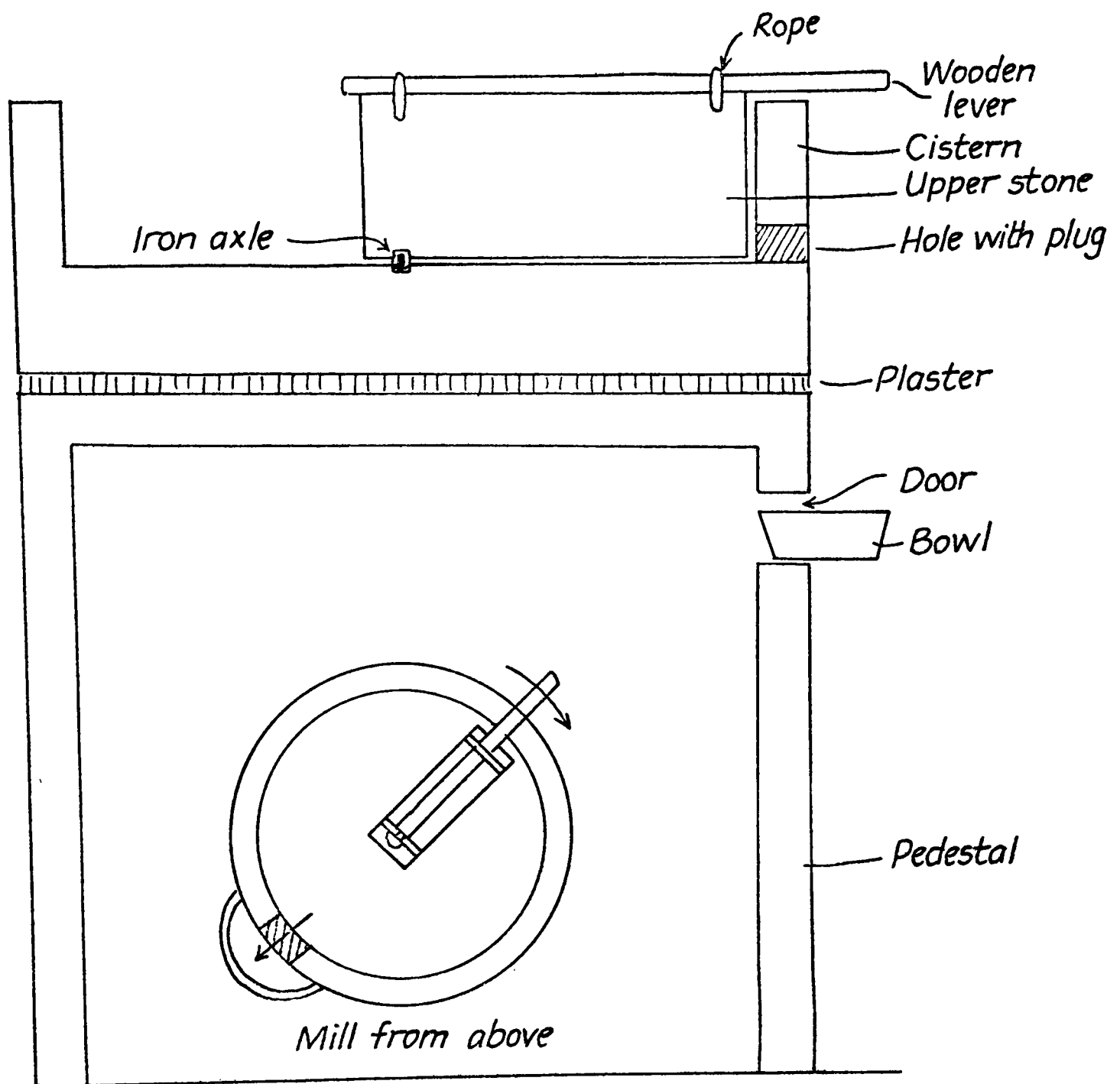
- 1a Linear inlay in table-top B/1/1
- 1b Linear inlay in bucket B/3/4
- 1c Spatial inlay in table-top B/1/1
- 1d Spatial inlay in table-top B/1/1
- BMRL photographs.

FIG. 1



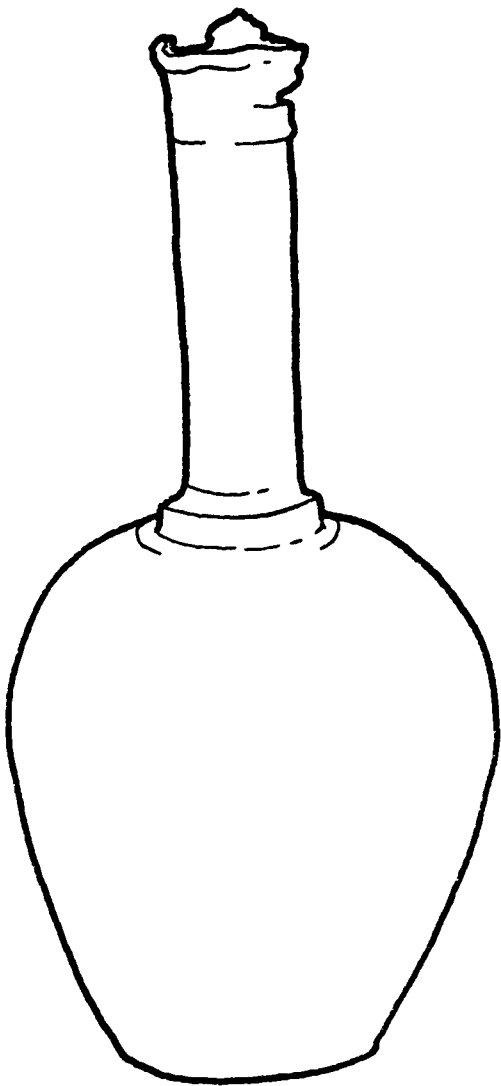
al-Hamdānī's gold-smelting furnace.

FIG. 2

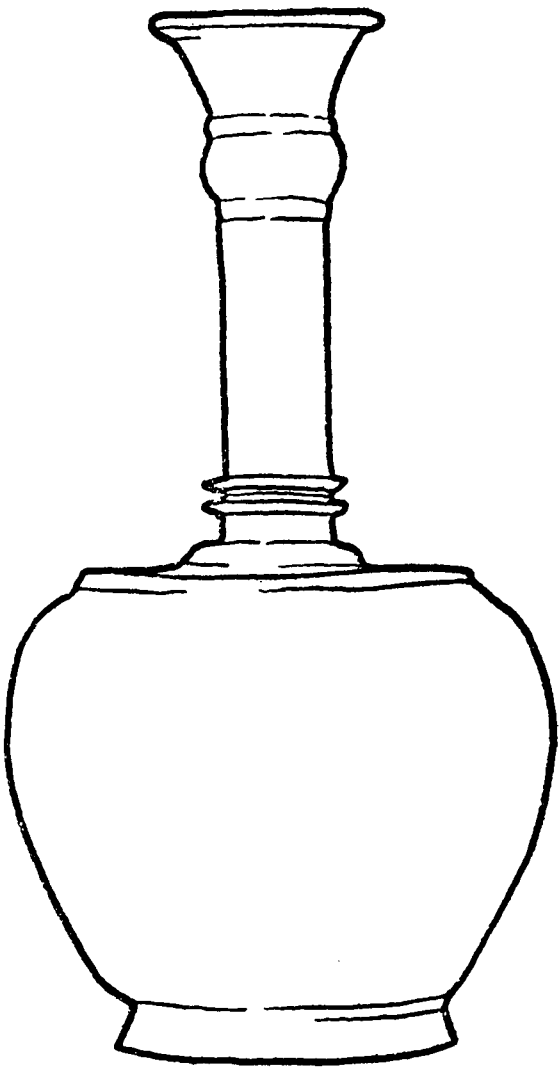


al-Hamdānī's gold-mill

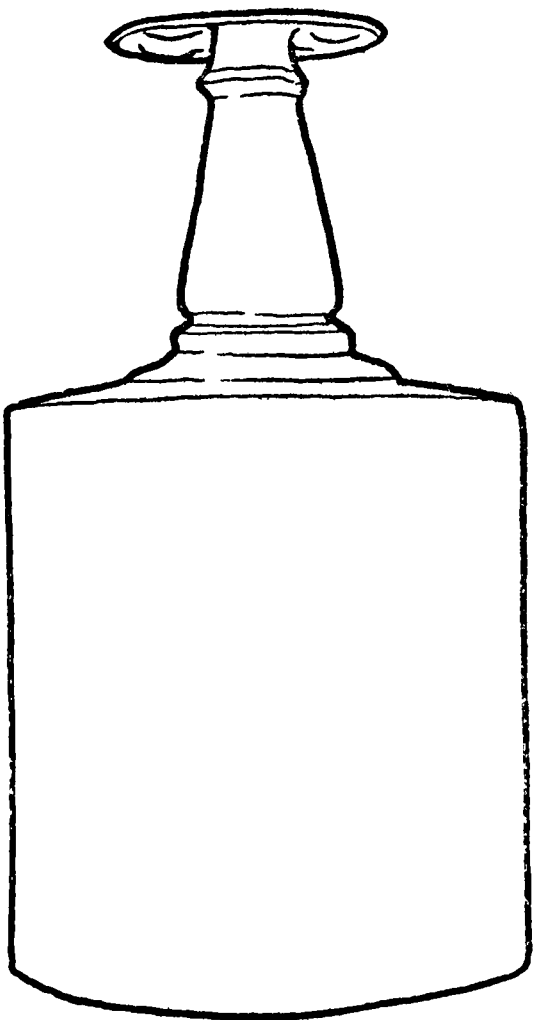
SILVER



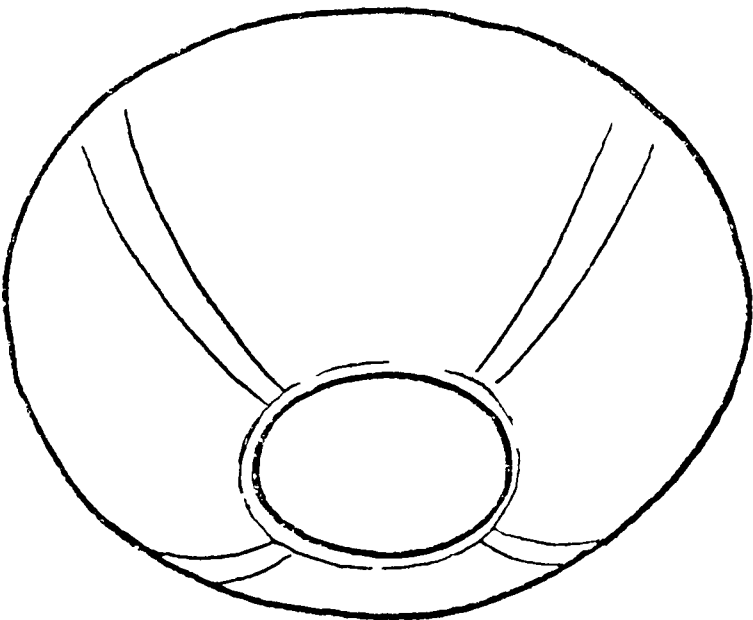
Bottle A/1



Bottle B/1

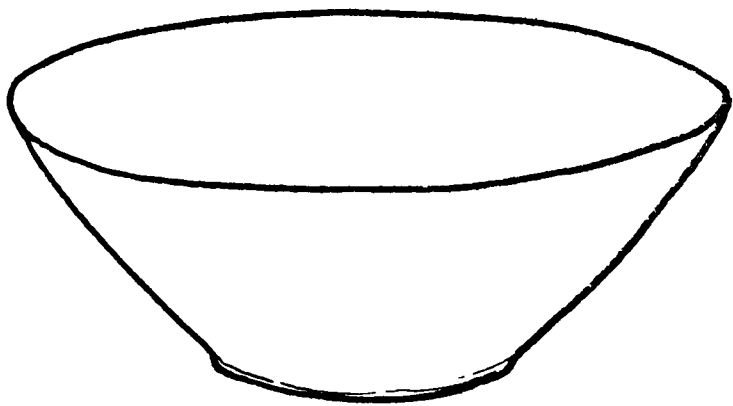


Bottle C/1

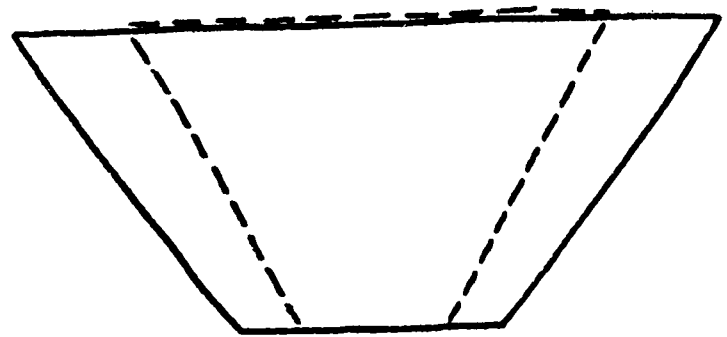


Bowl A/1

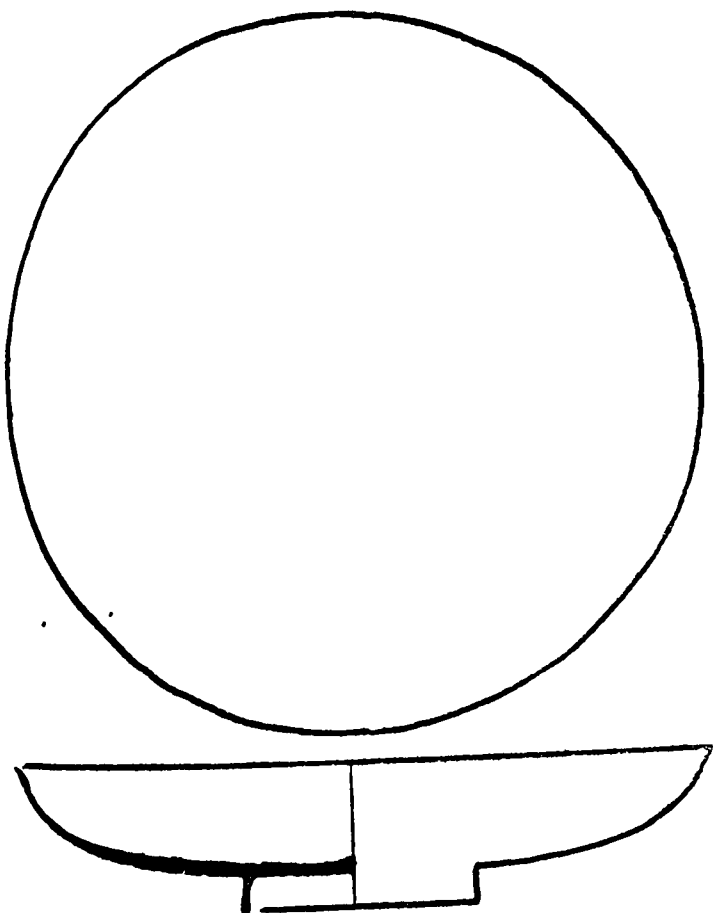
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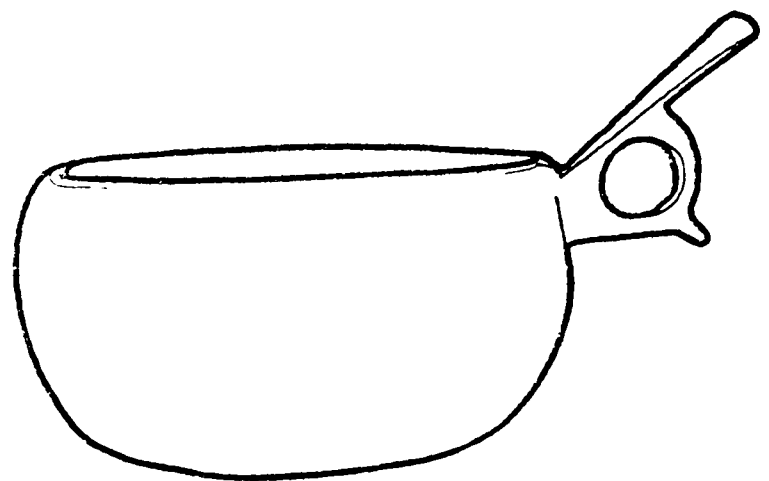
Bowl B/1



Bowls B/1 & B/4

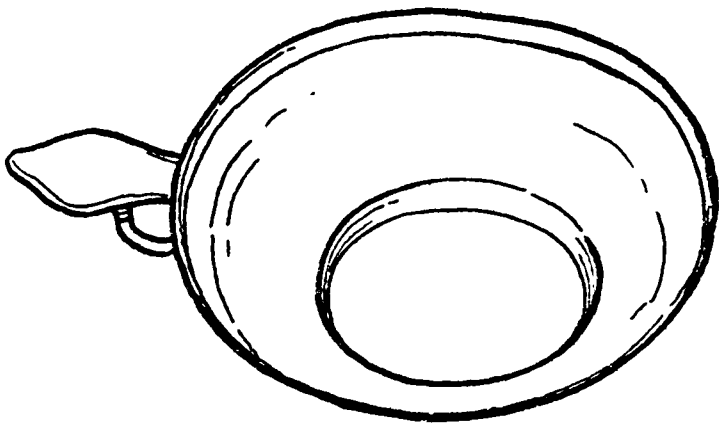


Bowl type C

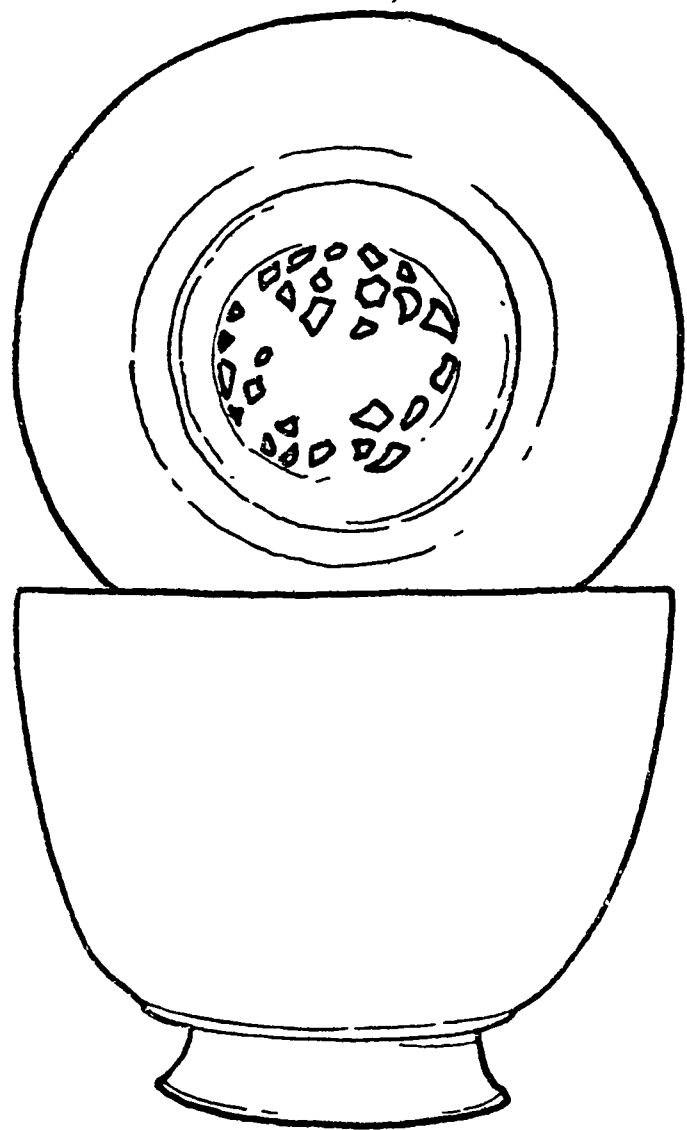


Bowl D/3

SILVER



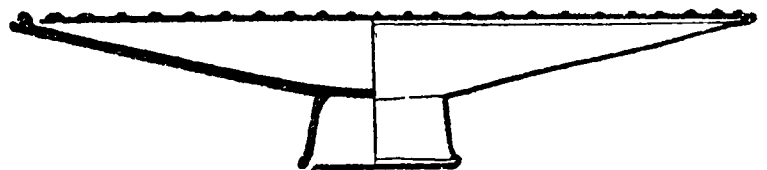
Bowl D/4



Bowl E/1

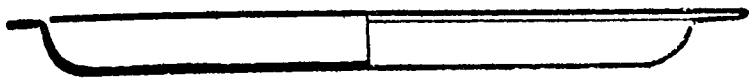


Dish A/1/1

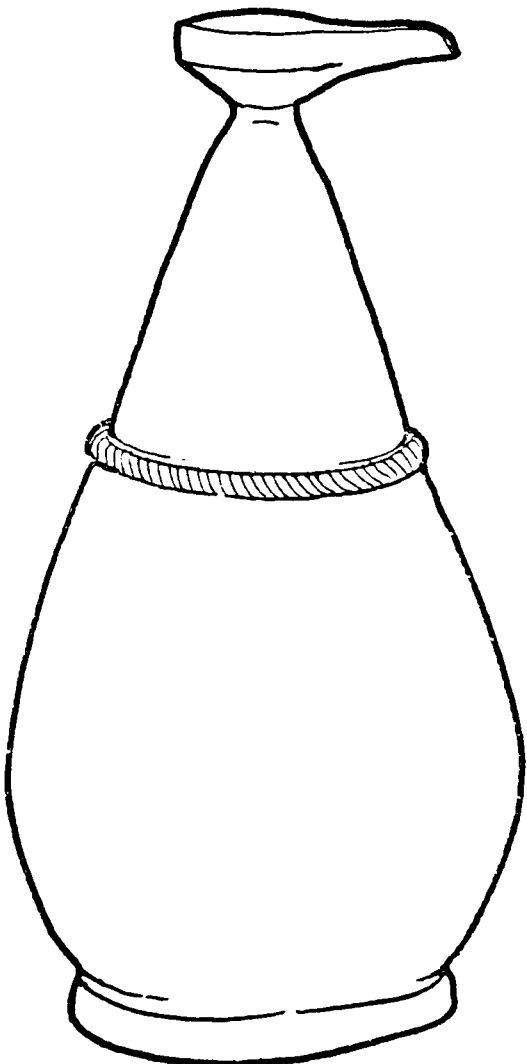


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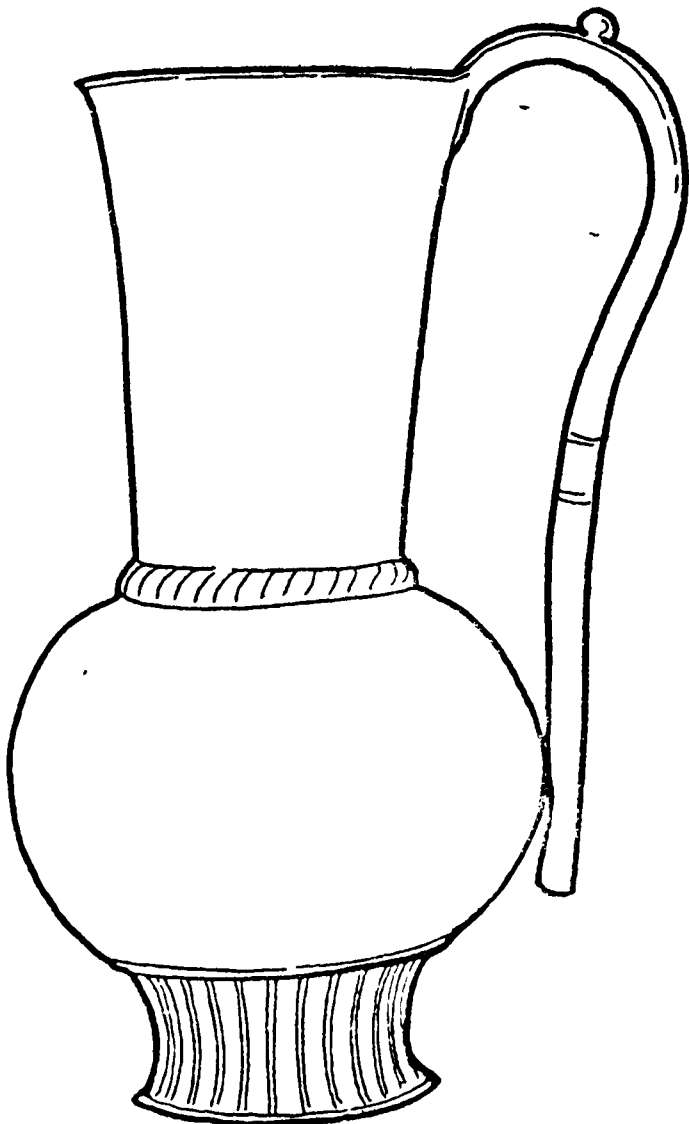
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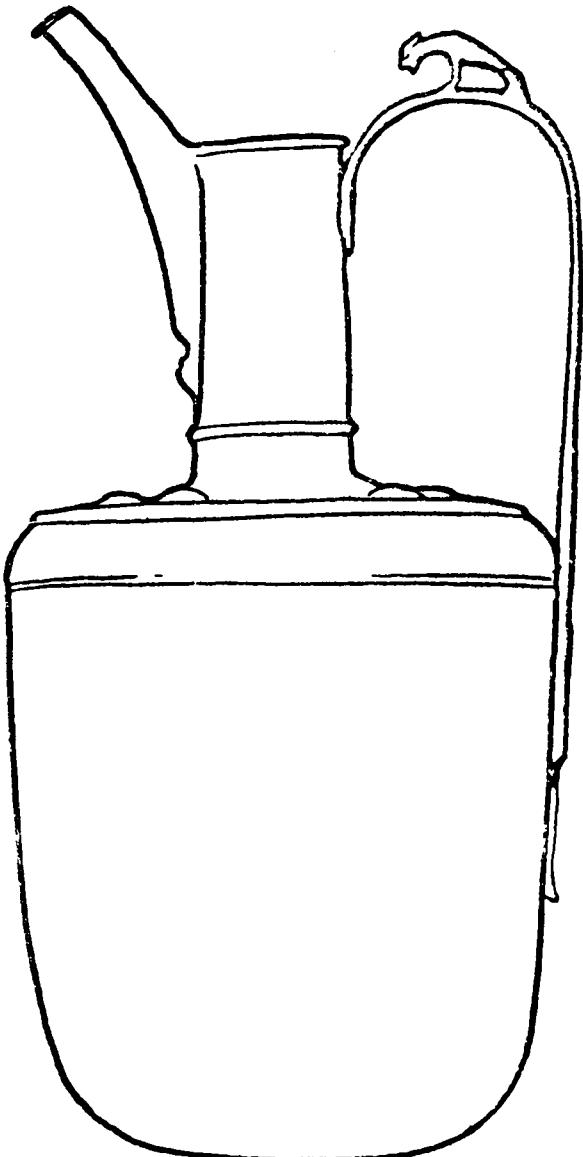
Dish B/1/1



Ewer A/1

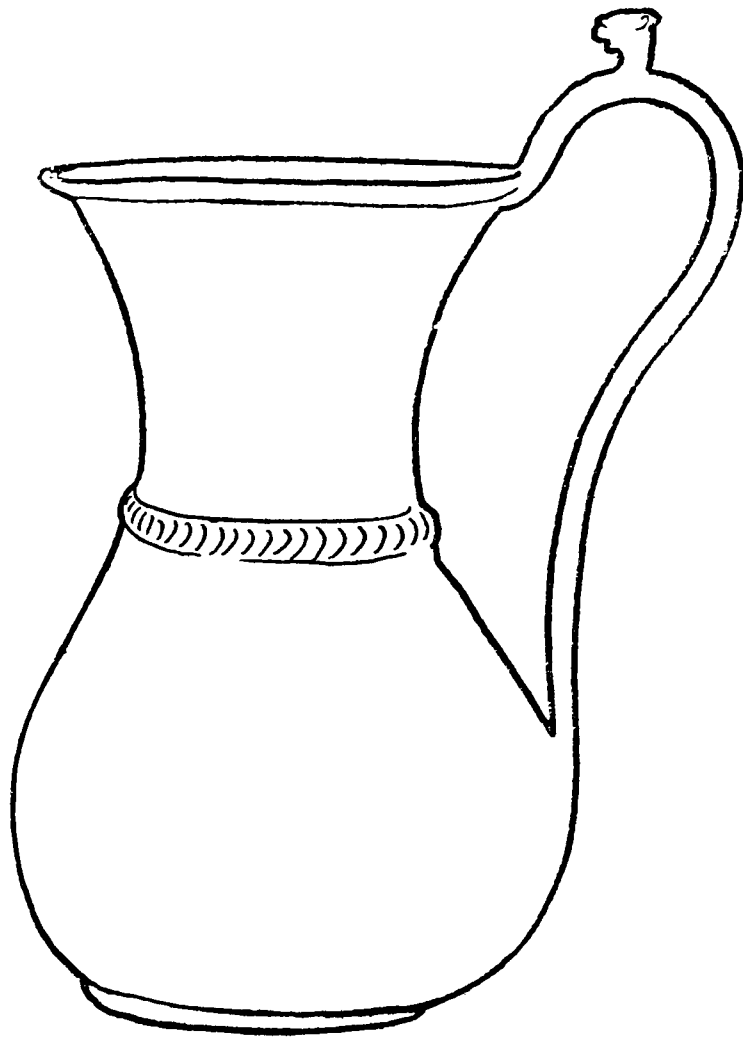


Ewer B/1

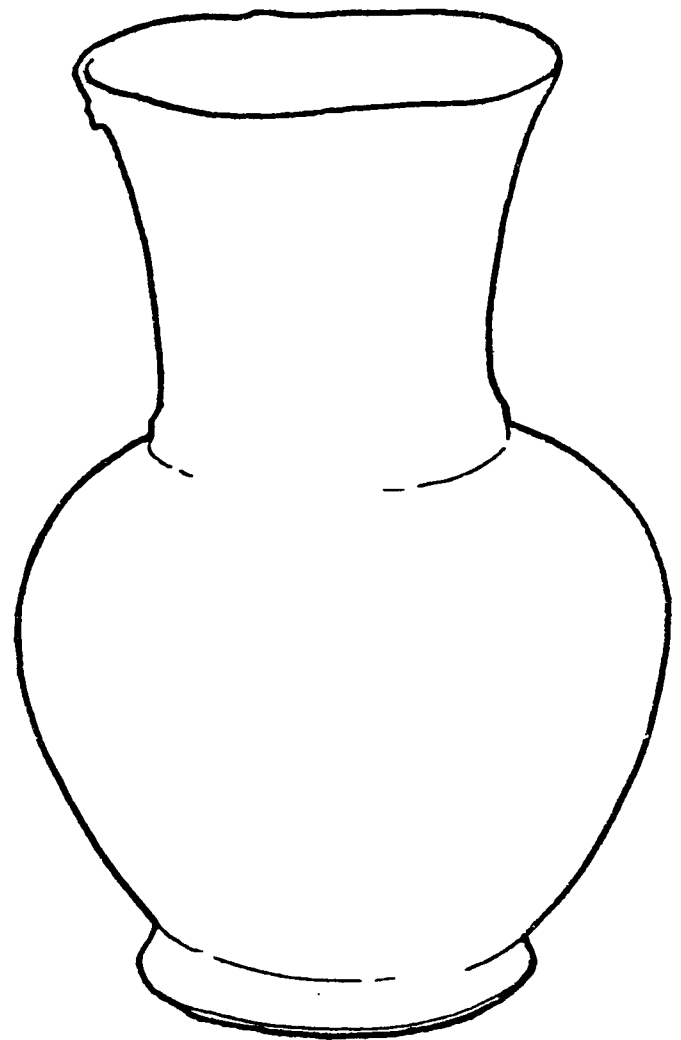


Ewer C/1

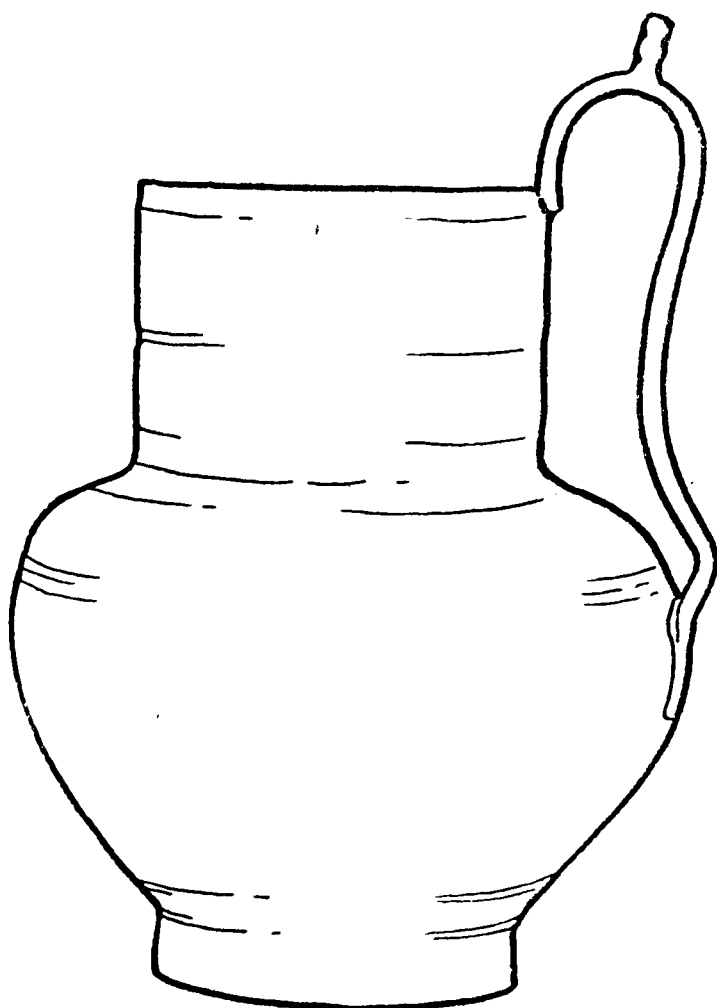
SILVER & GOLD



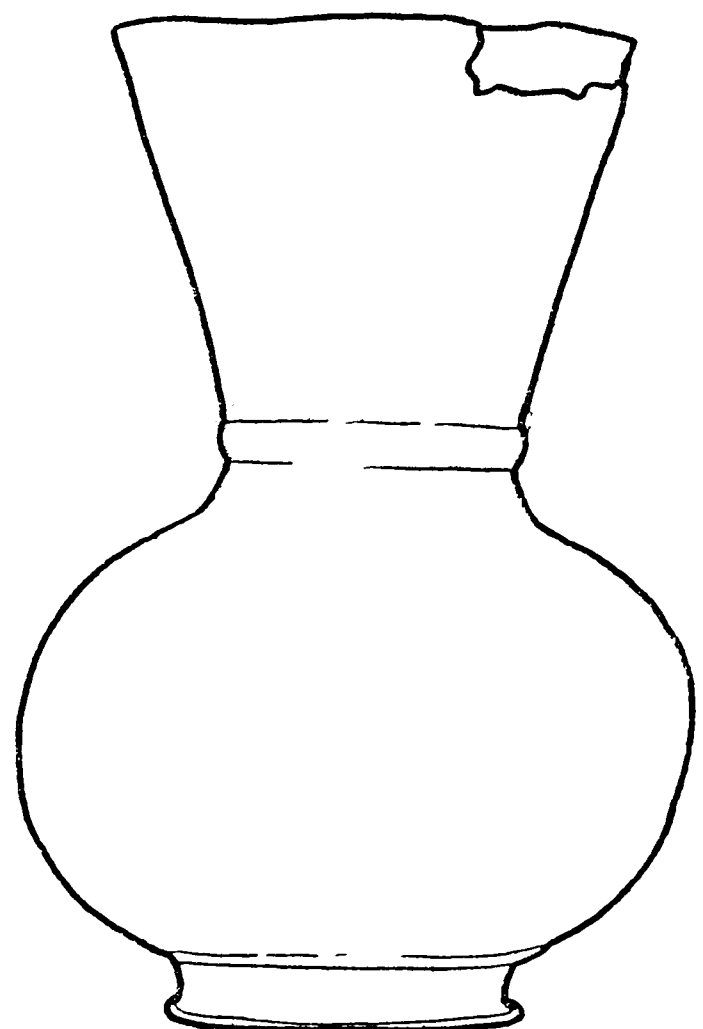
Jug A/1/1



Jug A/2/1



Jug A/3/3

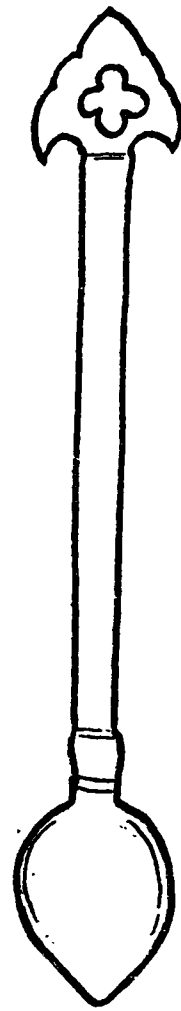


Jug B/1/1

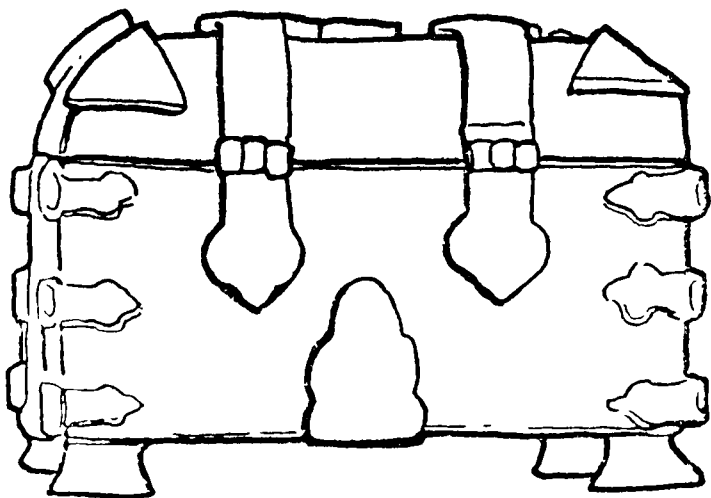
SILVER



Jug B/2/3

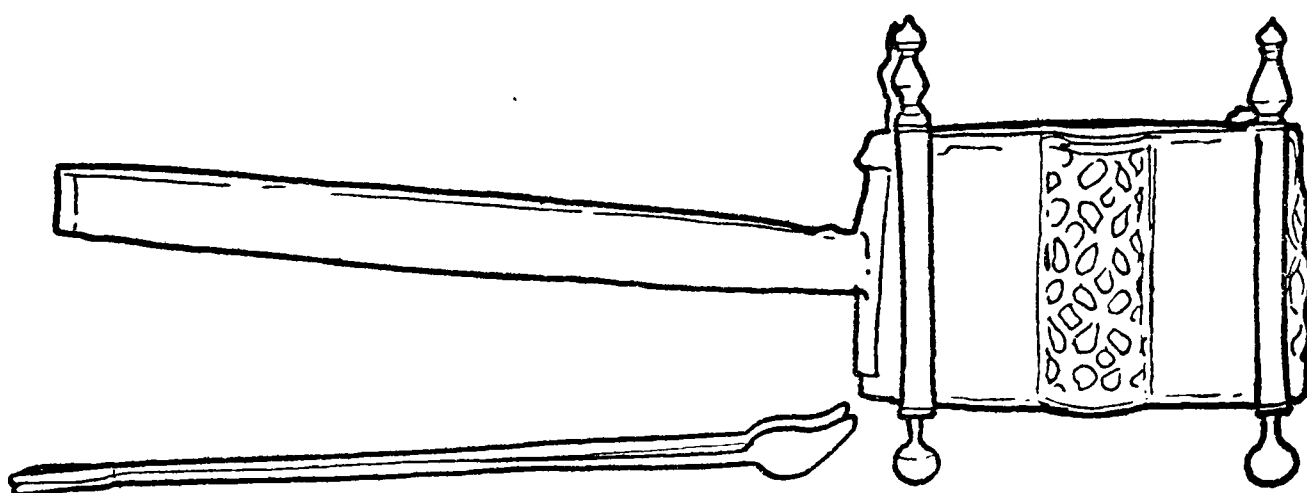


Spoon 1

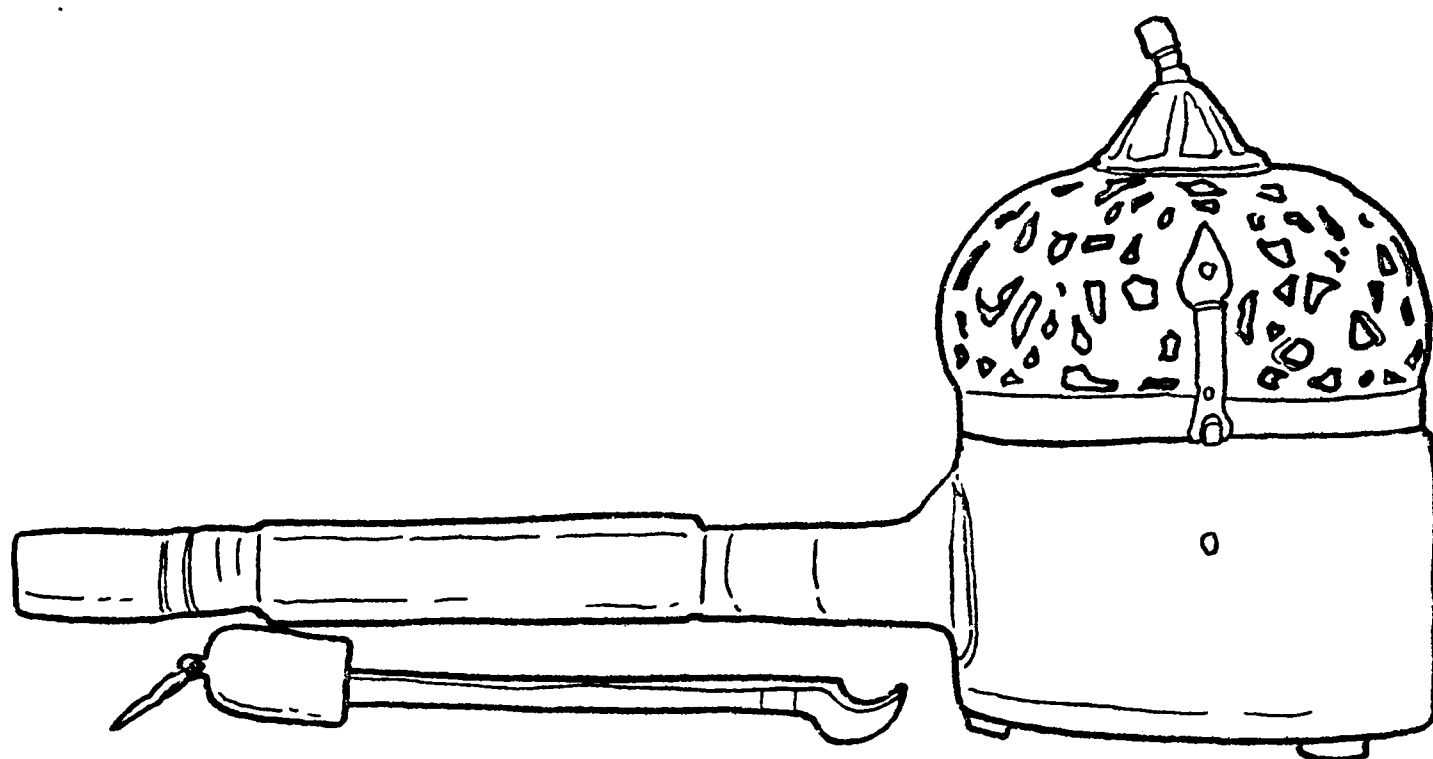


Casket 1

SILVER

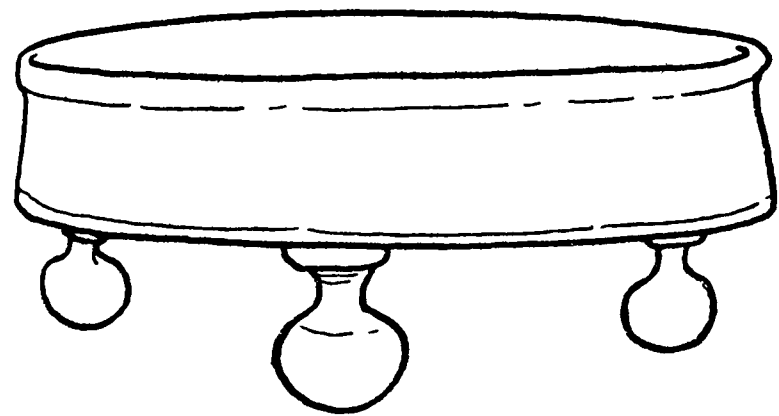


Incense-burner A/2

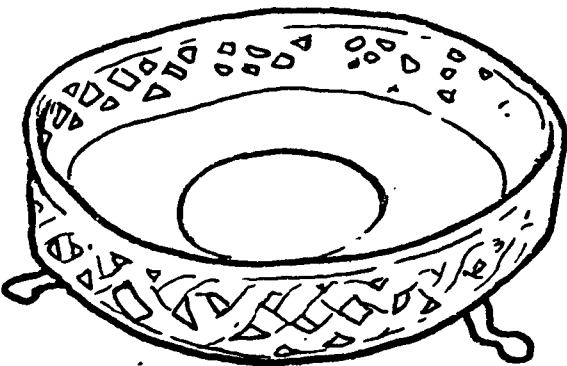


Incense-burner A/3

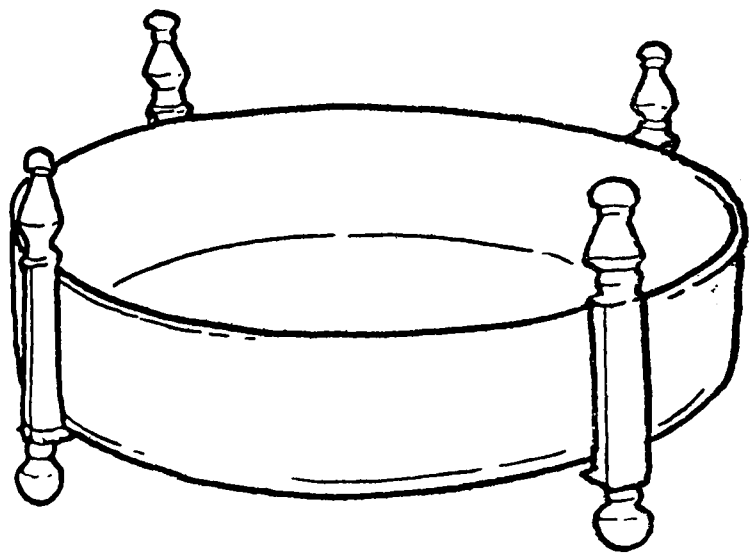
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Incense-burner B/1



Incense-burner B/3



Incense-burner B/4

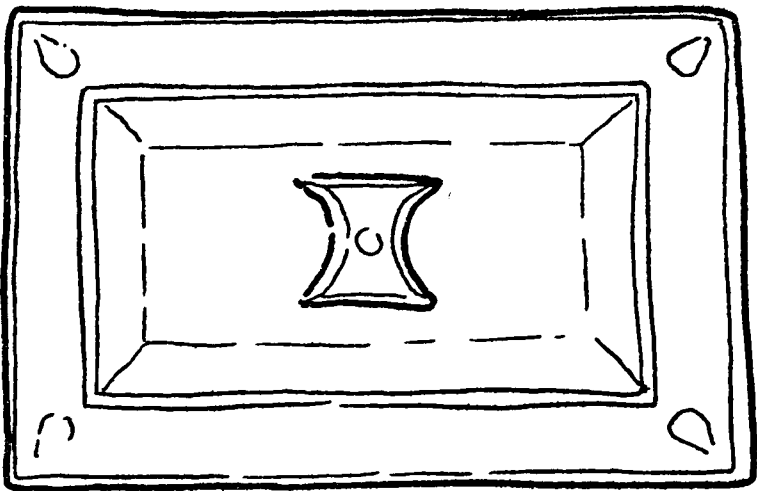
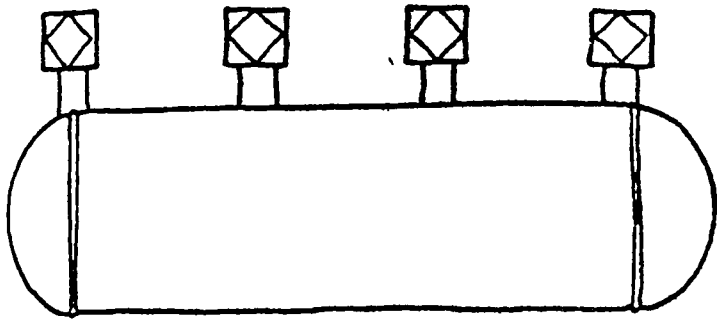
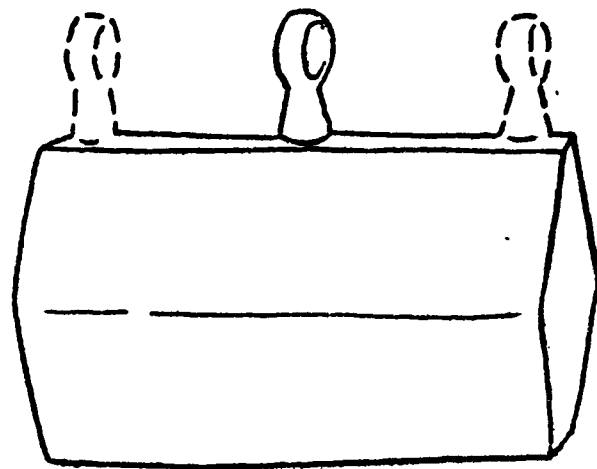


Table-top 1

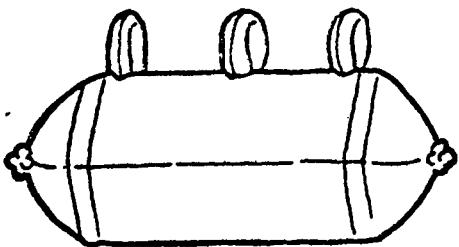
SILVER & GOLD



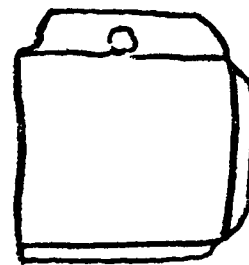
Amulet-case A/1



Amulet-case B/1



Amulet-case C/2



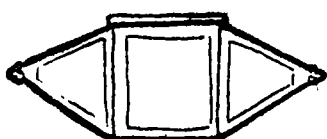
Amulet-case D/5



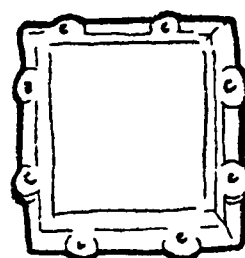
Amulet-case E/1



Belt fitting A/1/1

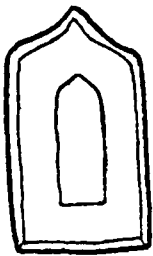


Amulet-case F/1

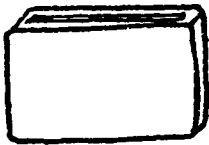


Belt fitting A/2/1

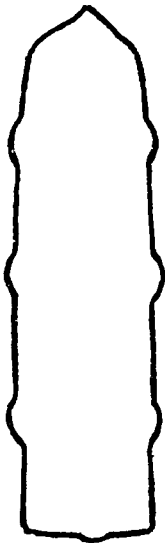
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Belt fitting A/3/1



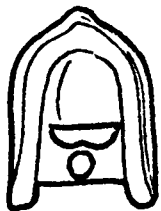
Belt fitting A/5/1



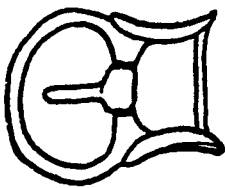
Belt fitting A/4/1



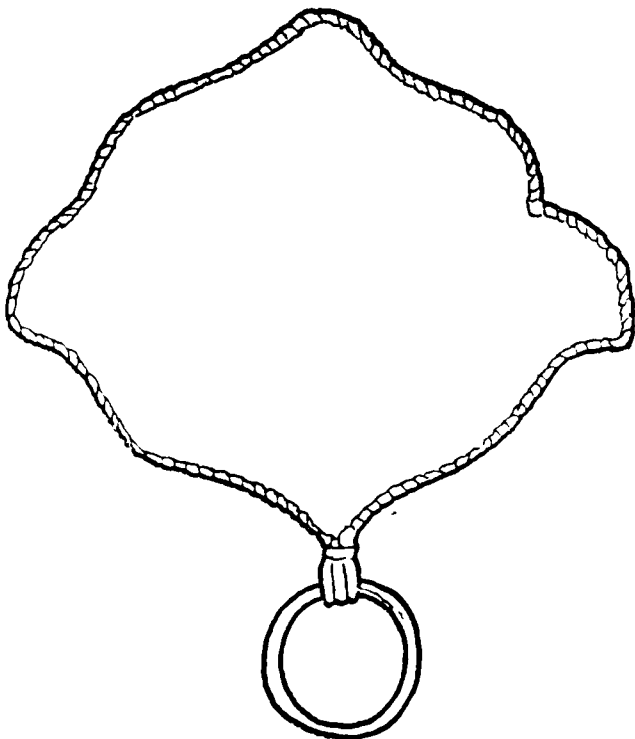
Belt fitting A/7/1



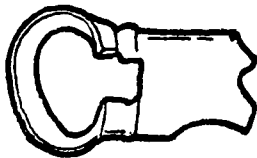
Belt fitting A/7/2



Belt fitting B/1/a/1



Belt fitting A/7/5

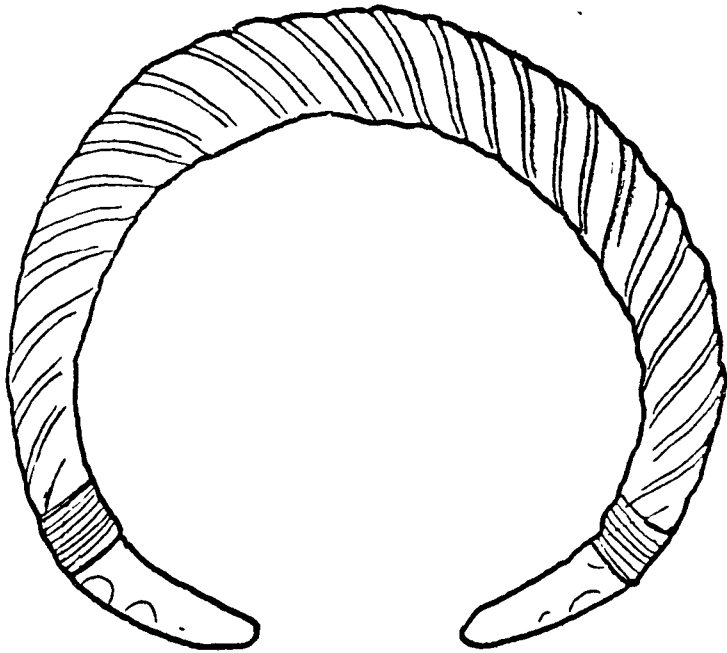


Belt fitting B/1/b/1

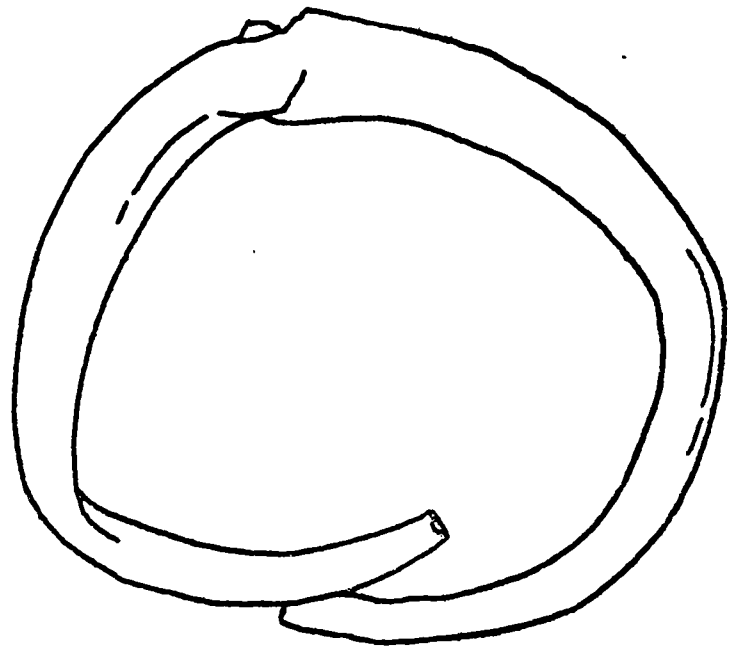
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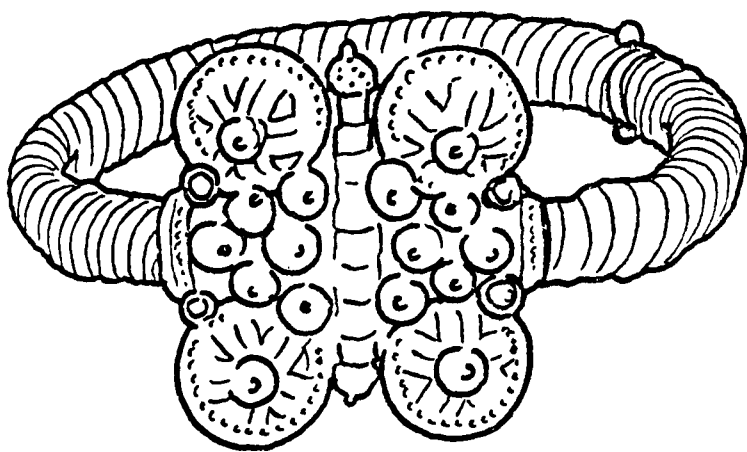
Bracelet A/1/1



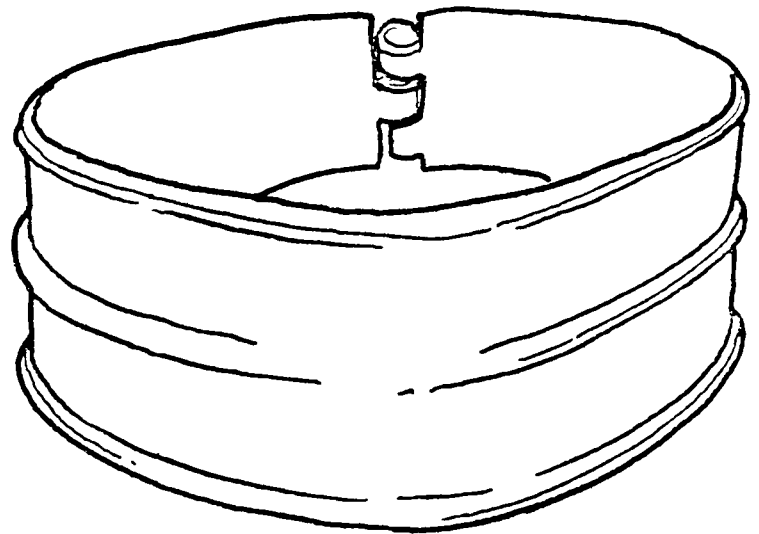
Bracelet A/2/1



Bracelet A/3/1

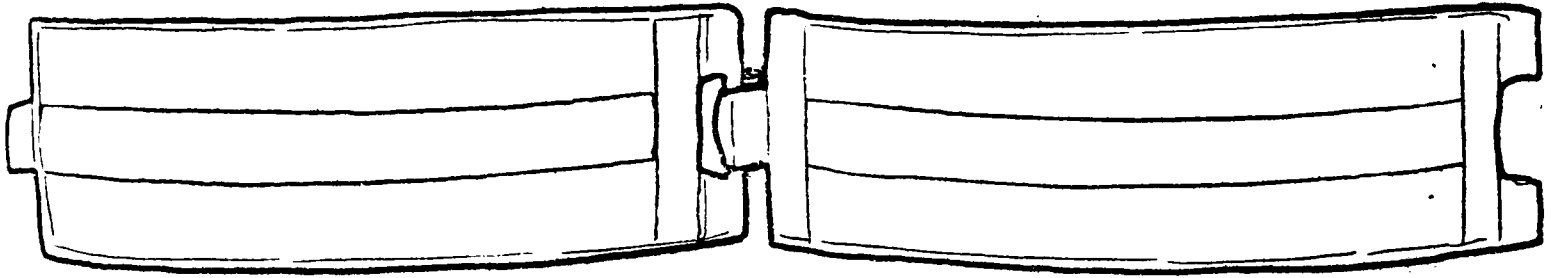


Bracelet A/4/3

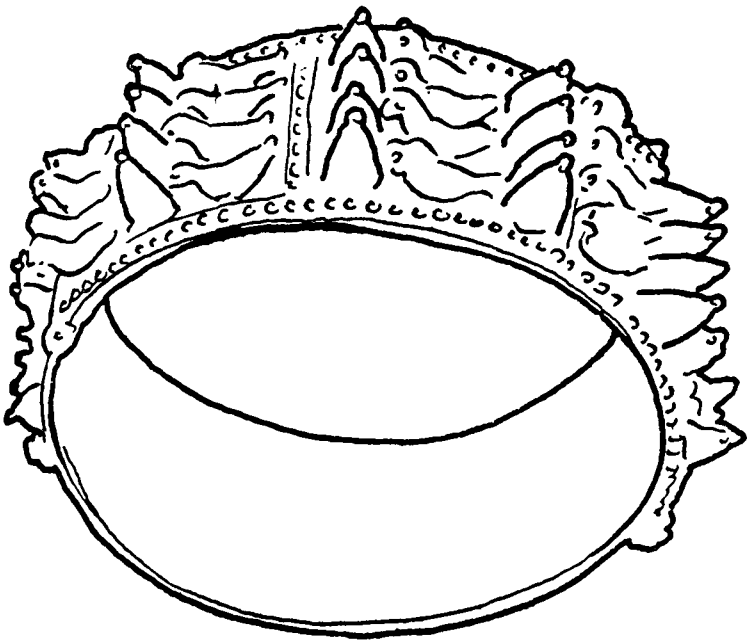


Bracelet B/1/1

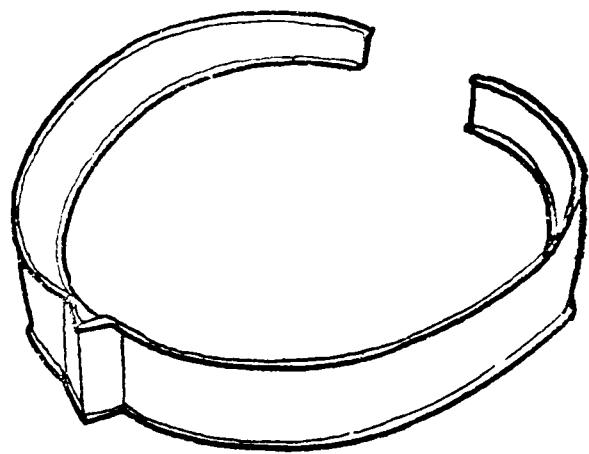
SILVER & GOLD



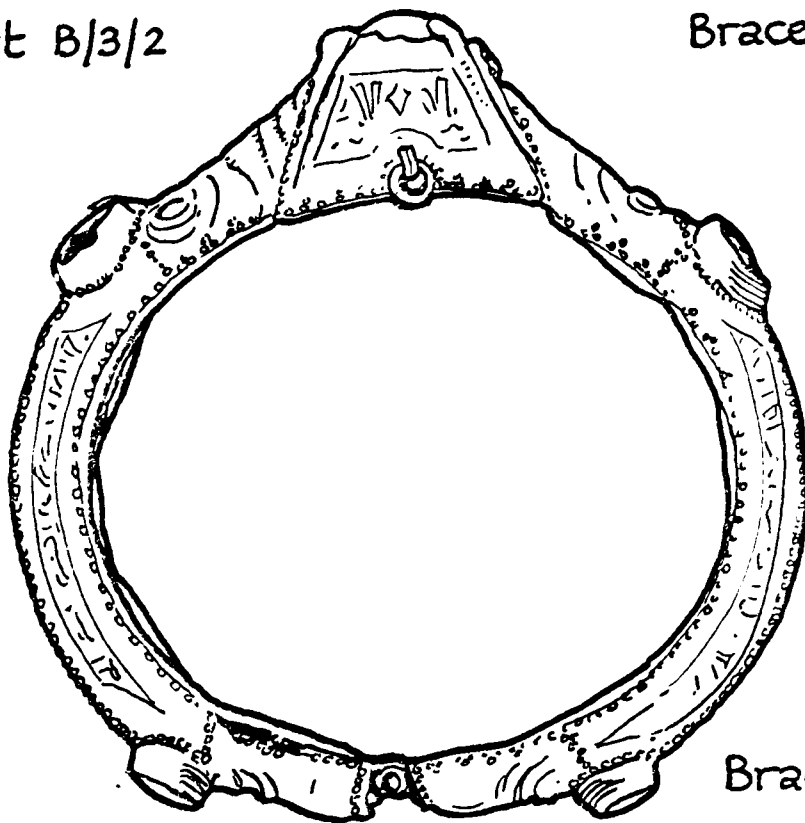
Bracelet B/2/1



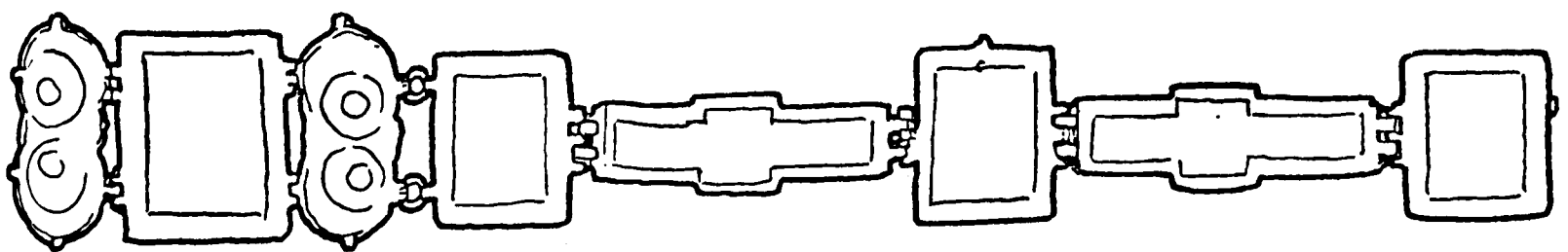
Bracelet B/3/2



Bracelet B/4/1

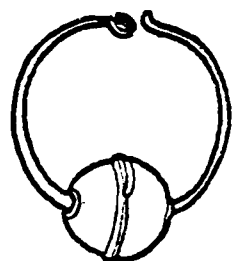


Bracelet C/1

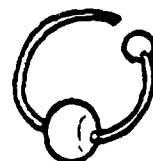


Bracelet D/1

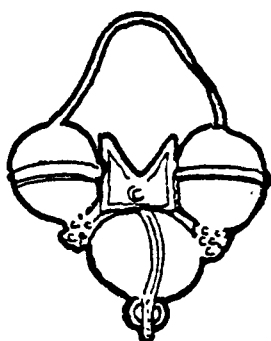
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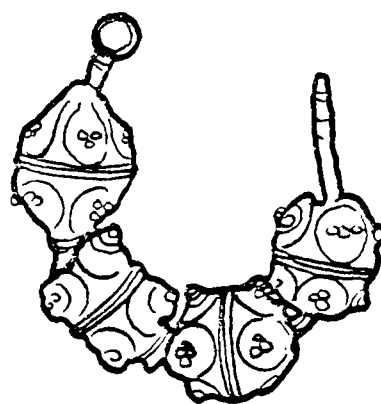
Earring A/1



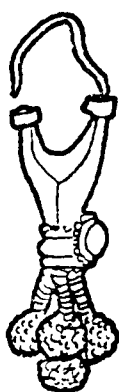
Earring A/12



Earring A/10



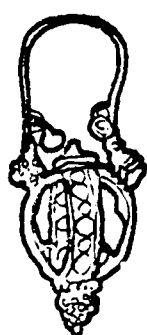
Earring A/14



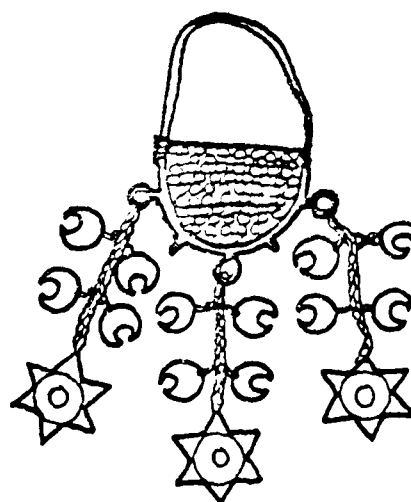
Earring A/19



Earring A/23

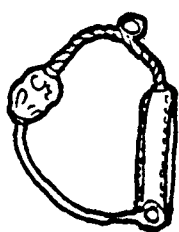


Earring A/22

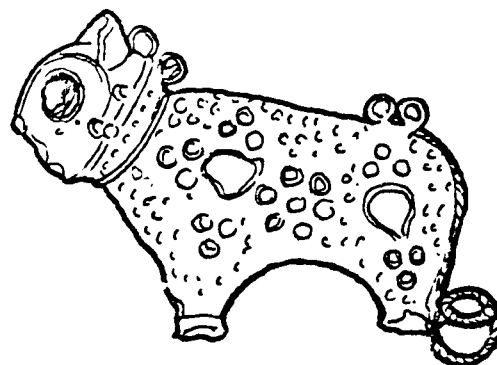


Earring B/4

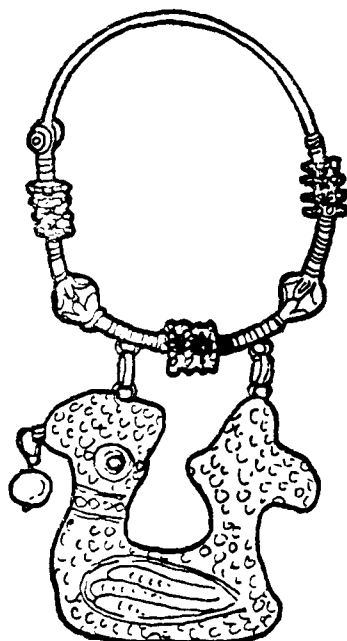
SILVER & GOLD



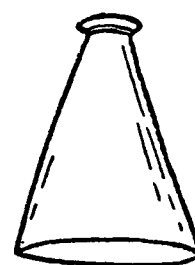
Earring B/5



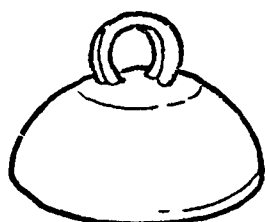
Earring B/13



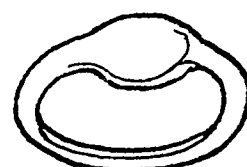
Earring B/9



Earring B/23



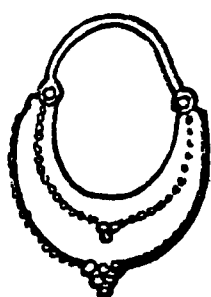
Earring B/27



Finger-ring A/2



Finger-ring B/1

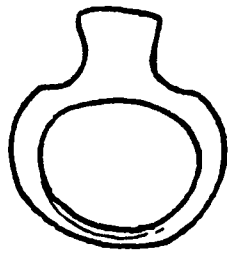


Earring B/34

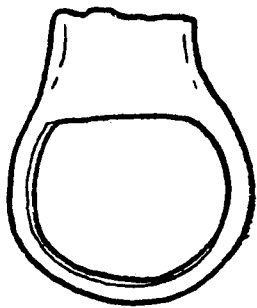


Finger-ring C/1

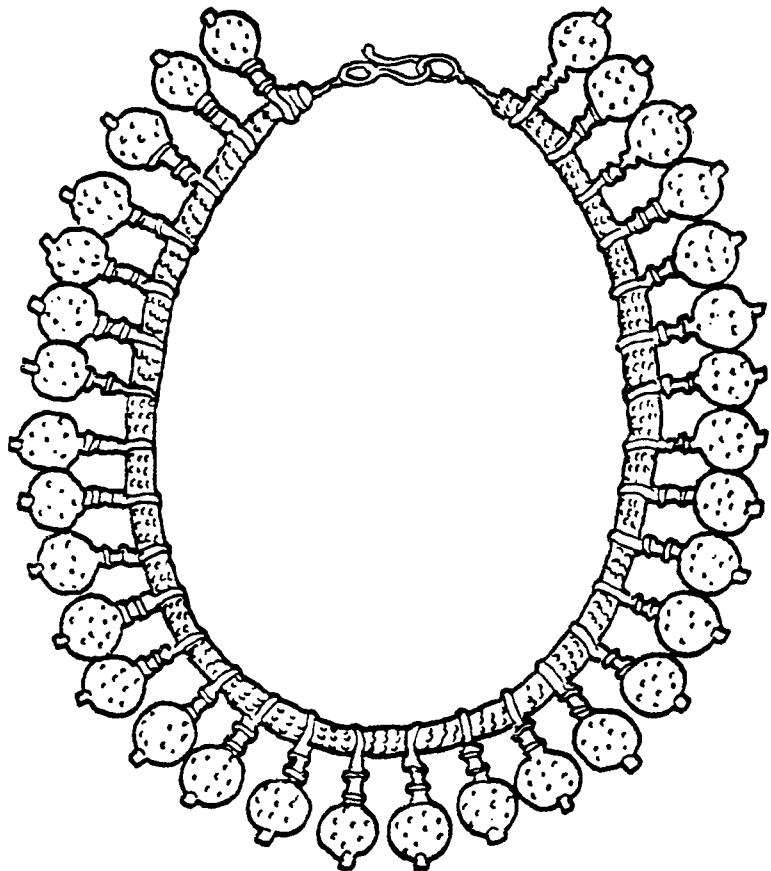
SILVER & GOLD



Finger-ring C/3



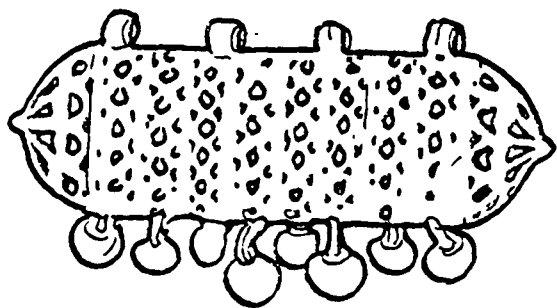
Finger-ring D/1



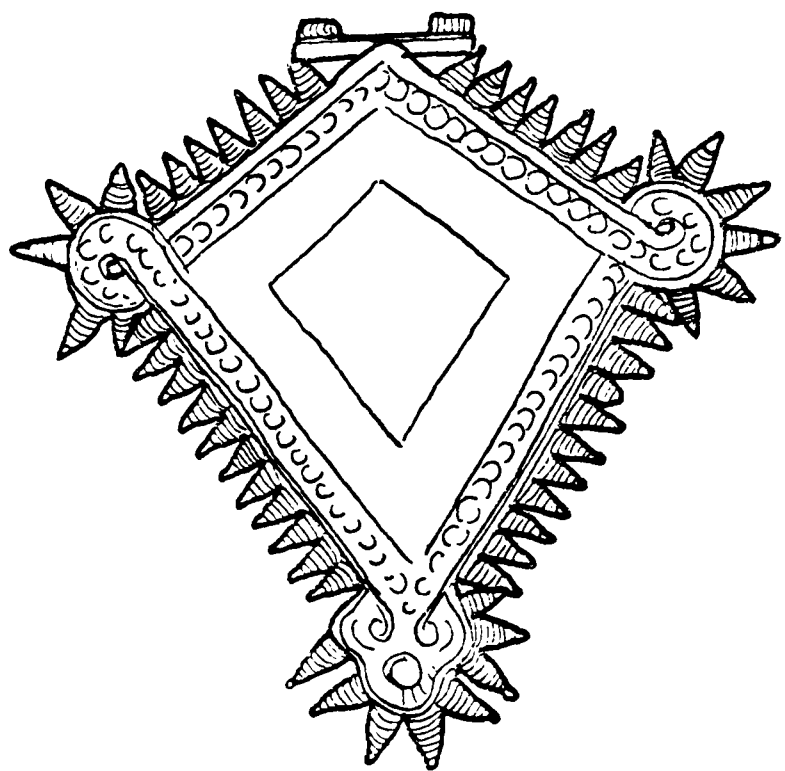
Necklace A/4



Necklace A/9

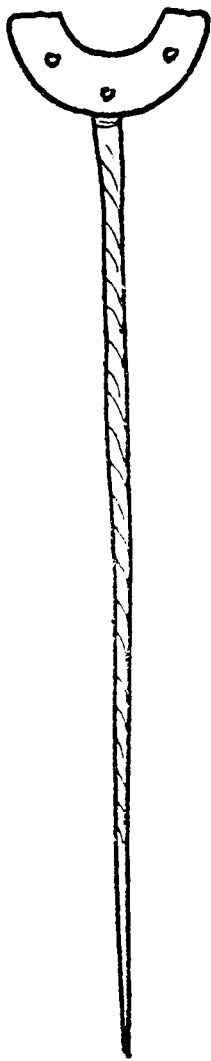


Necklace B/1

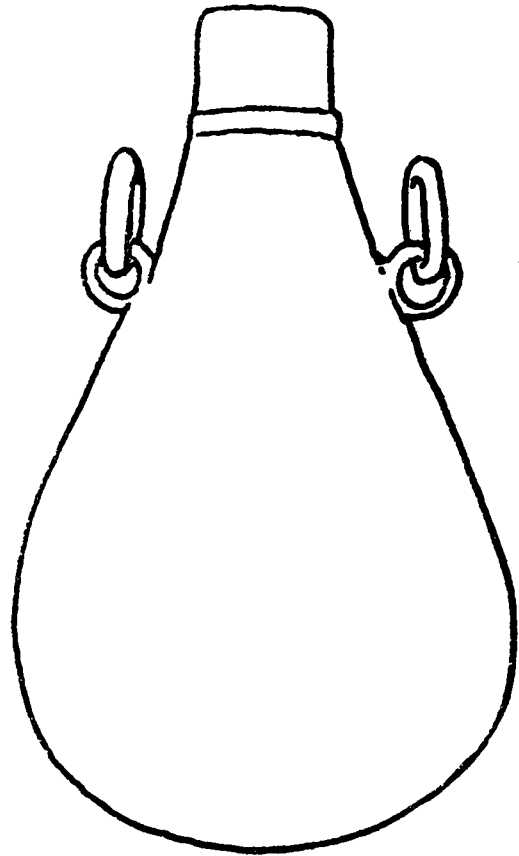


Pendant 1

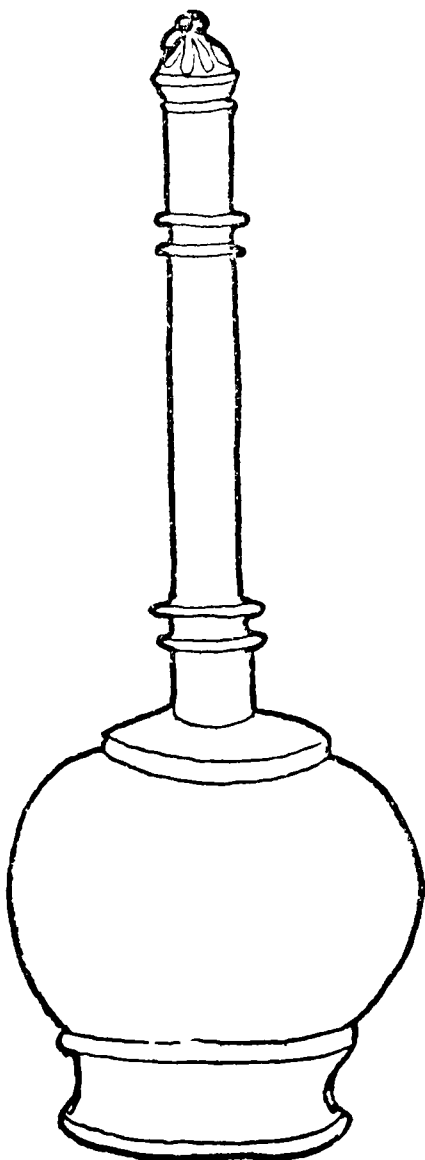
SILVER



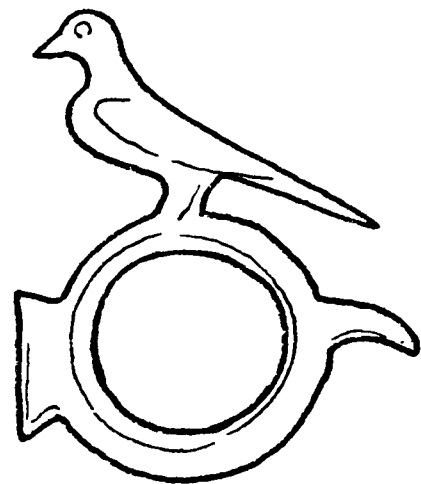
Pin 1



Flask 1

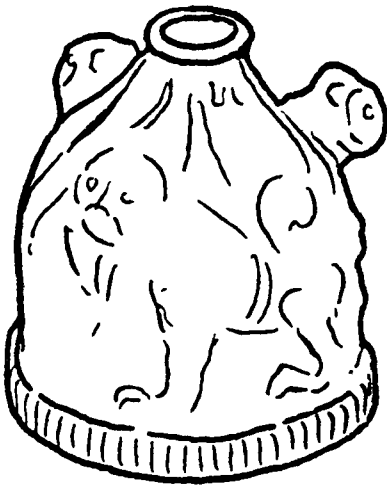


Rosewater sprinkler 3



Handle 1

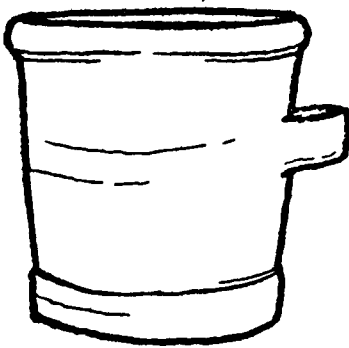
SILVER & GOLD



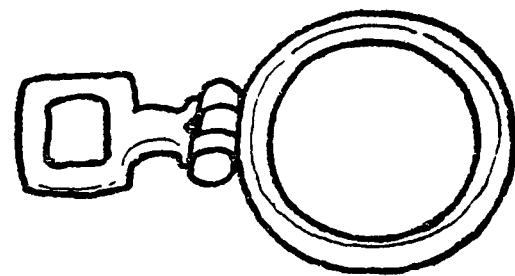
Weapon mount 1



Weapon mount 4

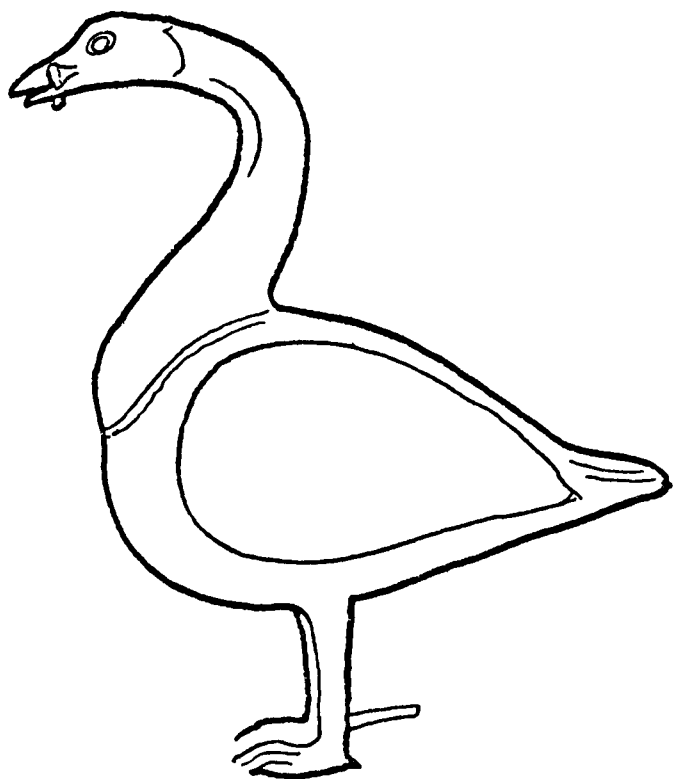


Weapon mount 2

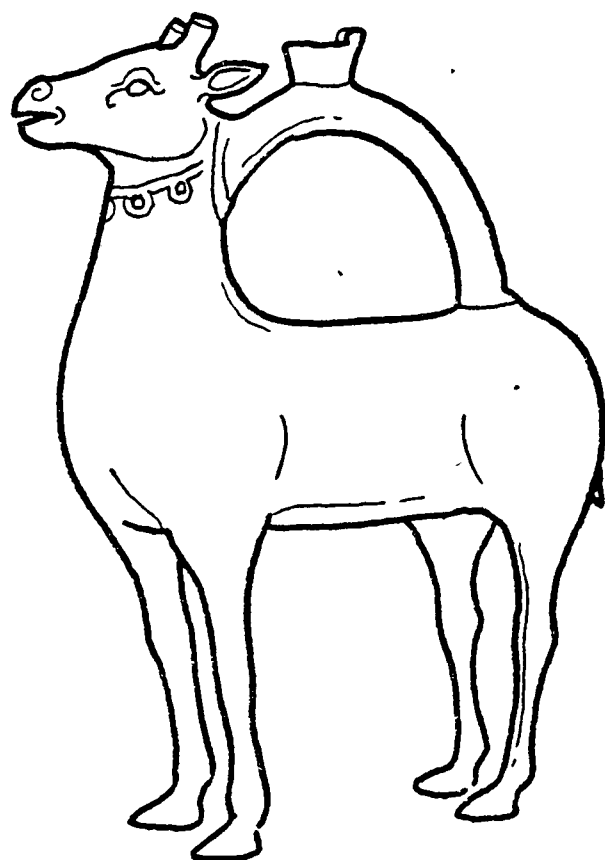


Unidentified object 1

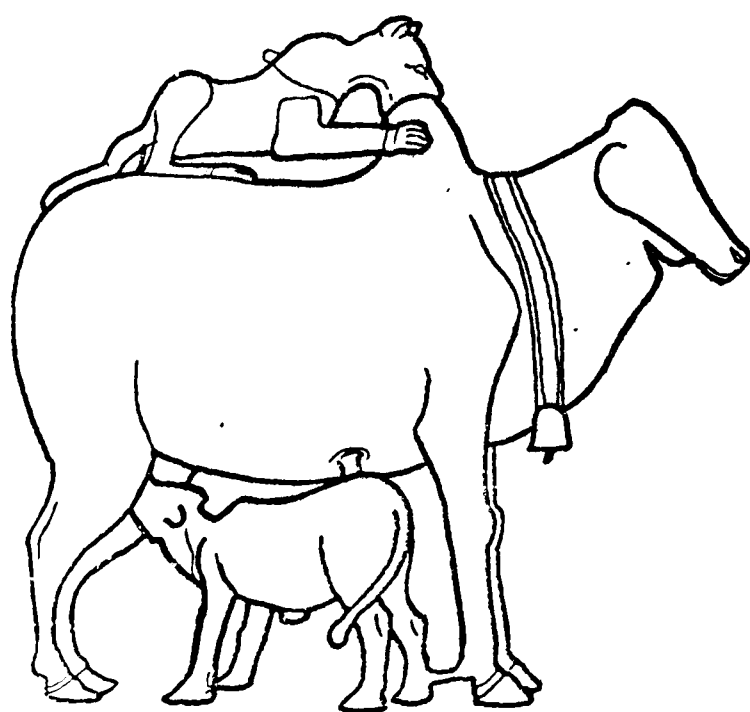
BRONZE



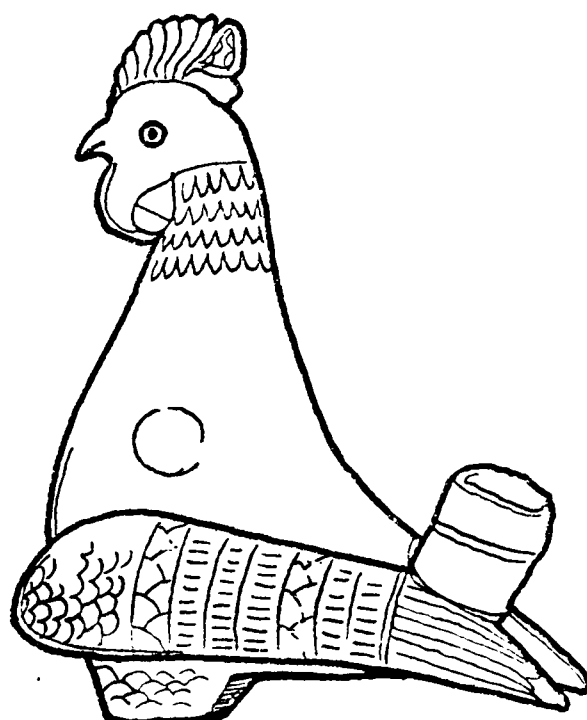
Aquamanile 1



Aquamanile 2

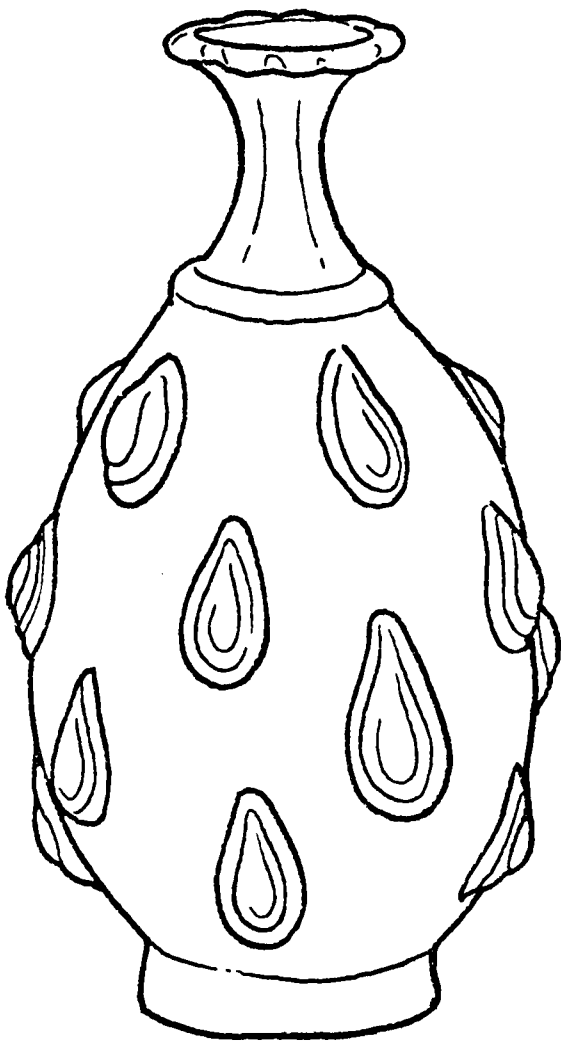


Aquamanile 3

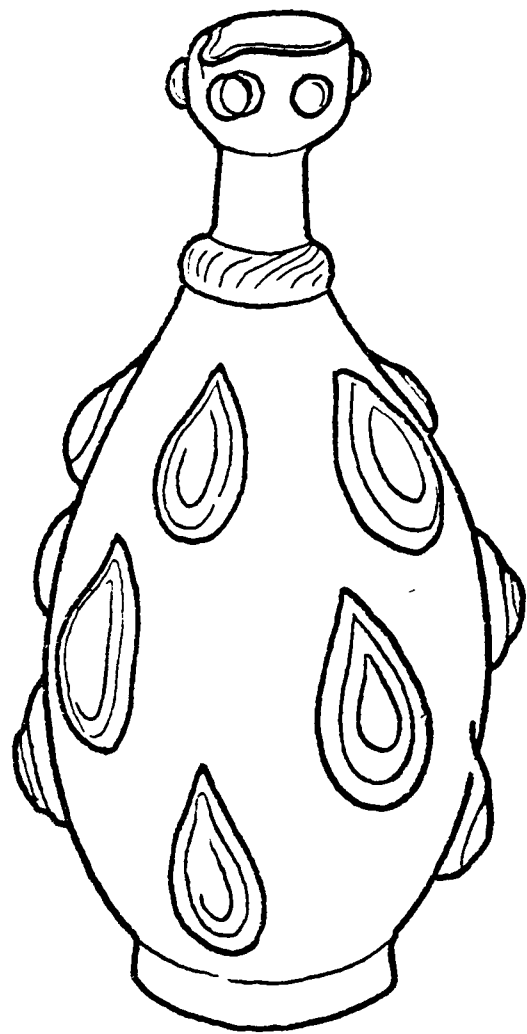


Aquamanile 4

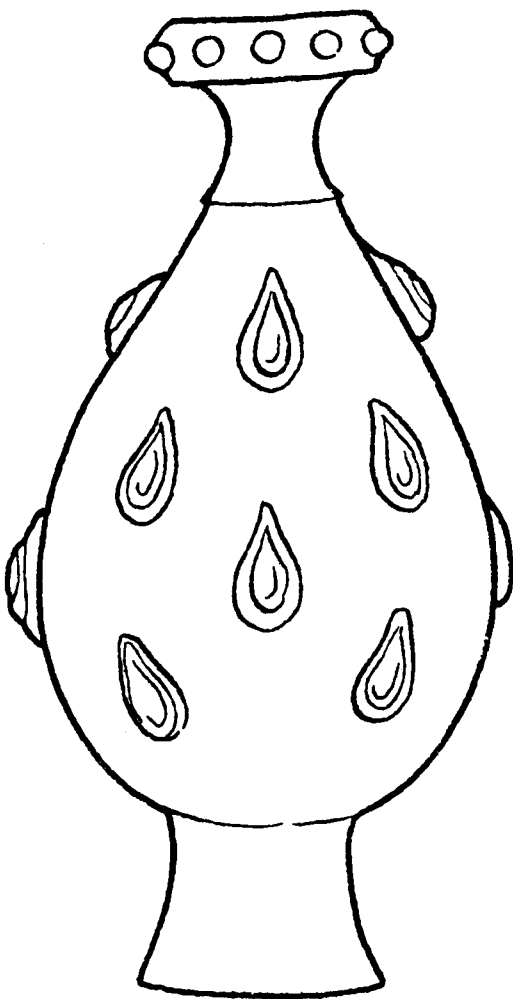
BRONZE



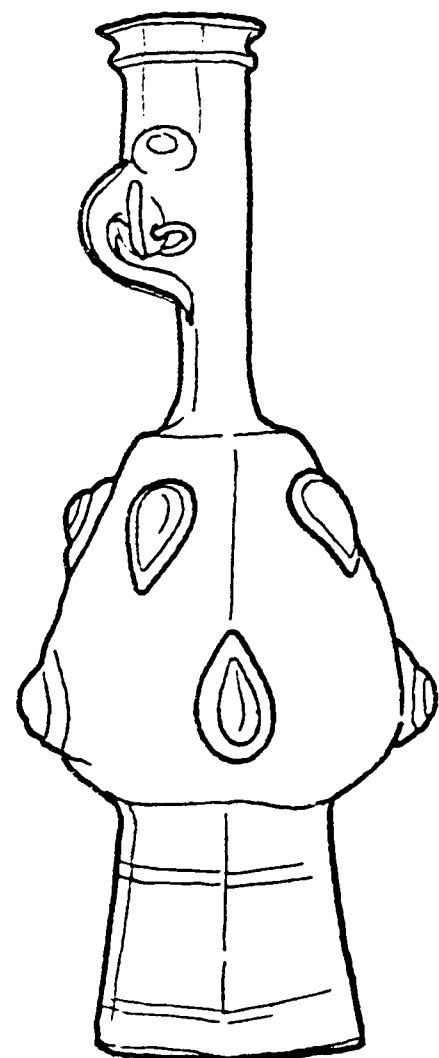
Bottle A/1/1



Bottle A/2/3

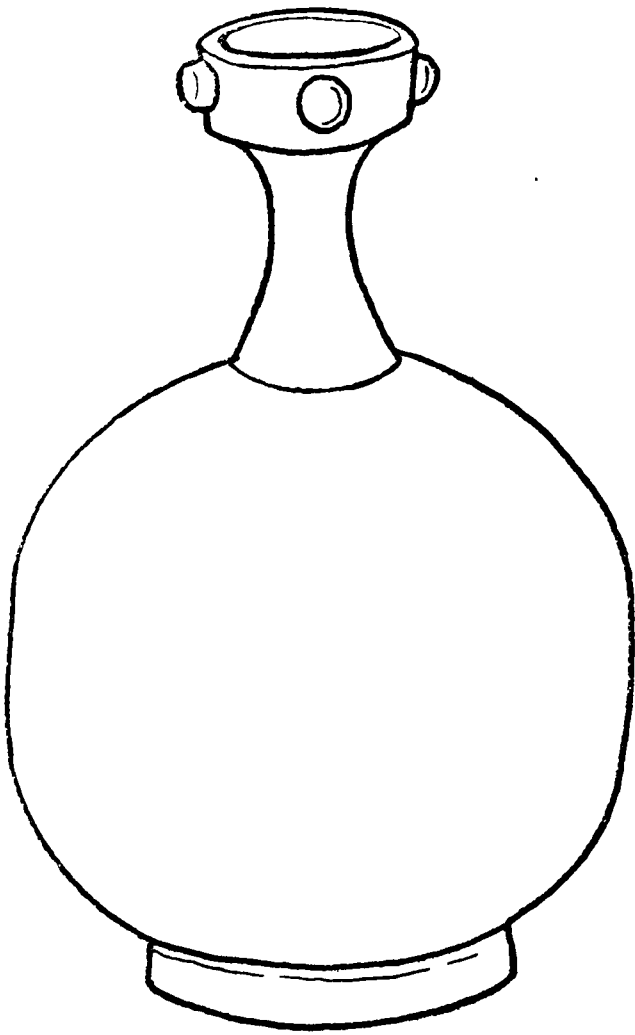


Bottle A/3/1

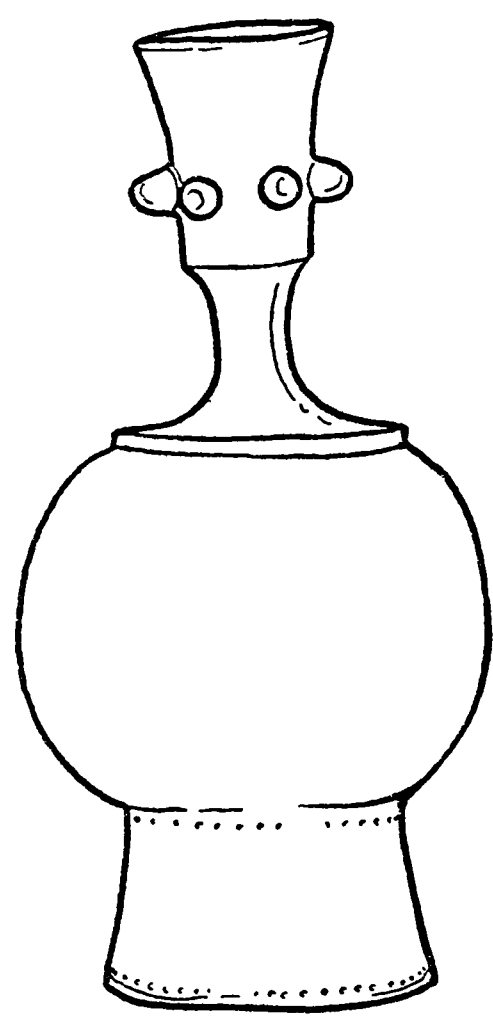


Bottle A/4/1

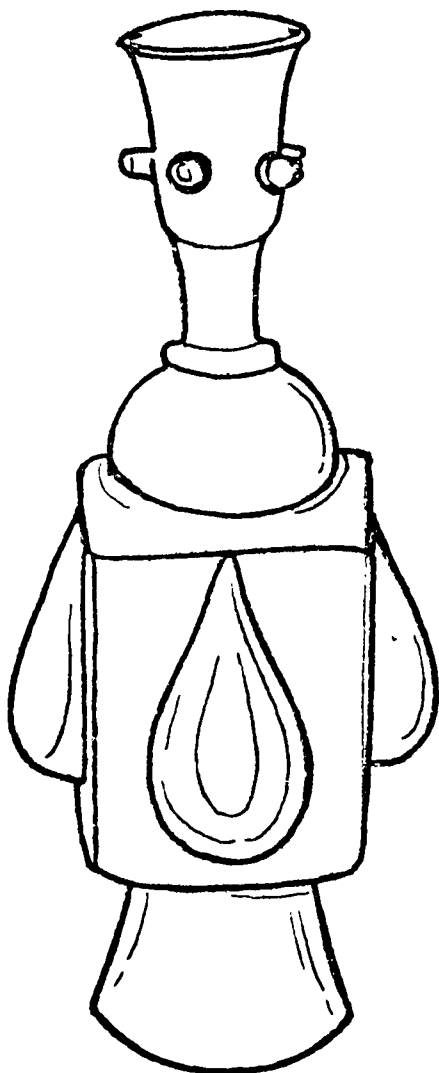
BRONZE



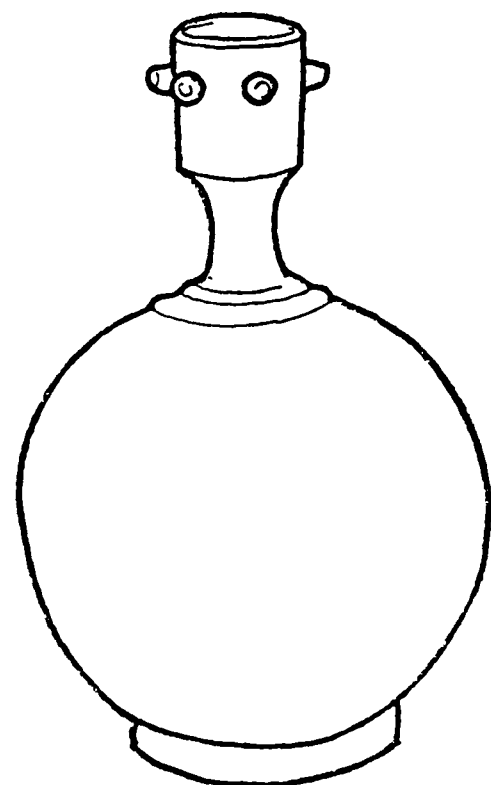
Bottle B/1/1



Bottle B/2/1

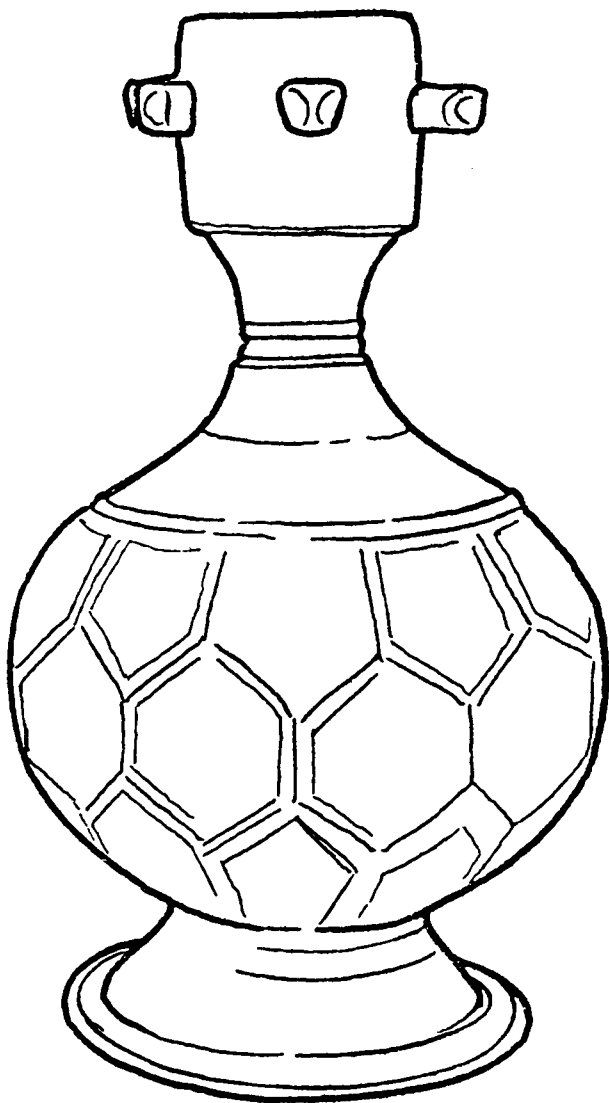


Bottle B/2/v.1

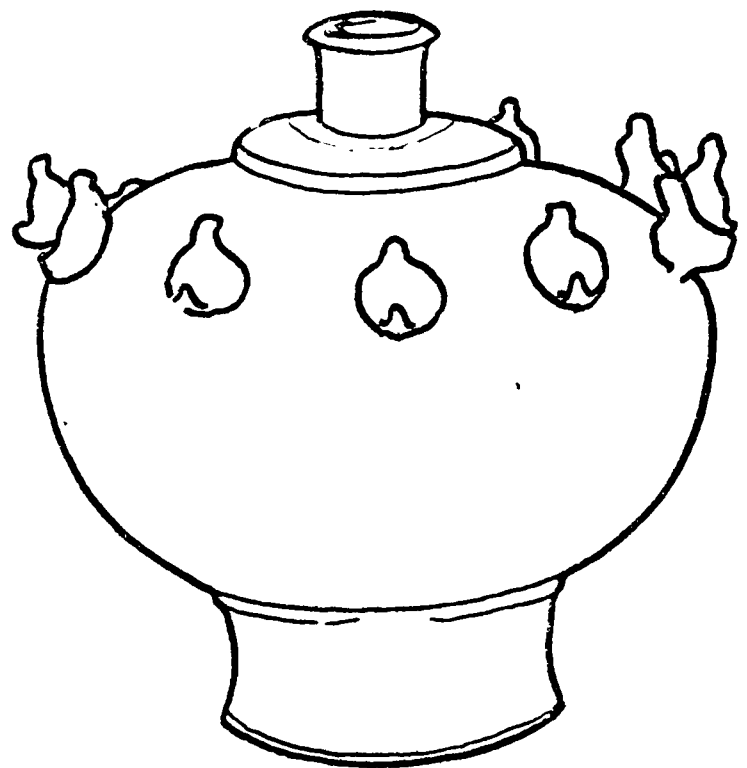


Bottle B/3/1

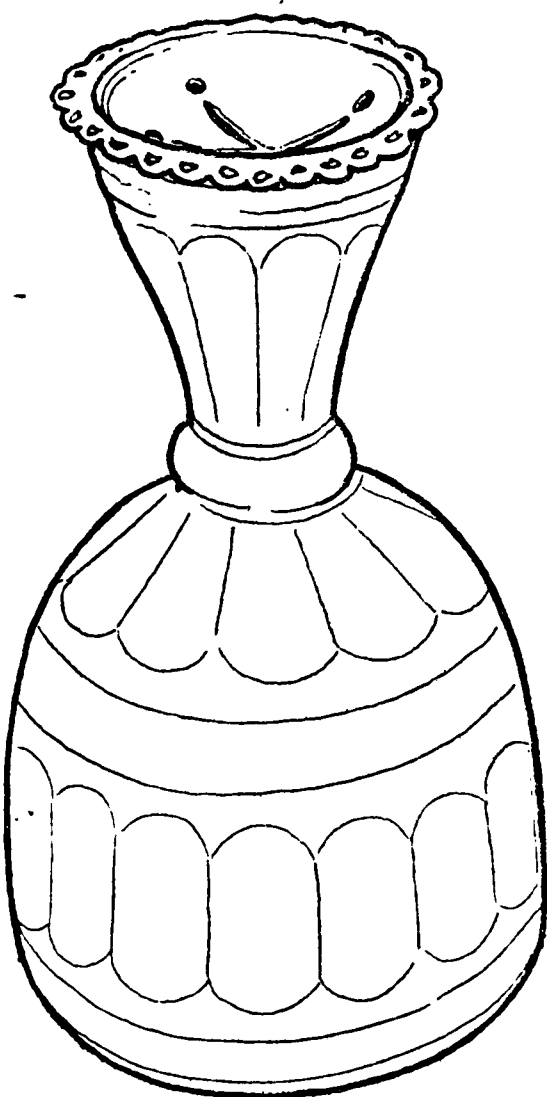
BRONZE



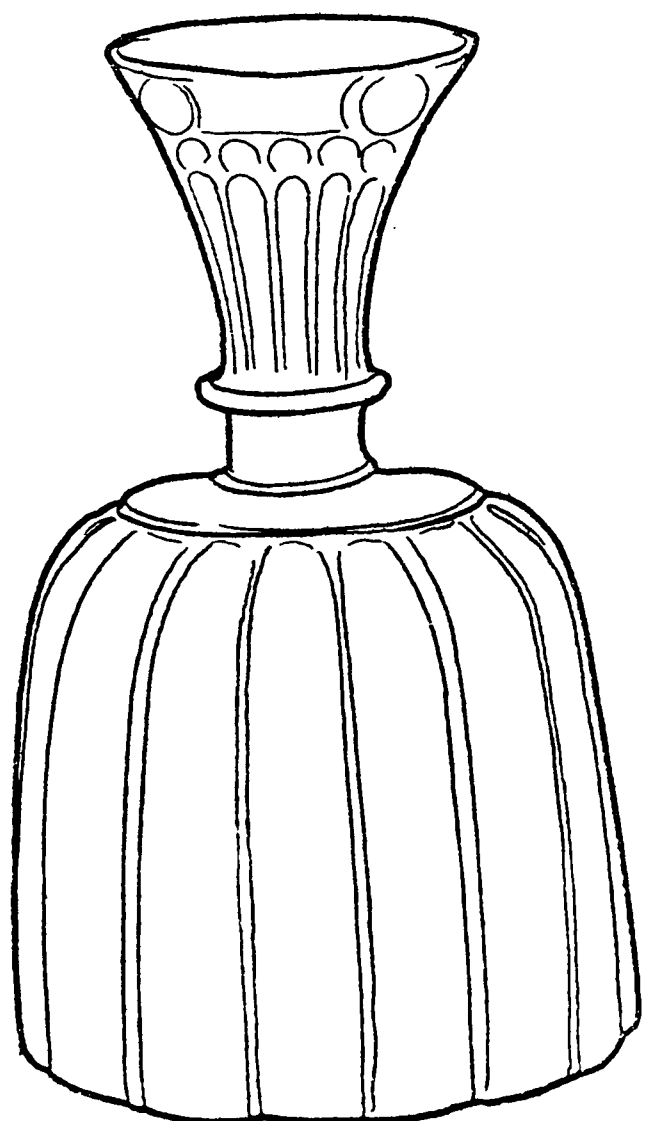
Bottle B/4/v.2



Bottle B/5/1

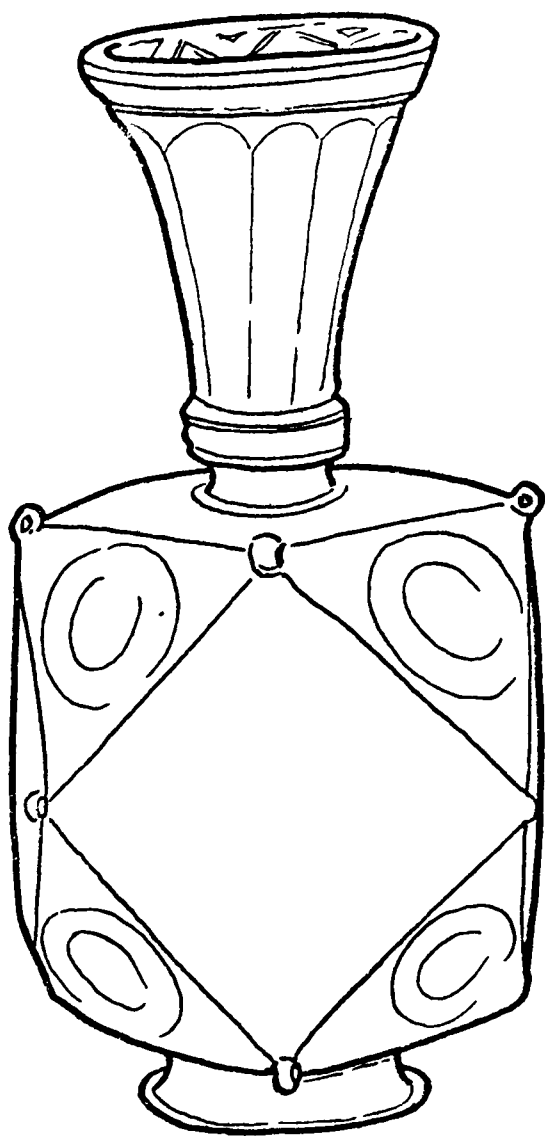


Bottle C/1/1

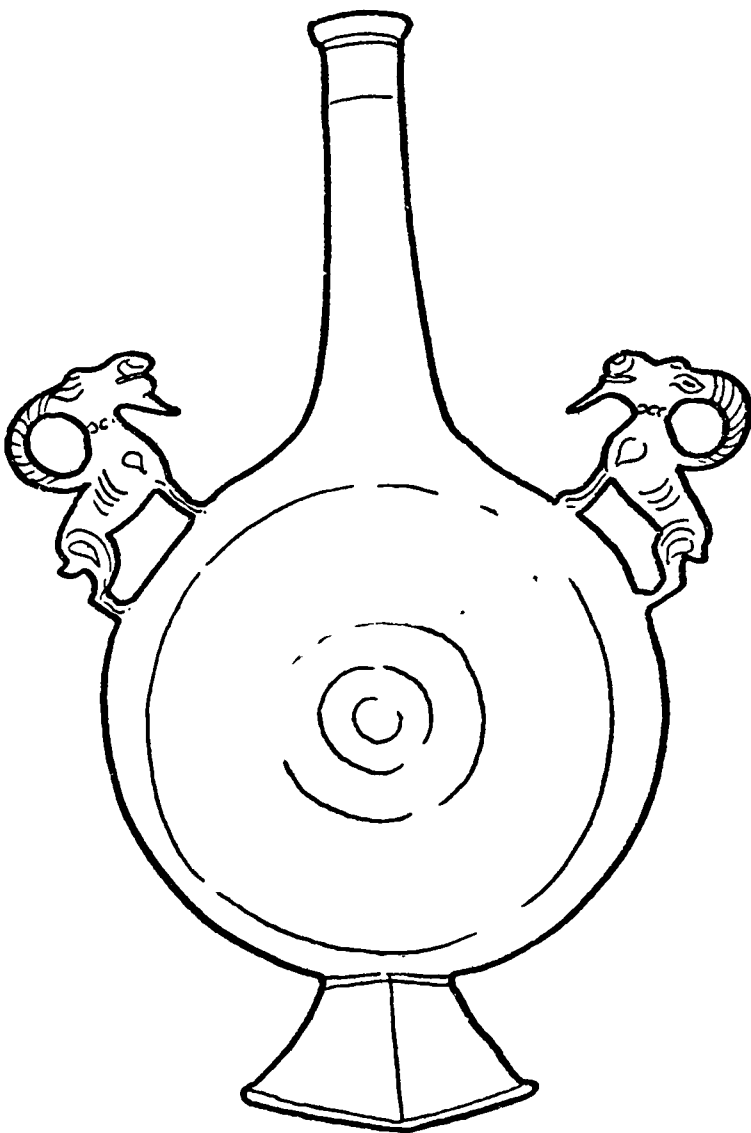


Bottle C/2/3

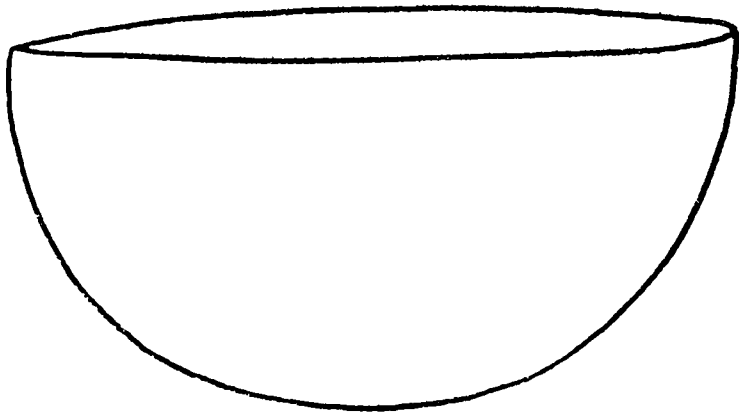
BRONZE



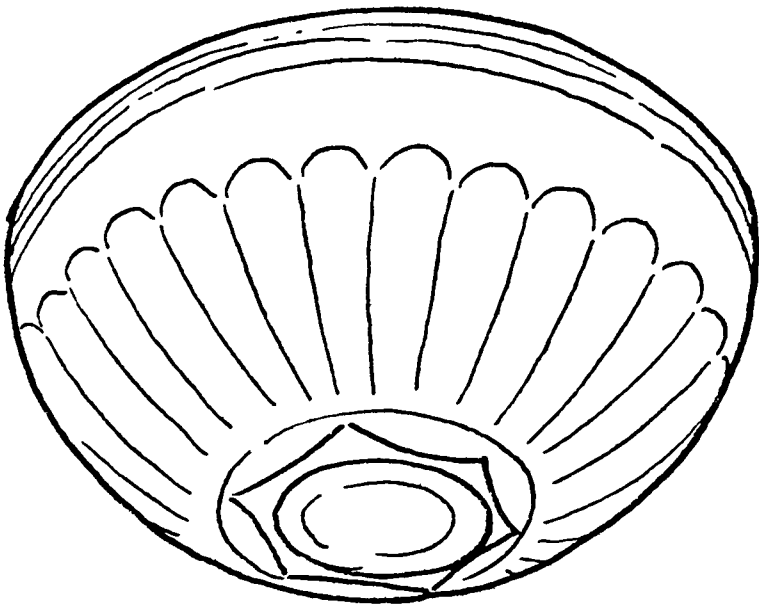
Bottle D/1



Bottle E/1

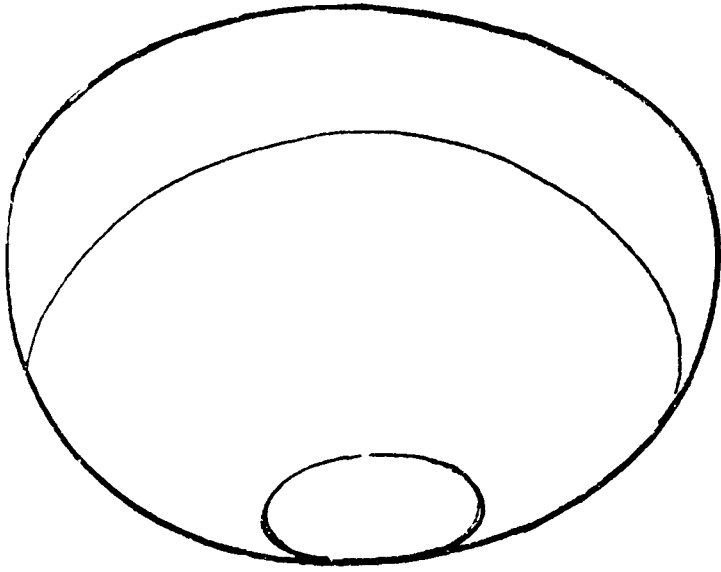


Bowl A/1

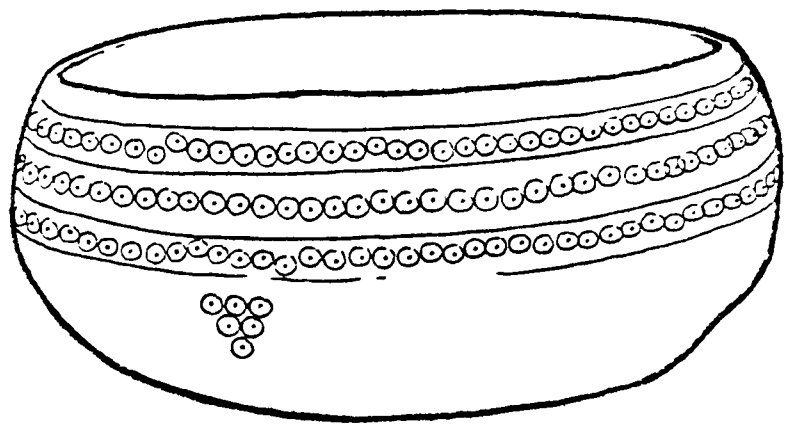


Bowl B/4

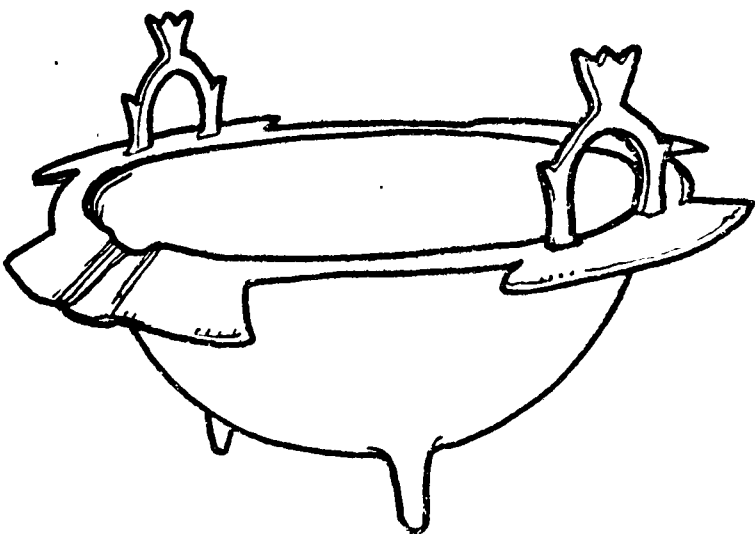
BRONZE



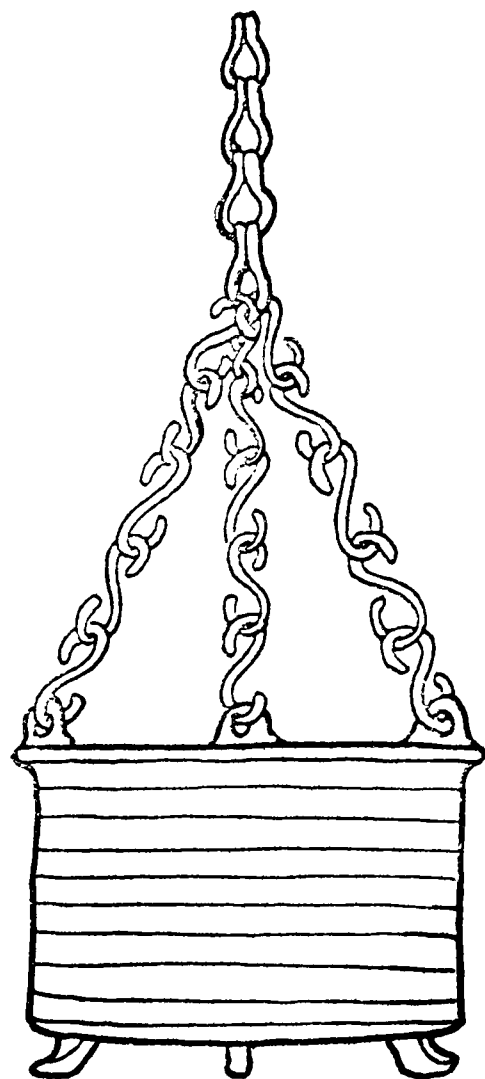
Bowl C/1



Bowl D/1



Cauldron A/1

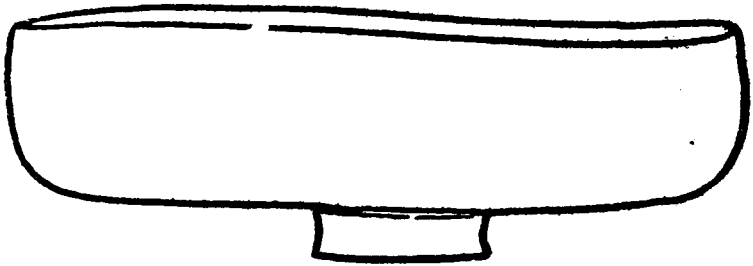


Cauldron B/1

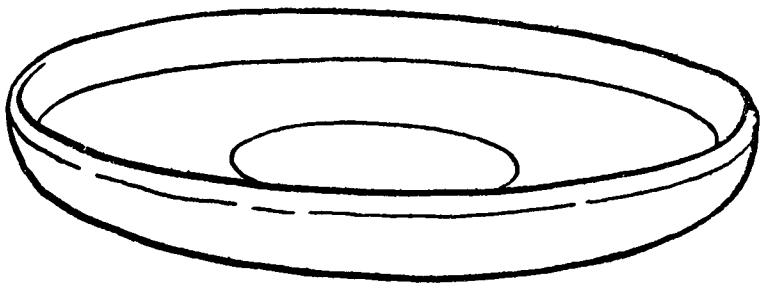
BRONZE



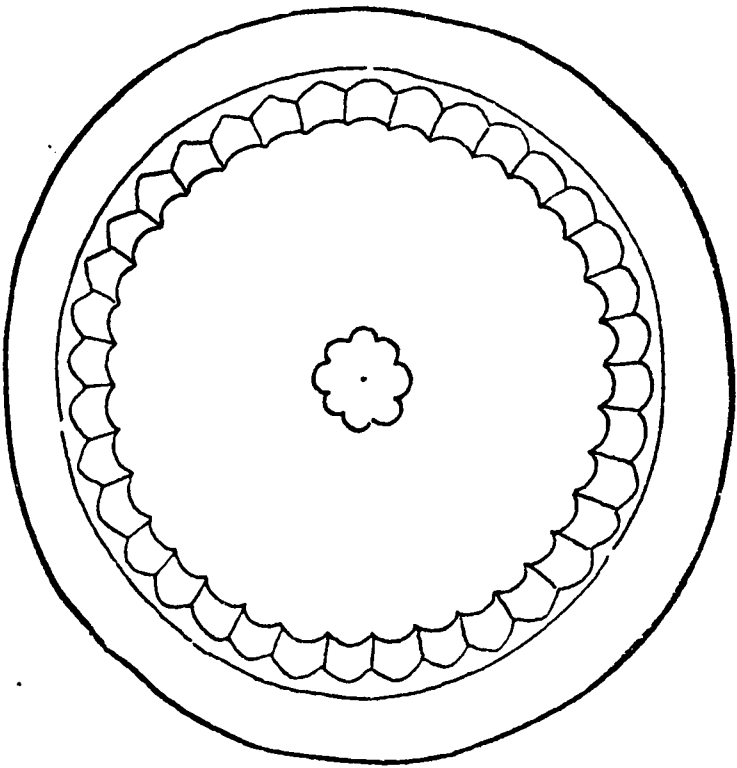
Dish A/1/3



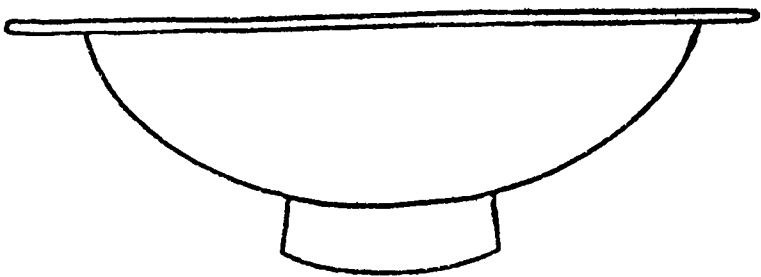
Dish A/2/b/5



Dish A/2/a/4



Dish B/1/4

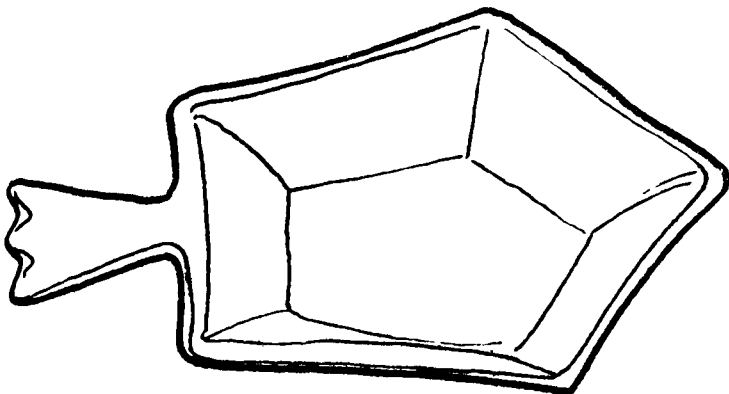


Dish B/2/2

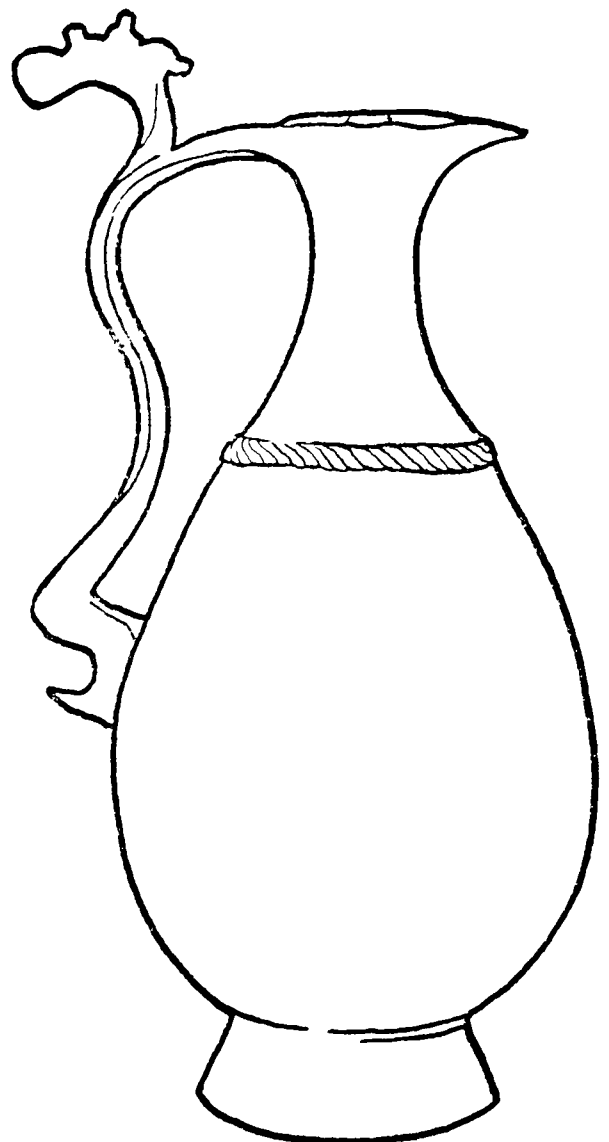
BRONZE



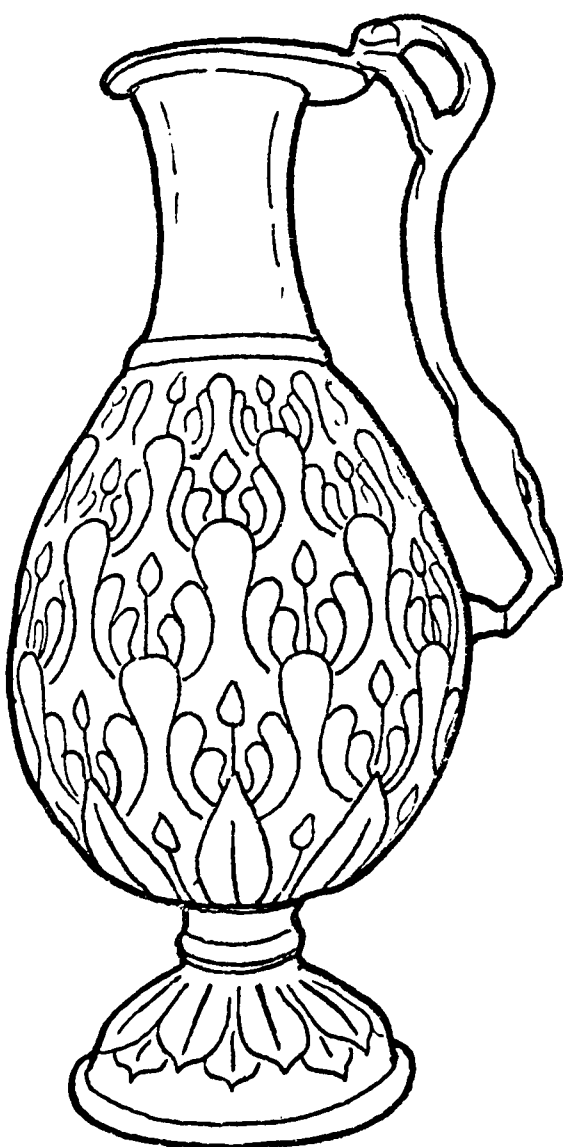
Dish c/1



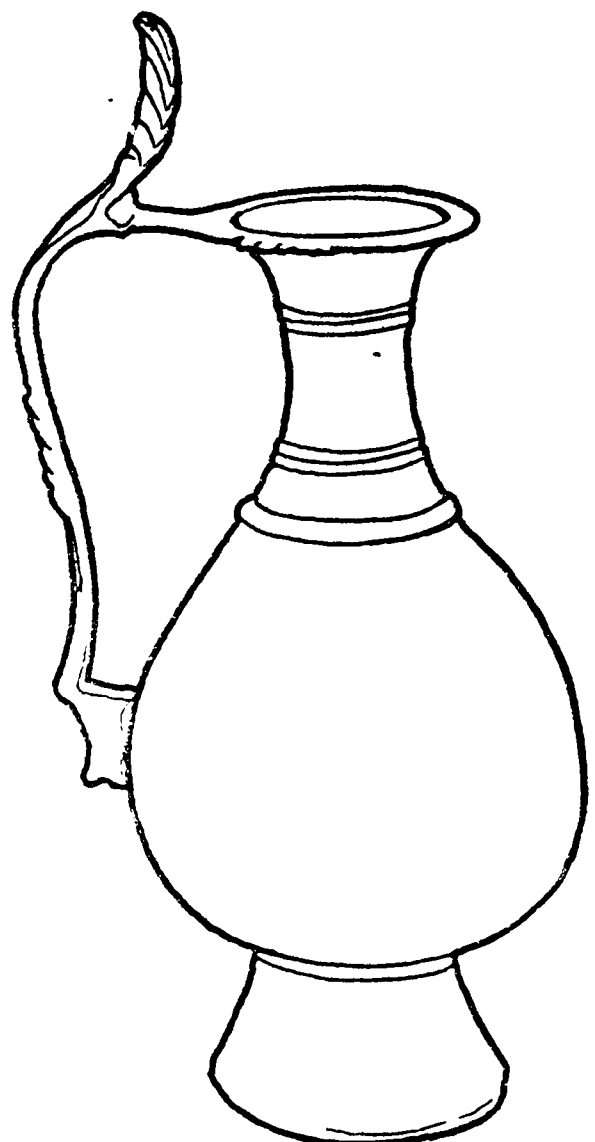
Dish D/1



Ewer A/1/a/1

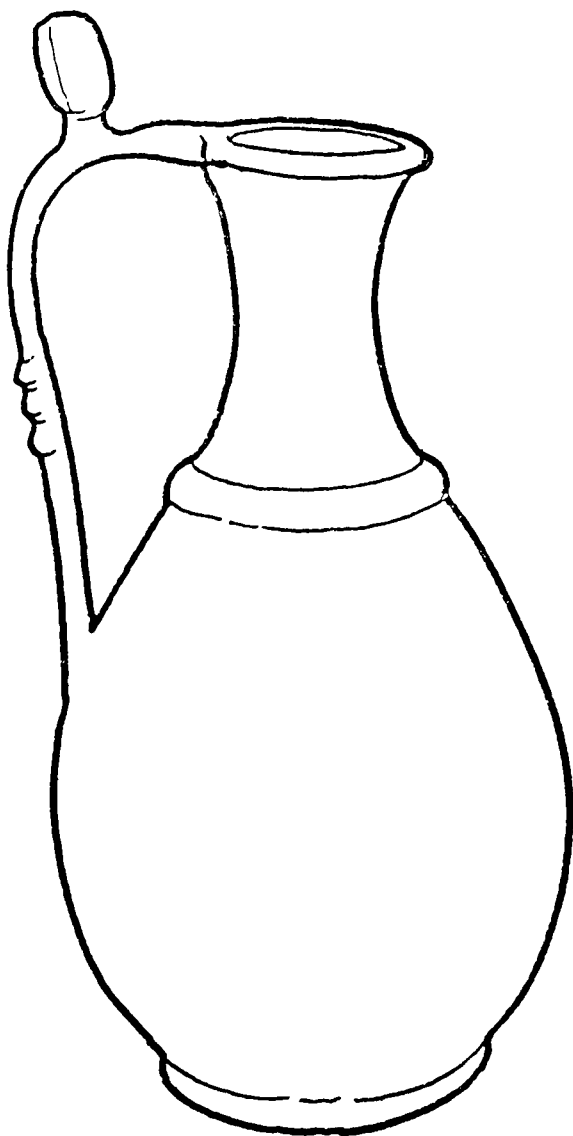


Ewer A/1/b/1

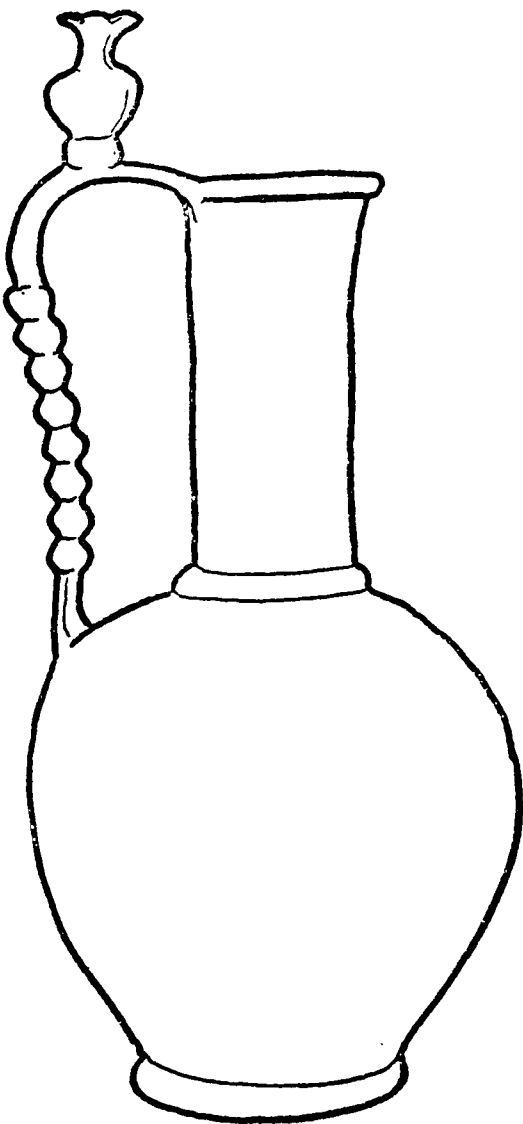


Ewer A/1/c/1

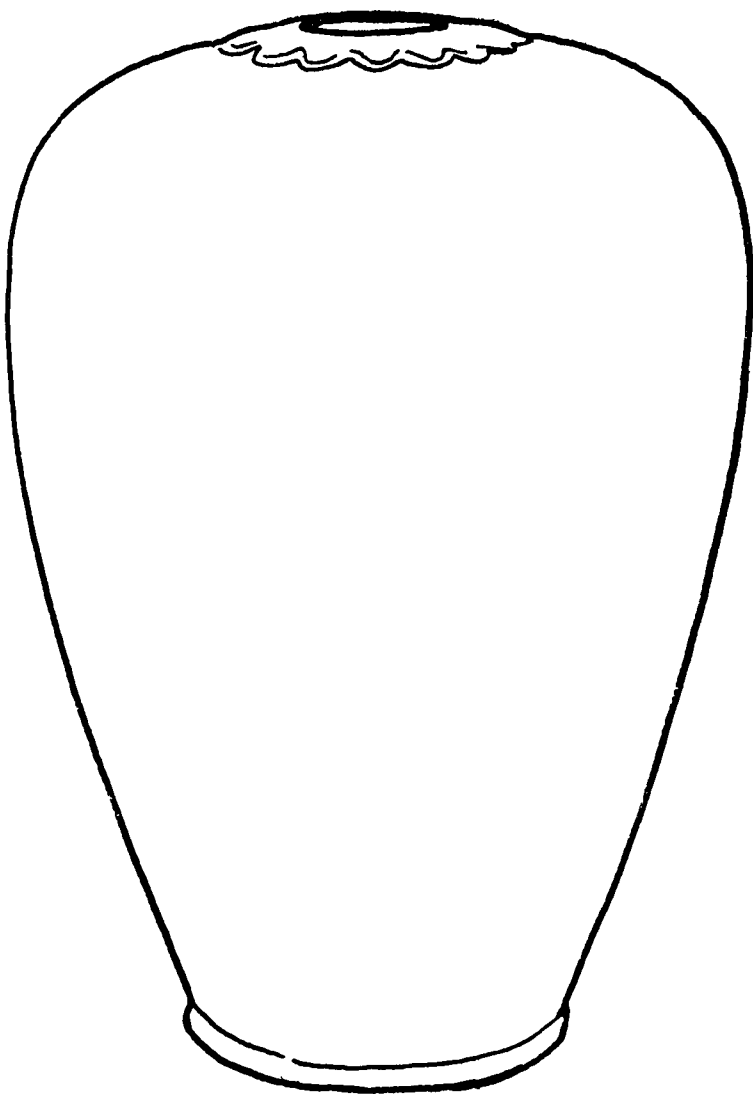
BRONZE



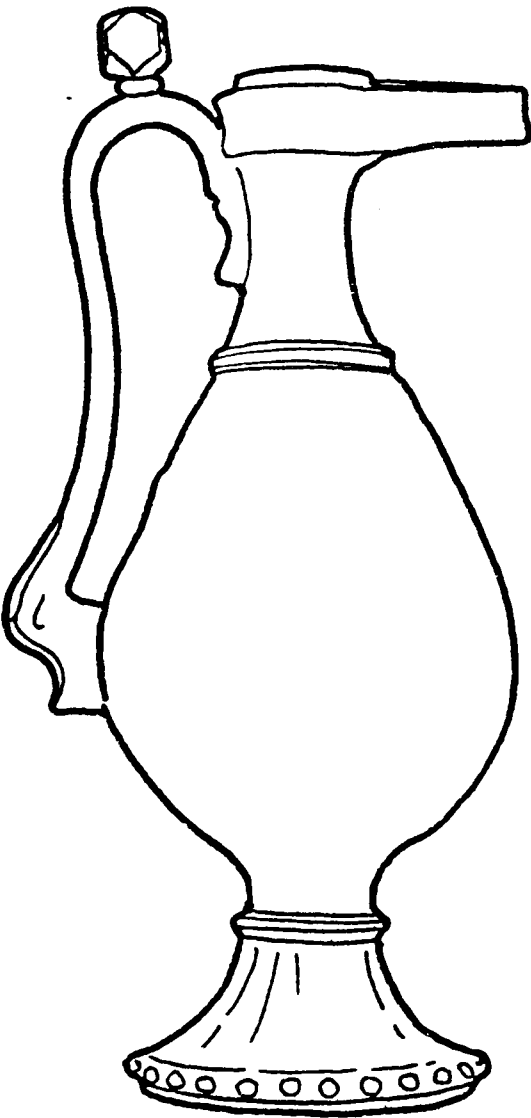
Ewer A/1/c/v.1



Ewer A/1/d/3

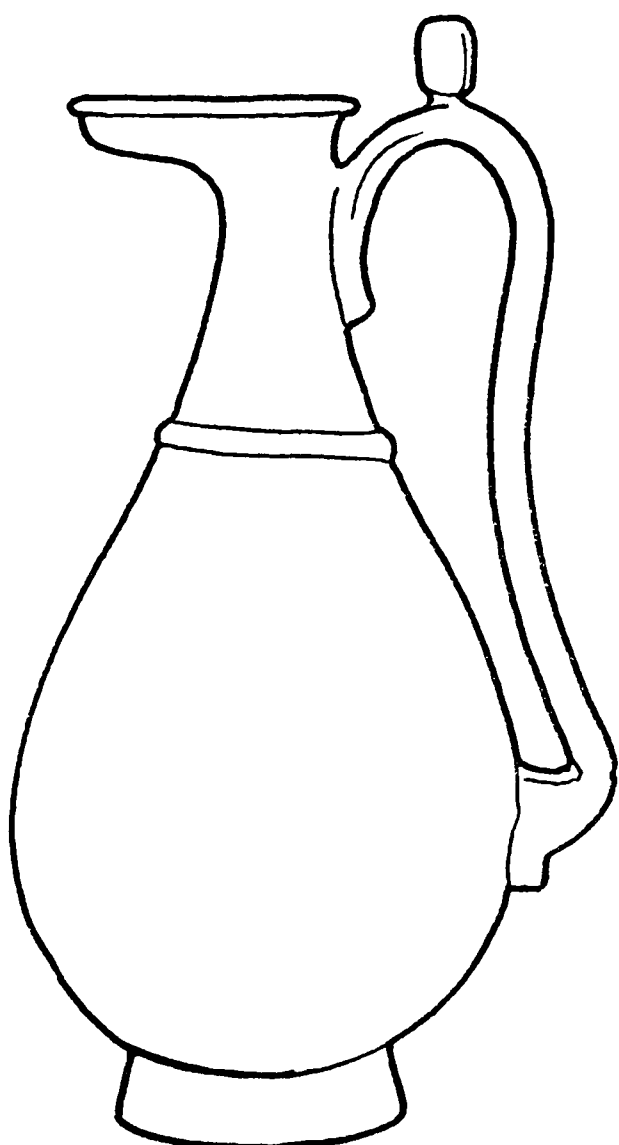


Ewer A/1/e/1

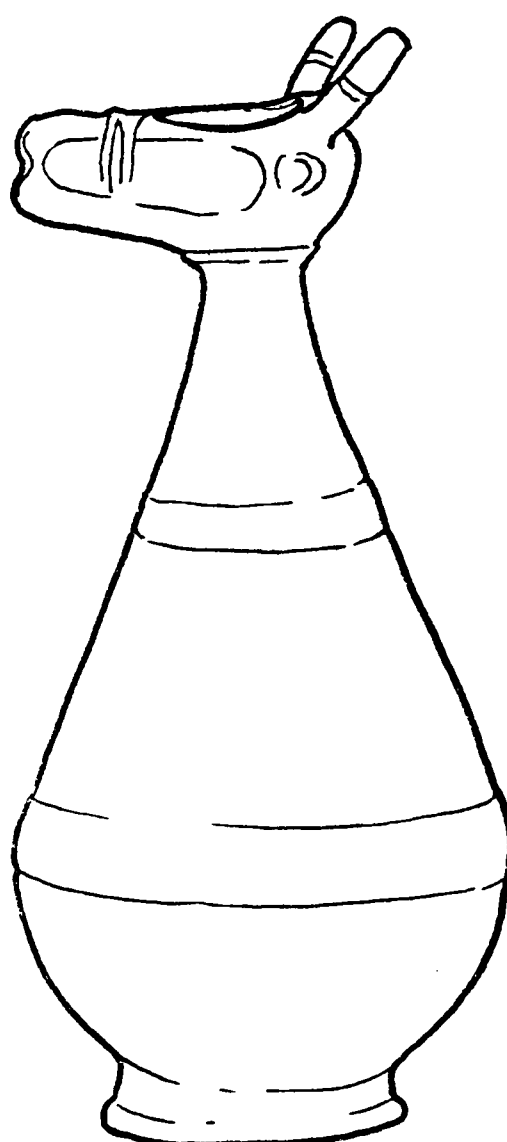


Ewer A/2/a/2

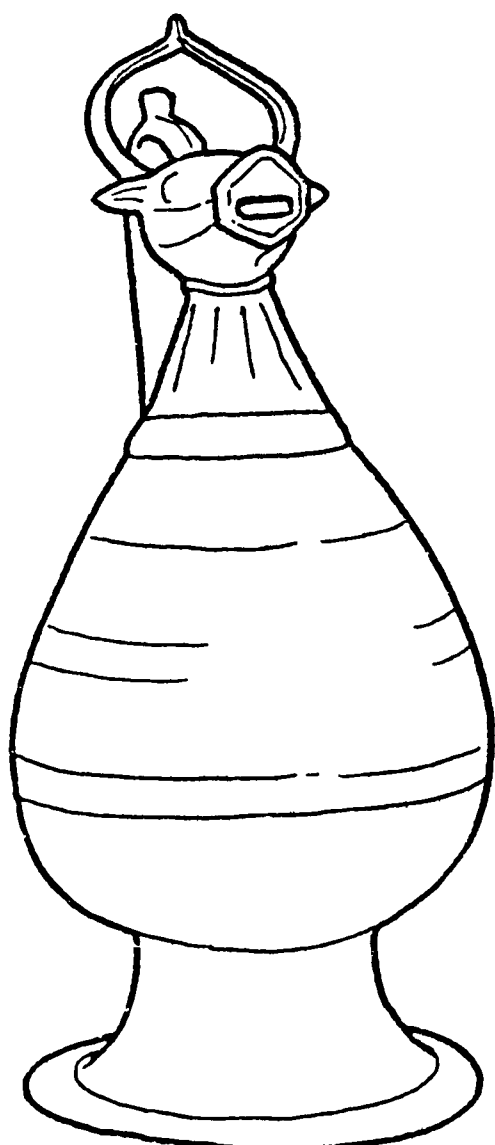
BRONZE



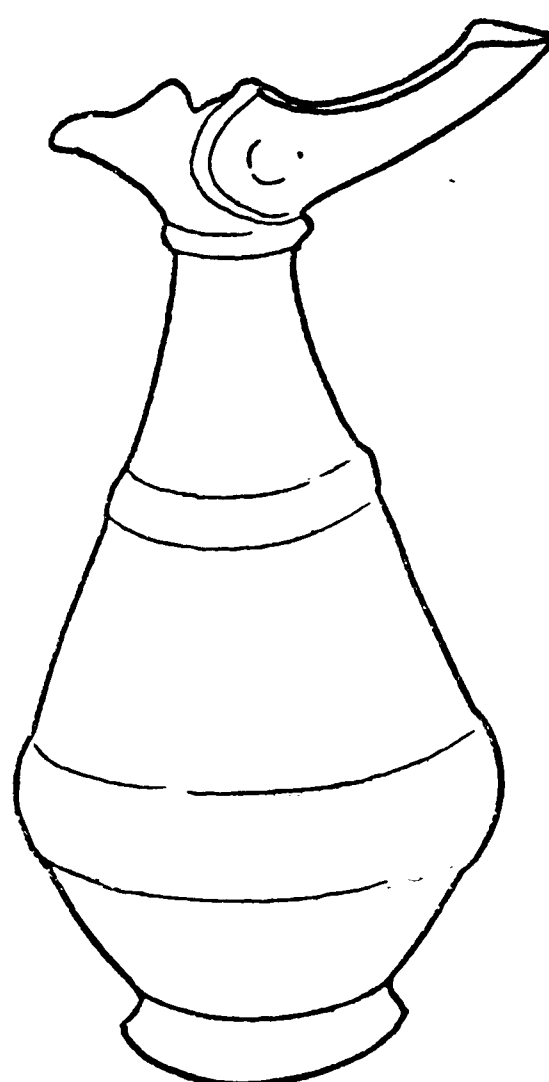
Ewer A/2/b/2



Ewer A/2/c/1

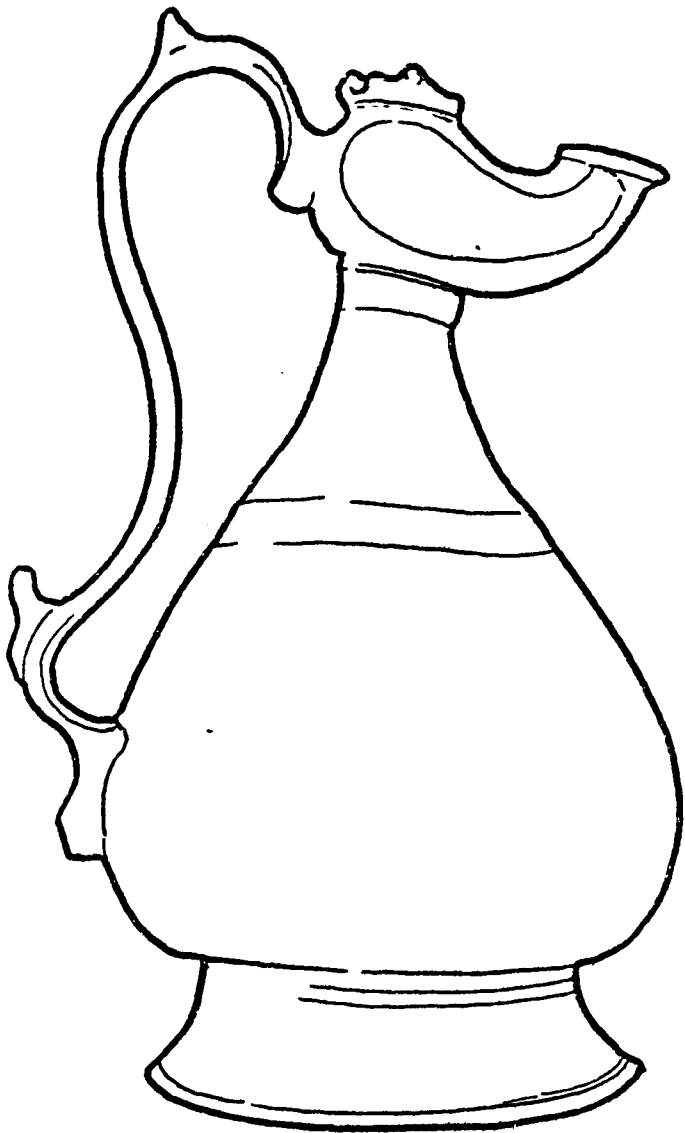


Ewer A/2/d/1

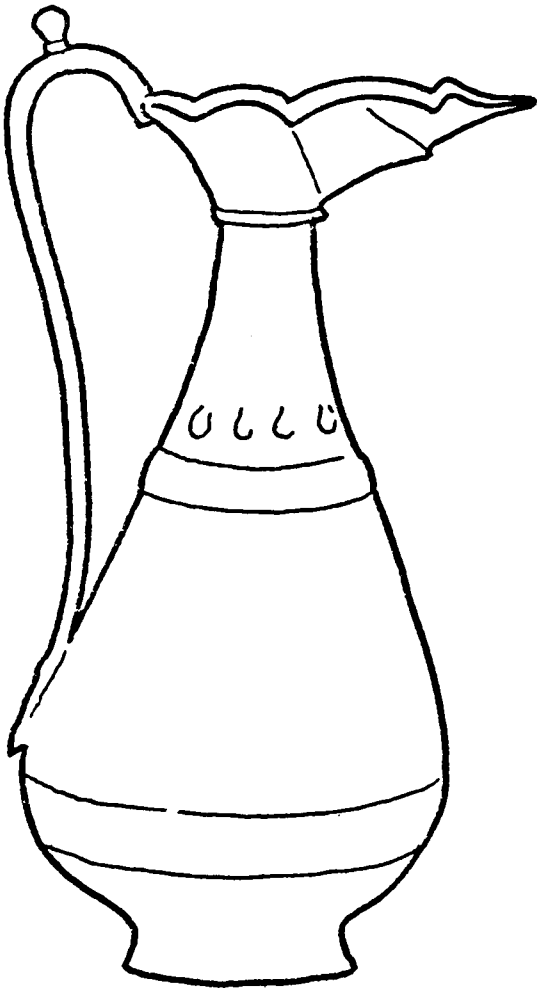


Ewer A/2/e/1

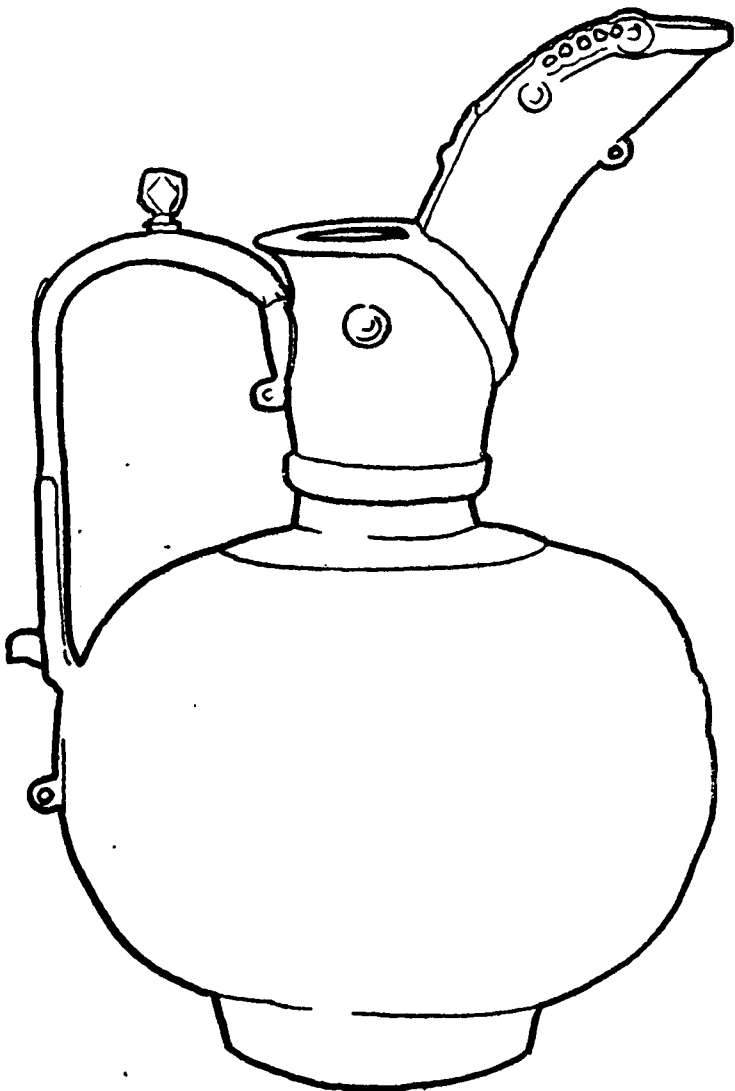
BRONZE



Ewer A/2/f/2



Ewer A/2/g/1

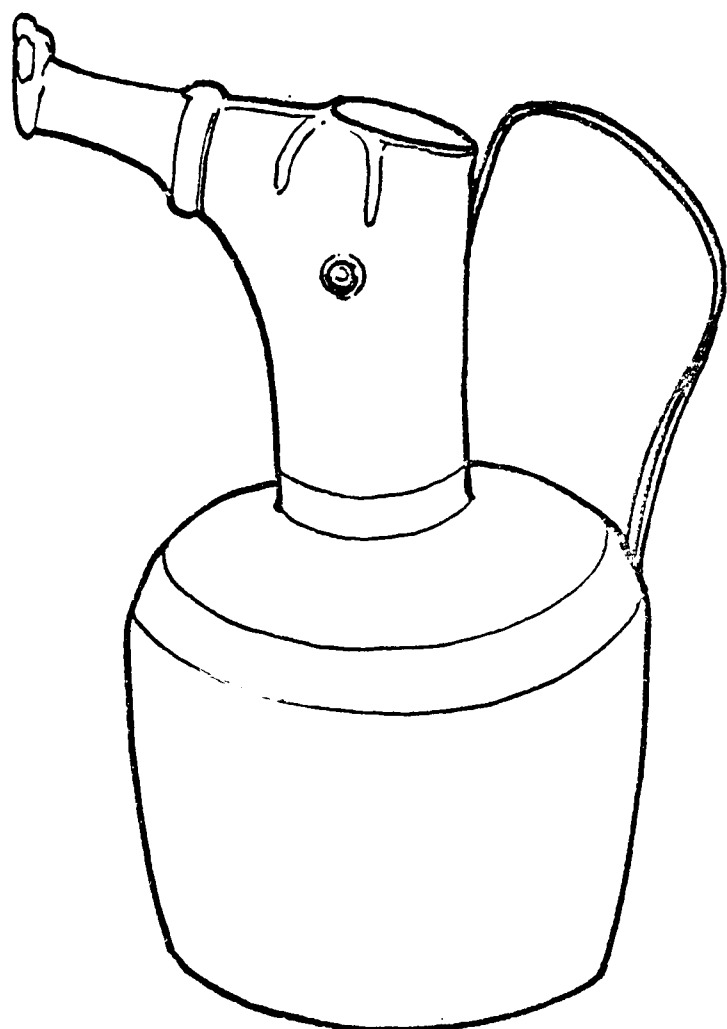


Ewer B/1/1

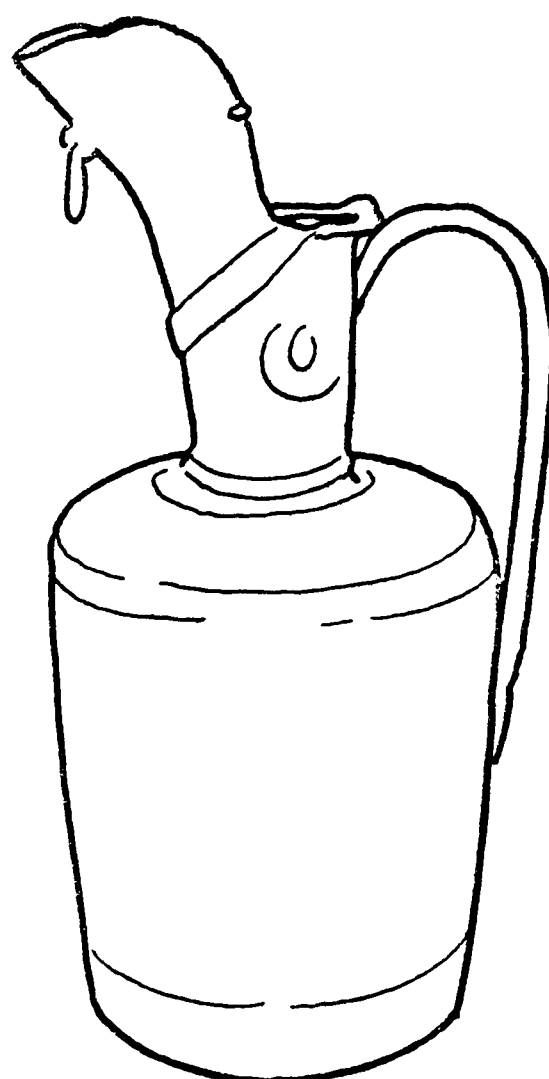


Ewer B/2/1

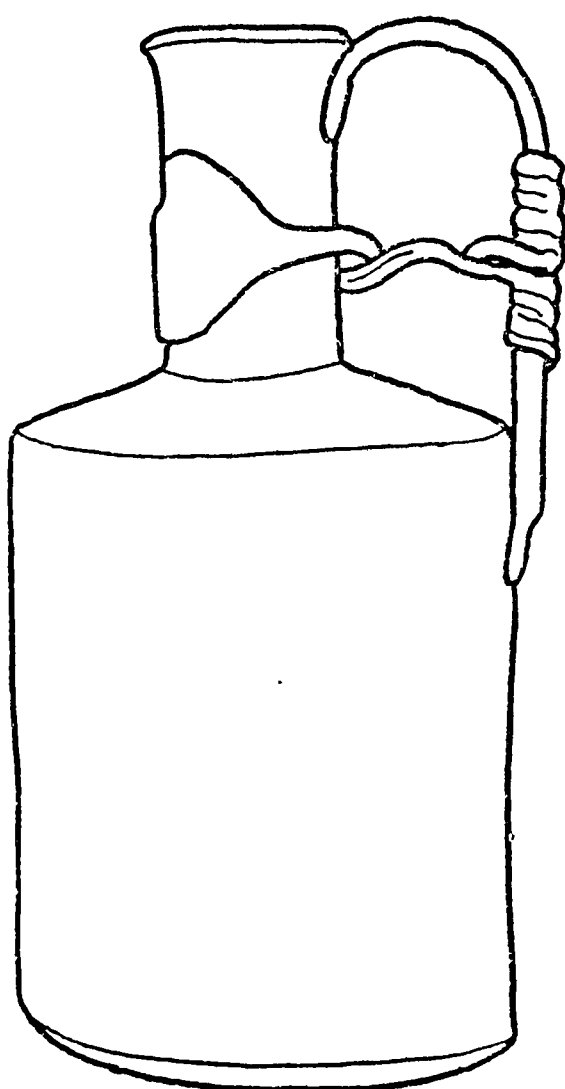
BRONZE



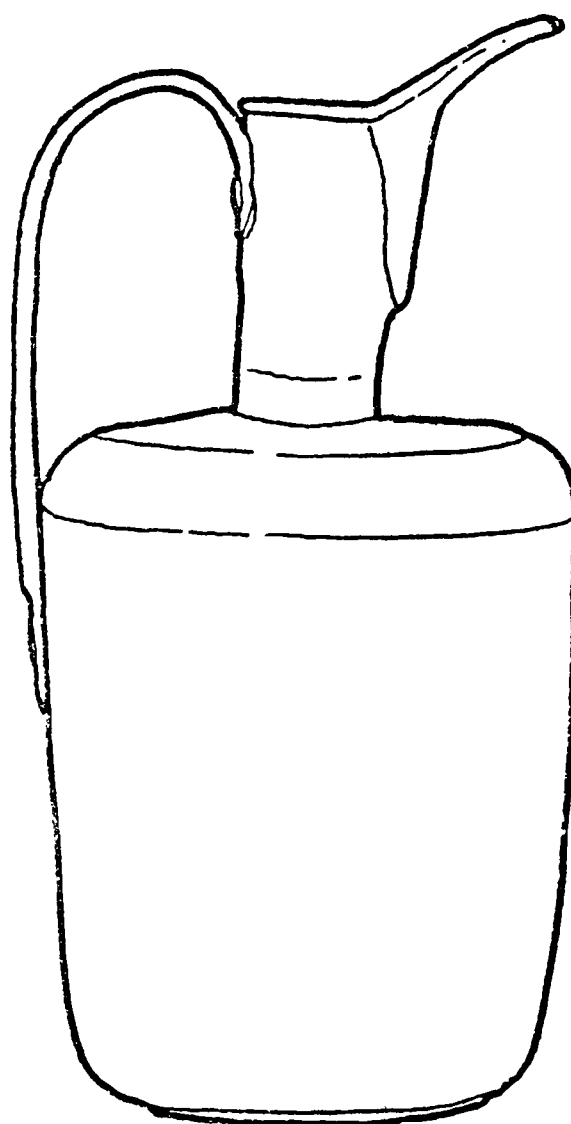
Ewer C/1/a/3



Ewer C/1/b/1

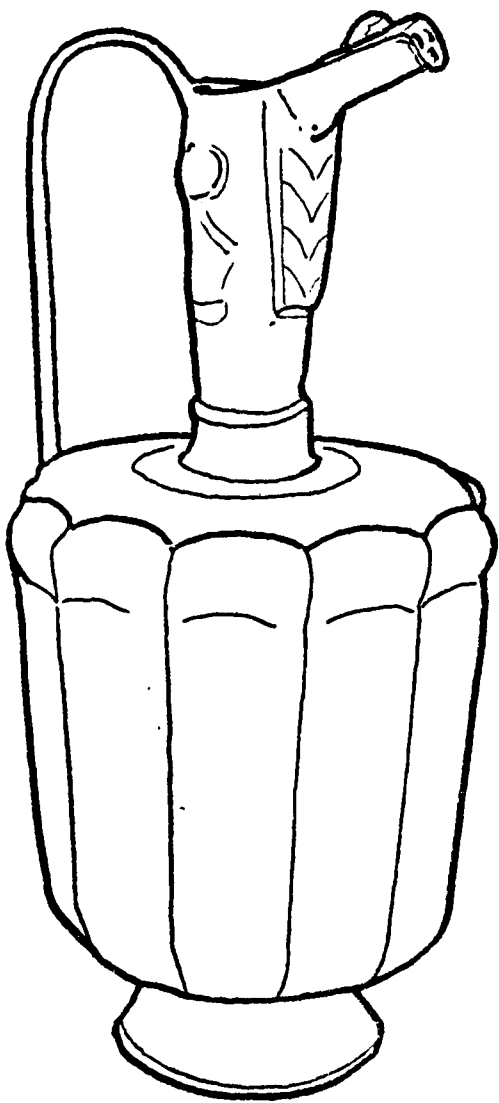


Ewer C/2/2

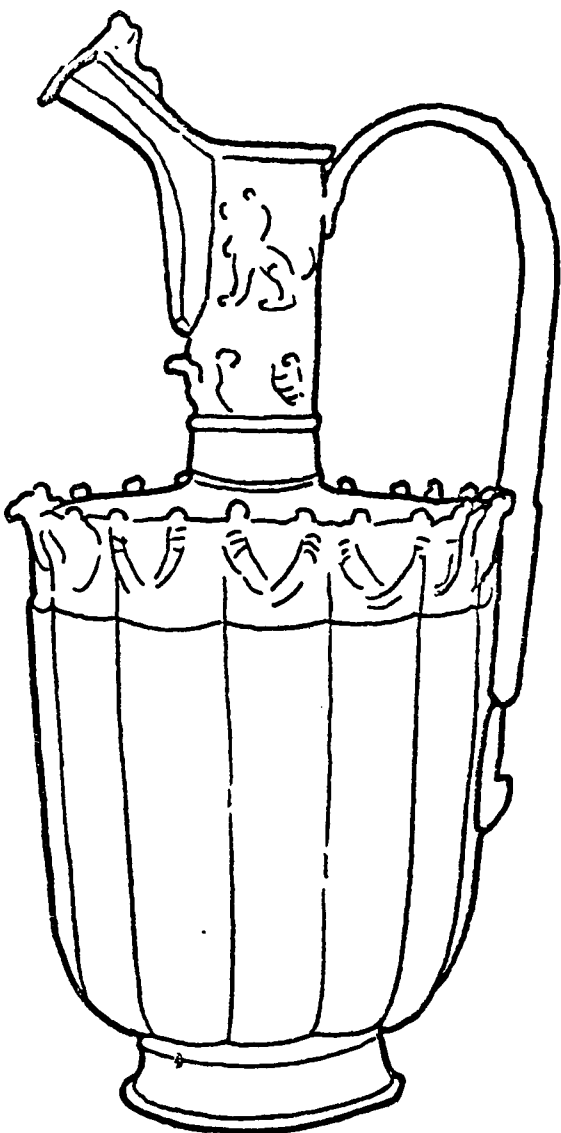


Ewer C/3/a/2

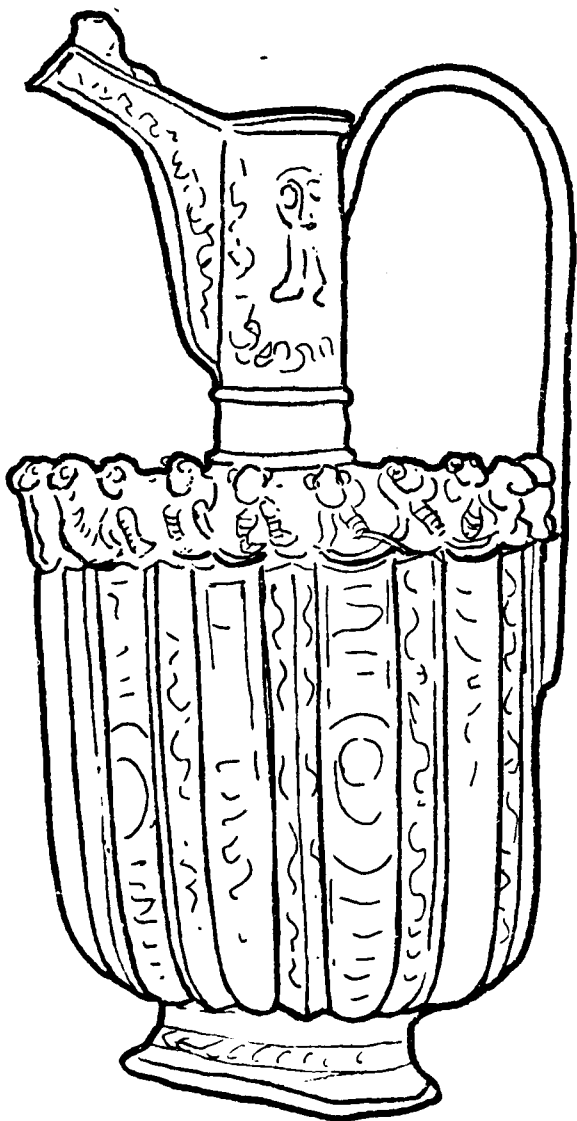
BRONZE



Ewer C/3/b/7



Ewer C/3/c/2



Ewer C/3/d/2

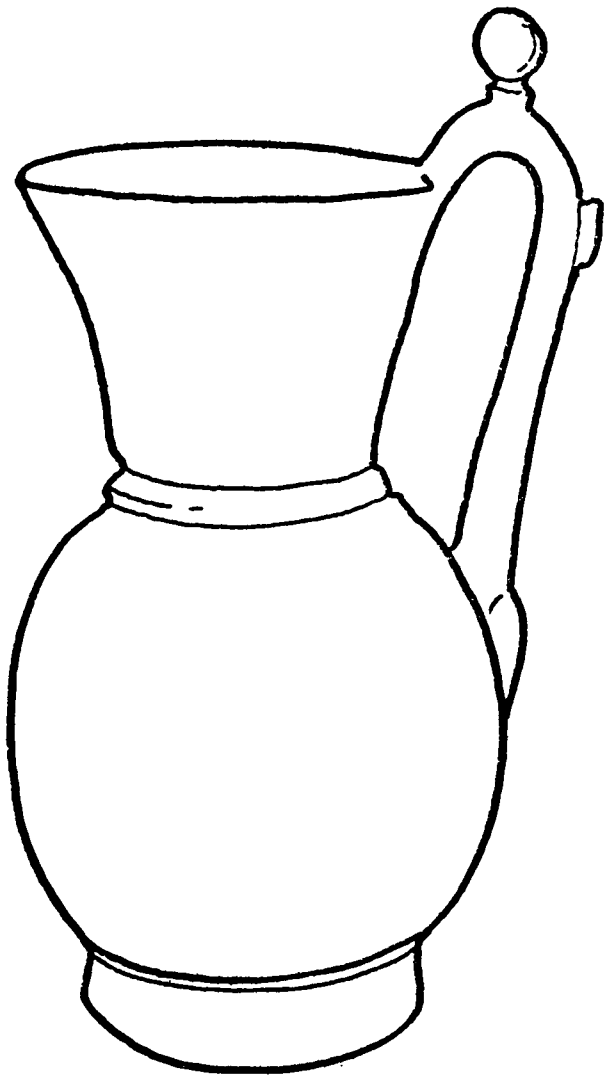


Fork 2



Fork 3

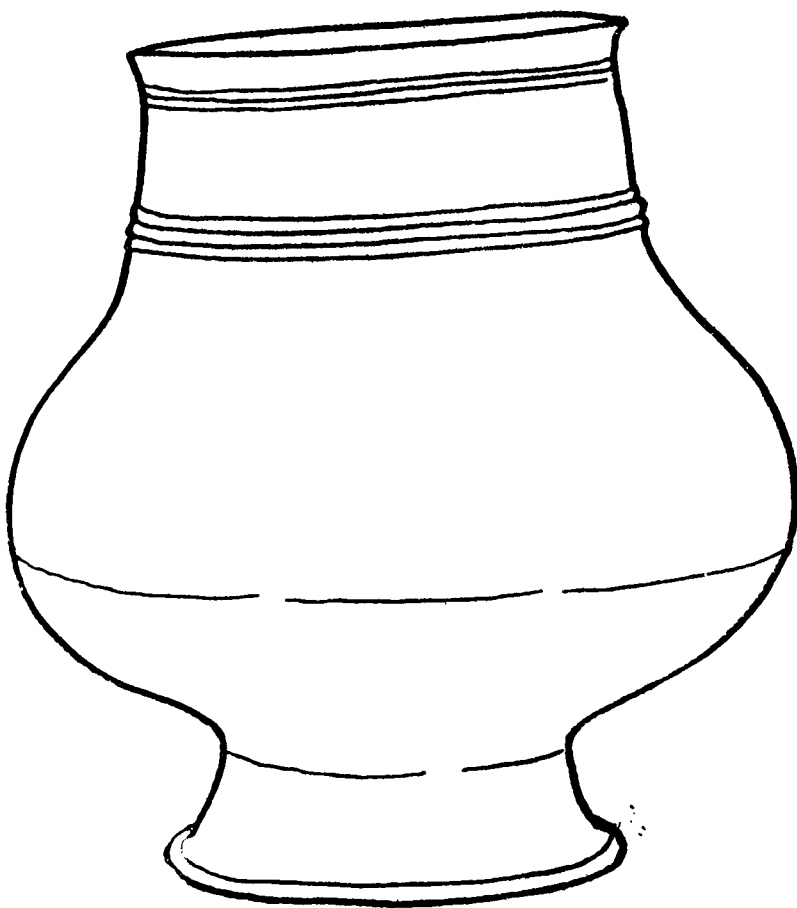
BRONZE



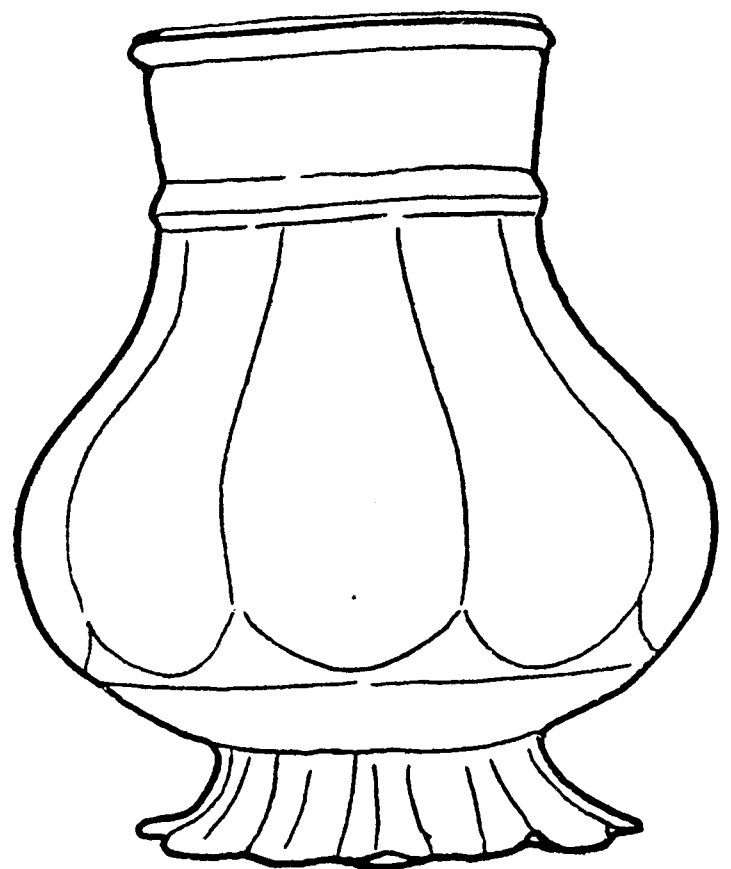
Jug A/1/1



Jug A/2/1

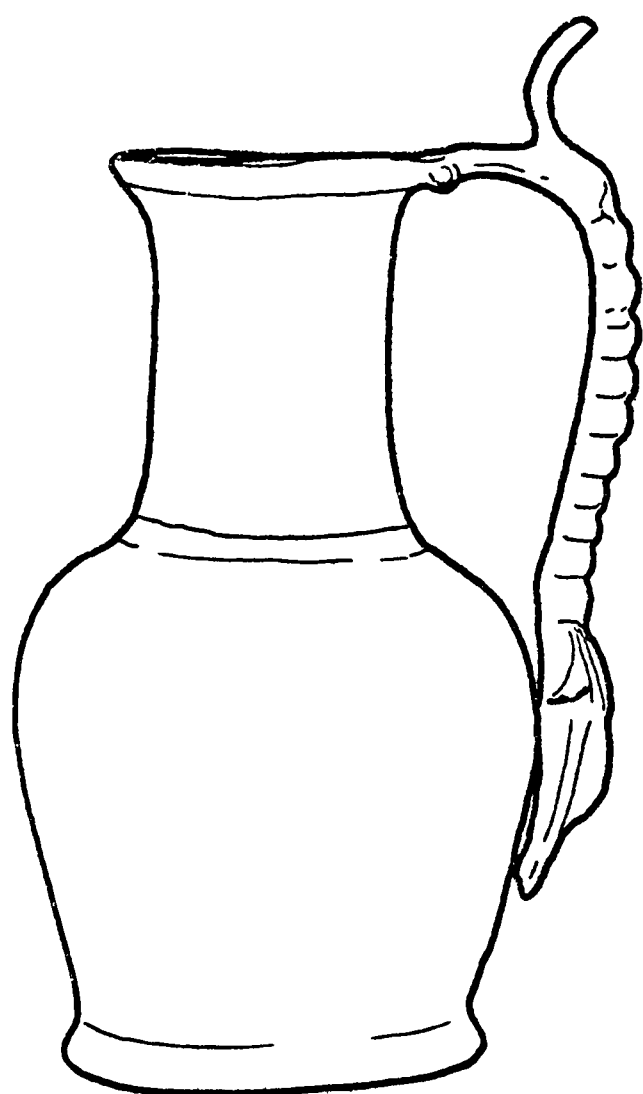


Jug A/3/2

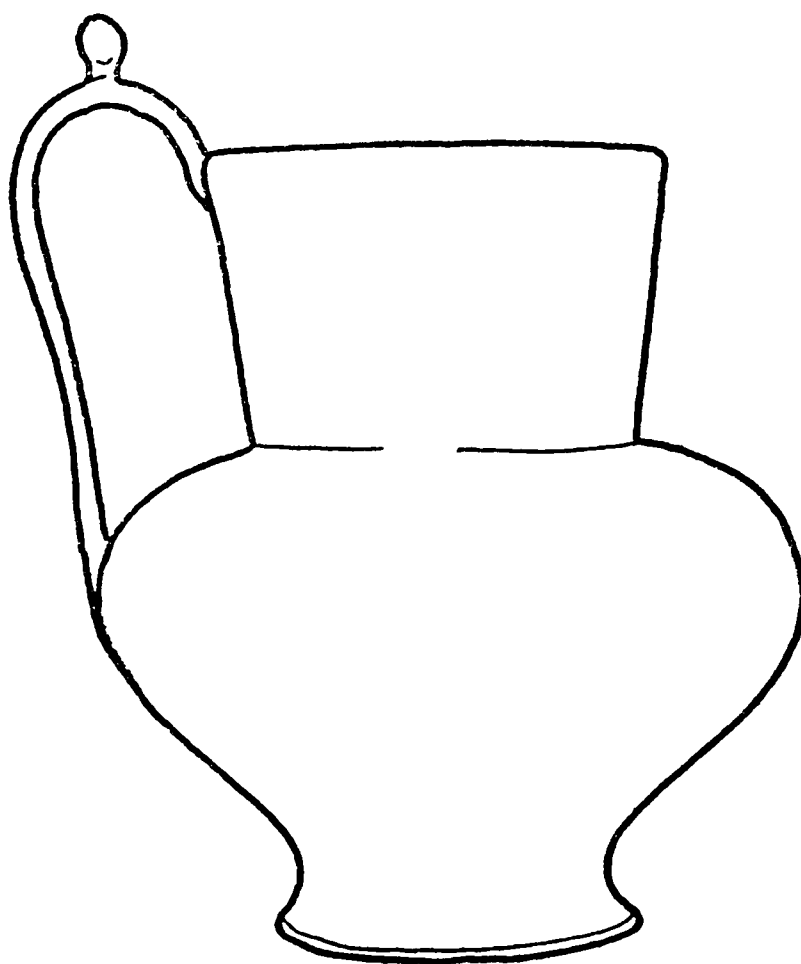


Jug A/4/1

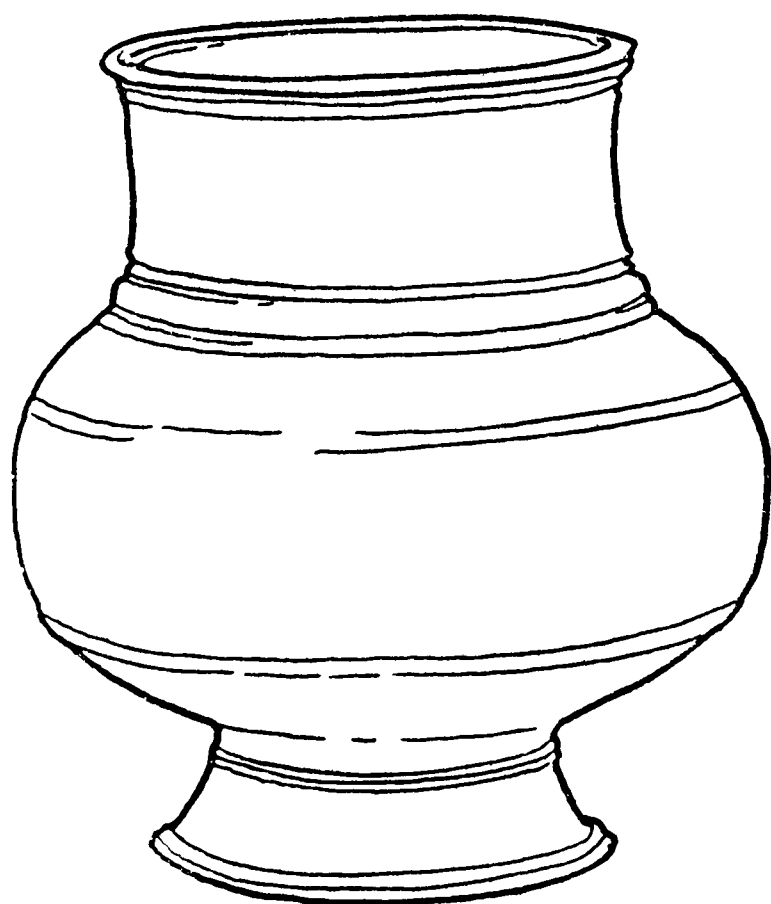
BRONZE



Jug A/5/1



Jug A/6/1

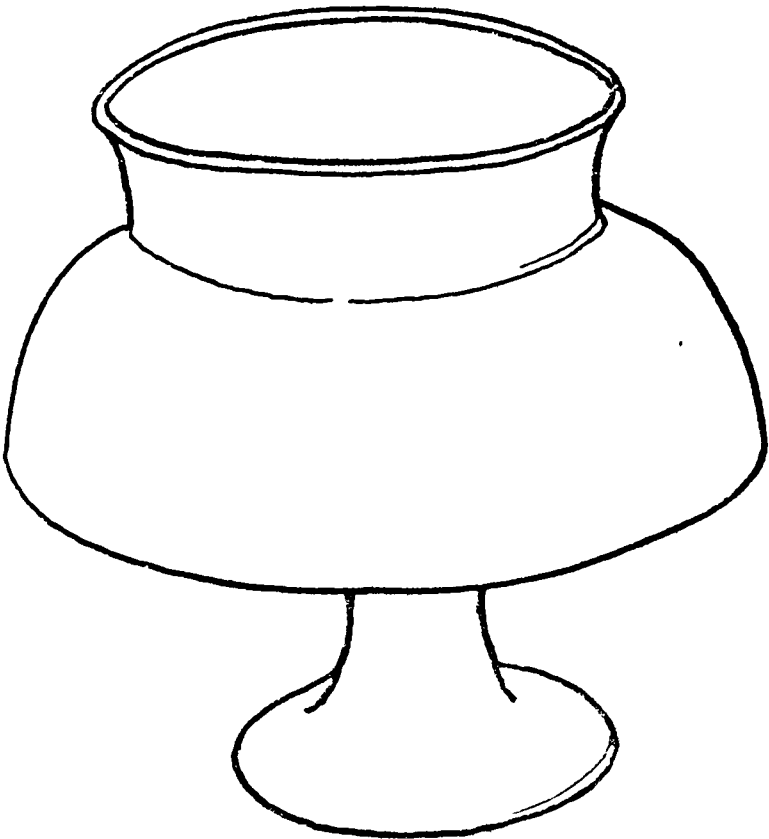


Jug B/1/1

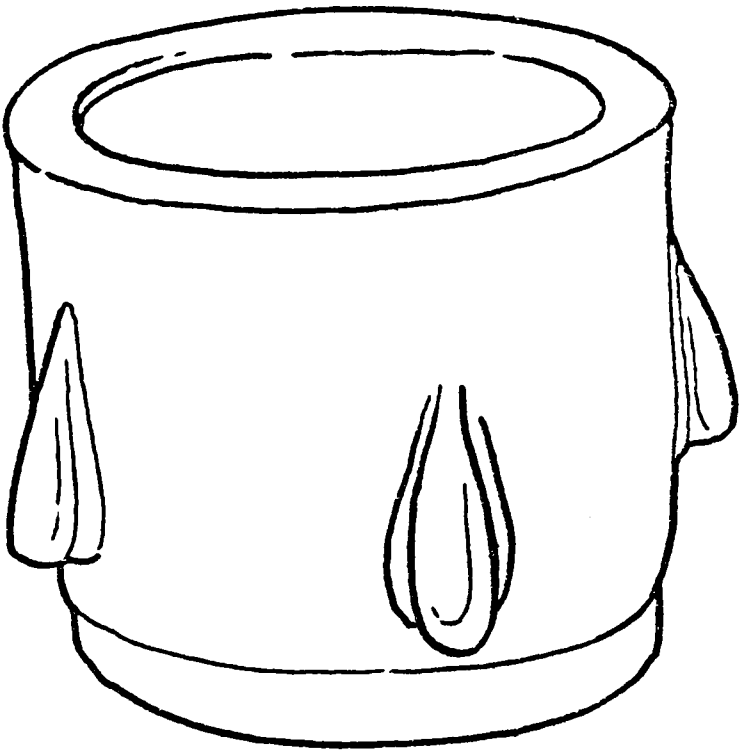


Jug B/2/1

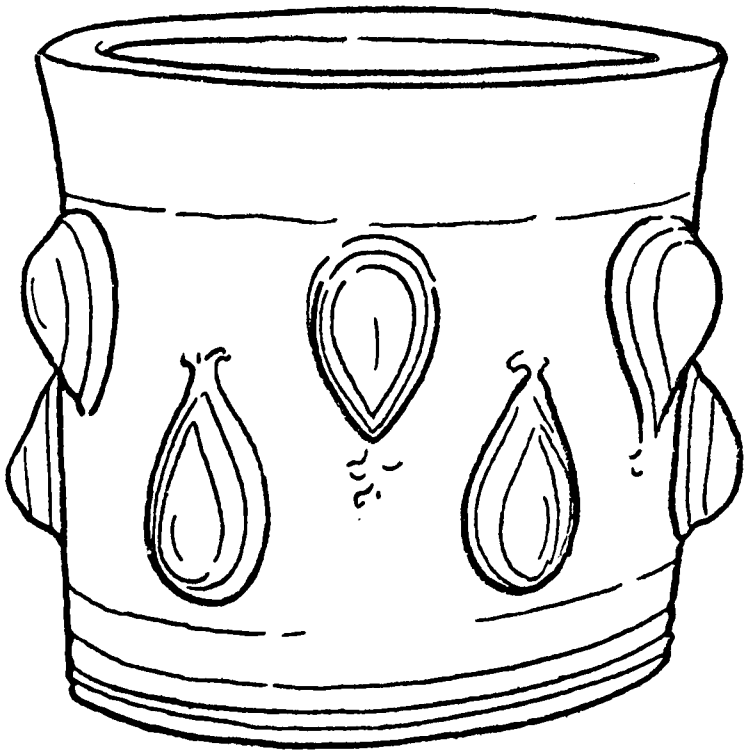
BRONZE



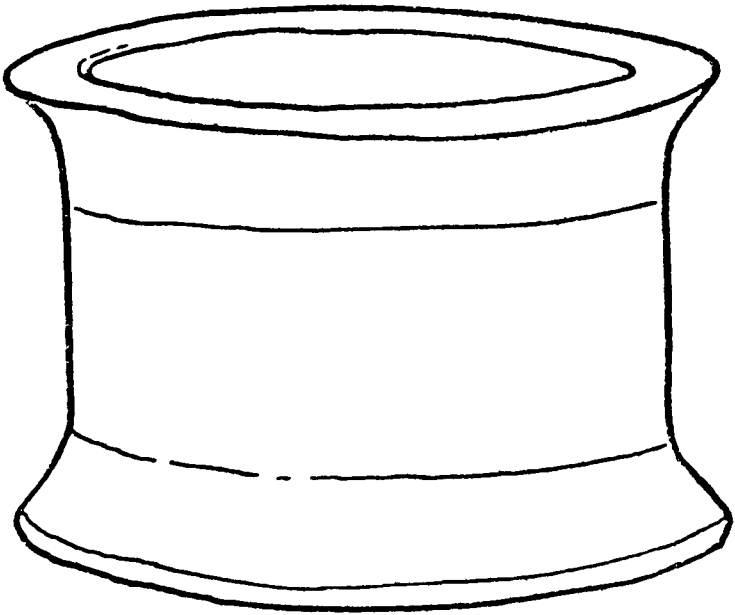
Jug C/1



Mortar A/1/a/2/1

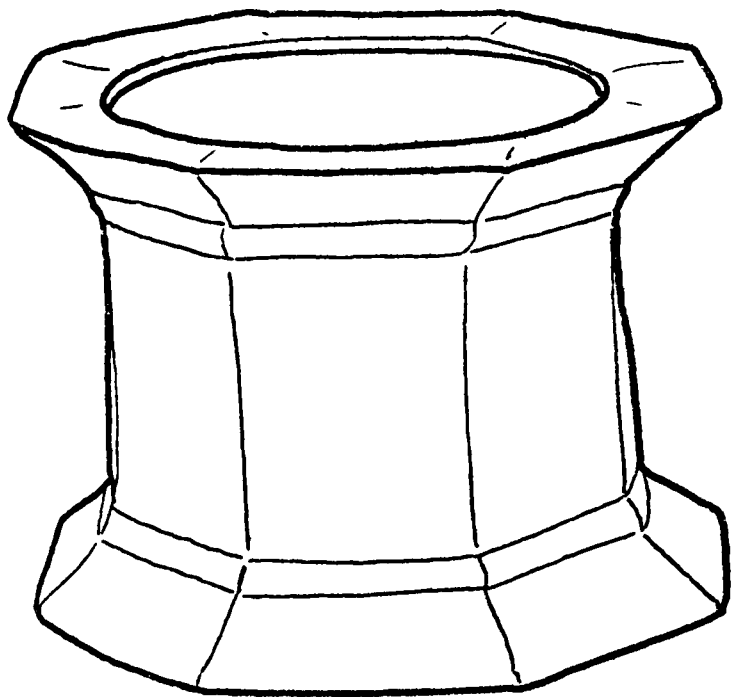


Mortar B/1/a/2/1

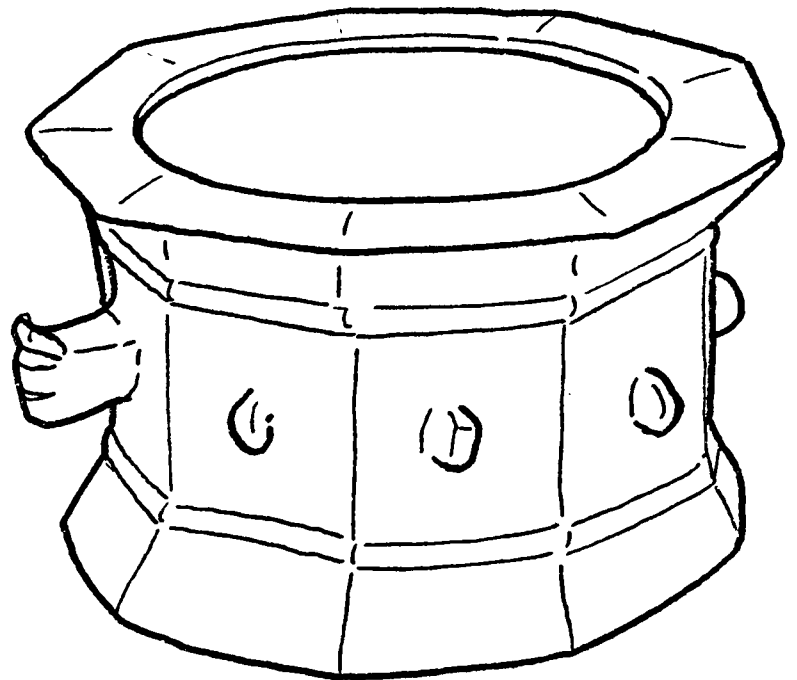


Mortar C/1/a/1/1

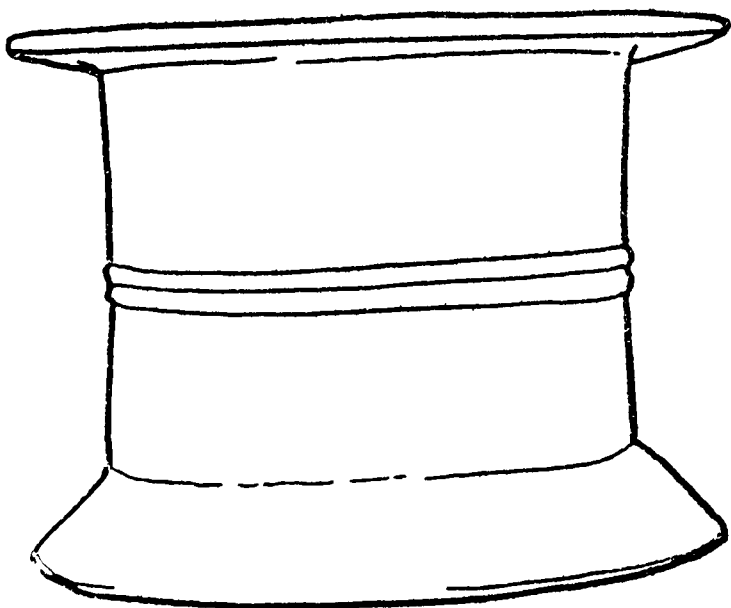
BRONZE



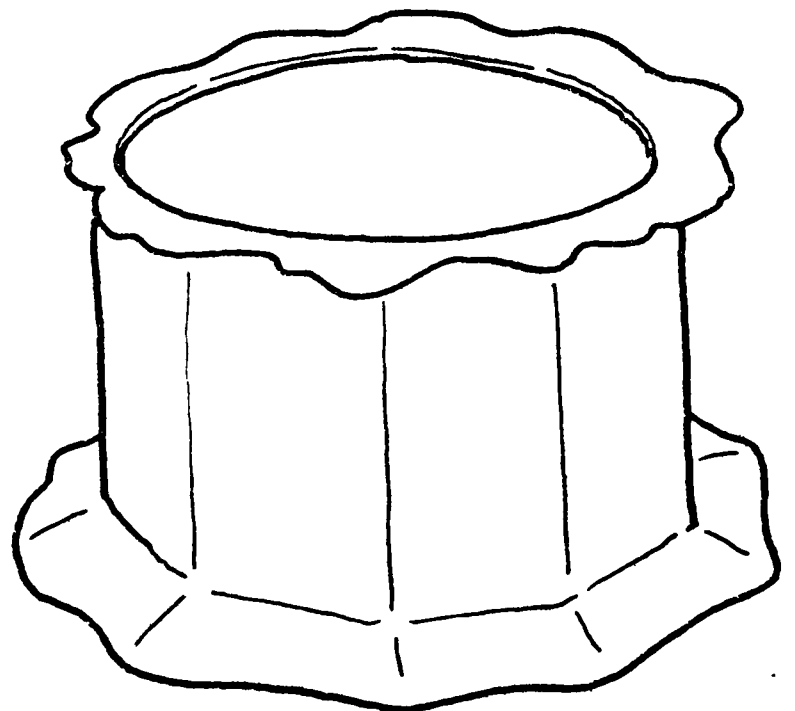
Mortar c/2/a/1/1



Mortar c/3/b/2/1

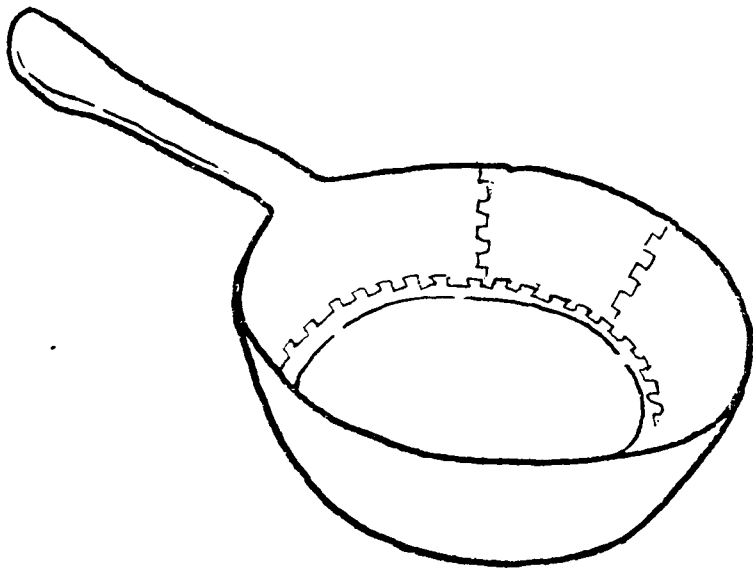


Mortar D/1/a/1/1



Mortar D/4/a/1/1

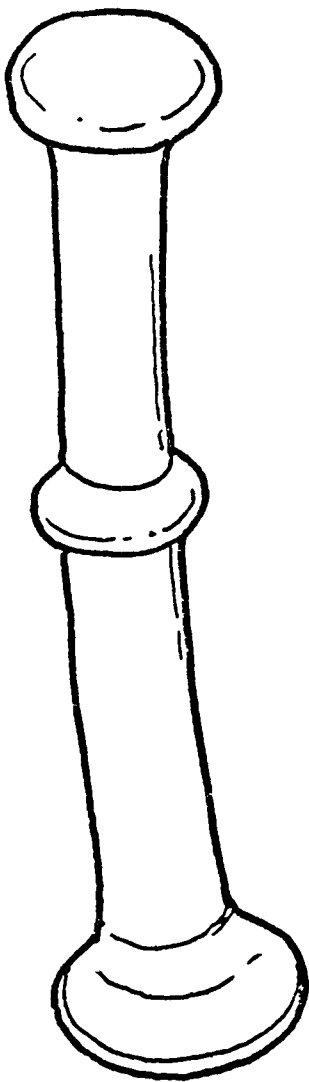
BRONZE



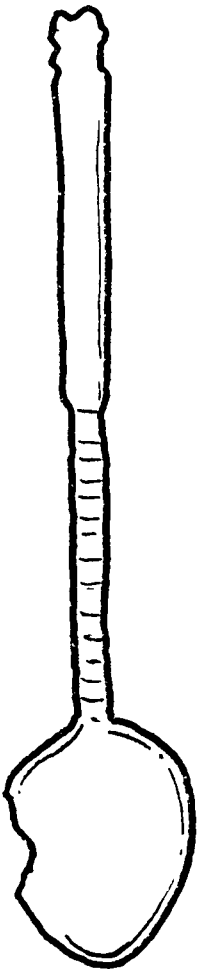
Pan 2



Pestle 1

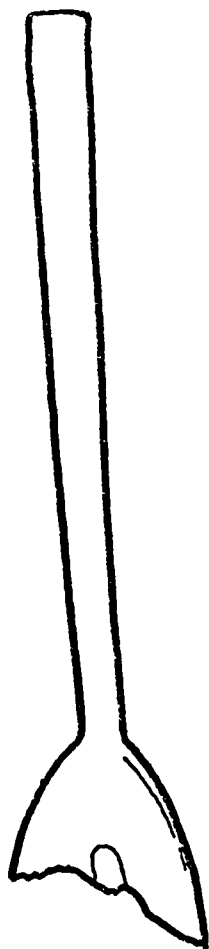


Pestle 8

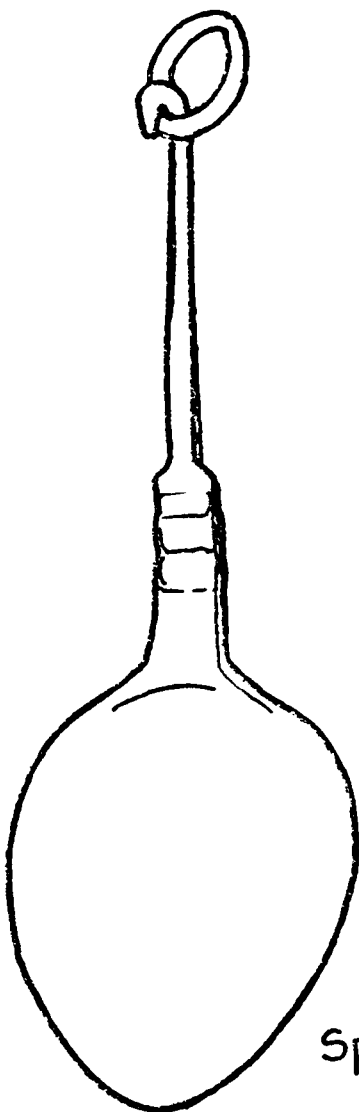


Spoon 3

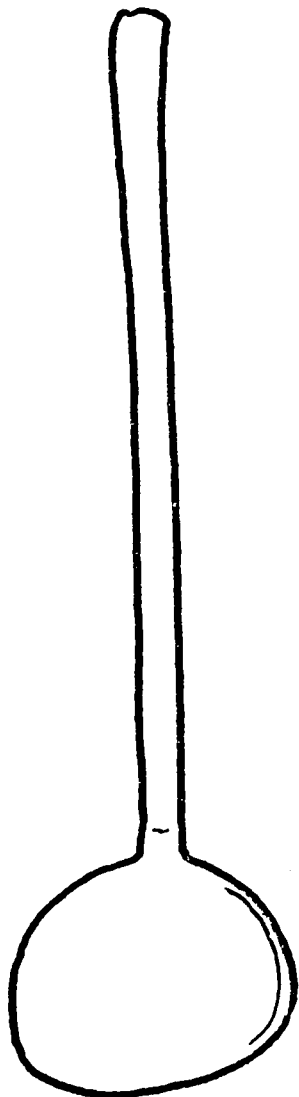
BRONZE



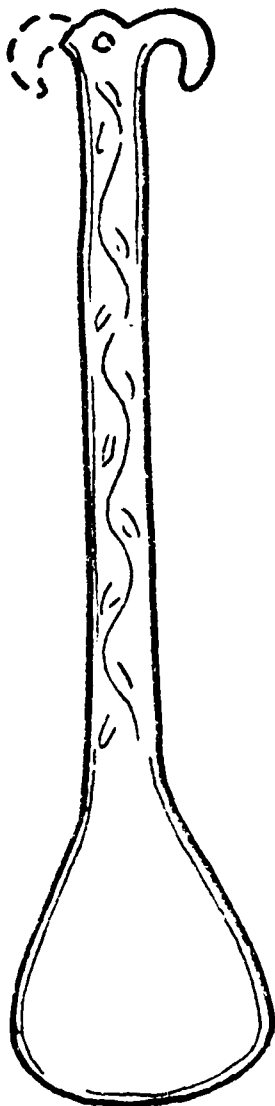
Spoon 5



Spoon 7

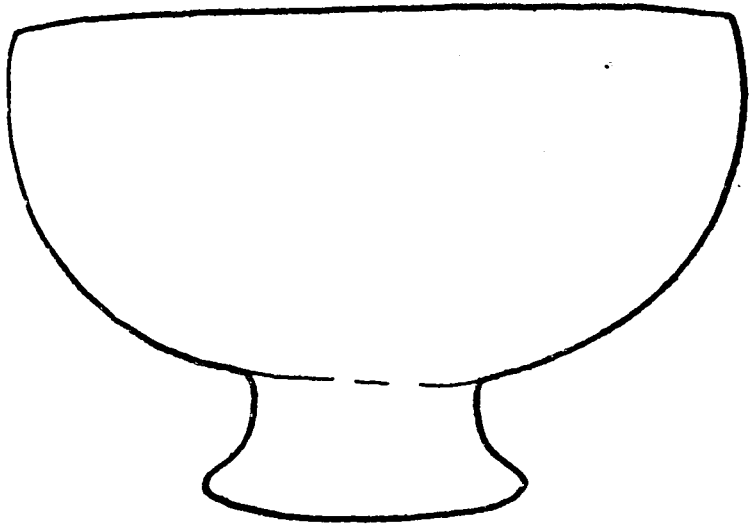


Spoon 9

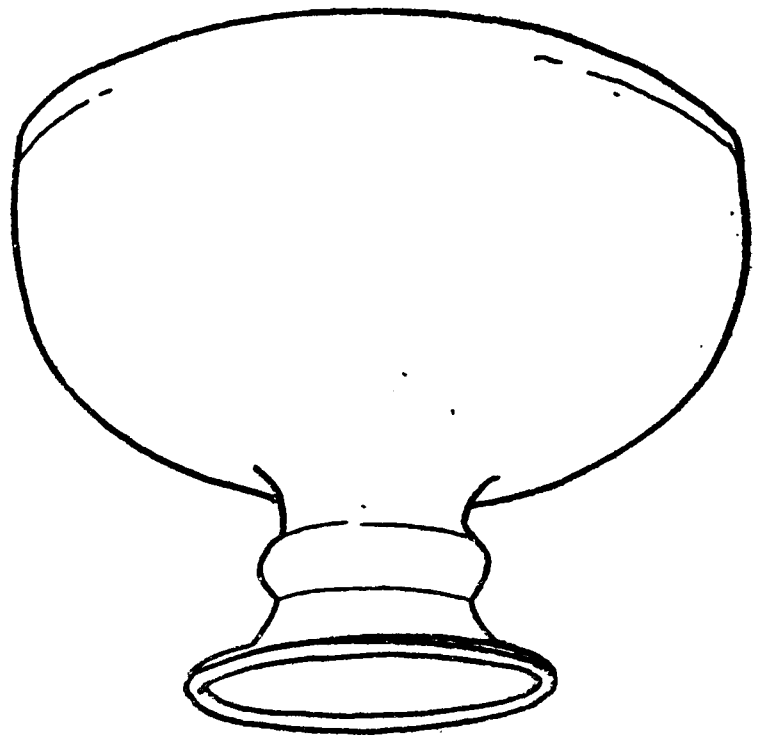


Spoon 13

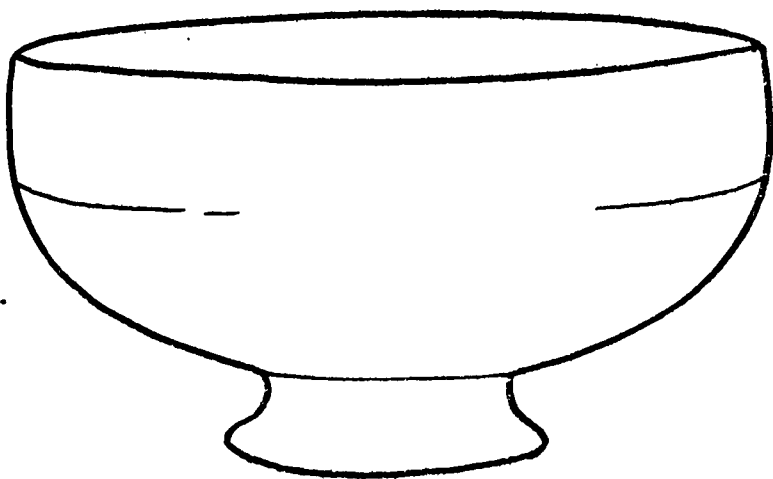
BRONZE



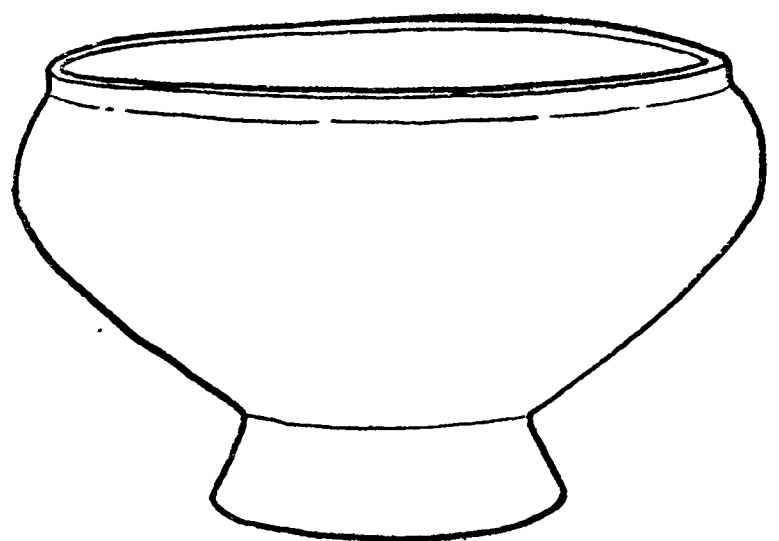
Stem bowl A/1/1



Stem bowl A/2/2

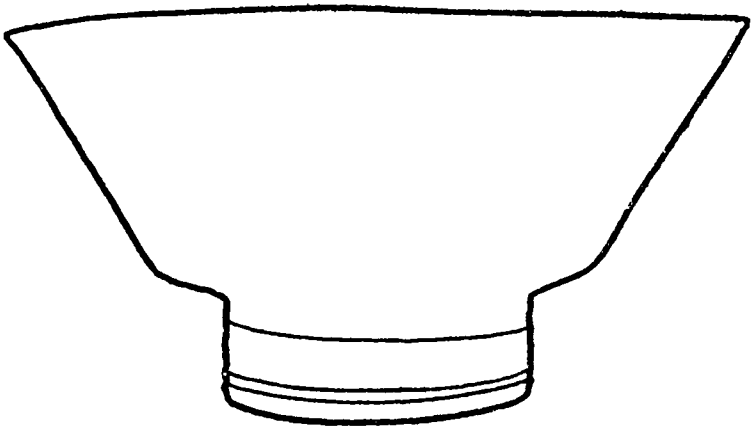


Stem bowl A/3/1

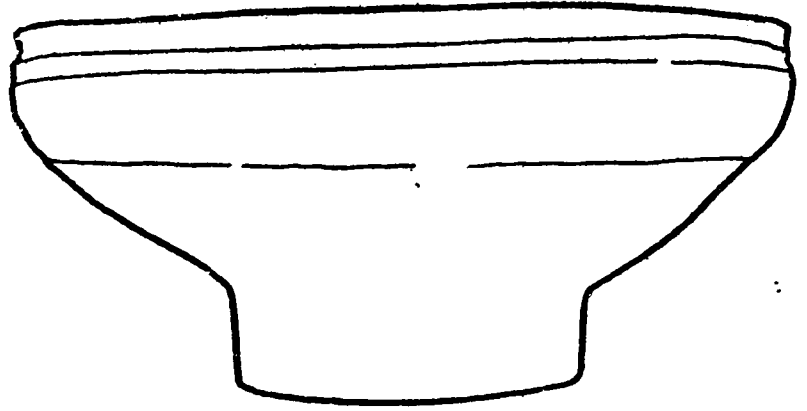


Stem bowl A/4/1

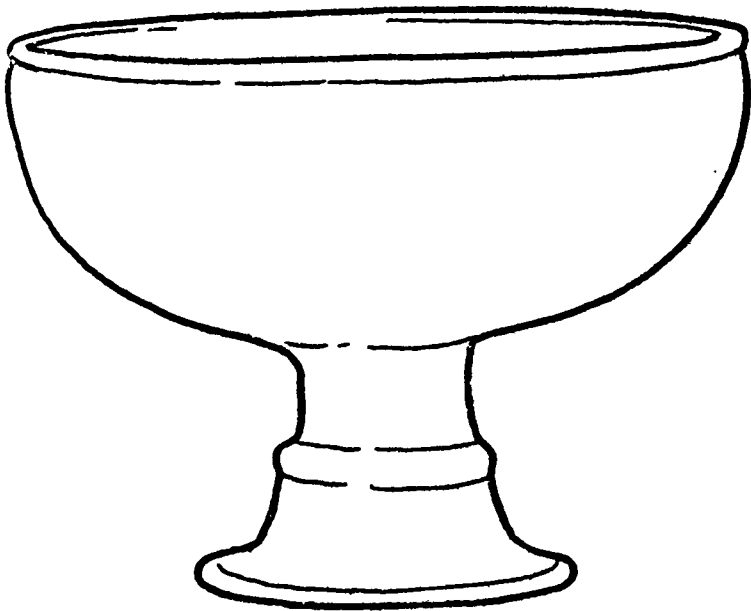
BRONZE



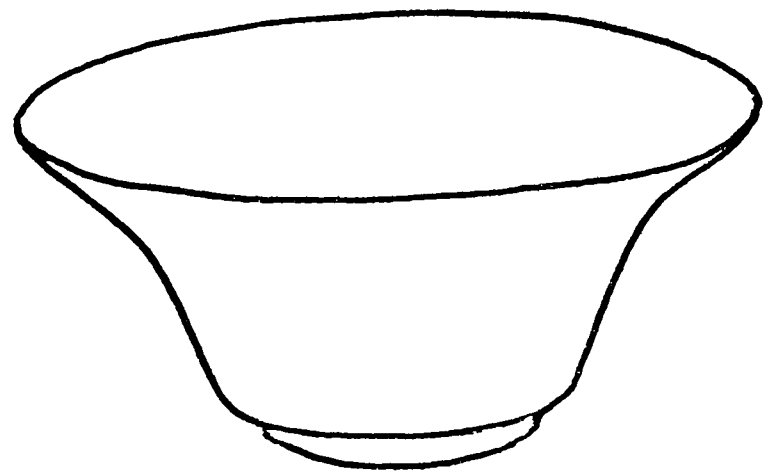
Stem bowl A/5/1



Stem bowl A/6/1

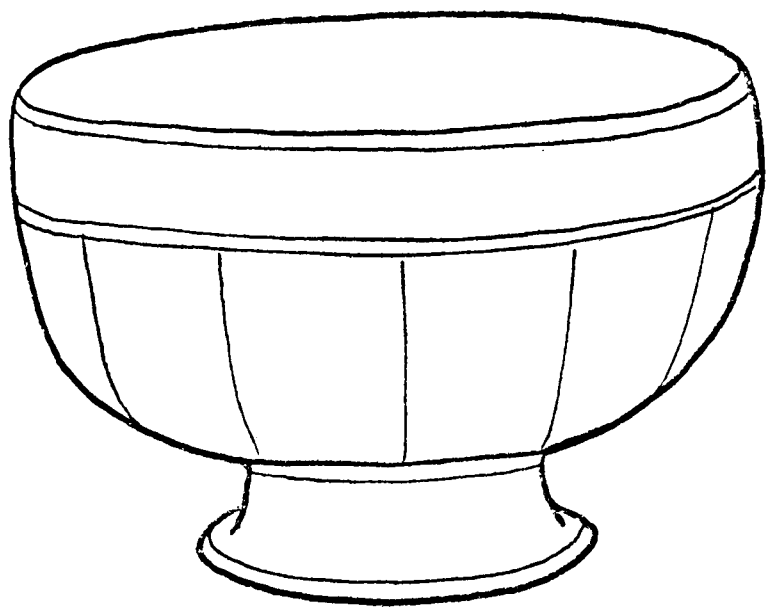


Stem bowl B/1/1

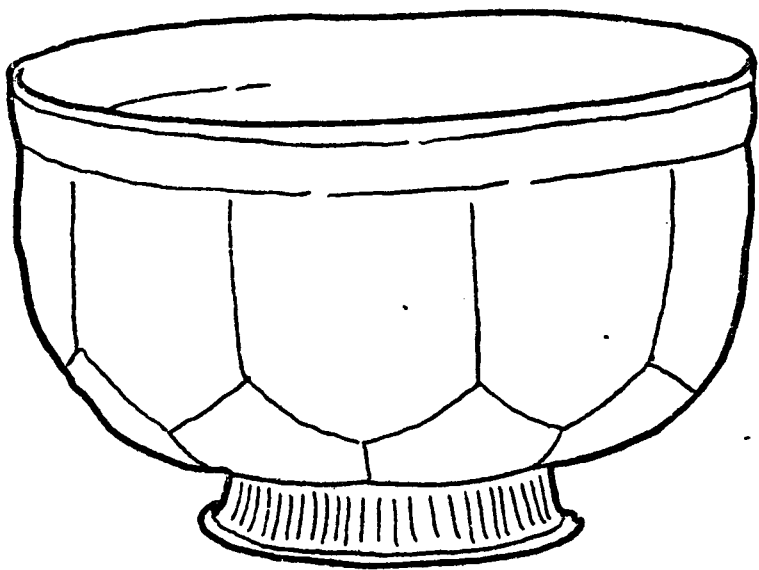


Stem bowl B/2/1

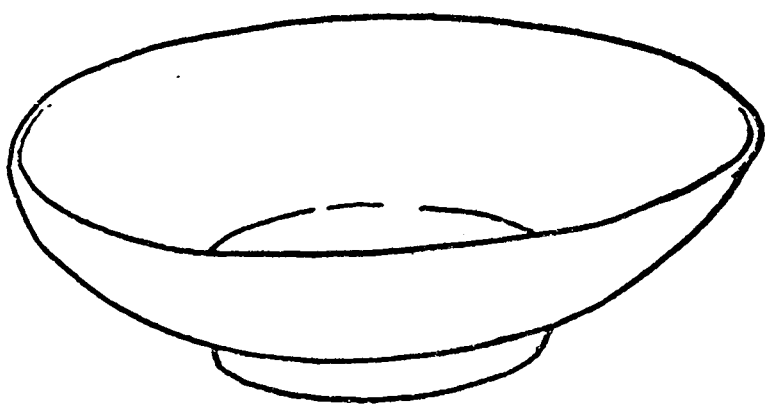
BRONZE



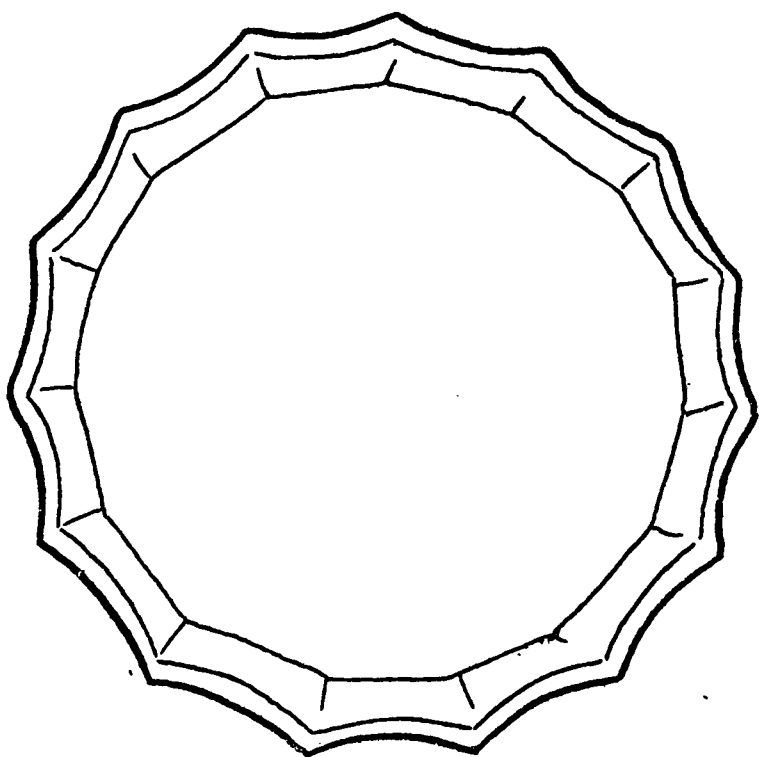
Stem bowl B/3/1



Stem bowl B/4/1

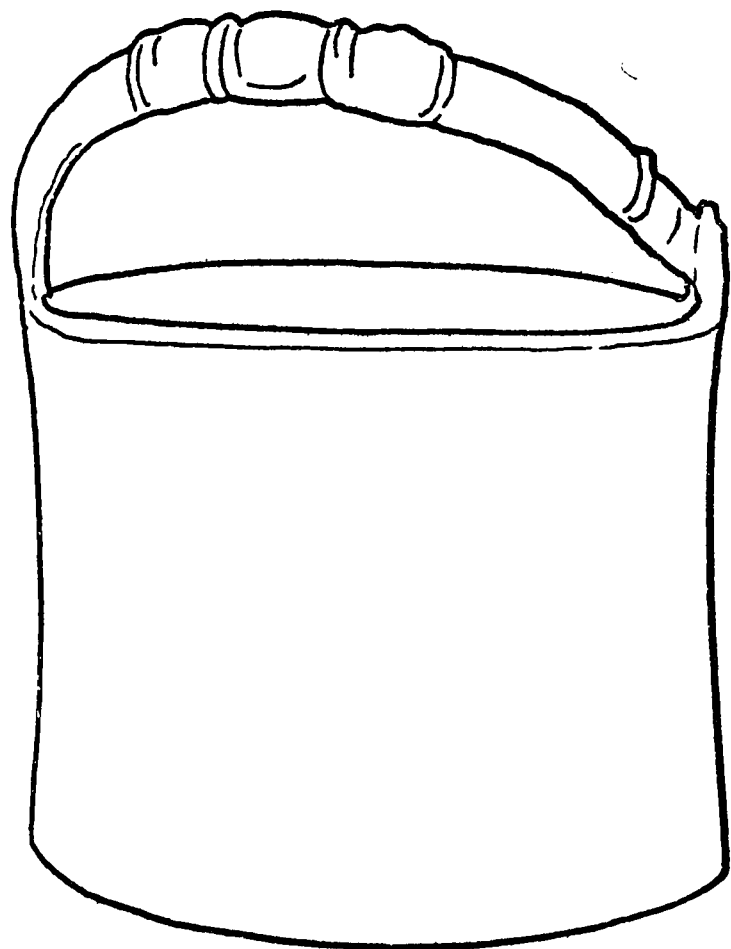


Stem bowl B/5/1

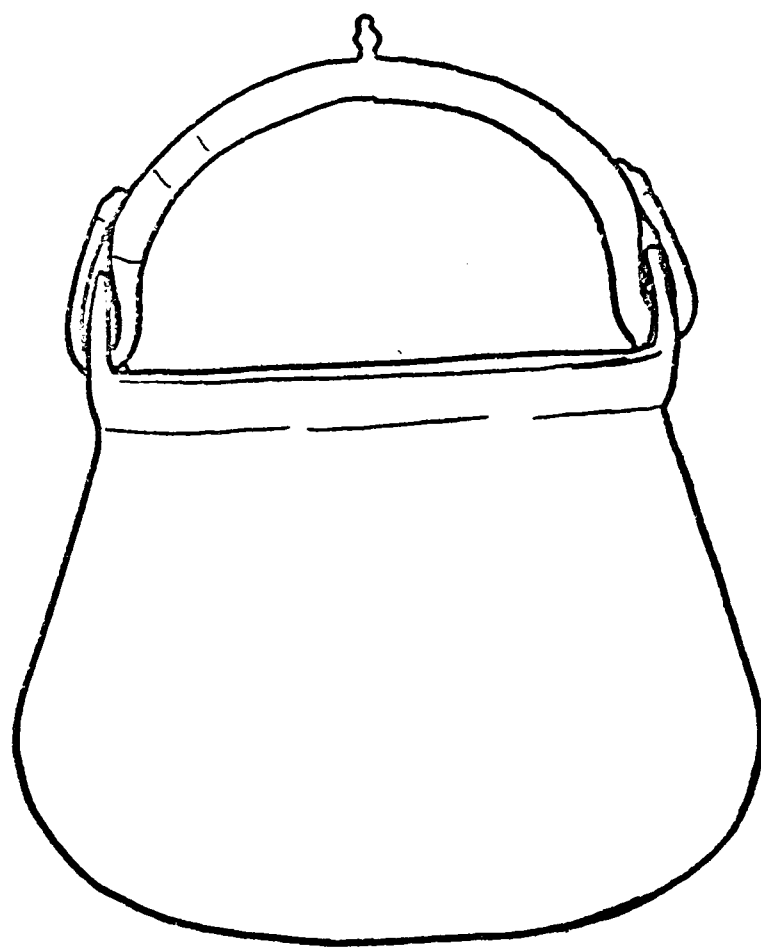


Basin A/3

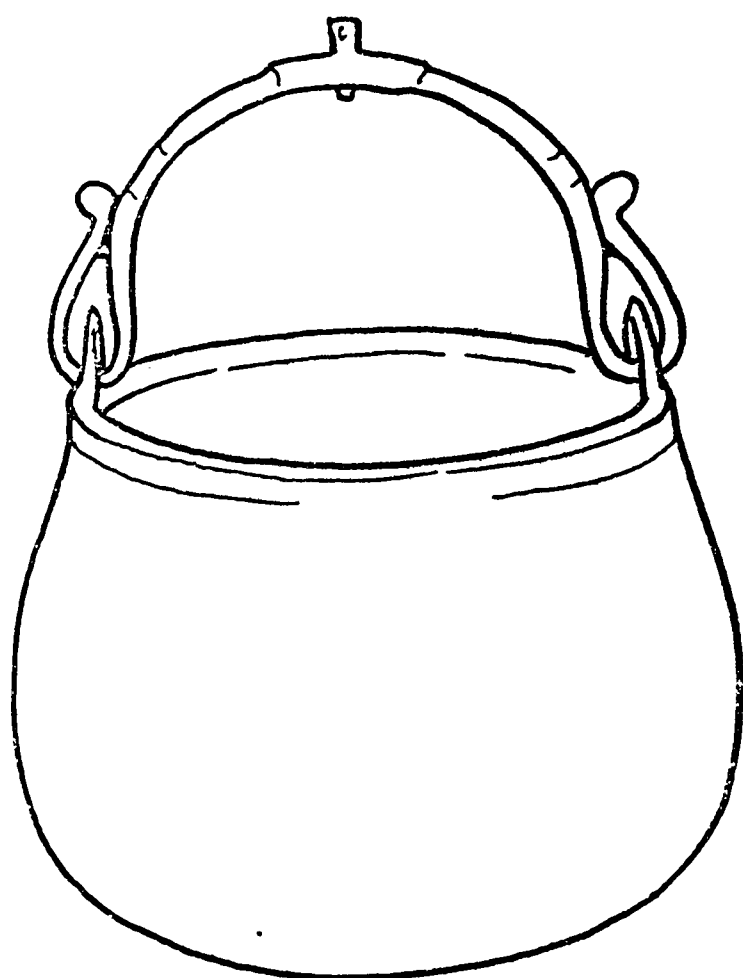
BRONZE



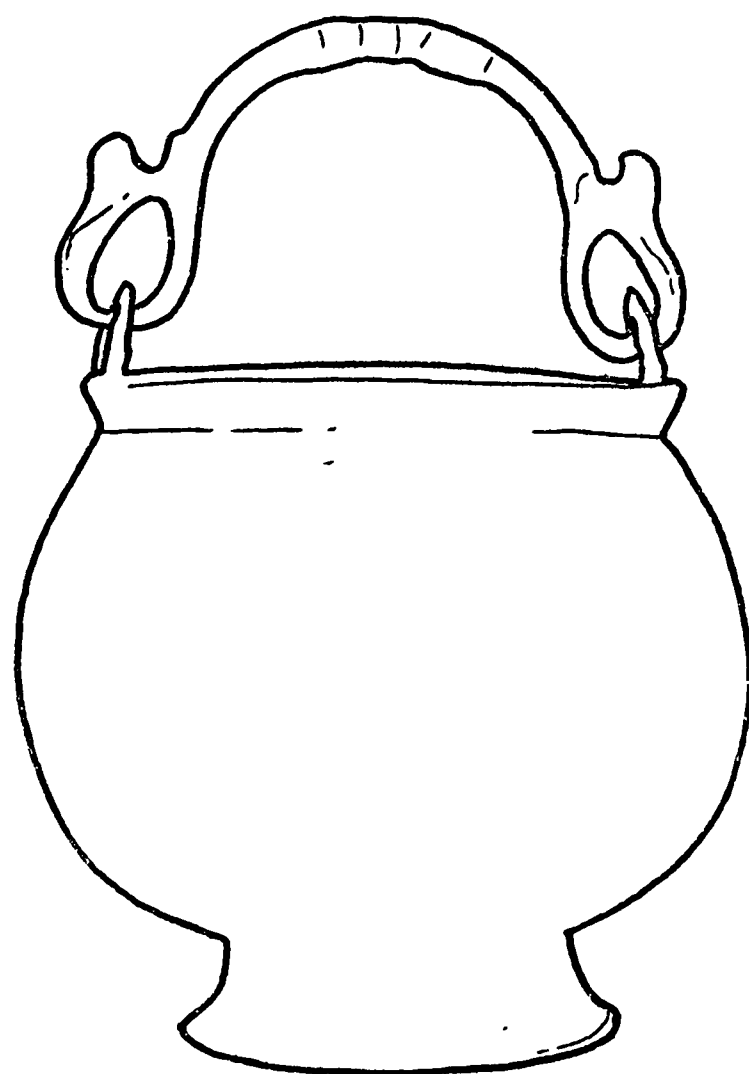
Bucket A/1



Bucket B/1/2

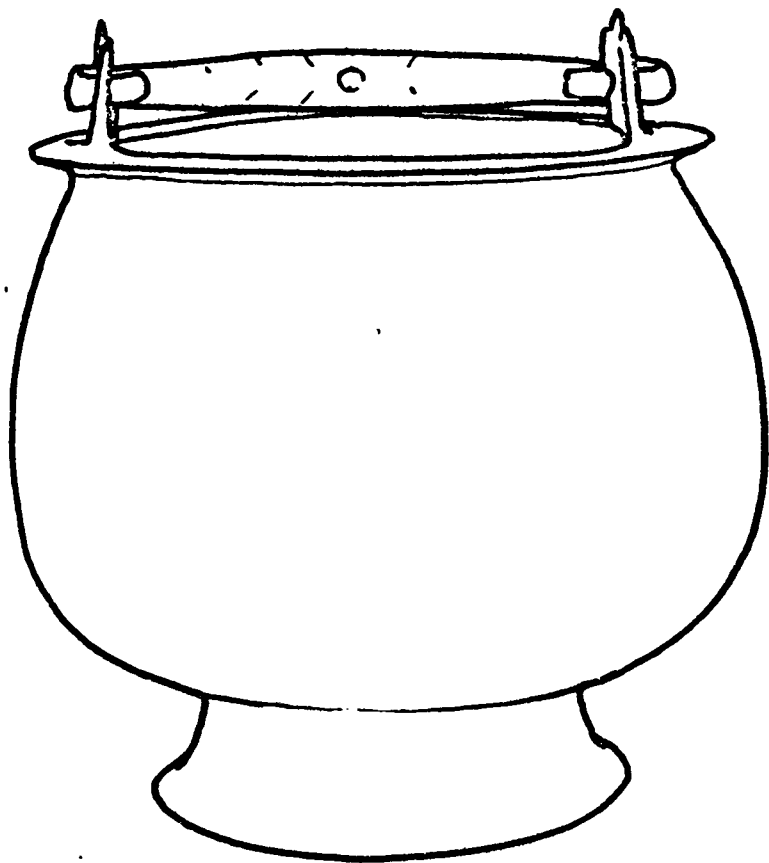


Bucket B/2/5

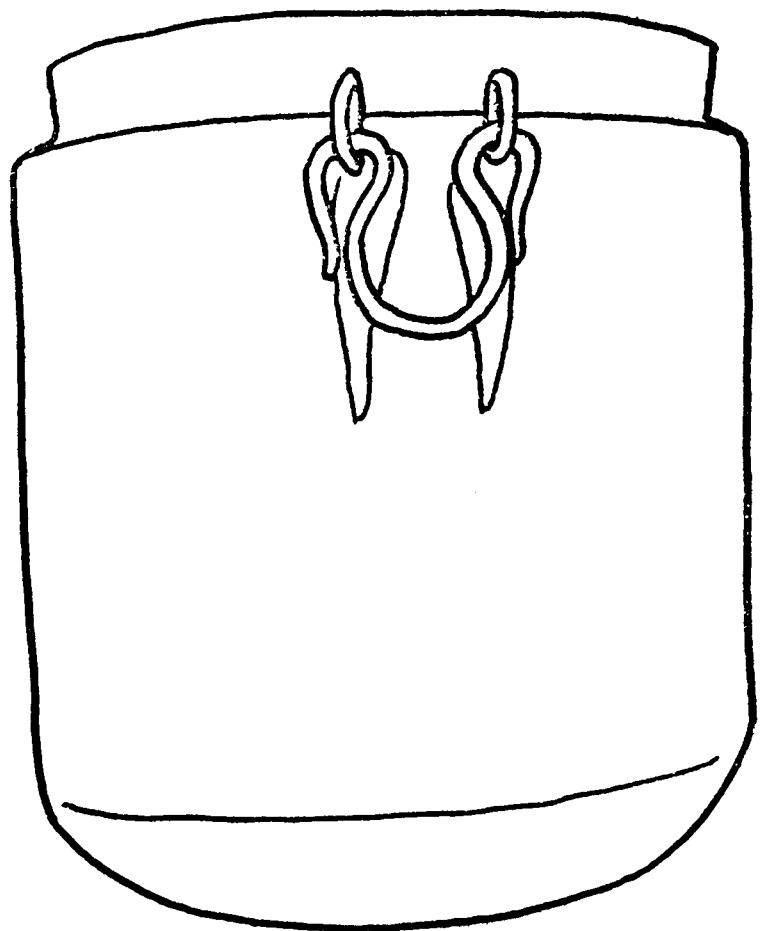


Bucket B/3/1

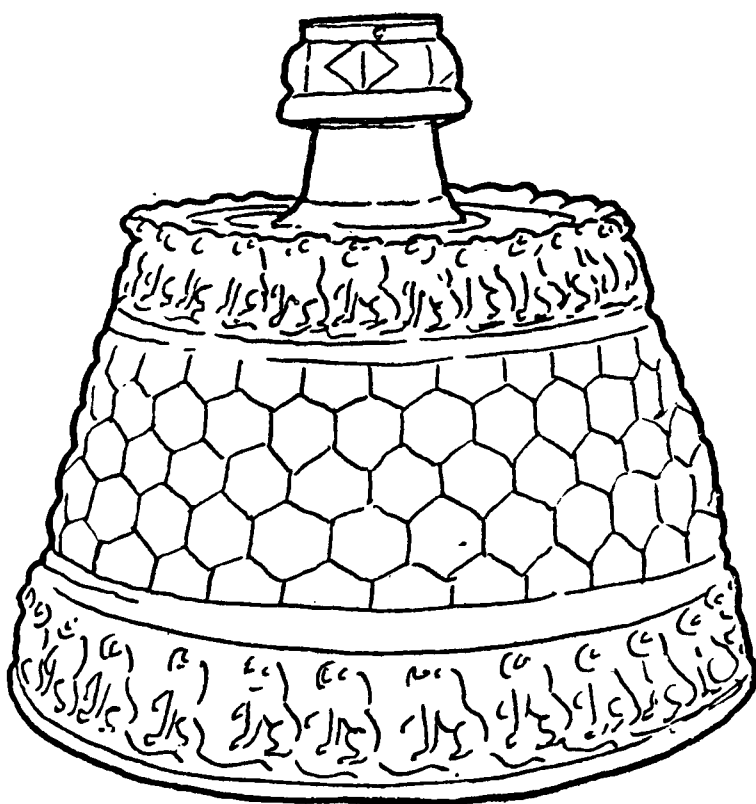
BRONZE



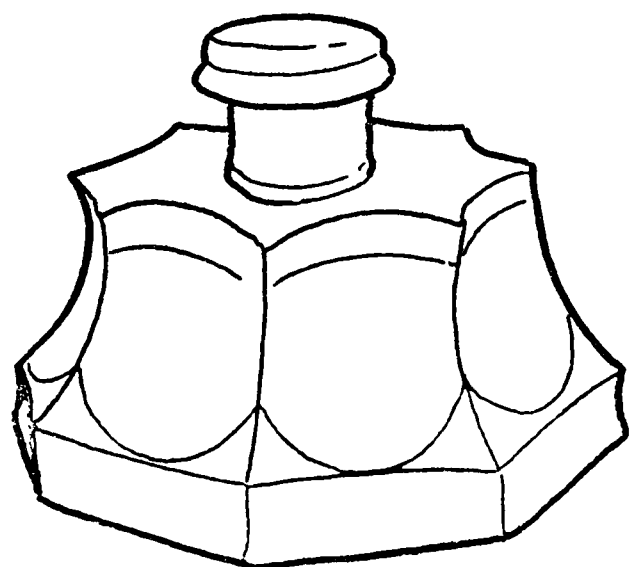
Bucket B/4/6



Bucket C/1

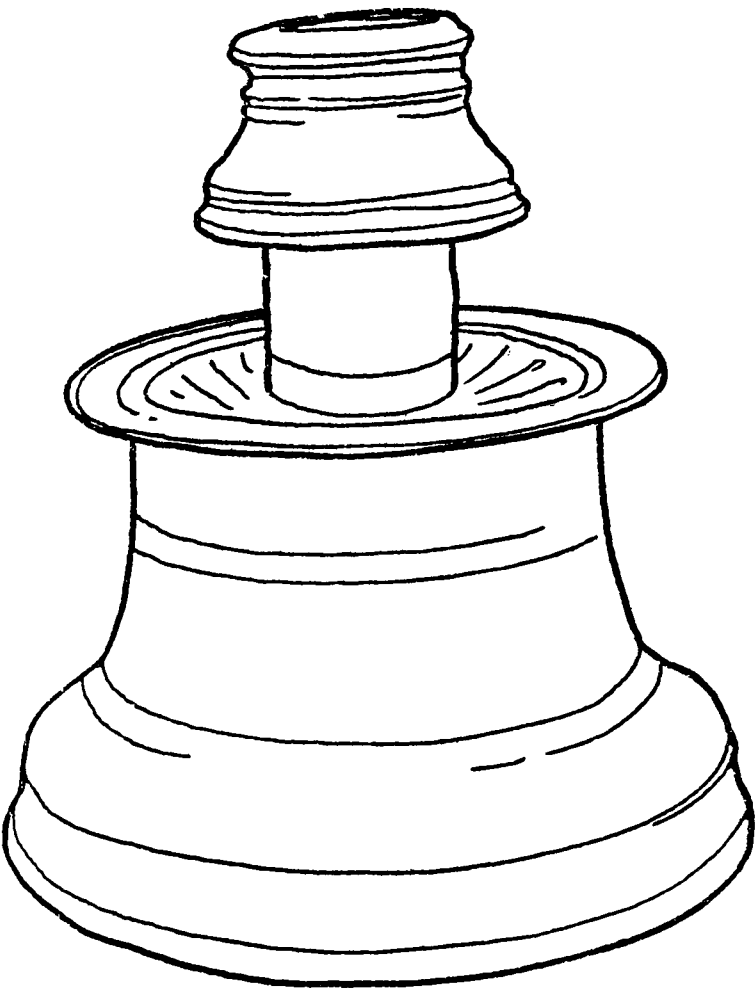


Candlestick A/3

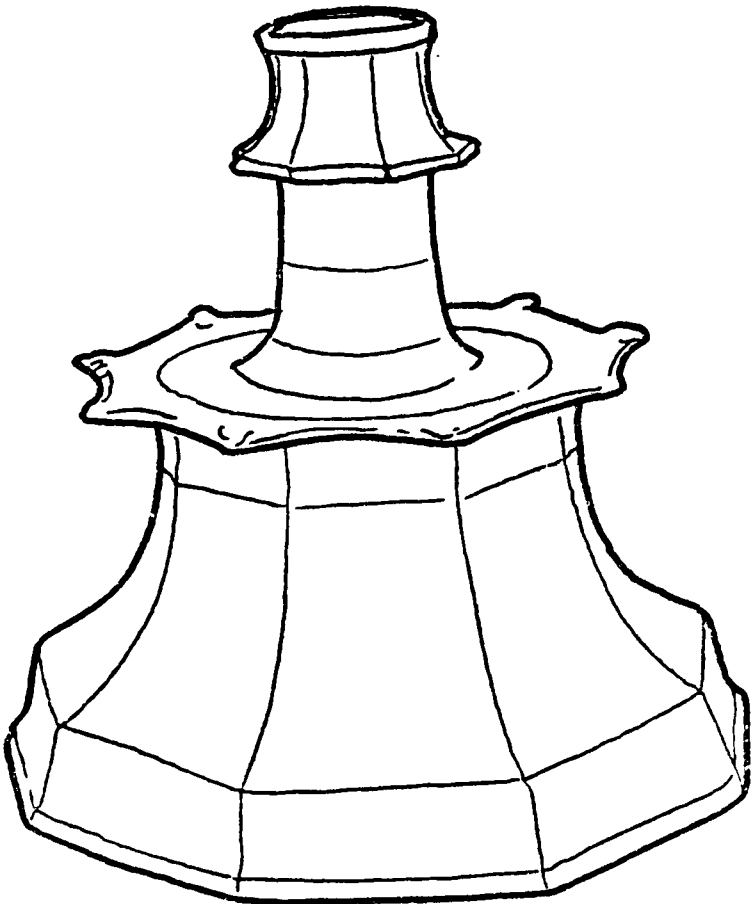


Candlestick B/1

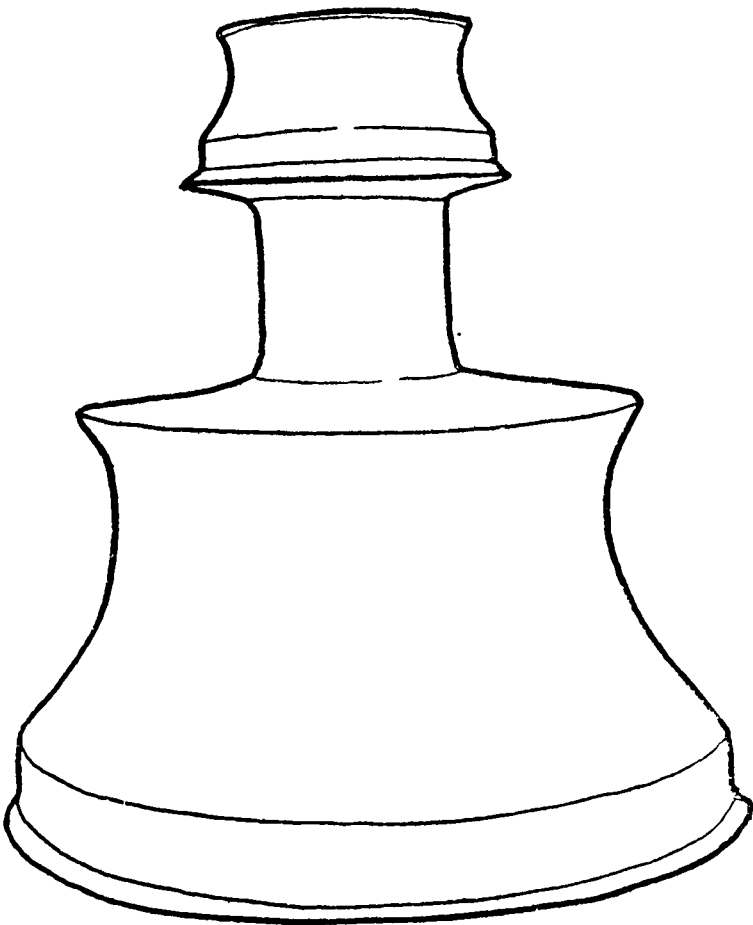
BRONZE



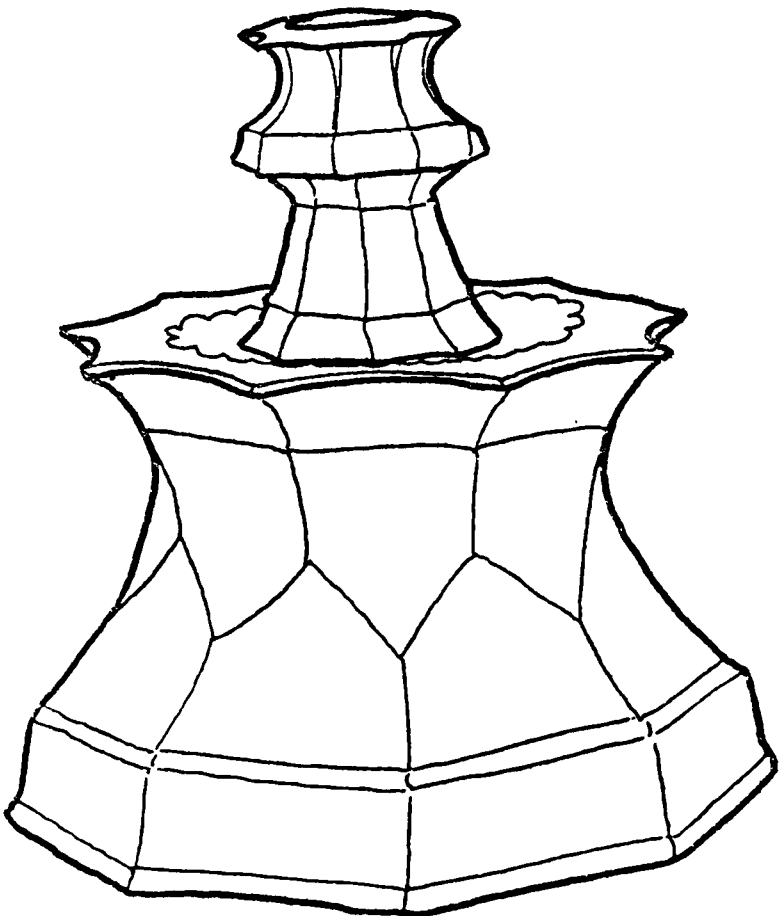
Candlestick C/1



Candlestick D/1

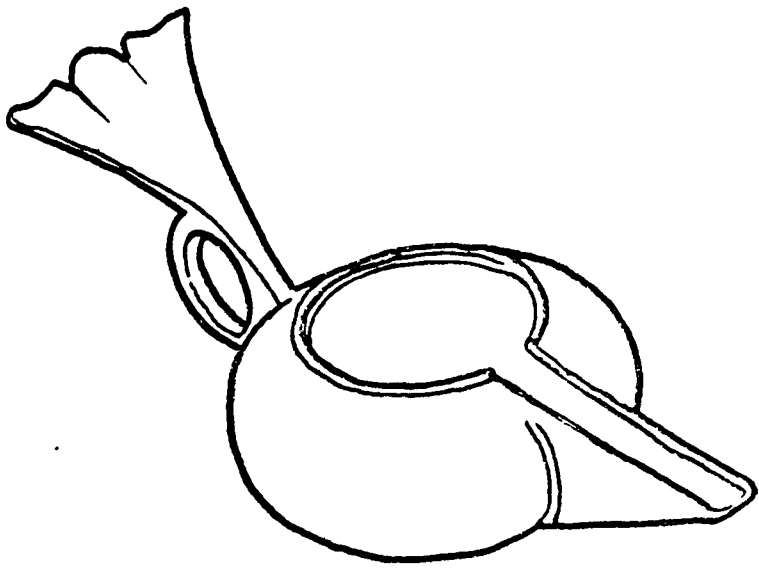


Candlestick E/1

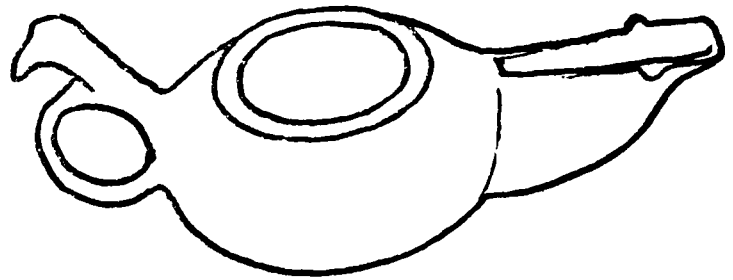


Candlestick F/1

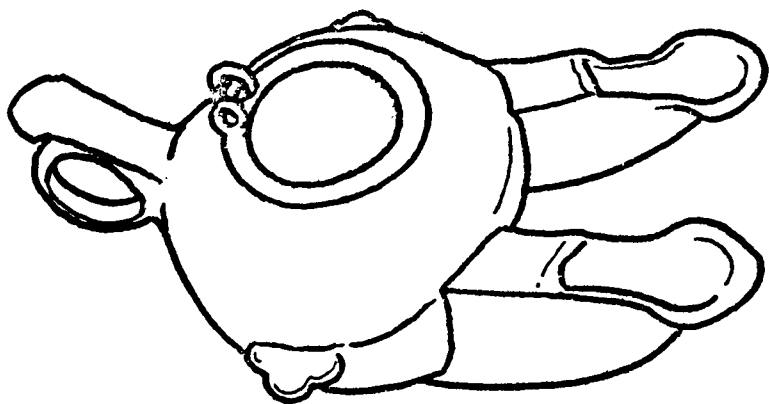
BRONZE



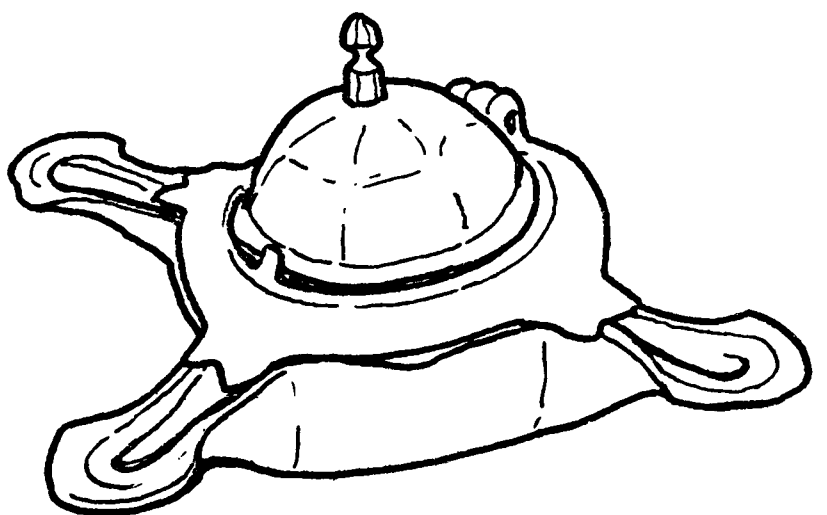
Lamp A/1/1



Lamp A/2/1

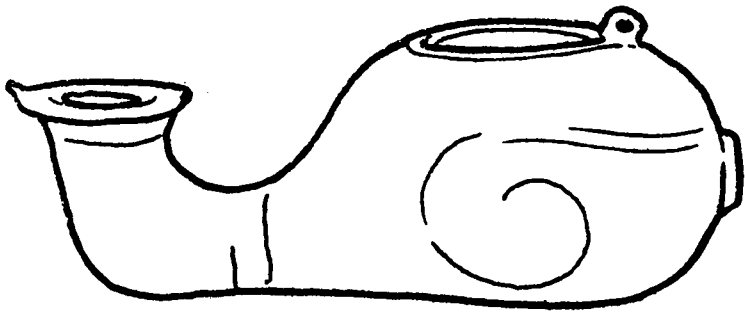


Lamp A/3/3

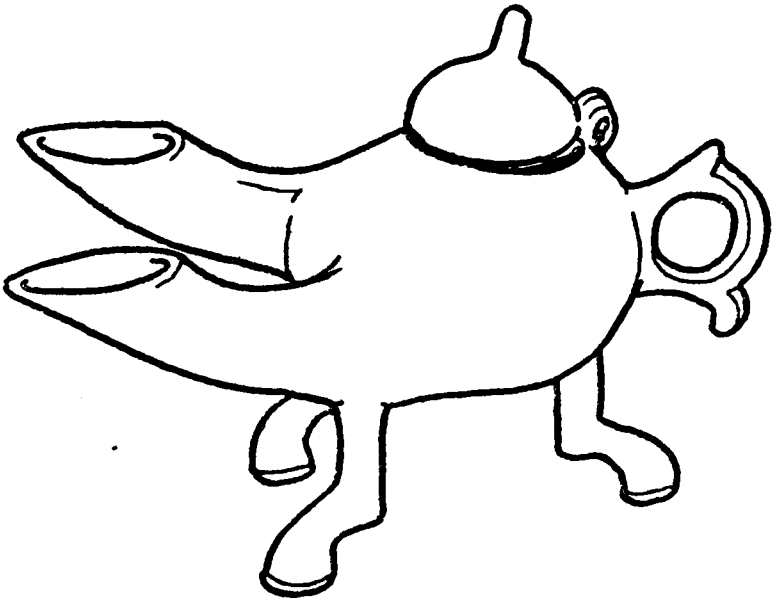


Lamp A/4/2

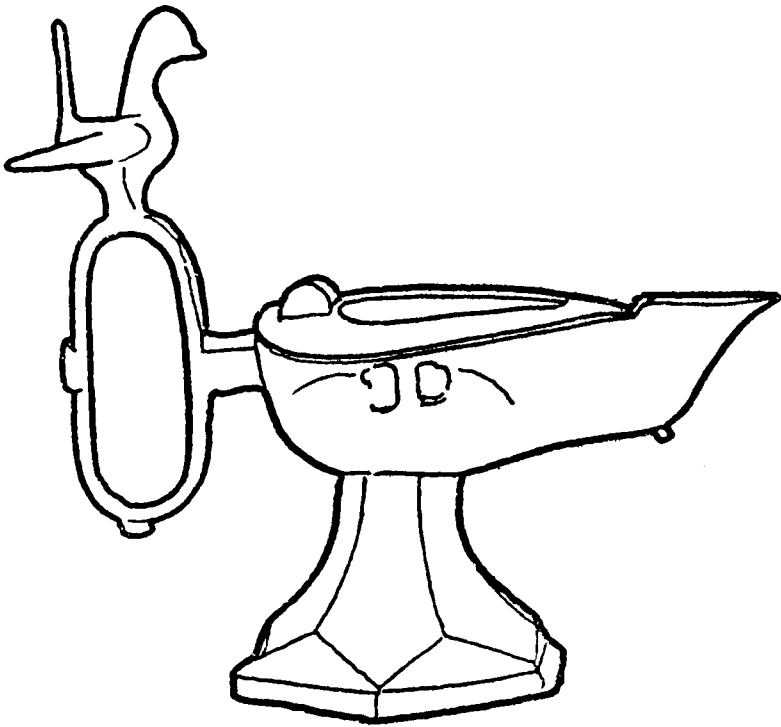
BRONZE



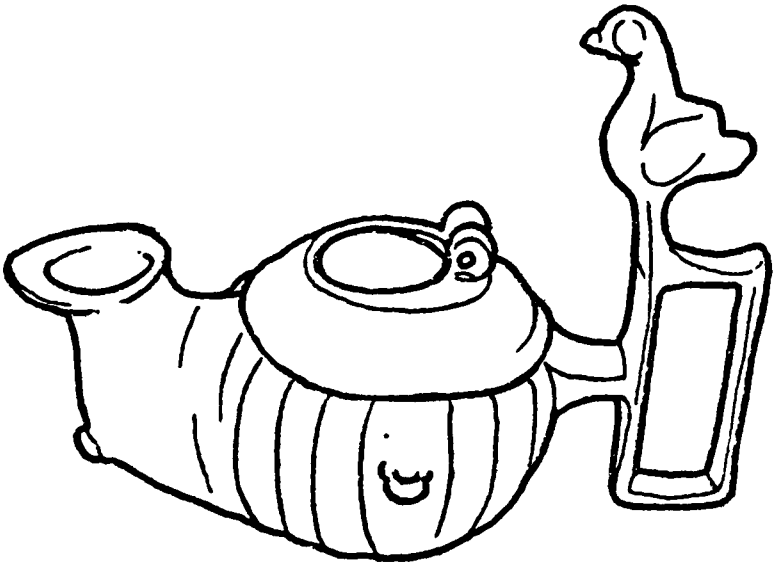
Lamp A/5/2



Lamp A/6/3

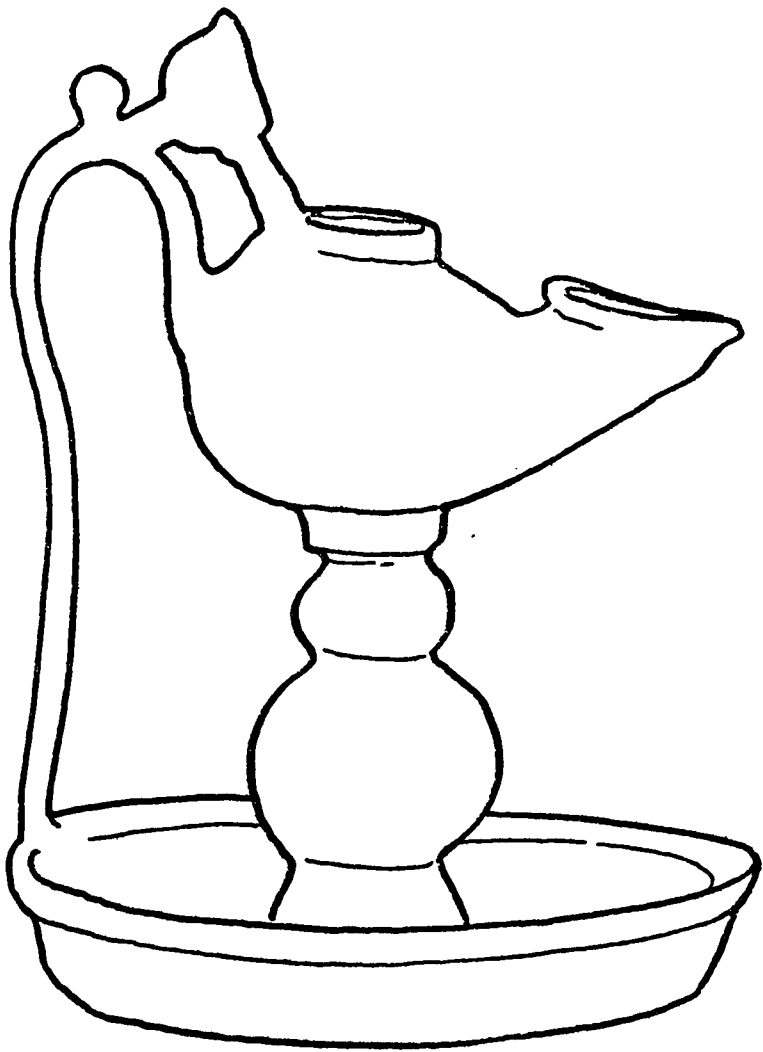


Lamp A/7/2

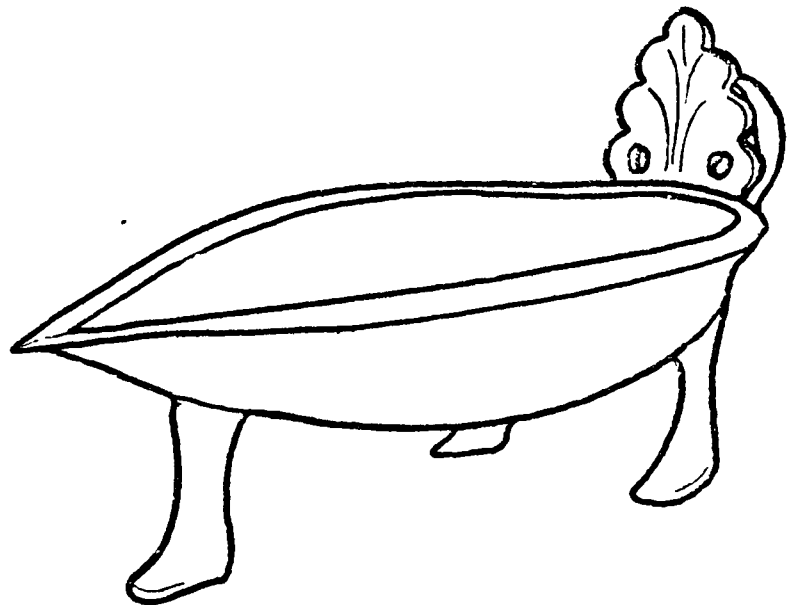


Lamp A/8/1

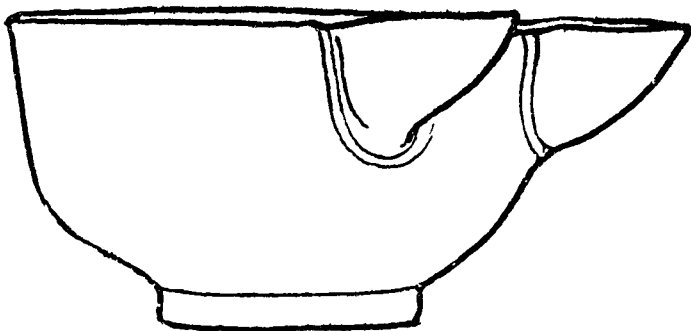
BRONZE



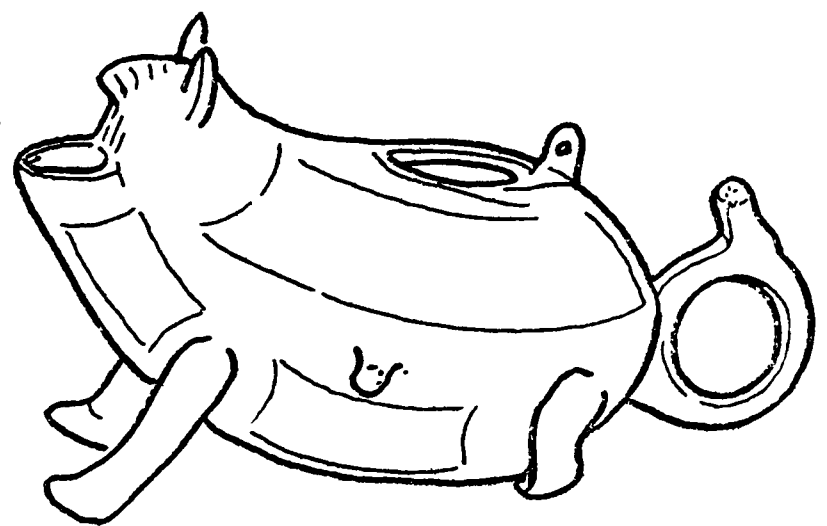
Lamp A/9/1



Lamp B/3



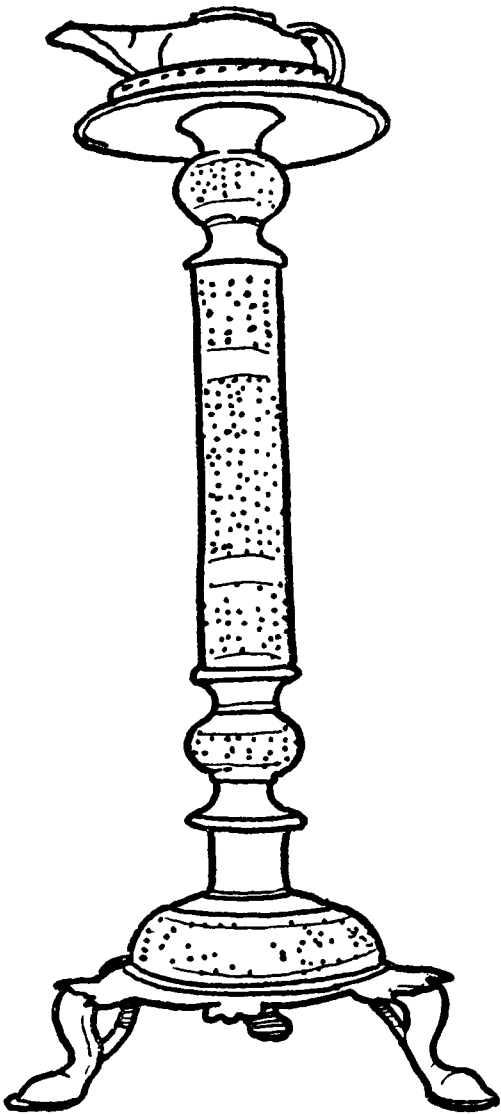
Lamp C/1



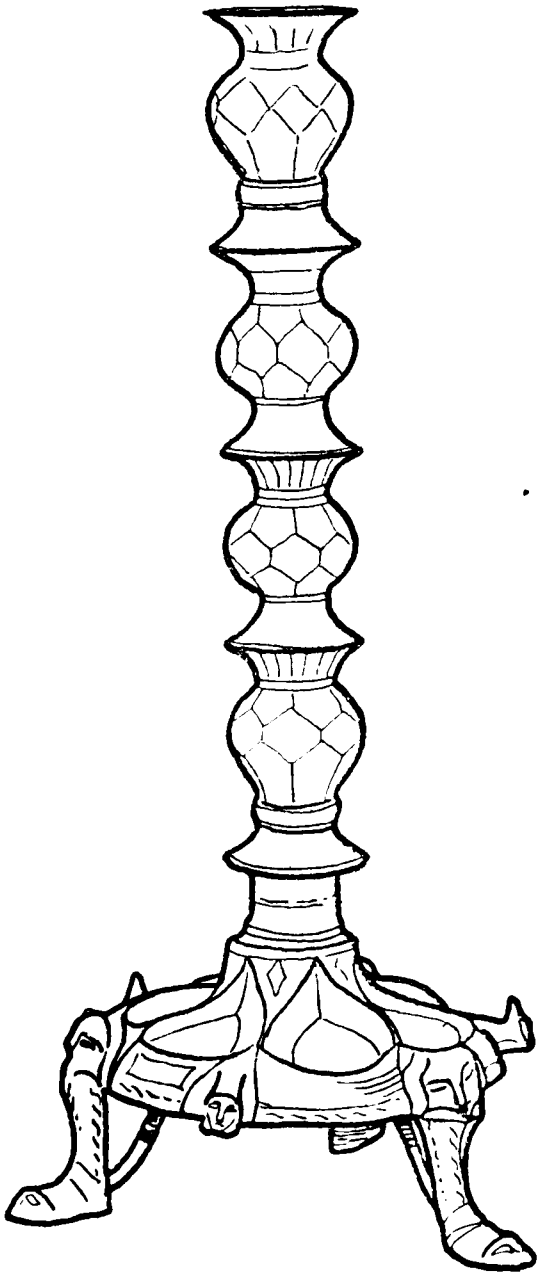
Lamp D/1



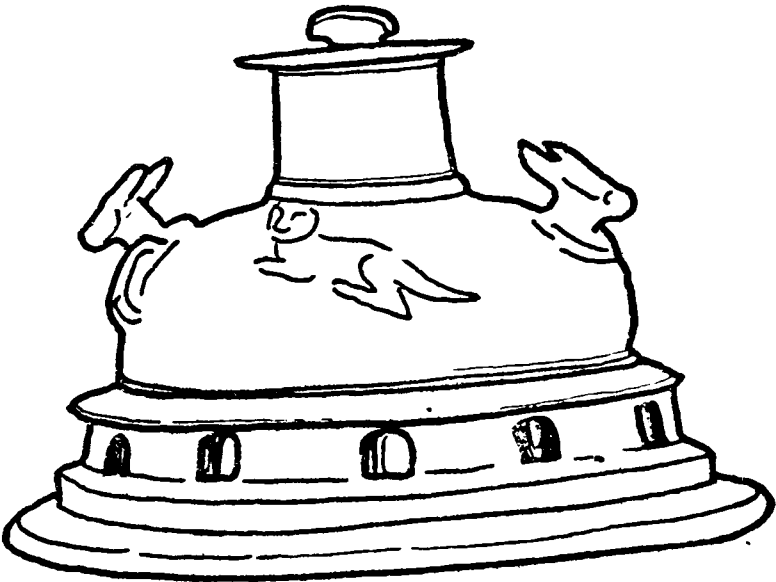
Lamp E/4



Lampstand A/1/4

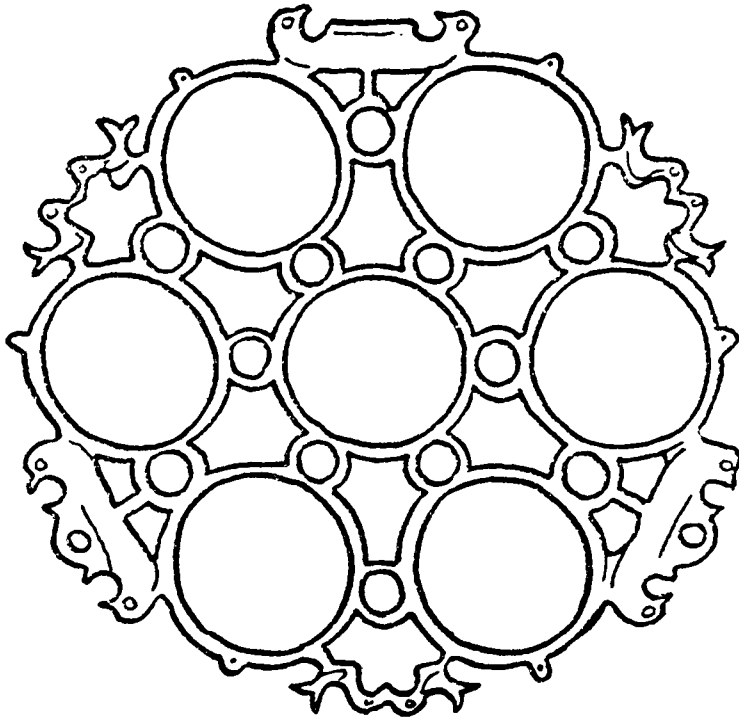


Lampstand B/4



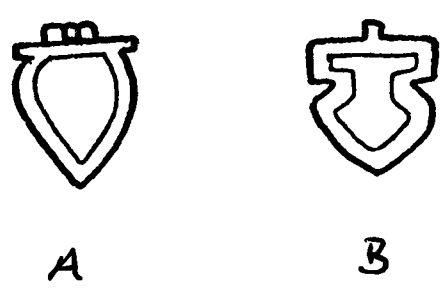
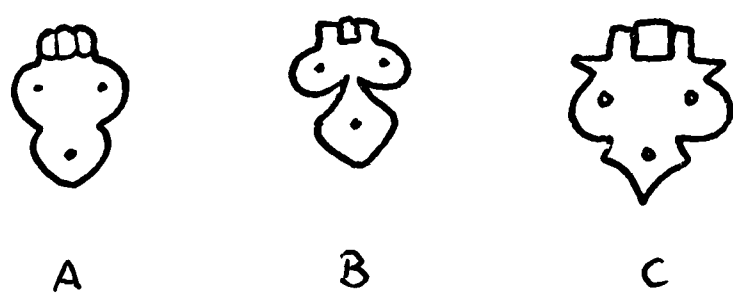
Lampstand c/2

BRONZE

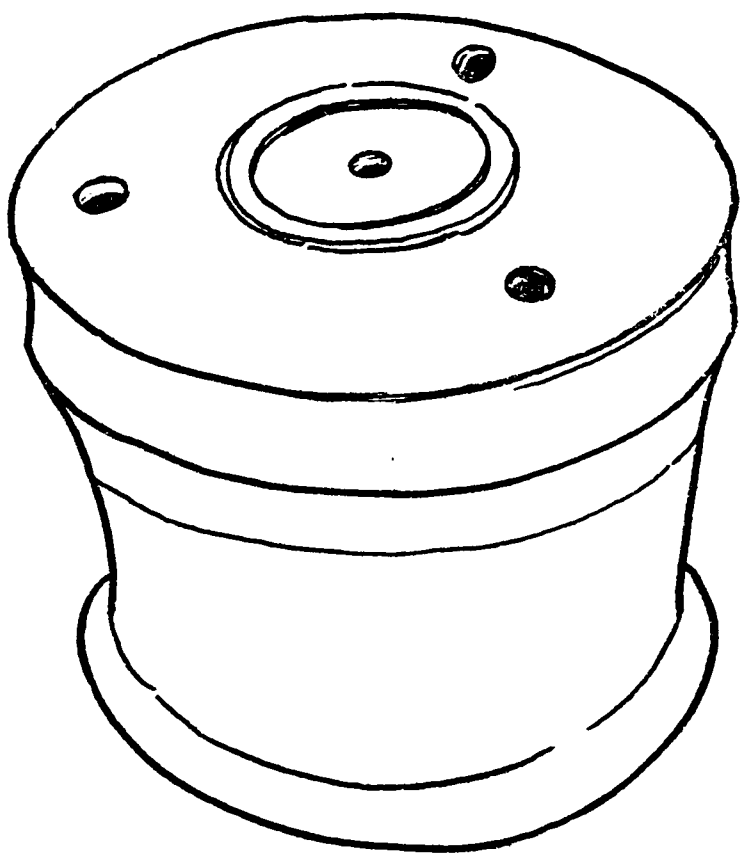


Polycandelon I

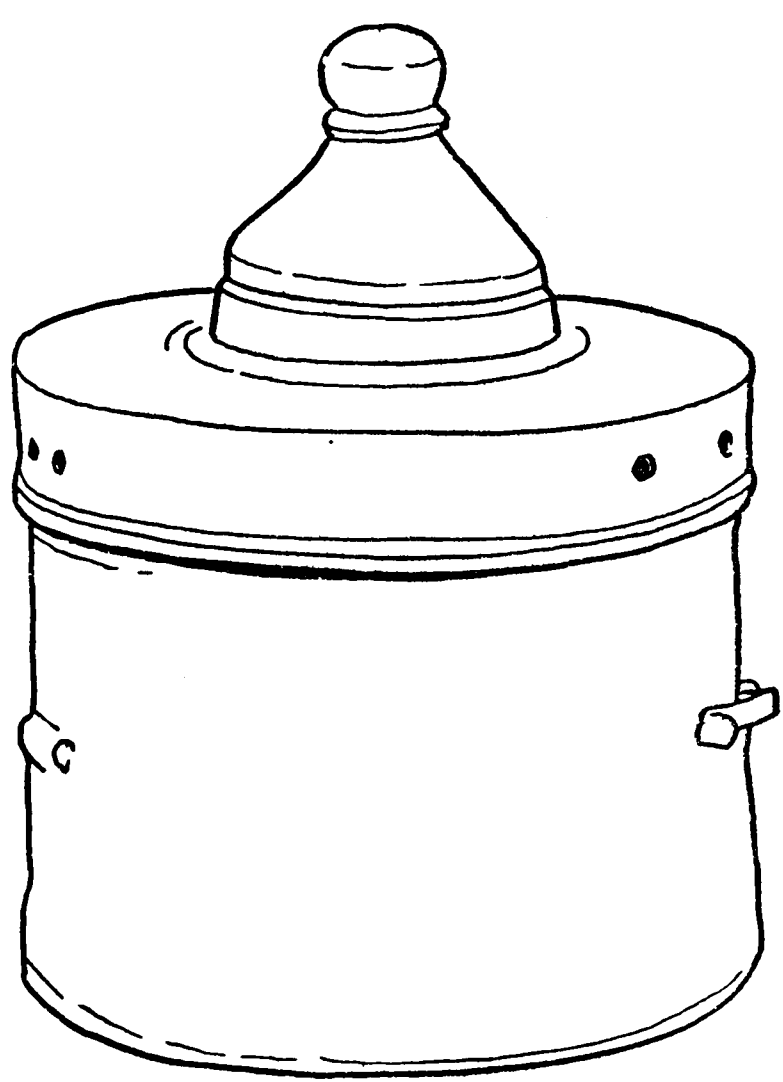
BRONZE



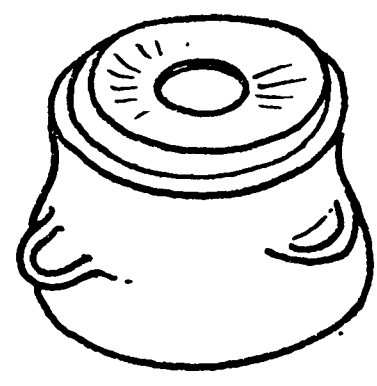
Inkwell fittings



Inkwell A/1

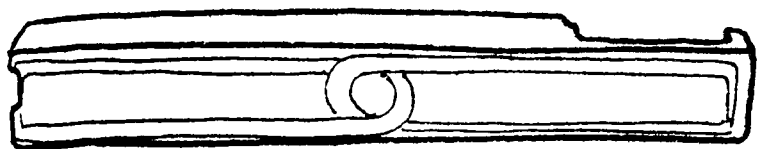


Inkwell B/2/1

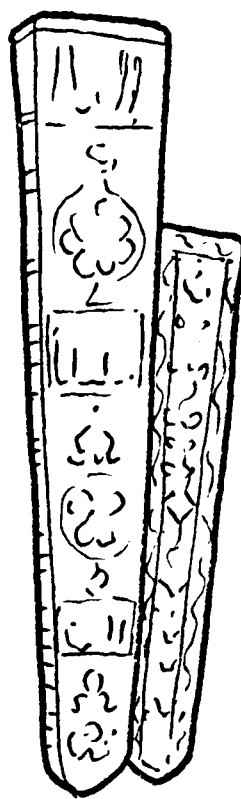


Inkwell C/1

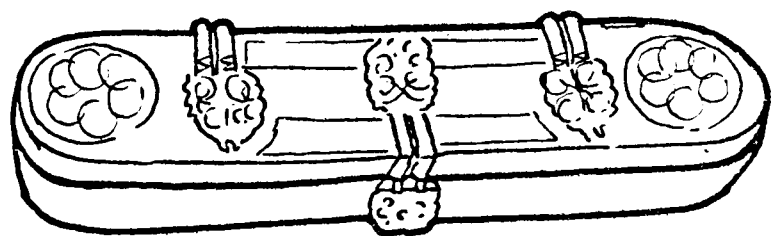
BRONZE



Pen-case A/1

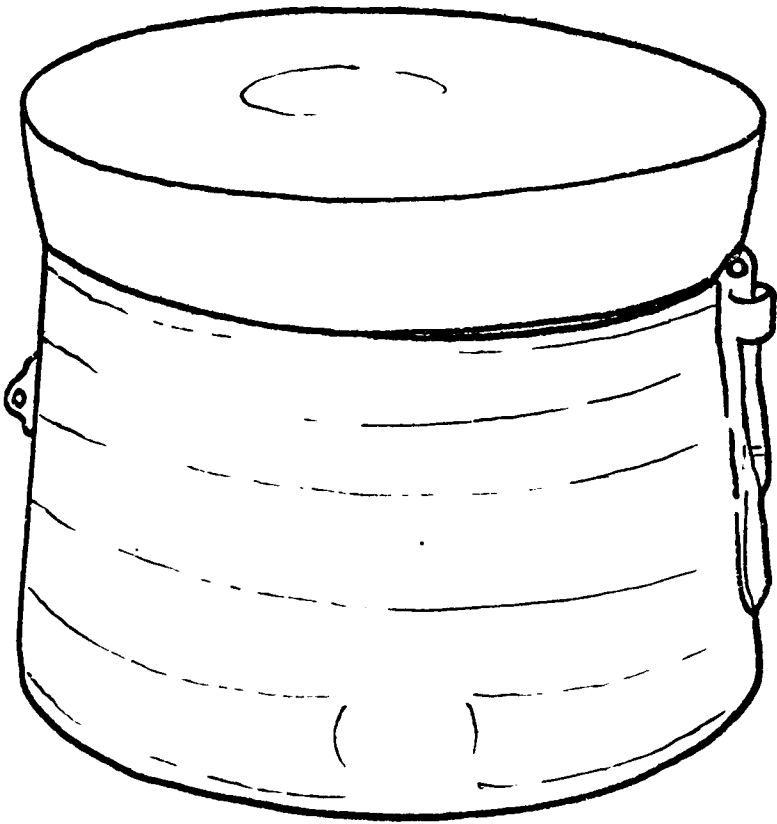


Pen-case B/1

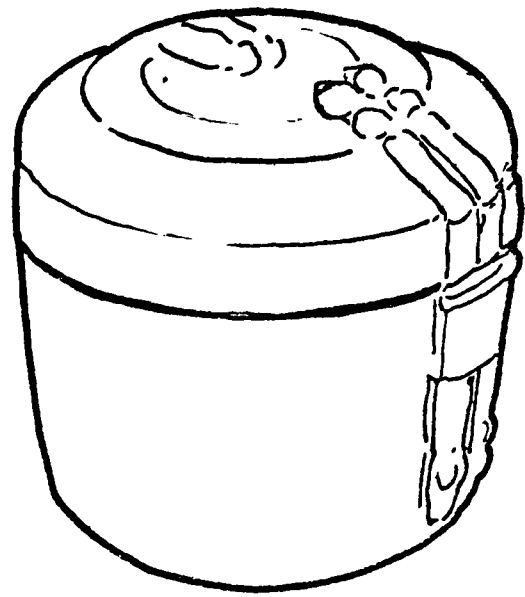


Pen-case C/1

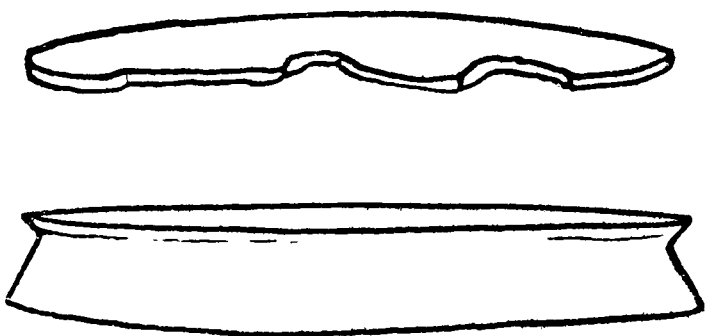
BRONZE



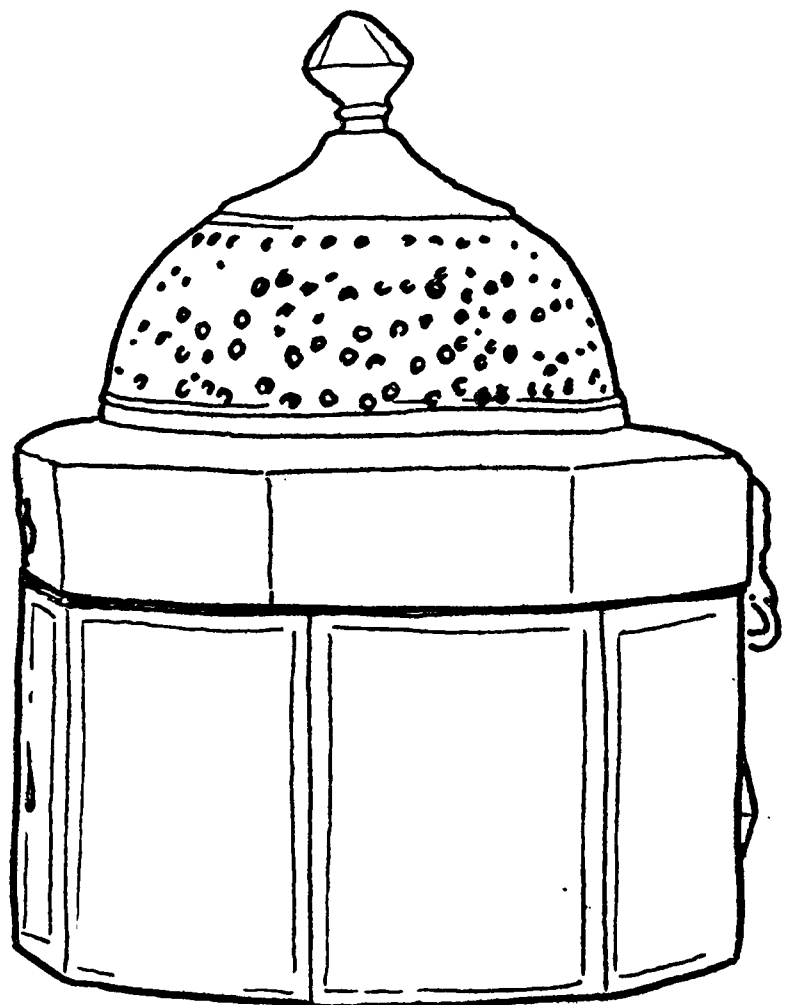
Box A/1/2



Box A/2/4

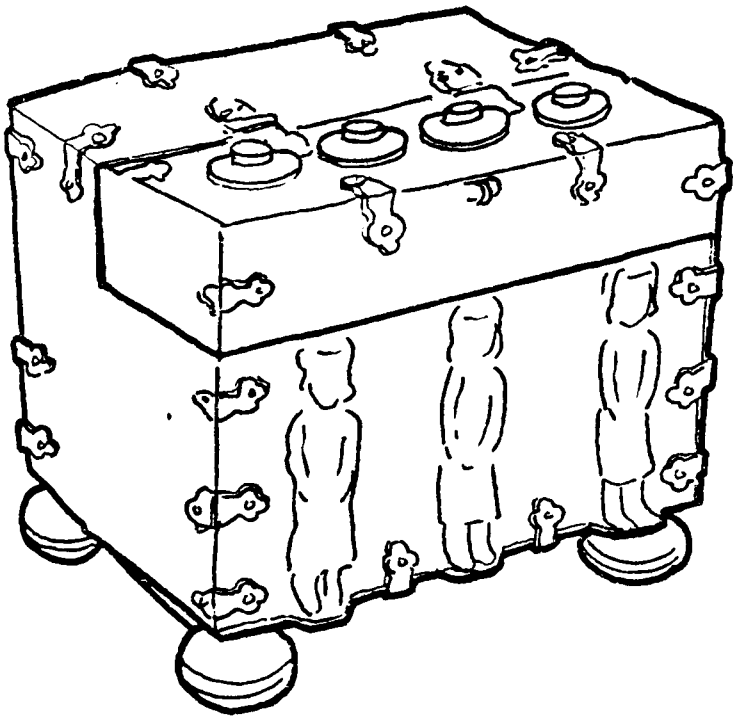


Box A/3/1

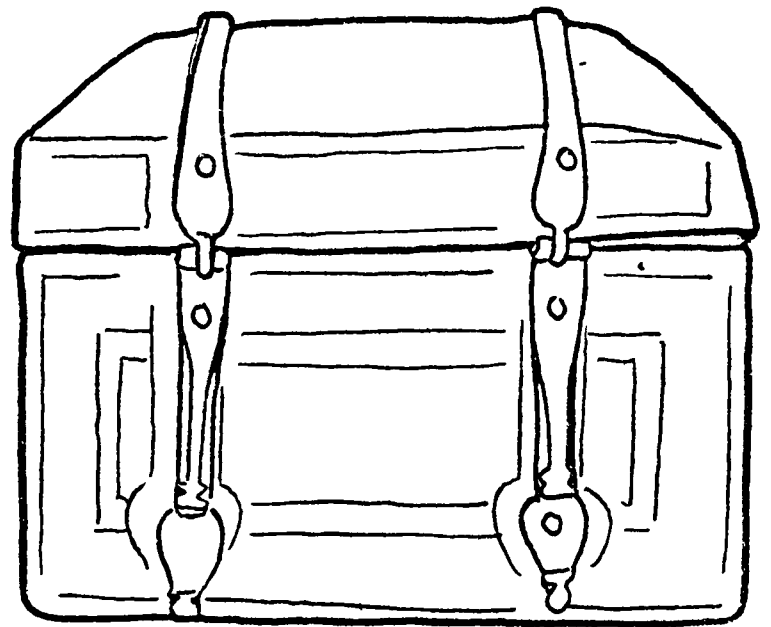


Box B/1

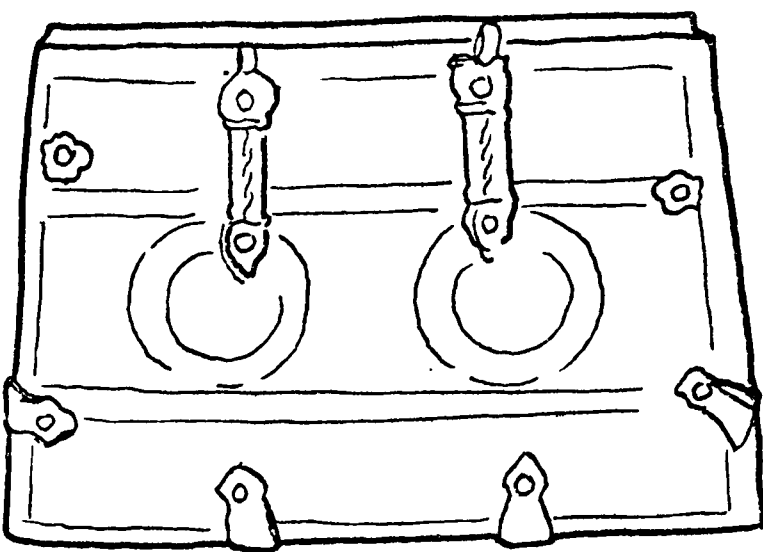
BRONZE



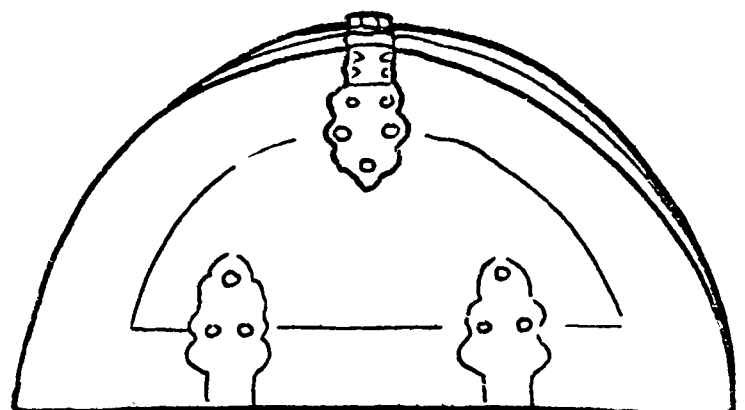
Box c/1/1



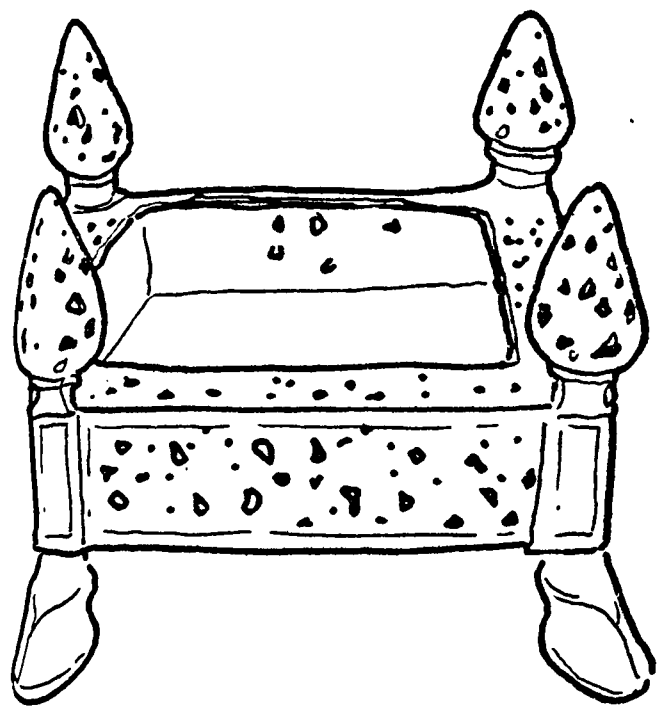
Box c/2/2/1



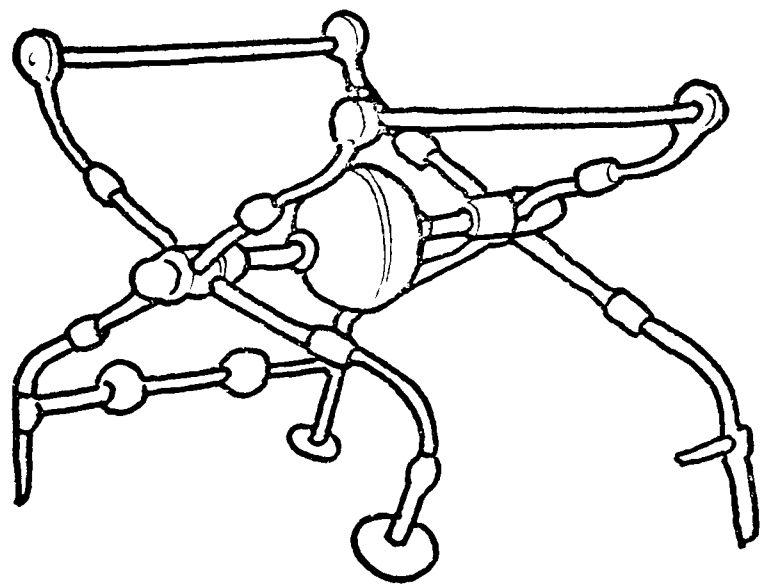
Box c/3/1



Box D/1

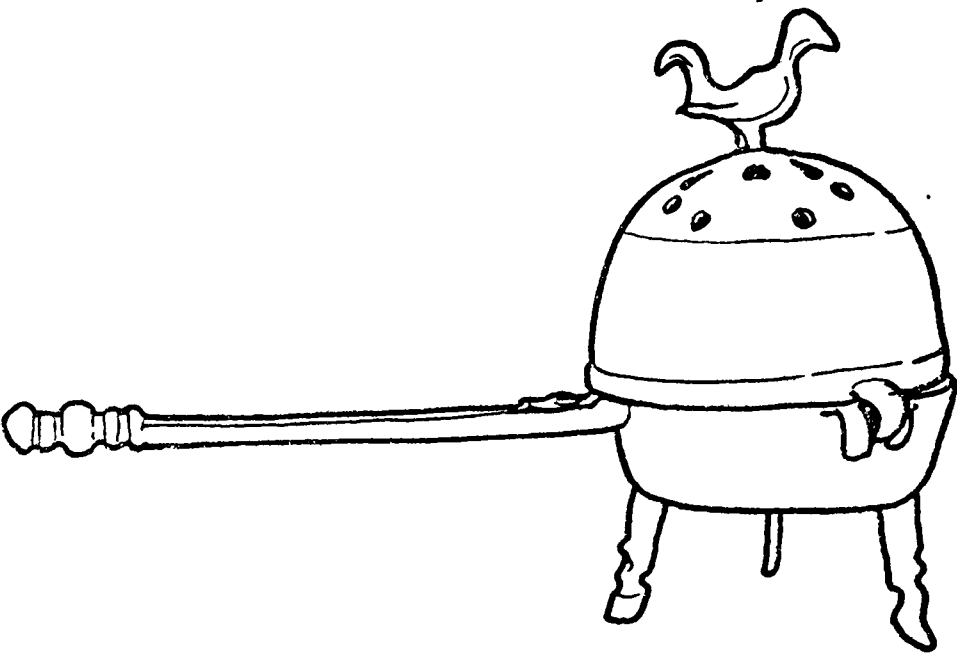


Brazier 1

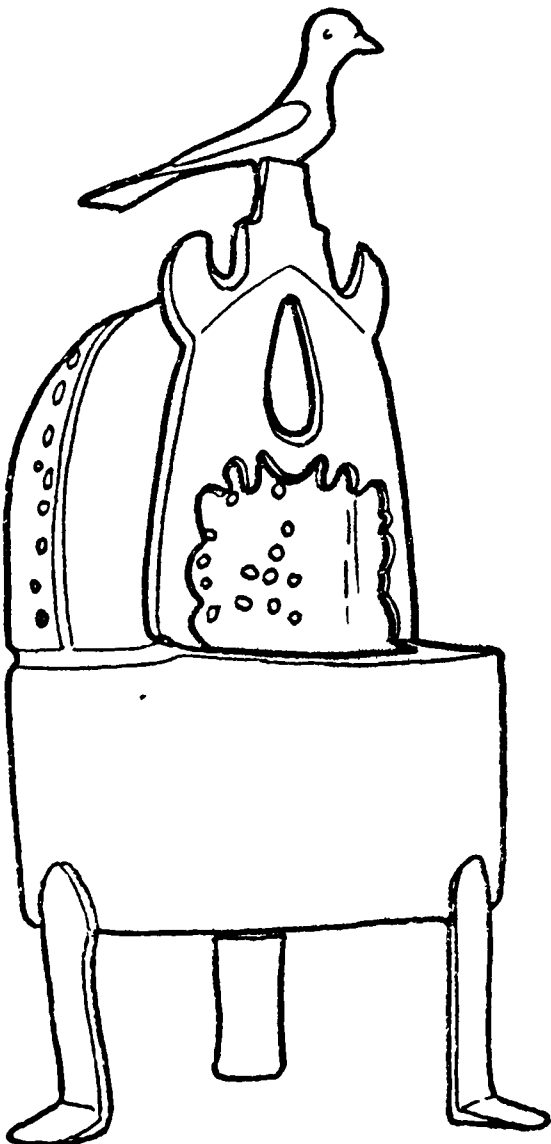


Chair 1

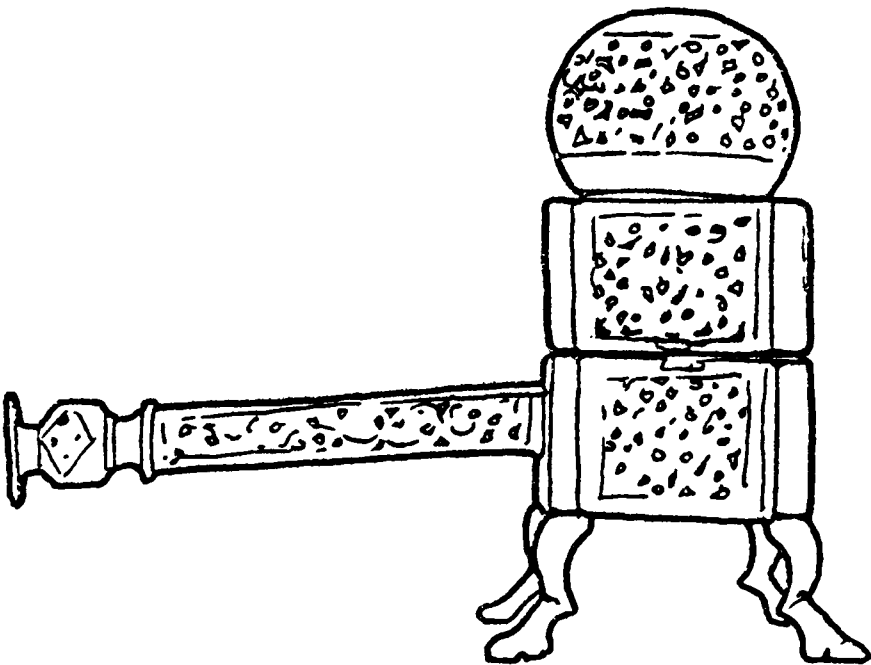
BRONZE



Incense-burner A/1/6

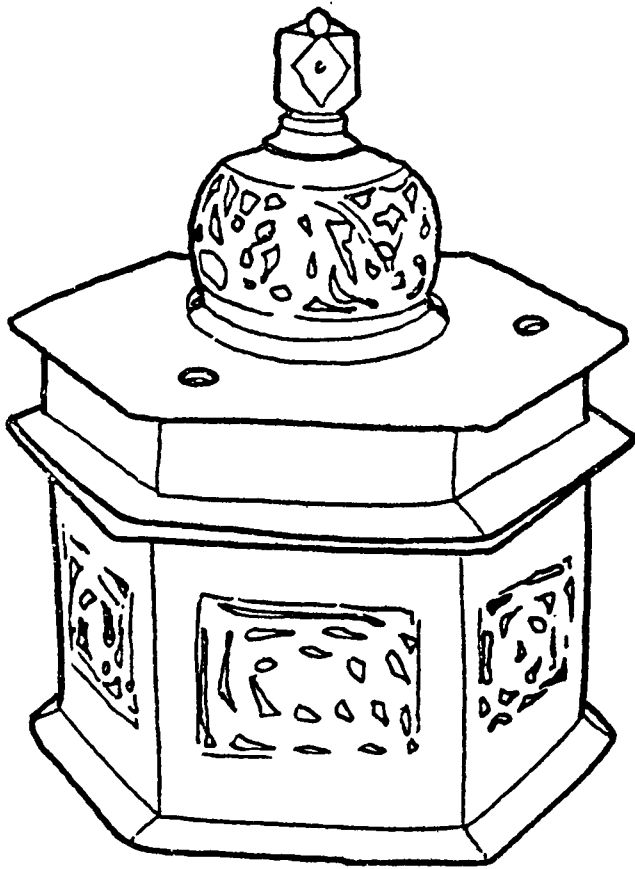


Incense-burner A/2/6



Incense-burner B/1

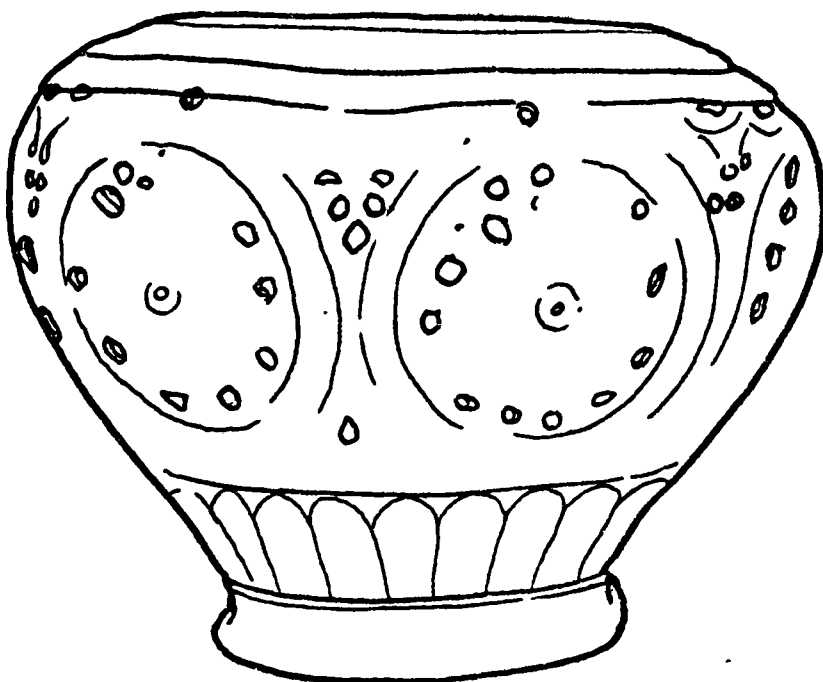
BRONZE



Incense-burner c/1



Incense-burner D/1/2

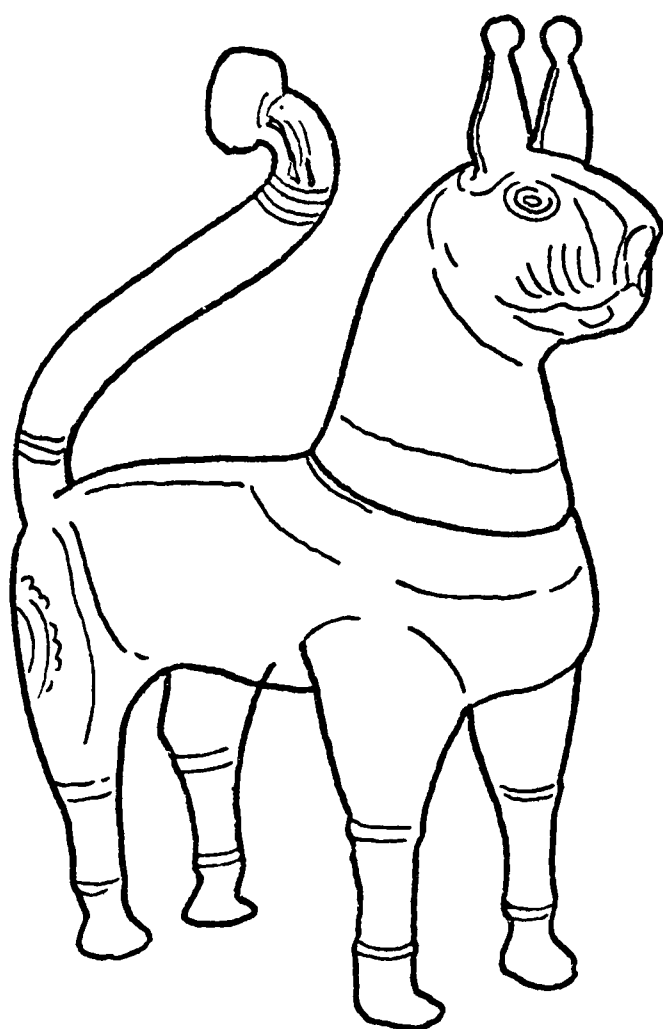


Incense-burner D/2/1

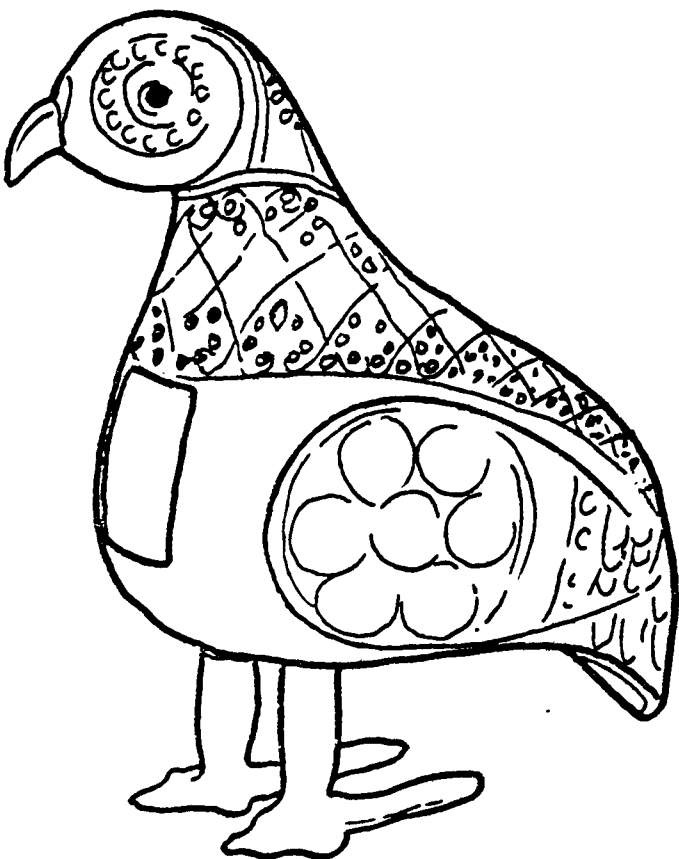


Incense-burner E/1/1

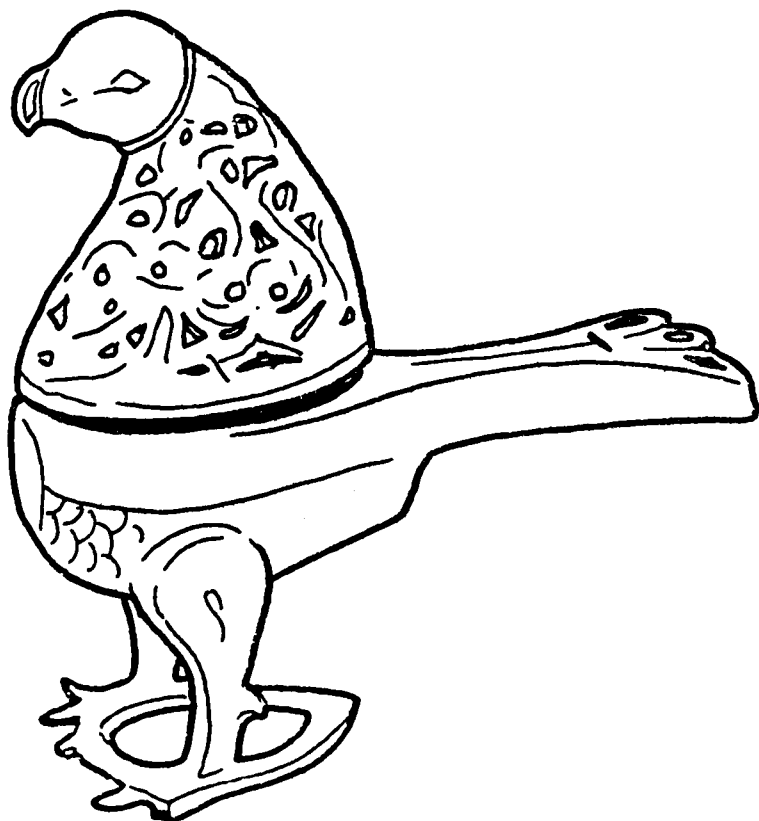
BRONZE



Incense-burner E/2/3



Incense-burner E/3/2

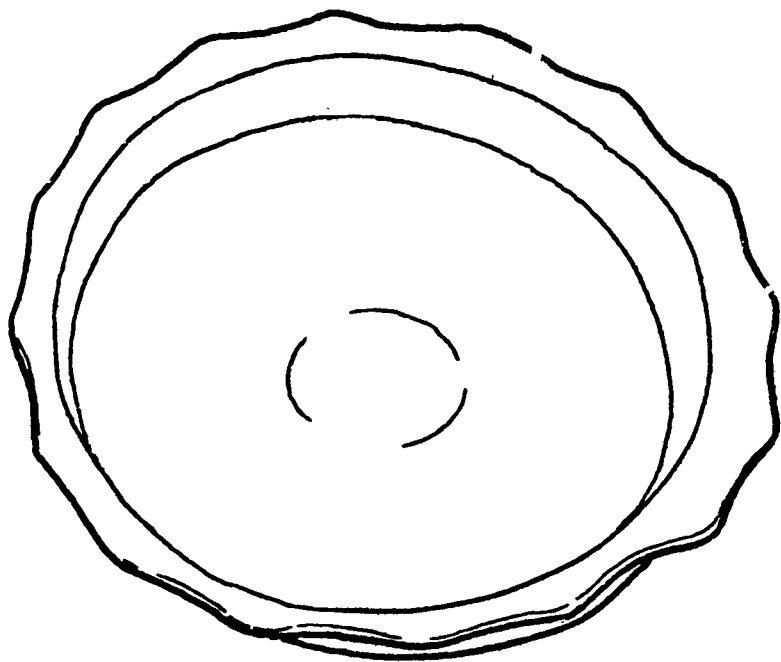


Incense-burner E/4/1

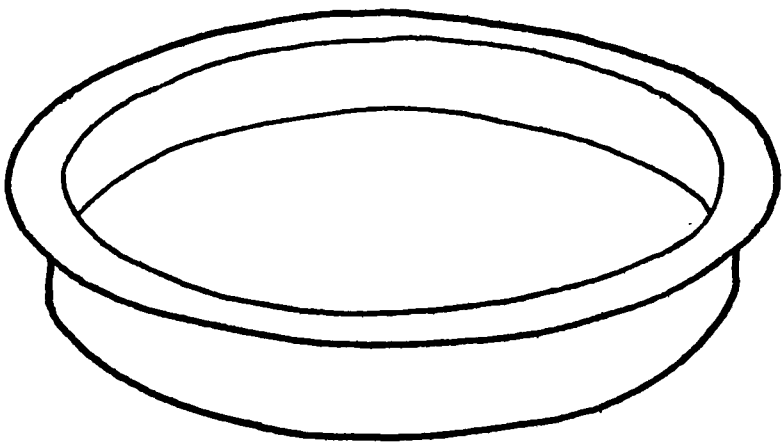


Incense-burner E/5/3

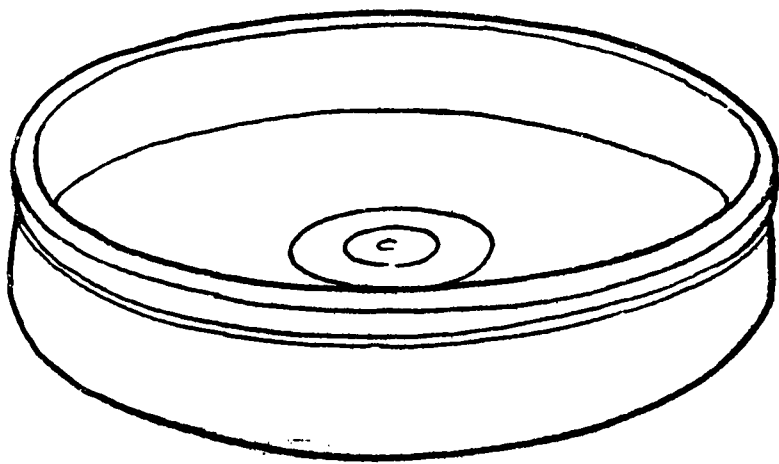
BRONZE



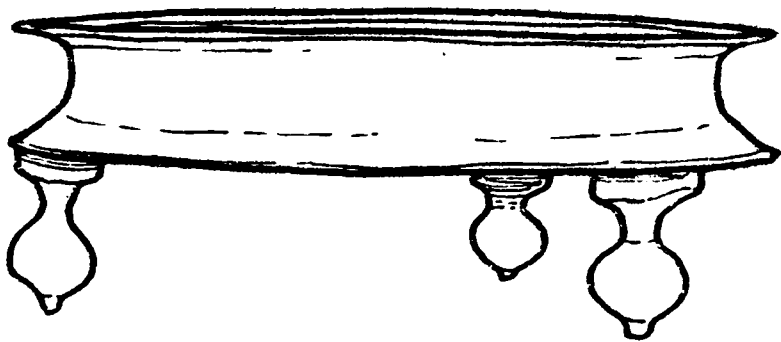
Incense-burner F/1/1



Incense-burner F/2/1

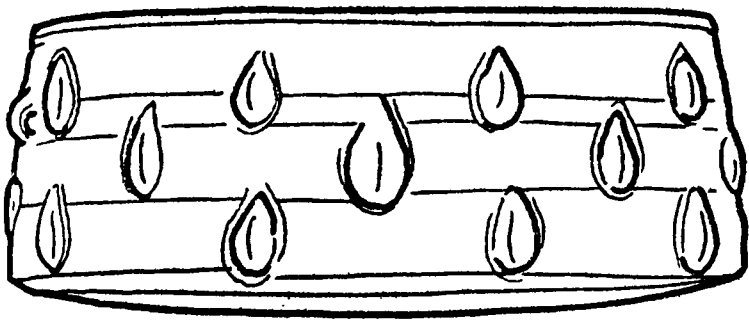


Incense-burner F/3/1

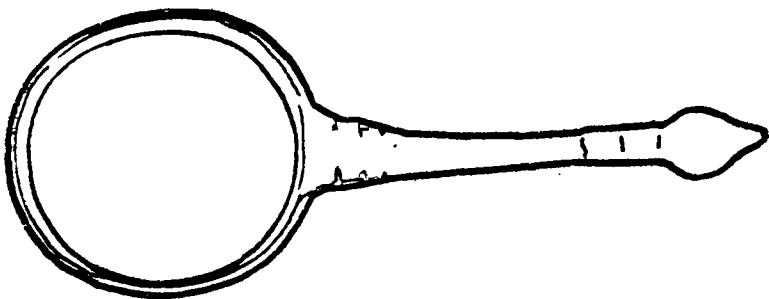


Incense-burner F/4/1

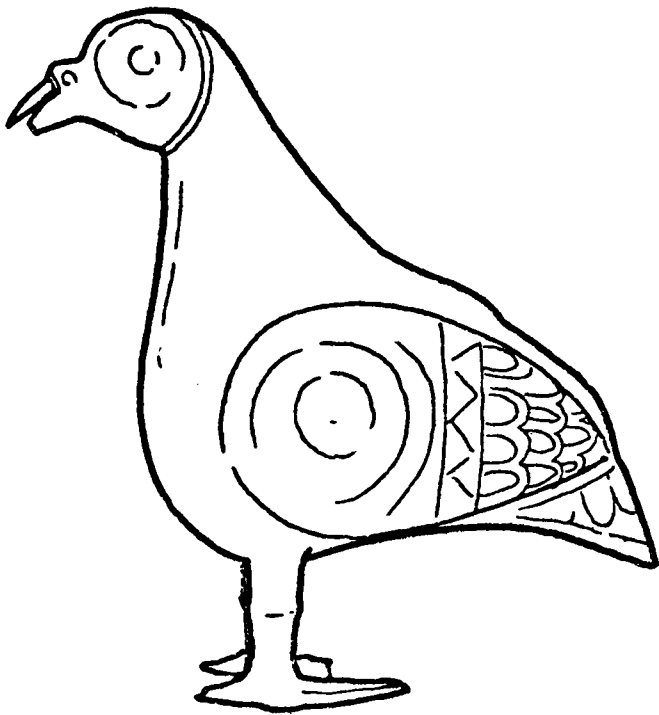
BRONZE



Incense-burner F/5/1

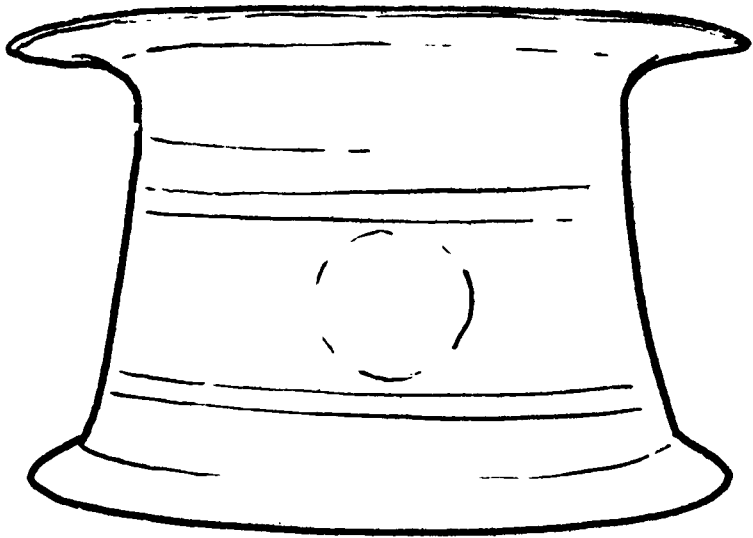


Incense-burner F/6/1

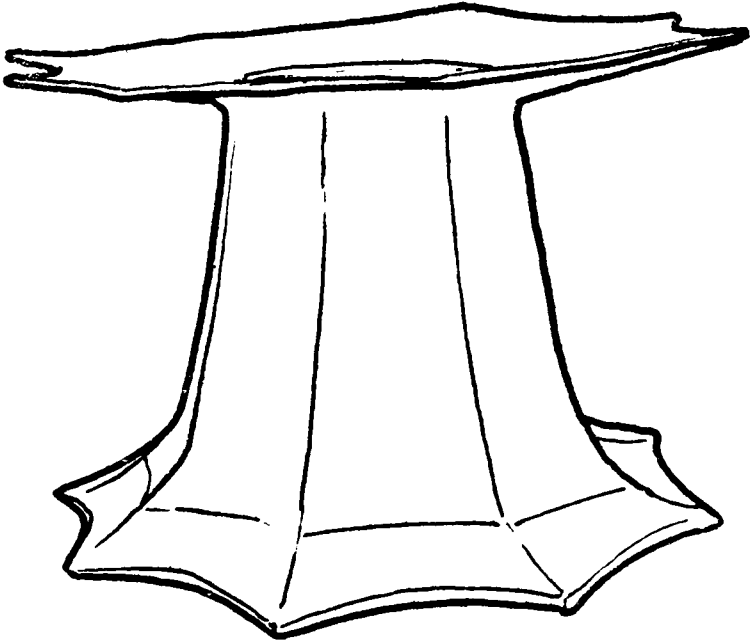


Incense-holder 1

BRONZE



Stand A/1



Stand B/1

BRONZE

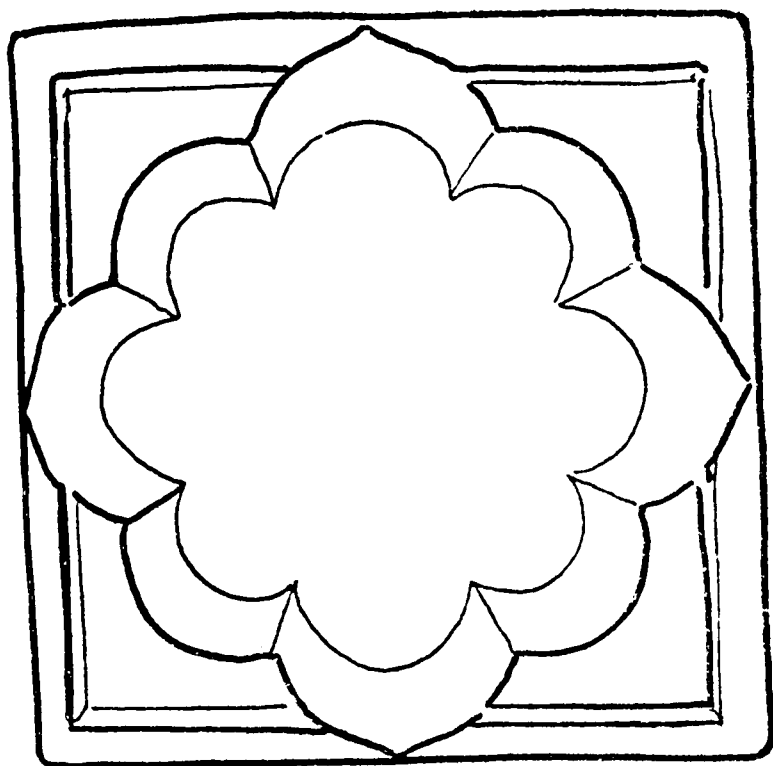


Table-top A/1/1

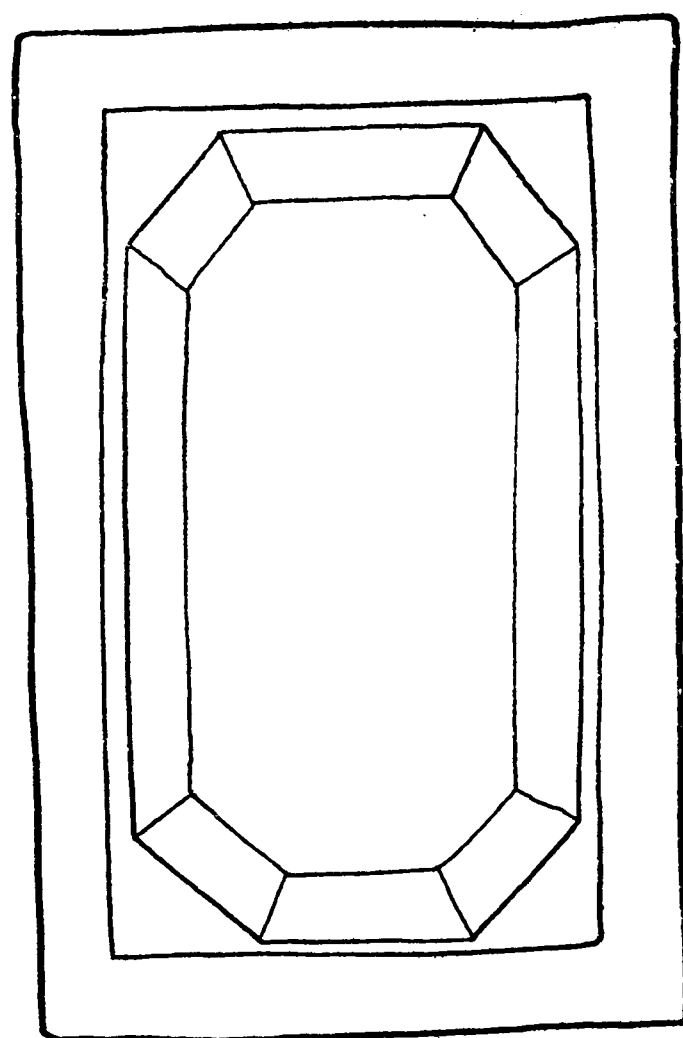


Table-top B/1/1

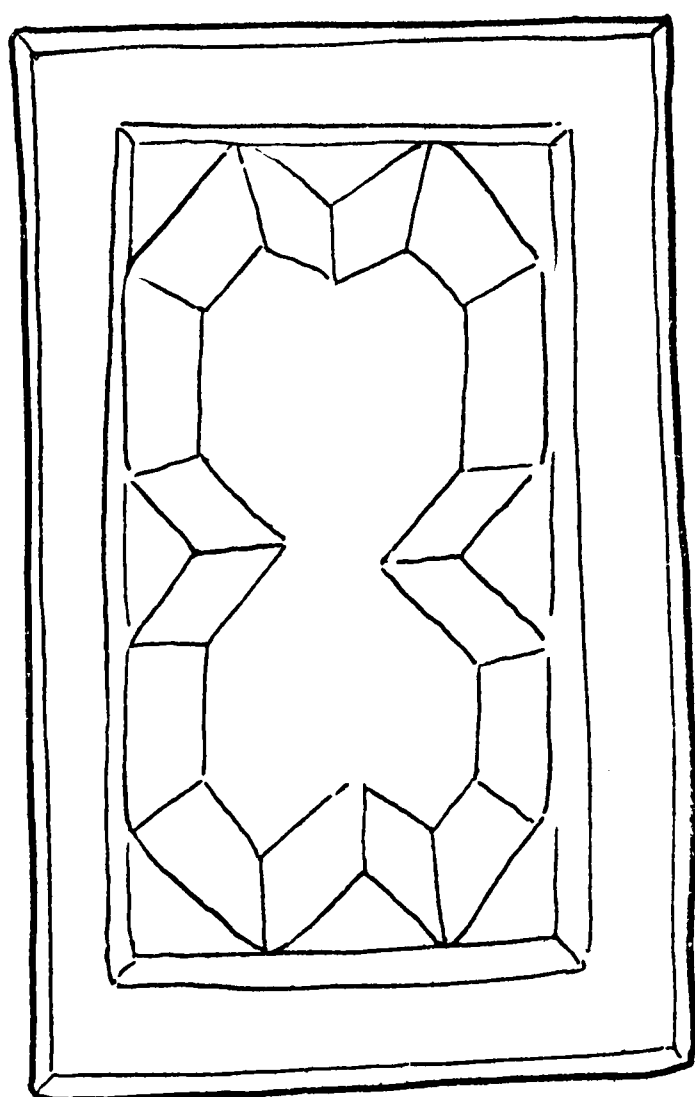


Table-top B/2/1

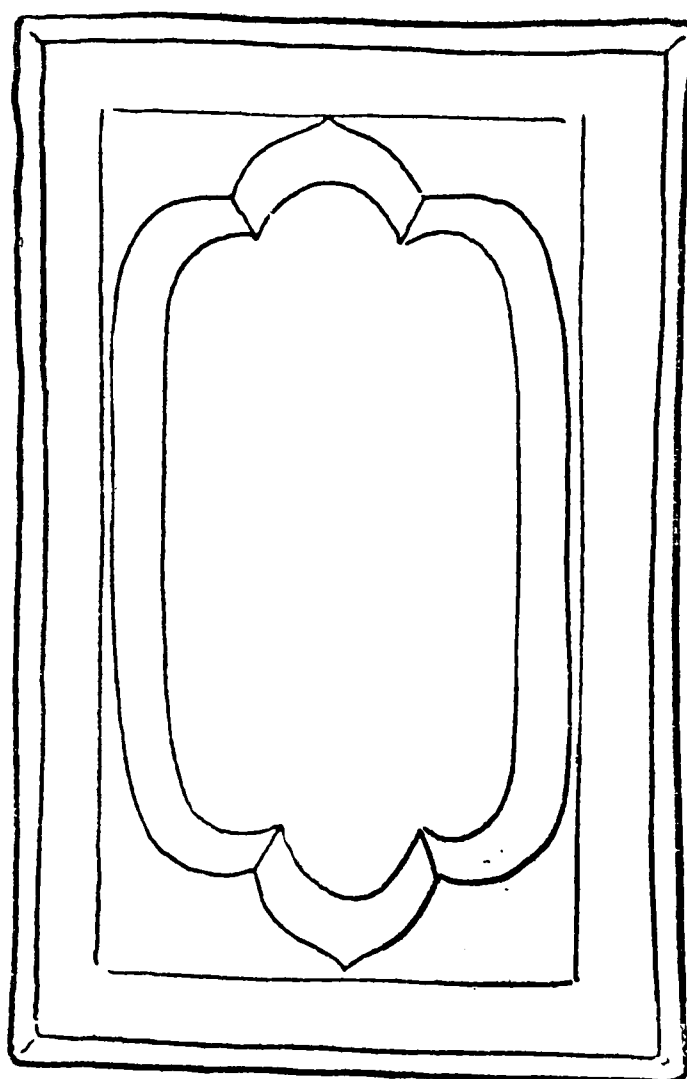
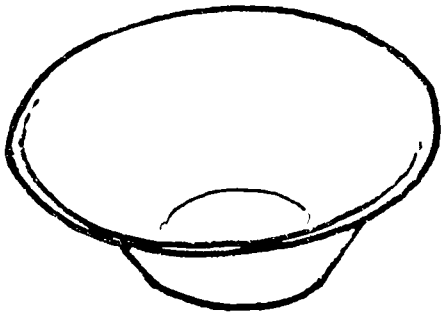
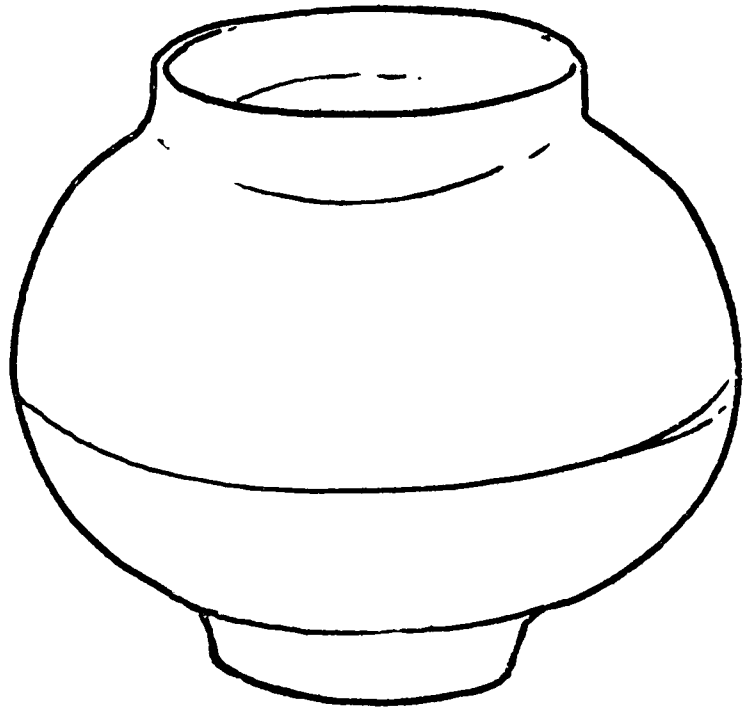


Table-top B/3/1

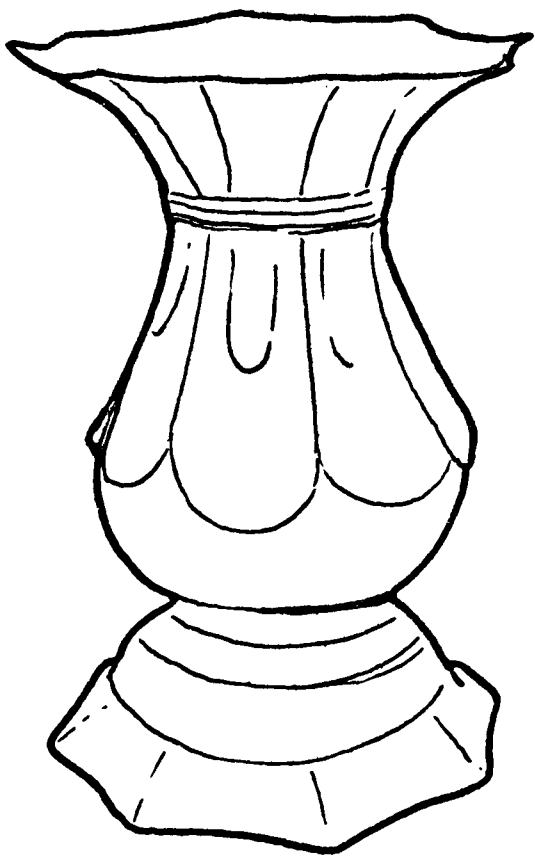
BRONZE



Miniature vessel A/7



Miniature vessel C/1

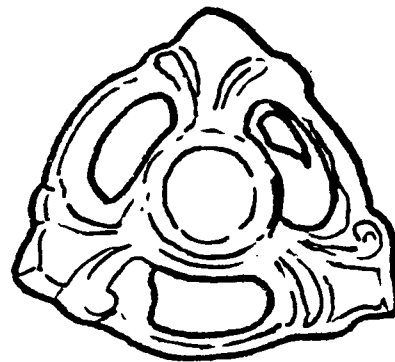


Vase 2

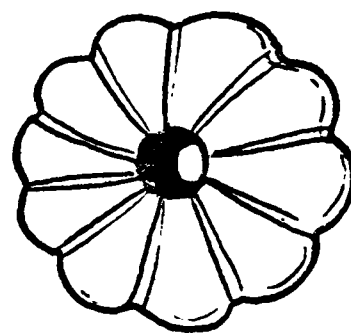
BRONZE



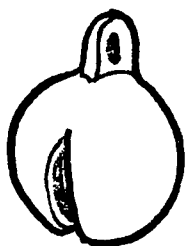
Appliqué 1



Appliqué 6



Appliqué 7



Bell A/2



Belt fitting A/6/6

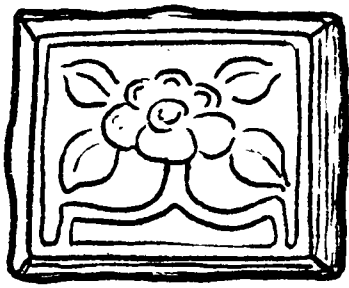


Bell B/4

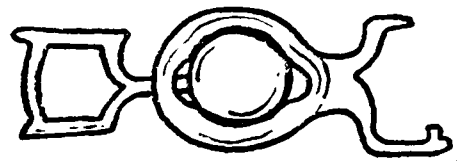


Belt fitting A/7/1

BRONZE



Belt fitting A/7/3



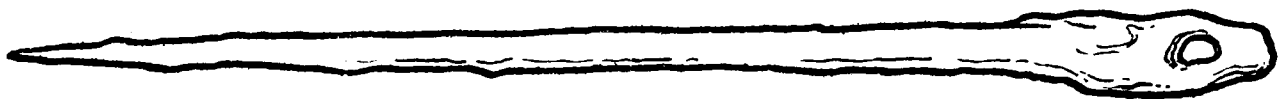
Belt fitting B/2/1



Belt fitting A/7/4

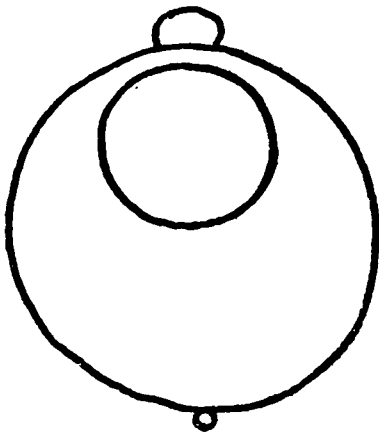


Button 1

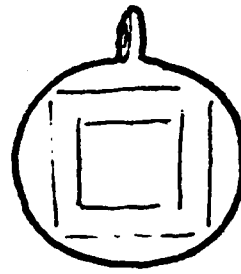


Needle 1

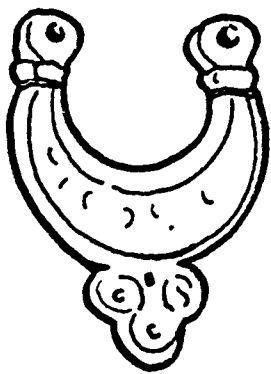
BRONZE



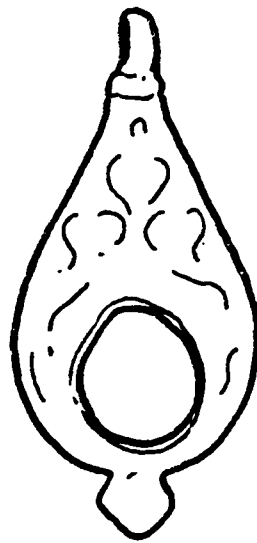
Pendant A/1



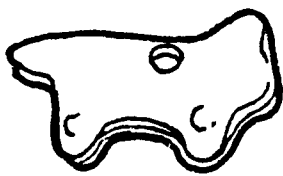
Pendant B/2



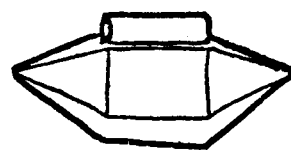
Pendant A/5



Pendant C/3



Pendant D/1

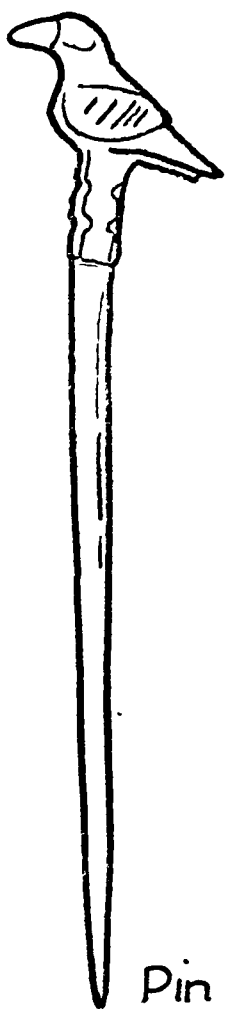


Pendant D/4



Pendant D/2

BRONZE



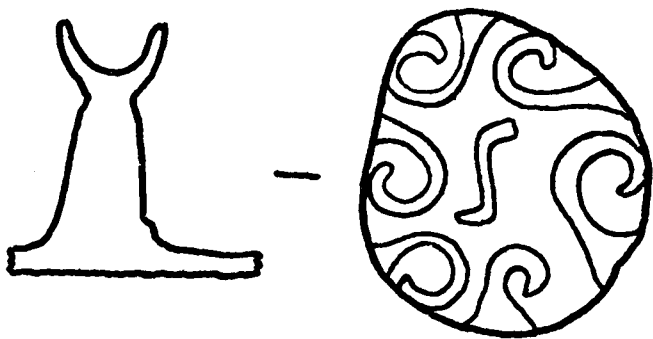
Pin A/1



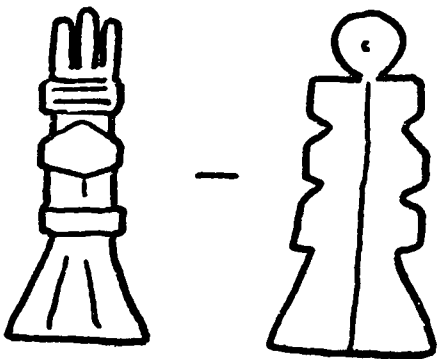
Pin B/1



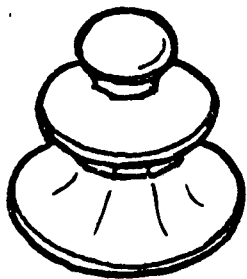
Pin C/5



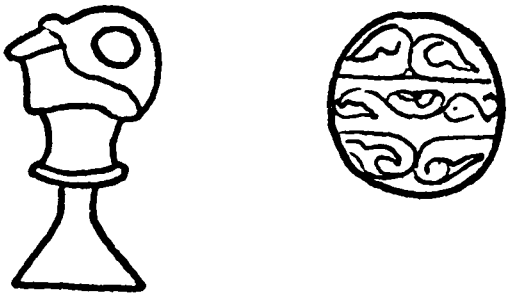
Seal 1



Seal 4

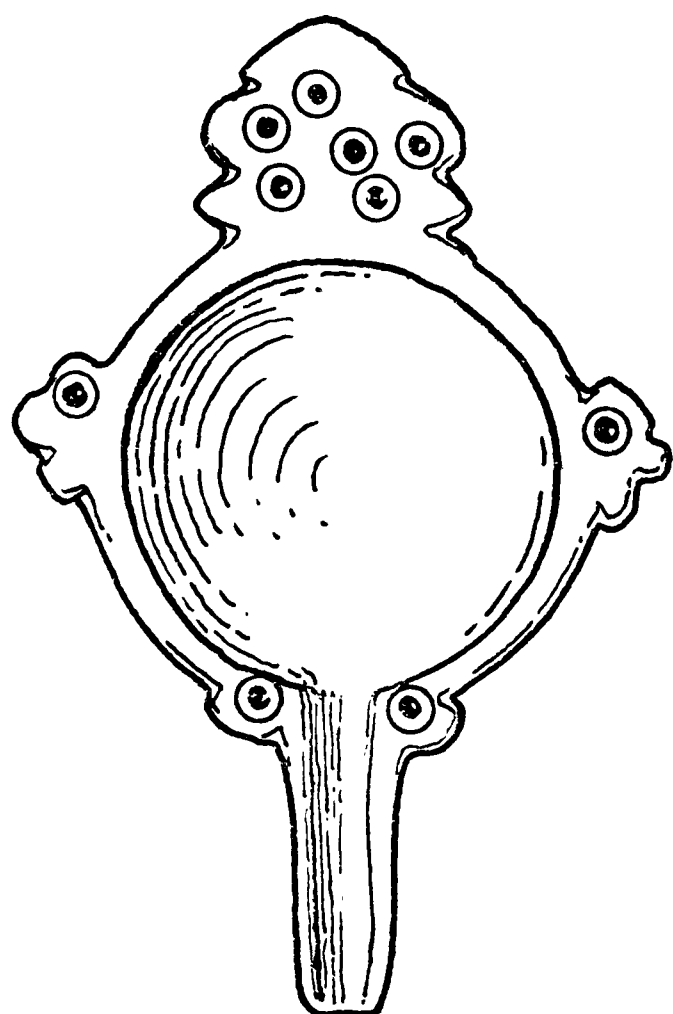


Seal 3

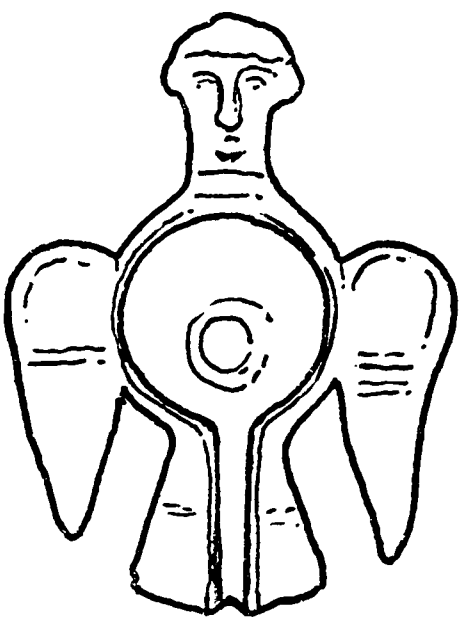


Seal 6

BRONZE



Cosmetic mortar 1

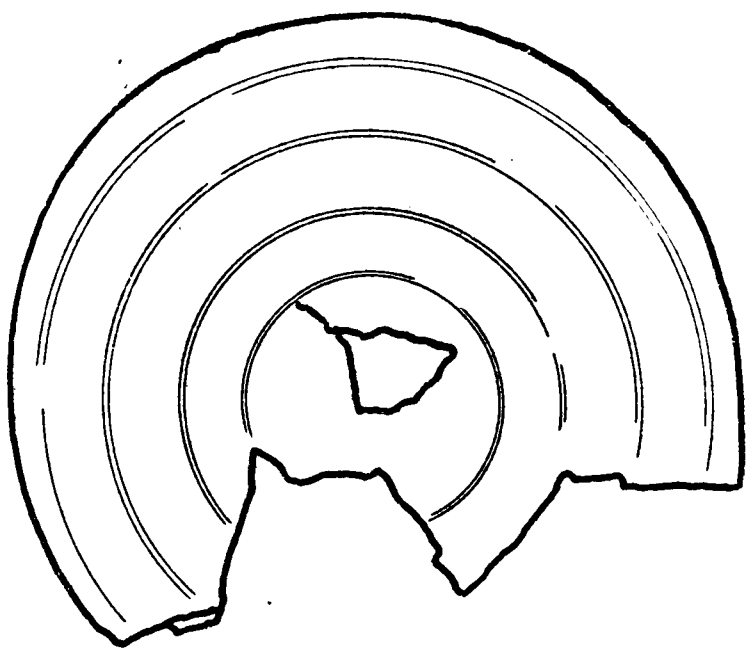


Cosmetic mortar v. 1

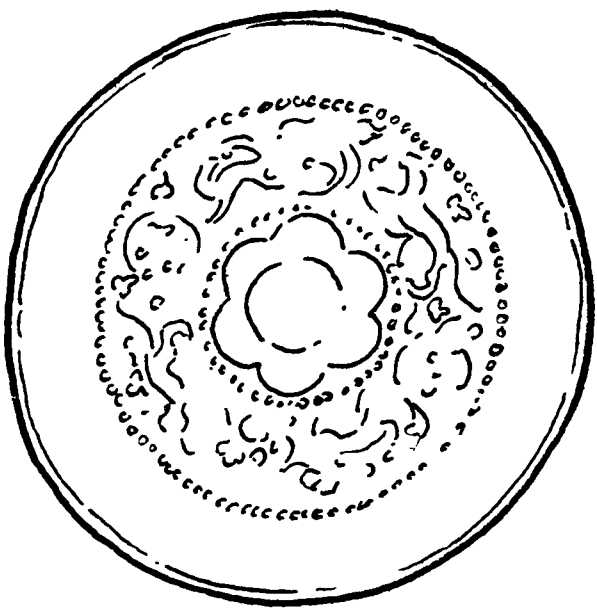


Kohl - stick 1

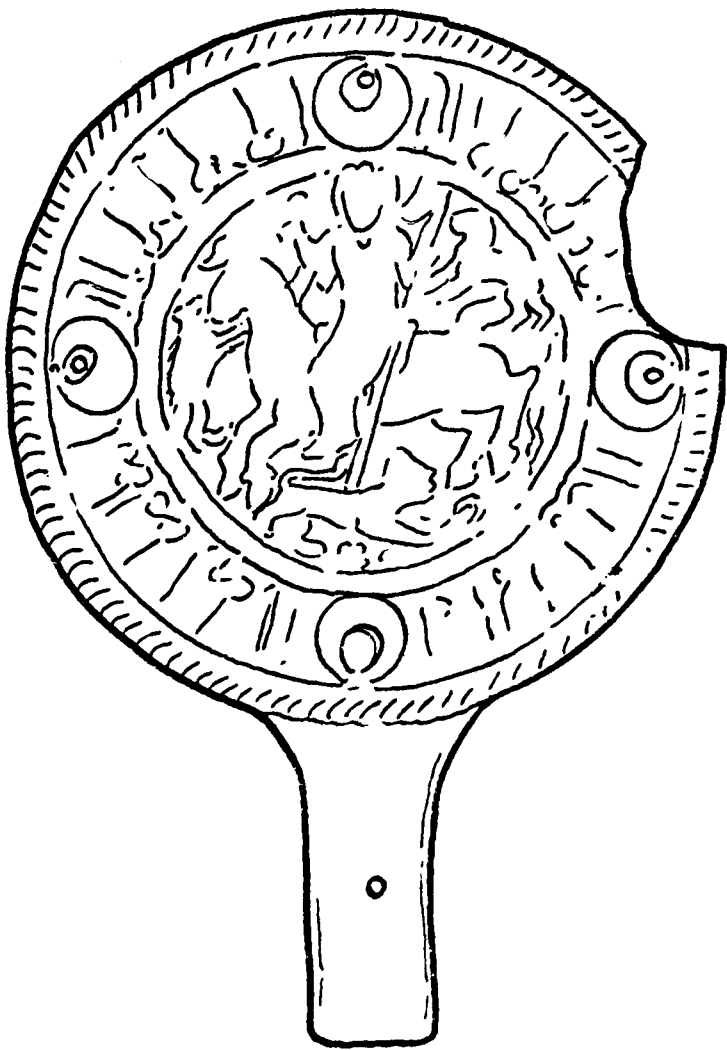
BRONZE



Mirror A/2



Mirror B/5/1



Mirror C/1/2



Mirror D/1

BRONZE



Spatula A/2



Spatula A/10



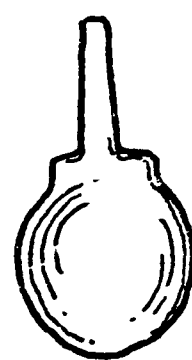
Spatula B/1



Spatula B/4



Spatula B/8

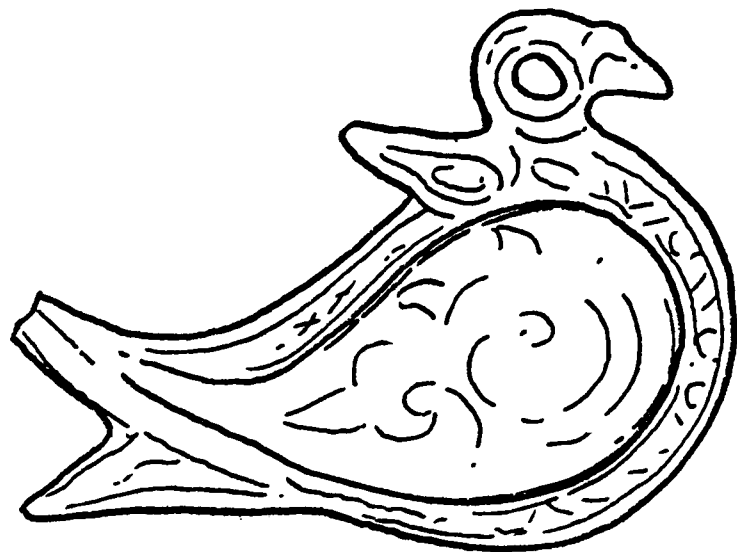


Spatula B/9

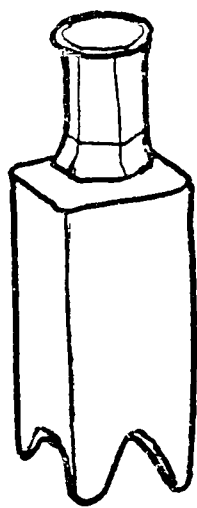
BRONZE



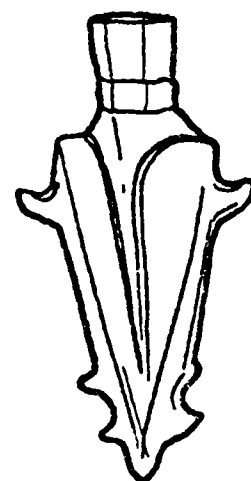
Spatula blade 1



Toilet dish 1

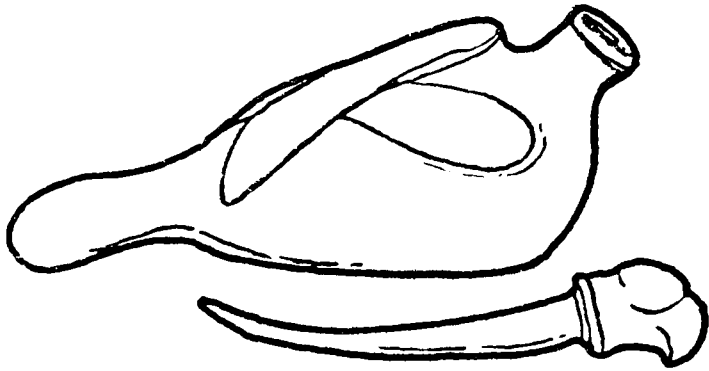


Toilet flask A/1

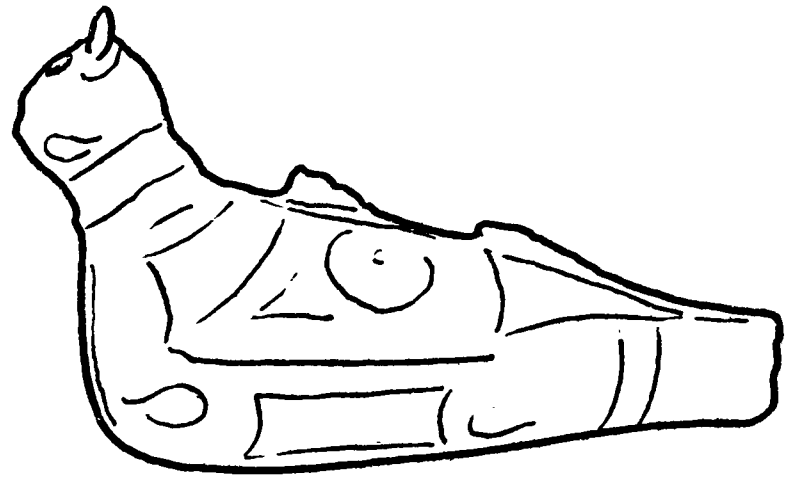


Toilet flask B/3

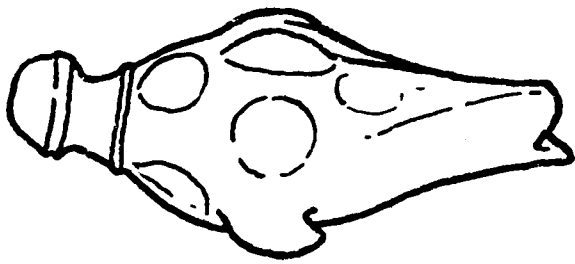
BRONZE



Toilet flask c/1/3



Toilet flask c/2/1

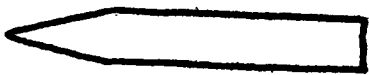


Toilet flask c/3/1



Tweezers B/2

BRONZE



Chisel 1



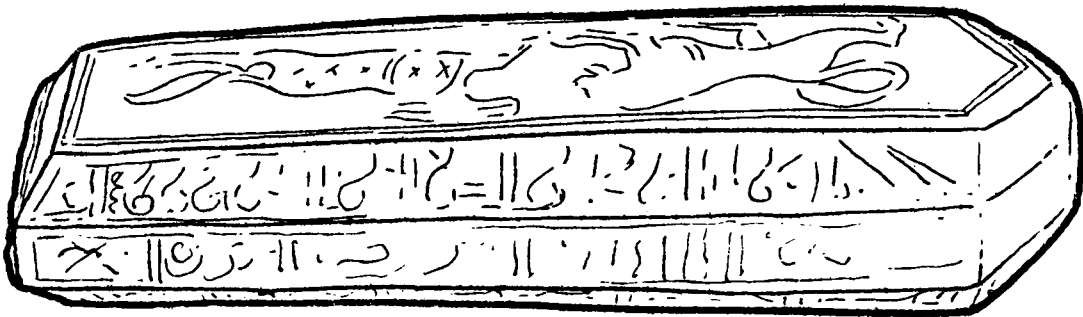
Nail A/1



Nail B/1

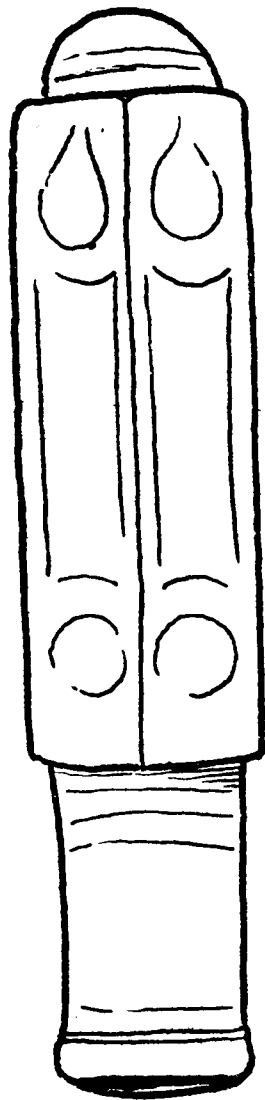


Saw 1

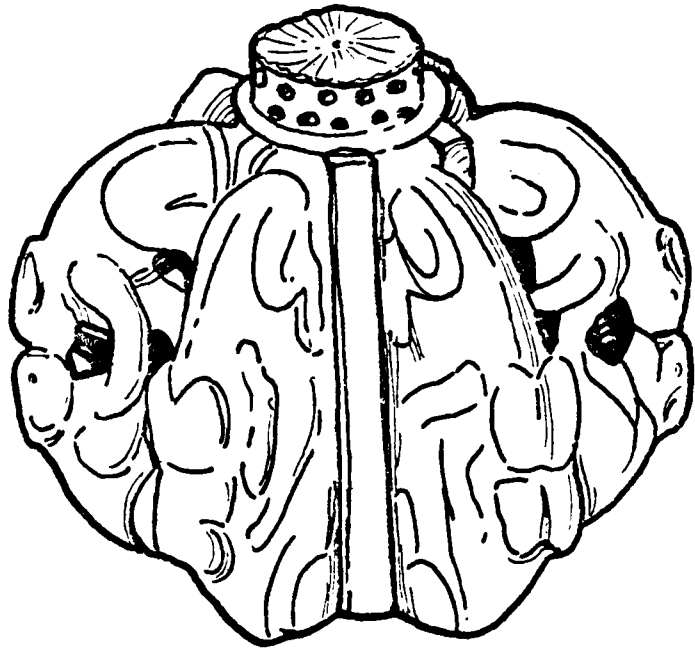


Dagger-handle 1

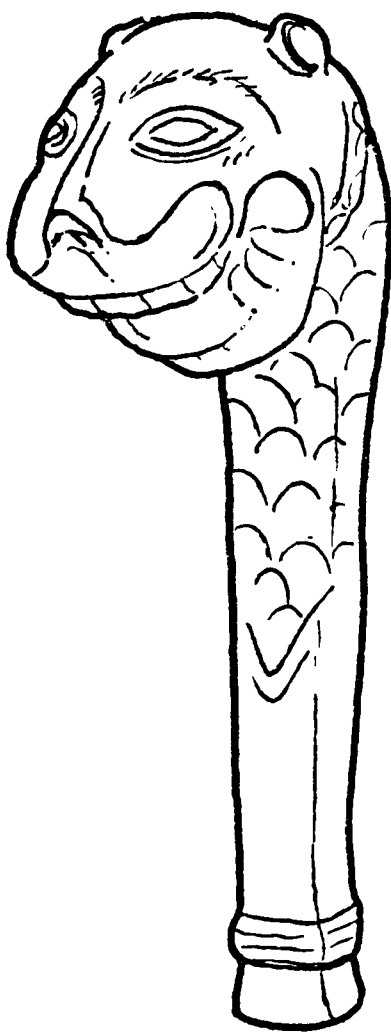
BRONZE



Mace-head 1



Mace-head 3

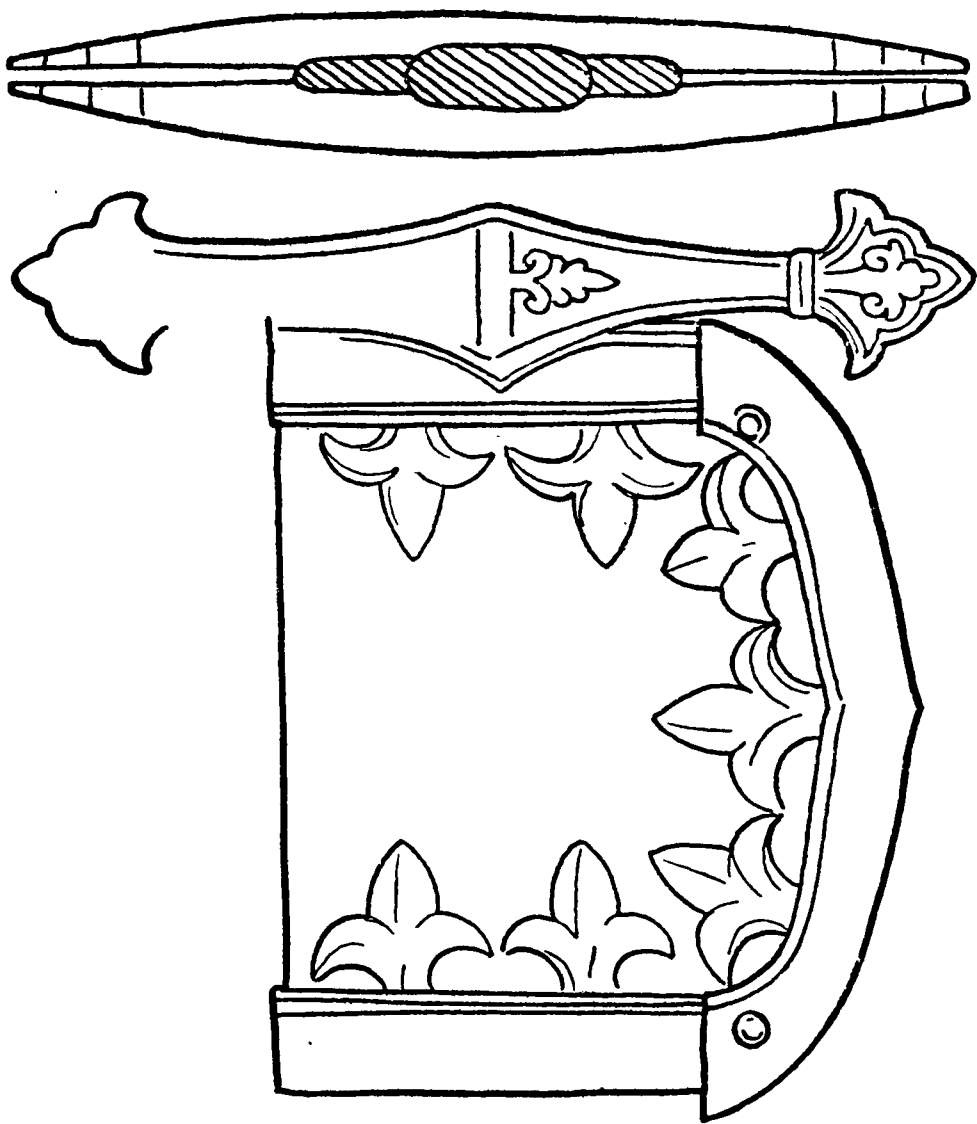


Mace-head 4

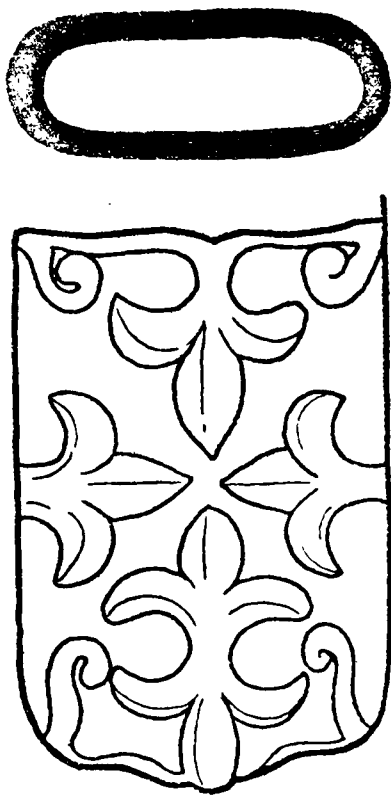


Sword-pommel 1

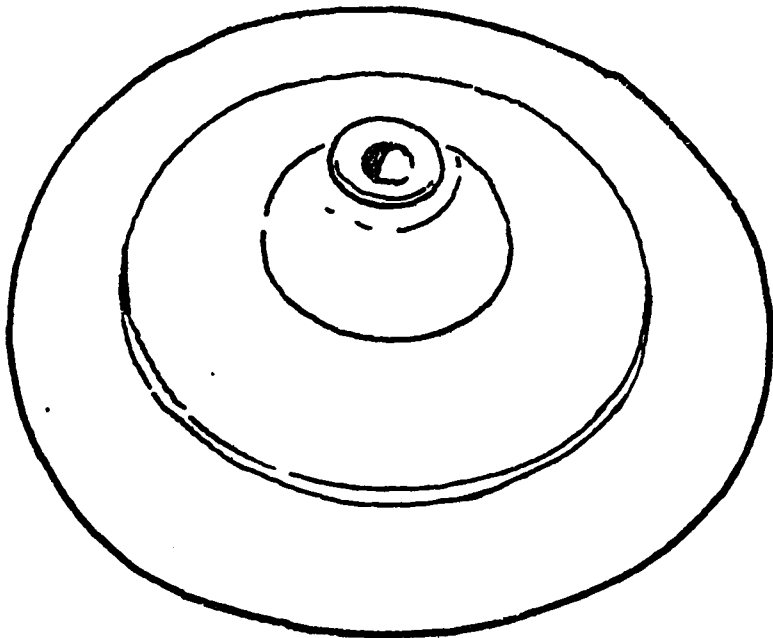
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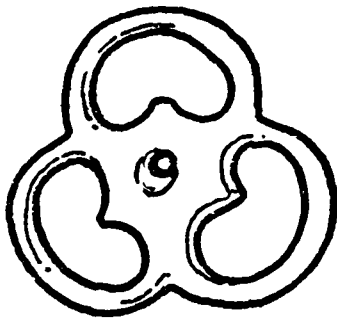
Sword I



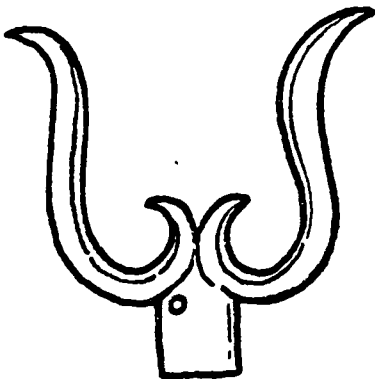
BRONZE



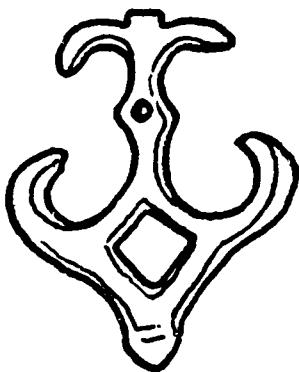
Cymbal 3



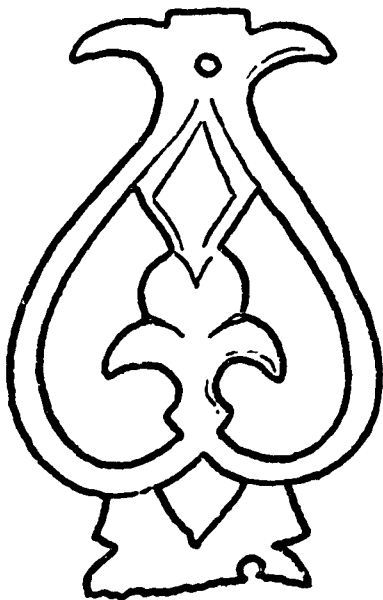
Horse-harness ornament 1



Horse-harness ornament 2

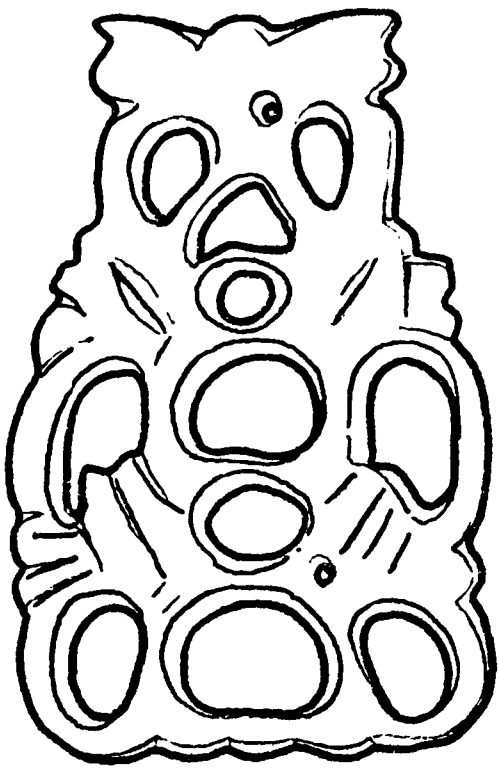


Horse-harness ornament 3

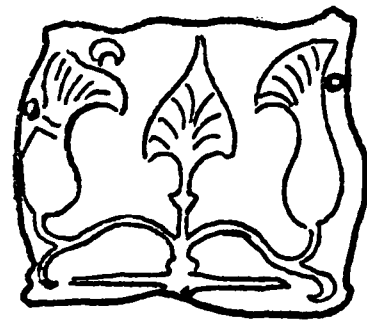


Horse-harness ornament 4

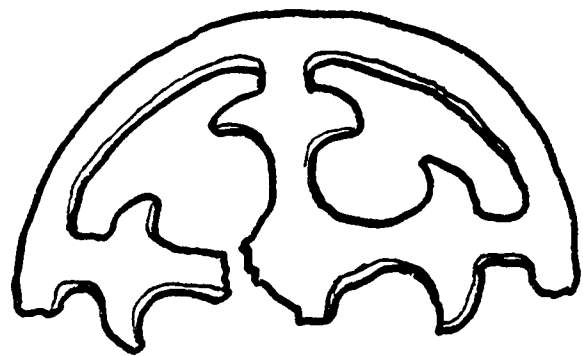
BRONZE



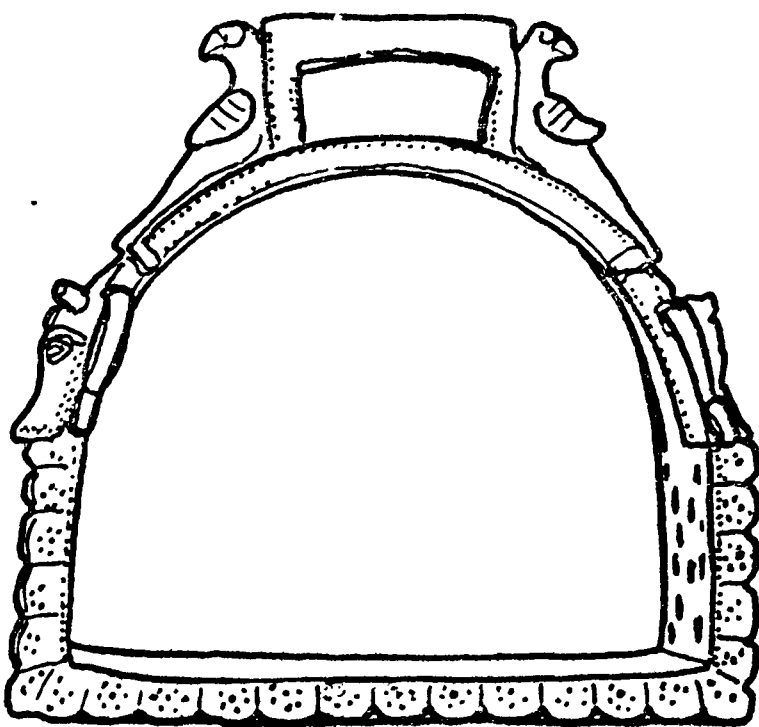
Horse-harness ornament 8



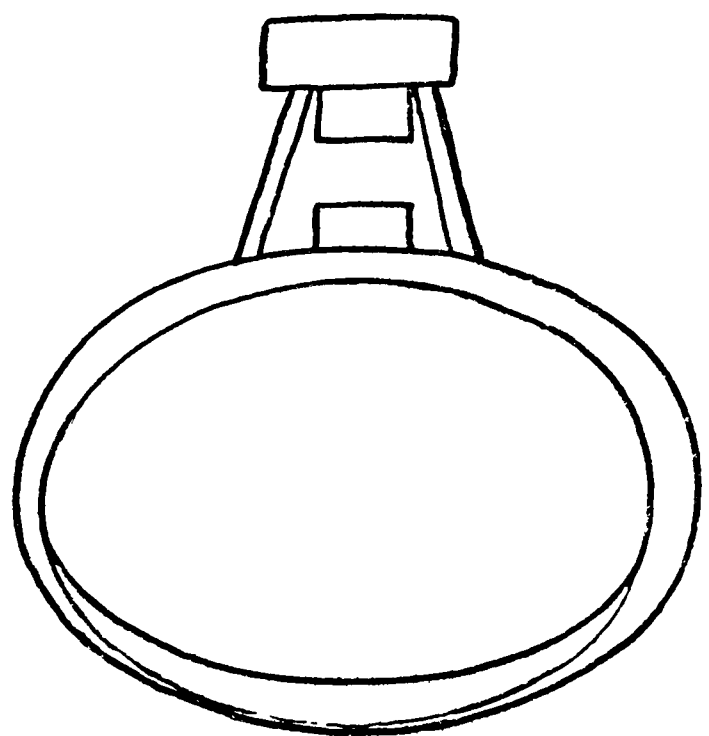
Horse-harness ornament 10



Horse-harness ornament 16



Stirrup 1

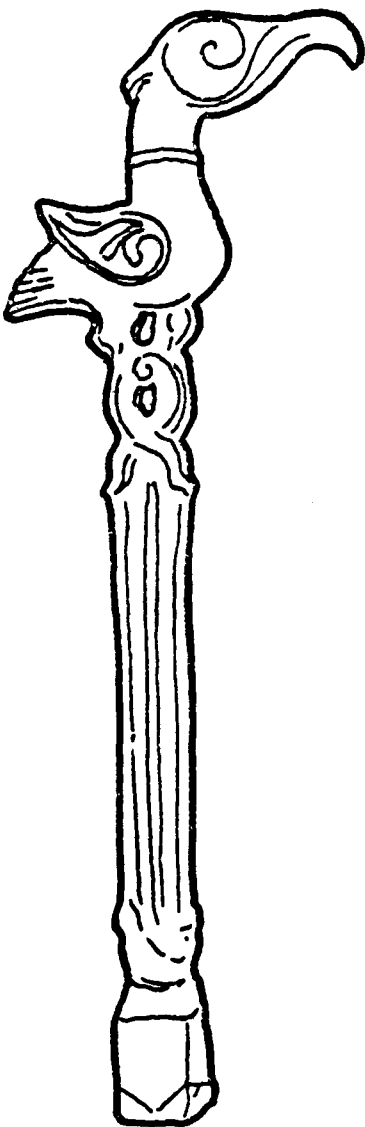


Stirrup 3

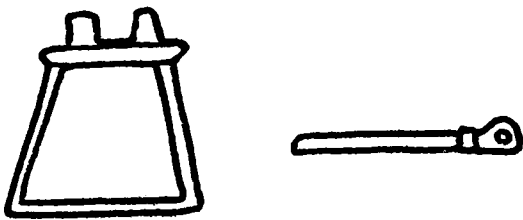
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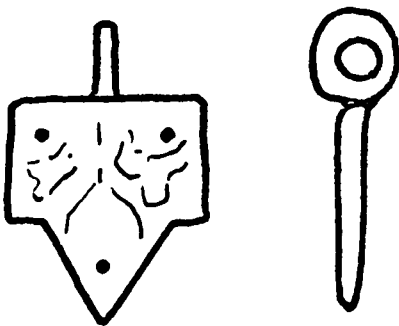
Box fitting A/3



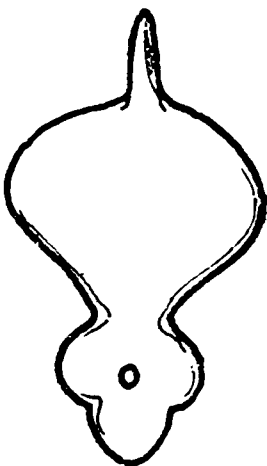
Box fitting A/6



Box fitting B/1

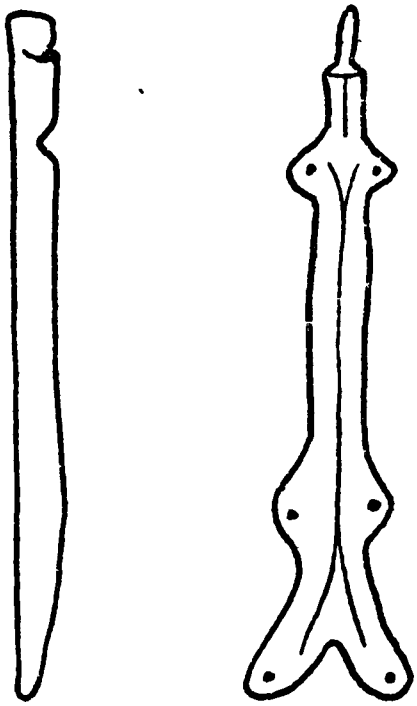


Box fitting B/2

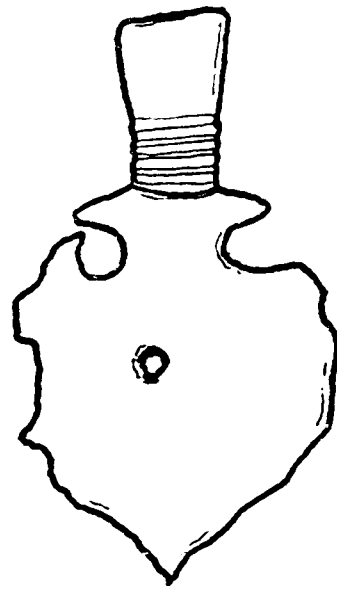


Box fitting B/6

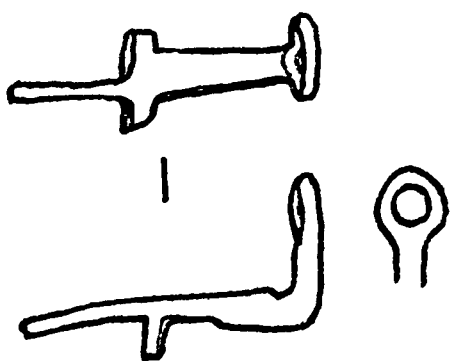
BRONZE



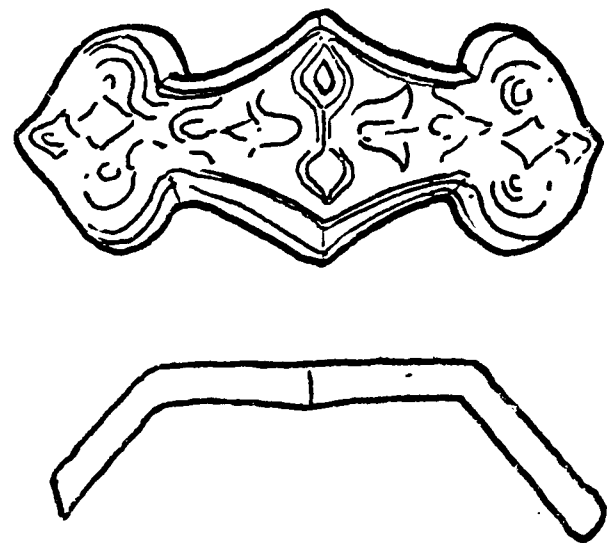
Box fitting B/7



Box fitting B/10

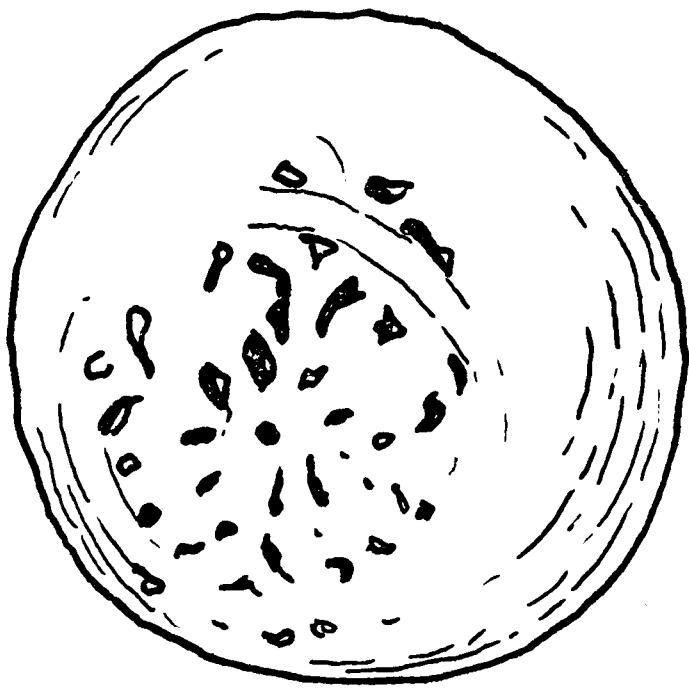


Box fitting B/11

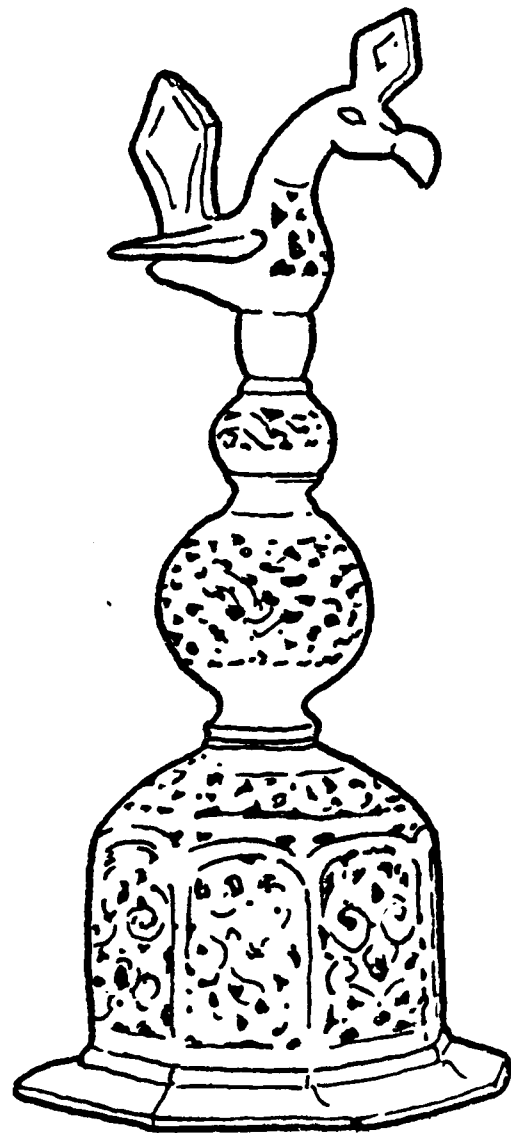


Box fitting B/12

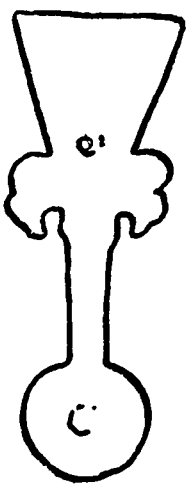
BRONZE



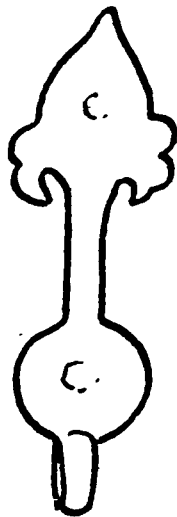
Chair boss 1



Cover 1



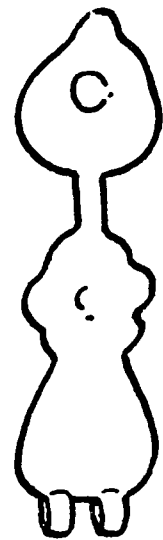
Door fitting
A/1



Door fitting
A/4

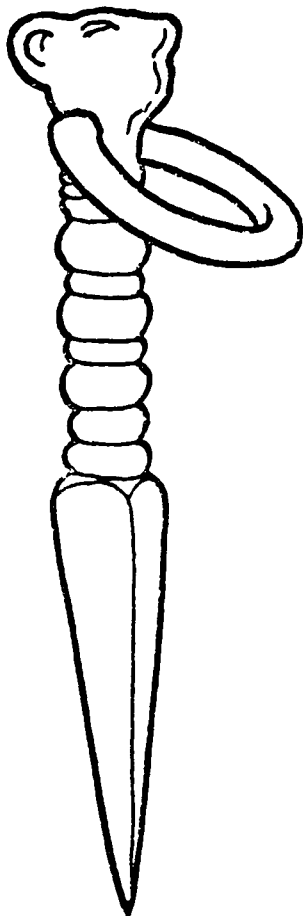


Door fitting
A/6

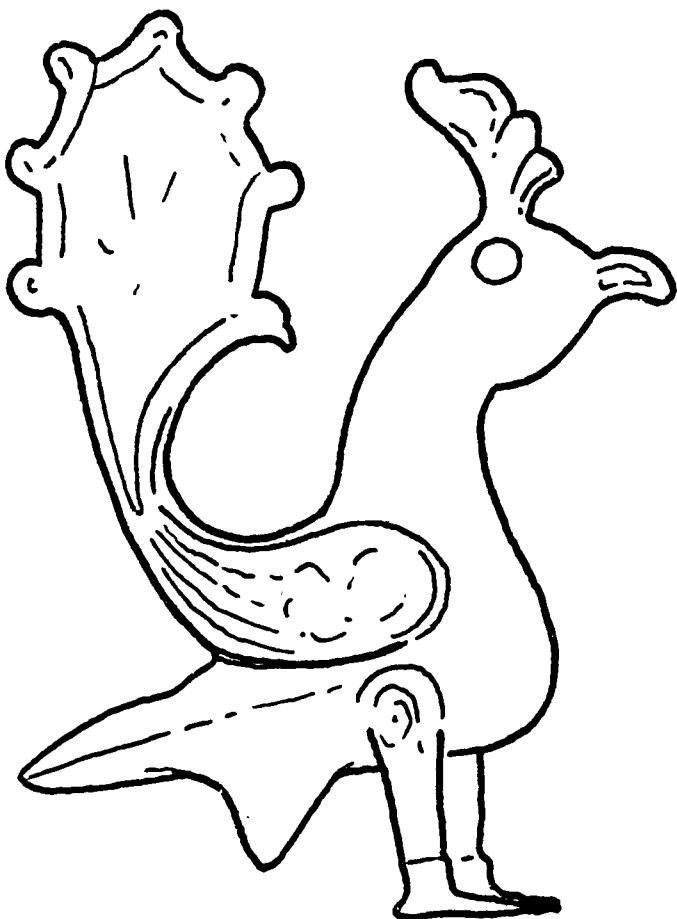


Door fitting
A/7

BRONZE



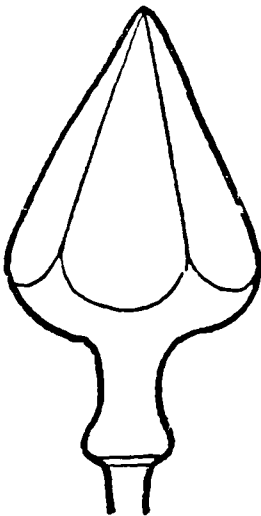
Door fitting B/2



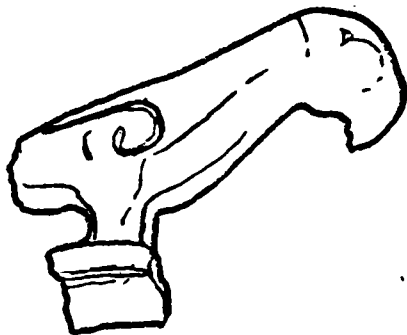
Finial A/5



Finial B/2



Finial c/1

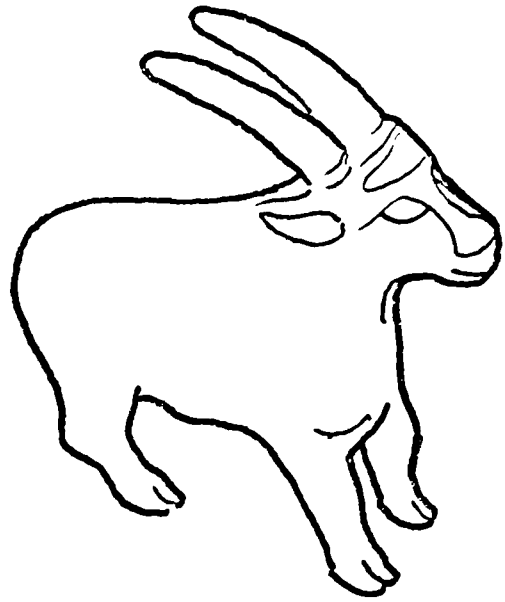


Finial B/5

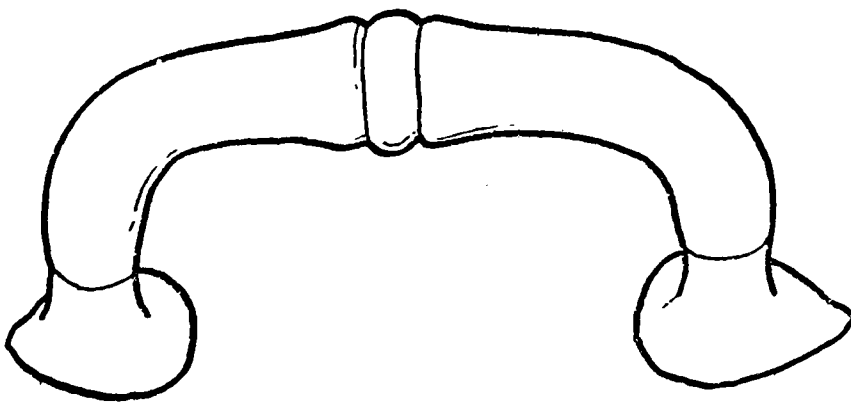
BRONZE



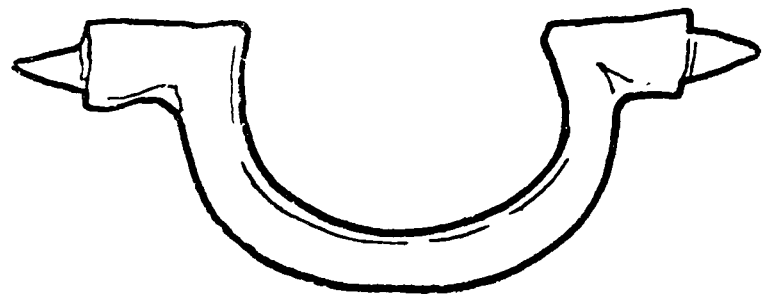
Finial c/4



Finial c/7

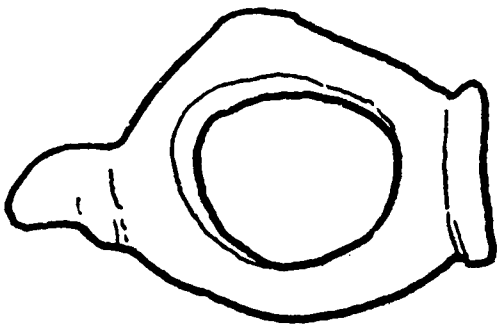


Handle A/2

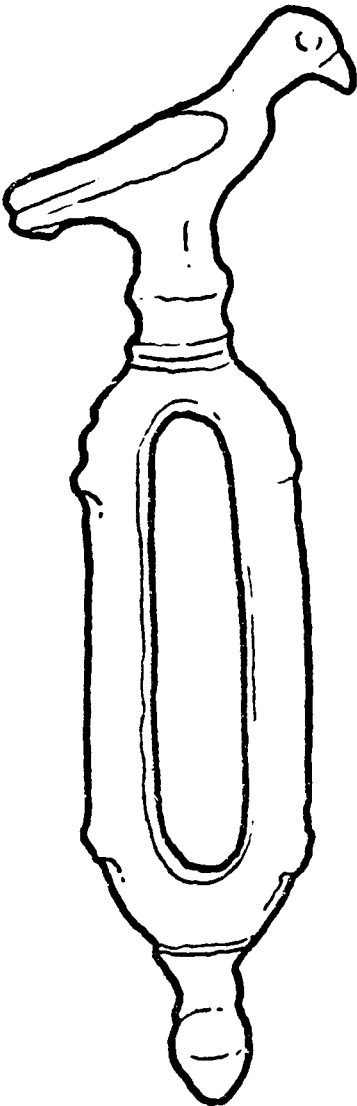


Handle B/1

BRONZE



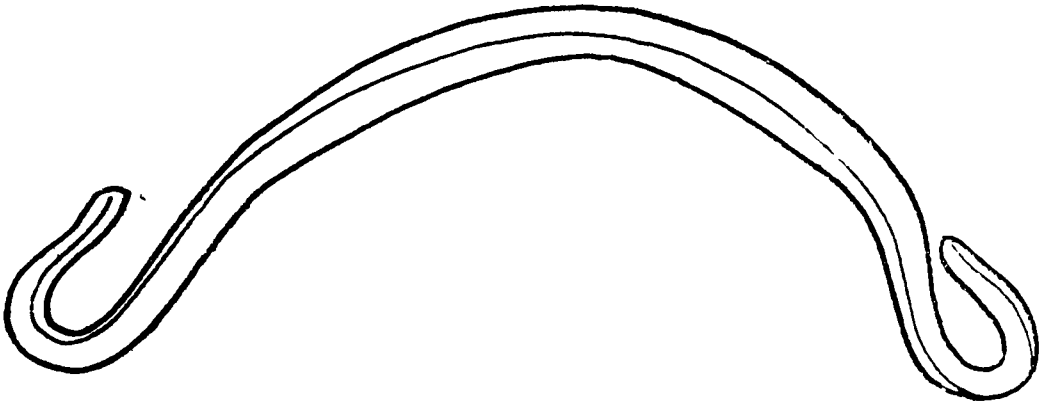
Handle c/1



Handle D/1

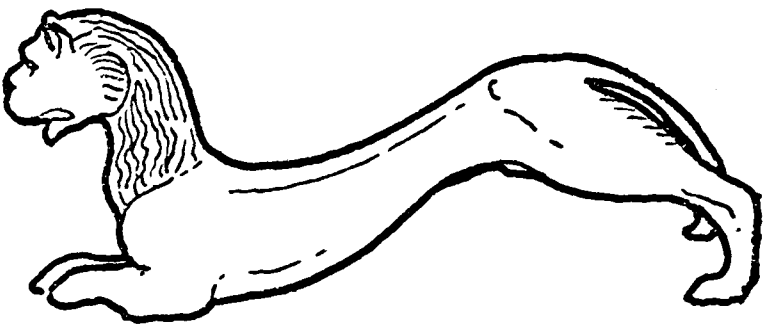


Handle E/1

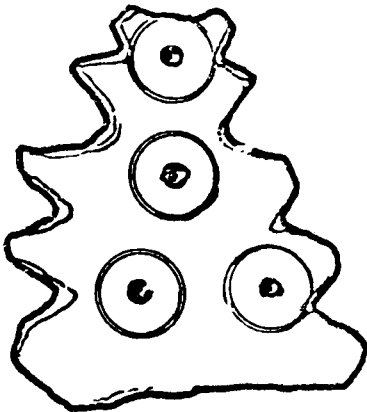


Handle F/2

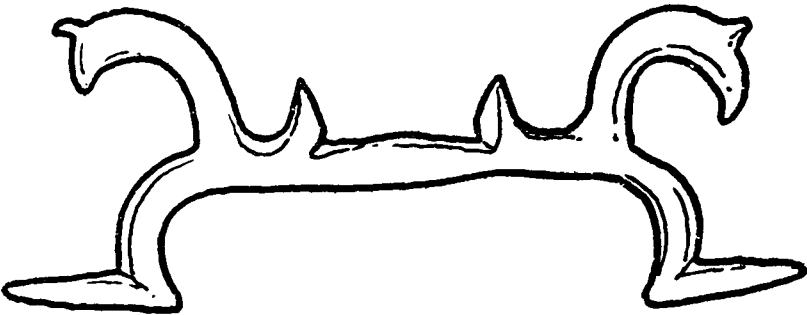
BRONZE



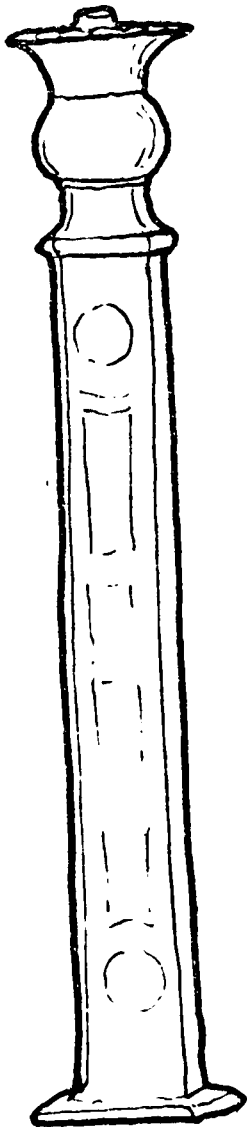
Handle H/1



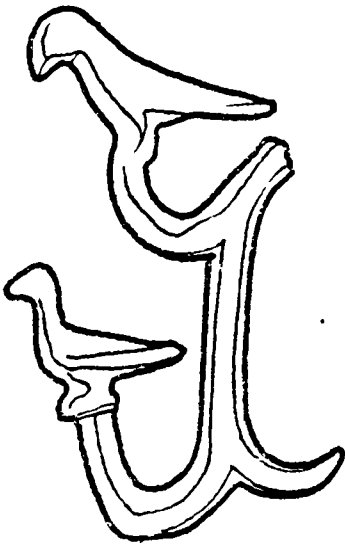
Handle G/3



Handle J/1

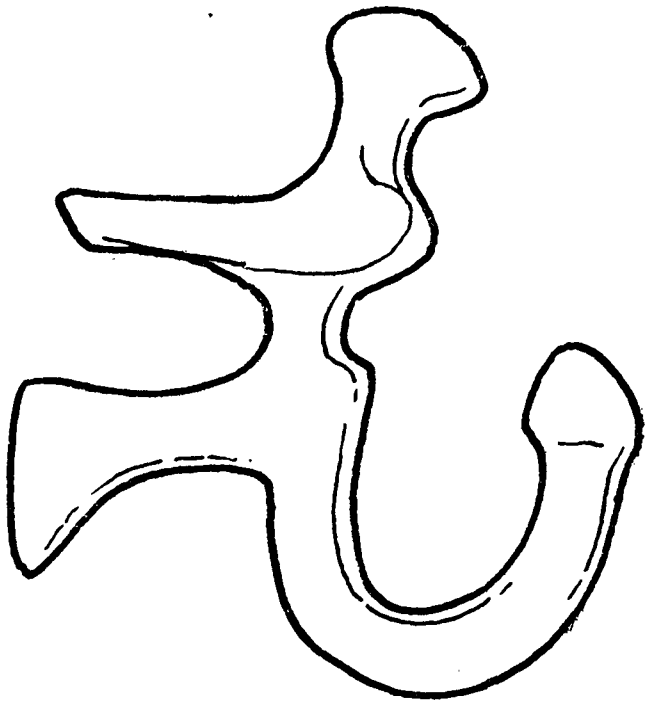


Handle K/1

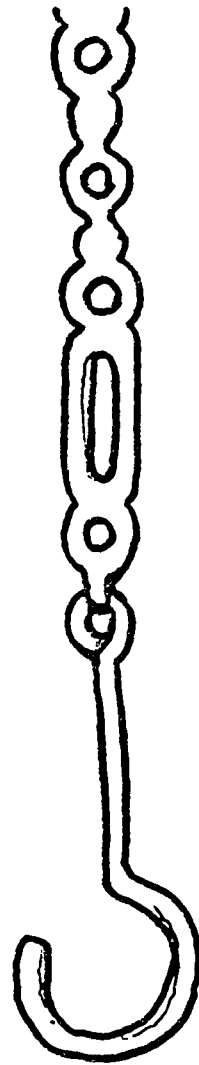


Handle L/6

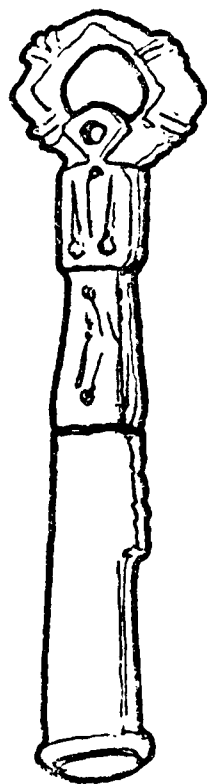
BRONZE



Hook A/1

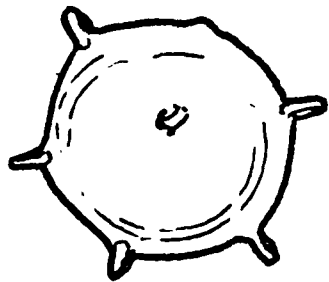


Hook B/3

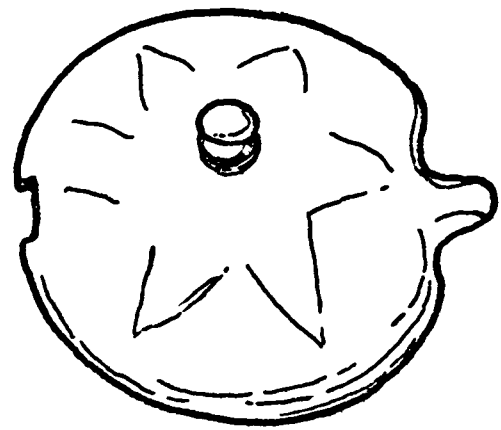


Key 2

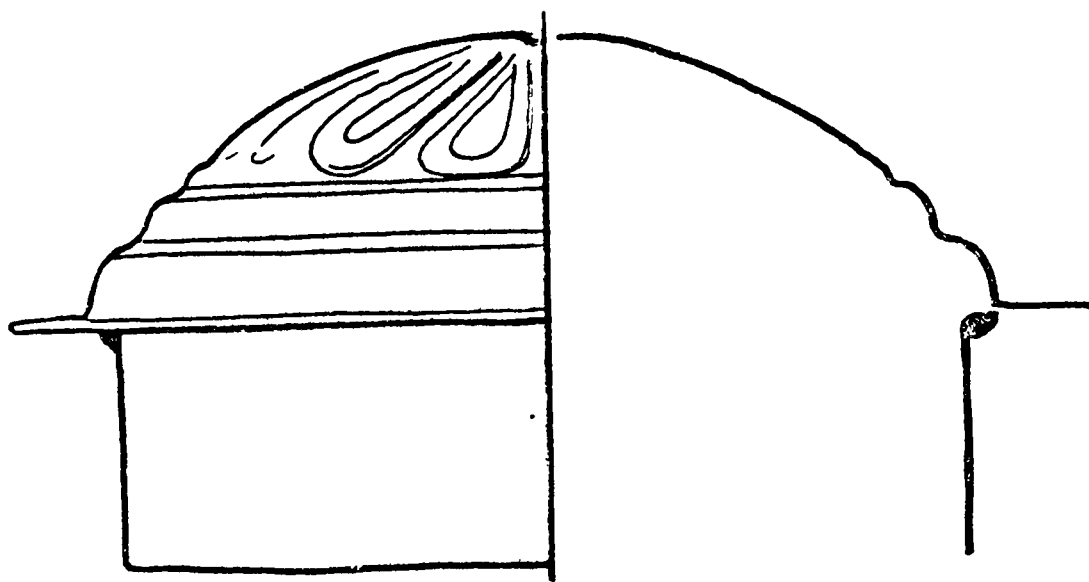
BRONZE



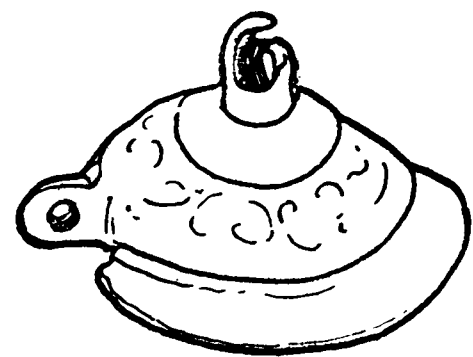
Lid A/4



Lid A/5

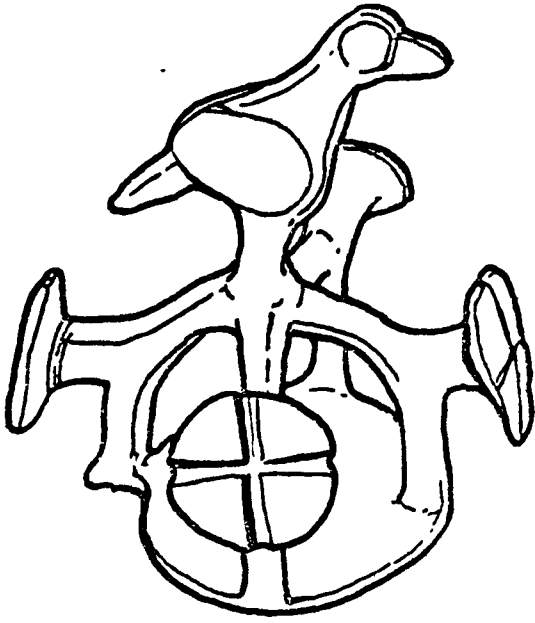


Lid A/7

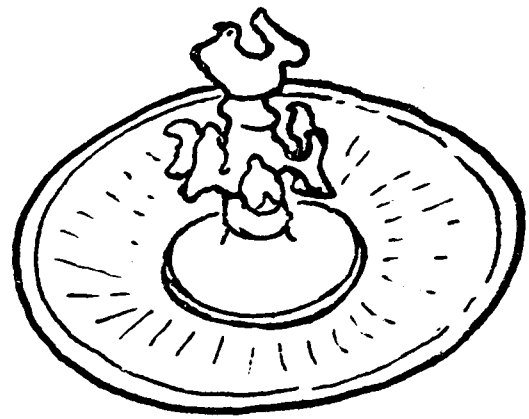


Lid A/9

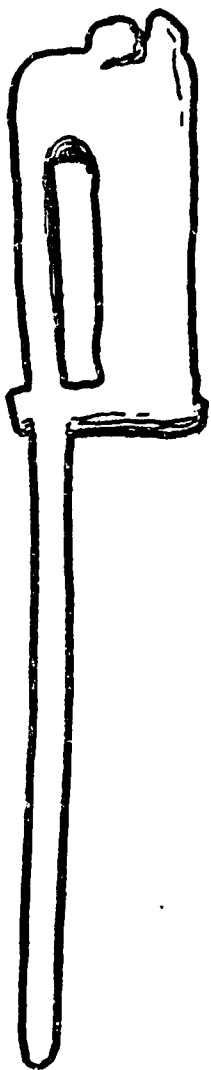
BRONZE



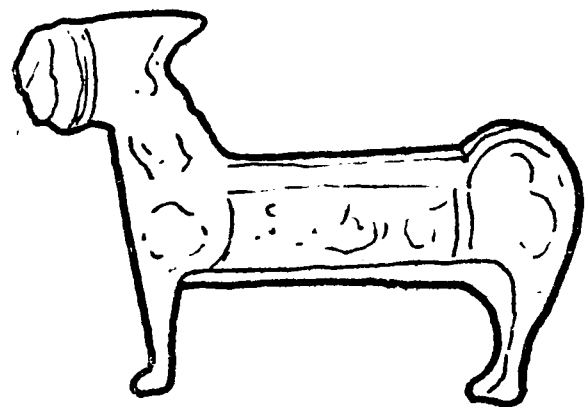
Lid A/12



Lid B/1

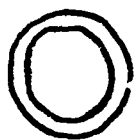


Lock 1

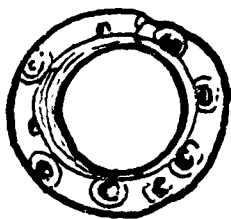


Lock 2

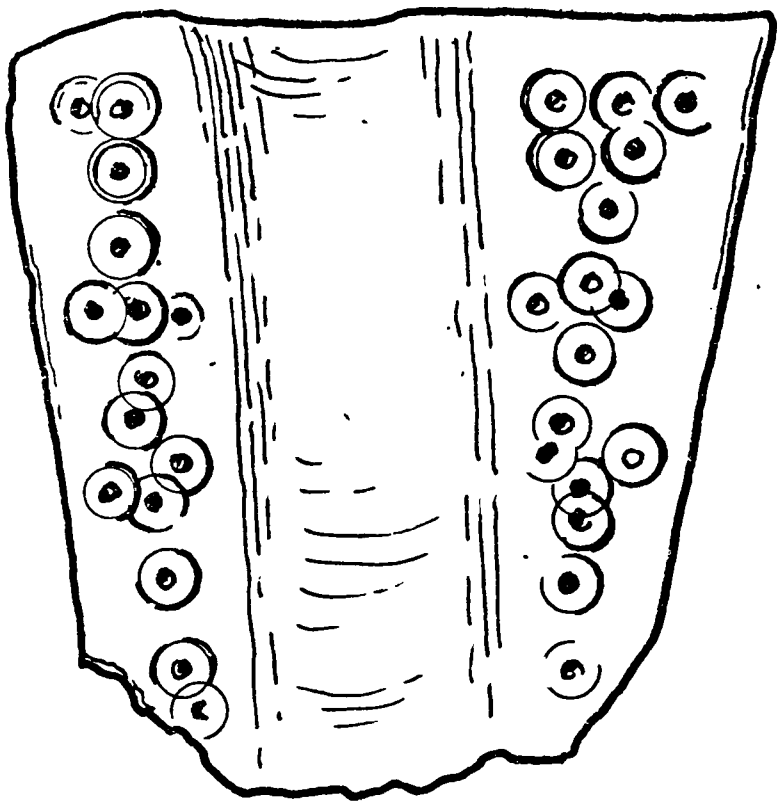
BRONZE



Ring A/II

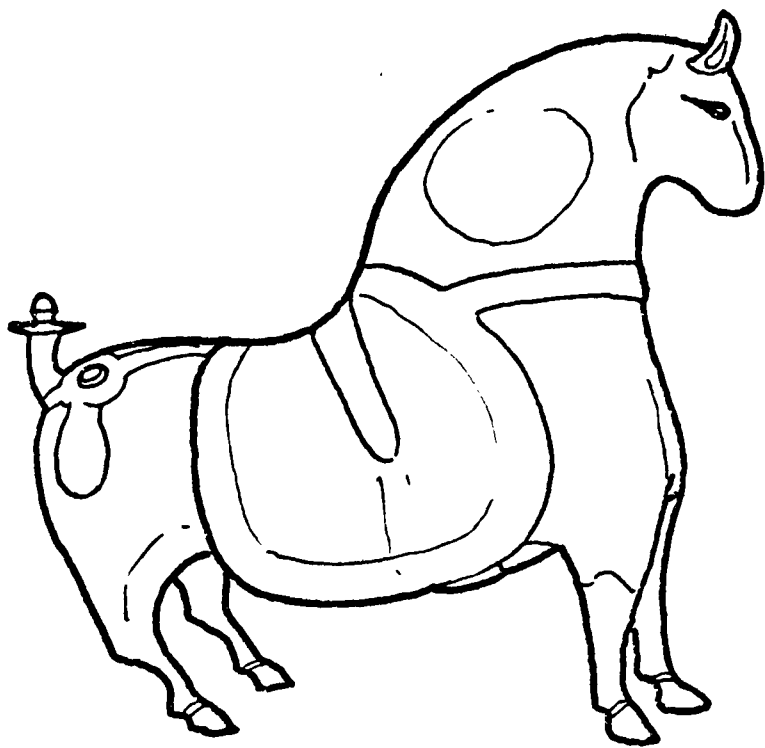


Ring B/3



Spout I

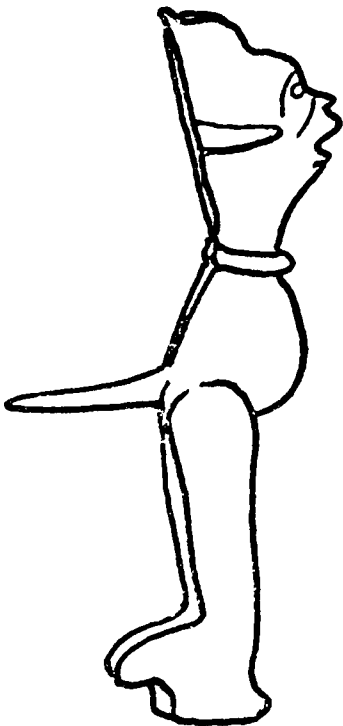
BRONZE



Support fitting A/1/2



Support fitting A/2/a/1

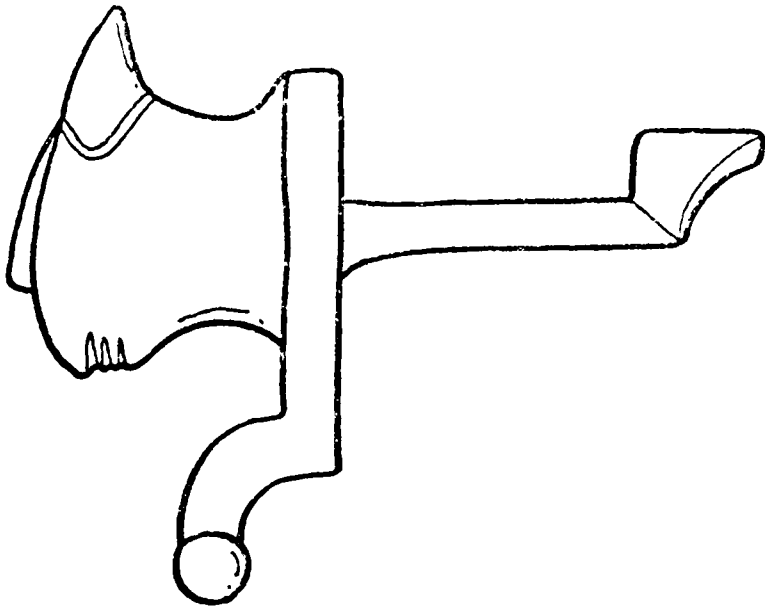


Support fitting A/2/b/2

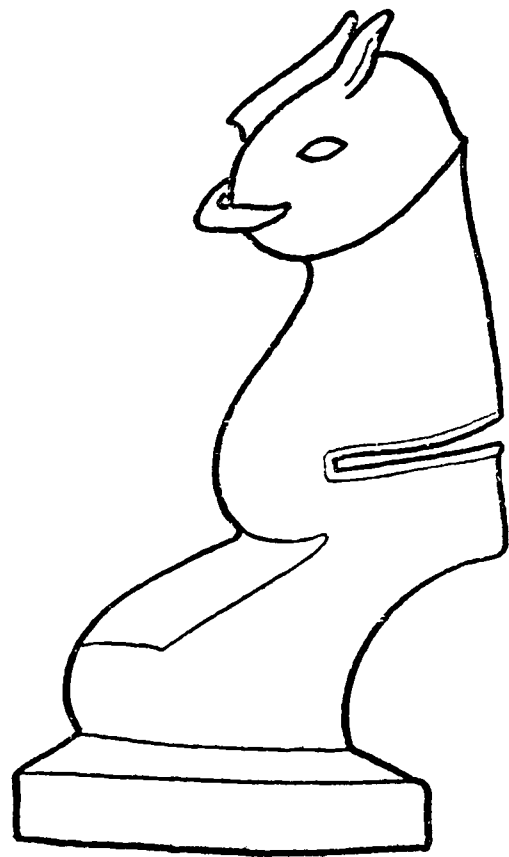


Support fitting A/2/c/3

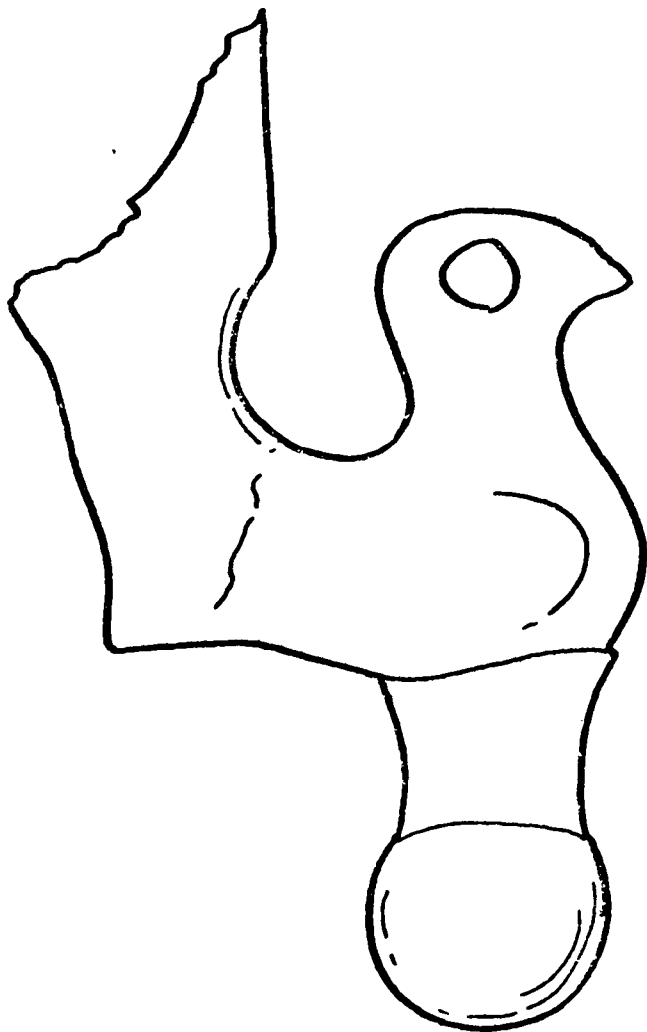
BRONZE



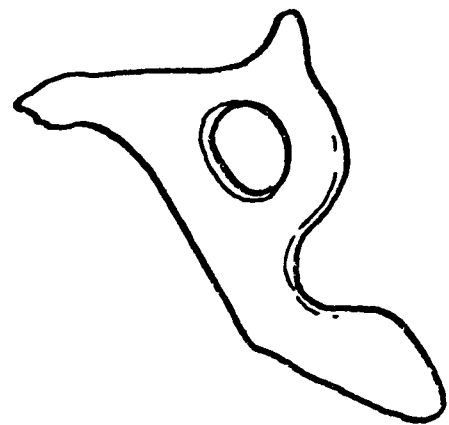
Support fitting A/2/d/1



Support fitting A/2/d/2

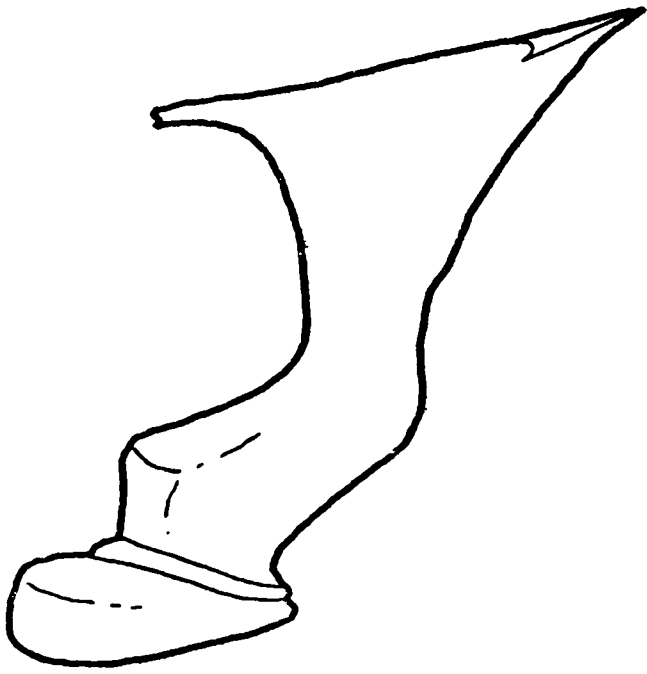


Support fitting A/2/d/3

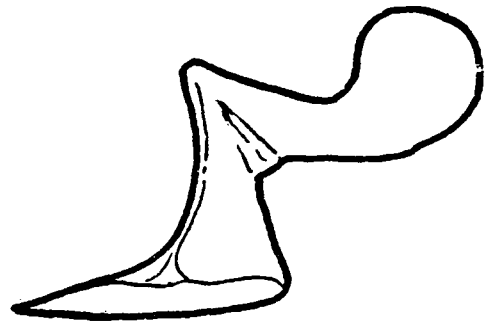


Support fitting A/3/1

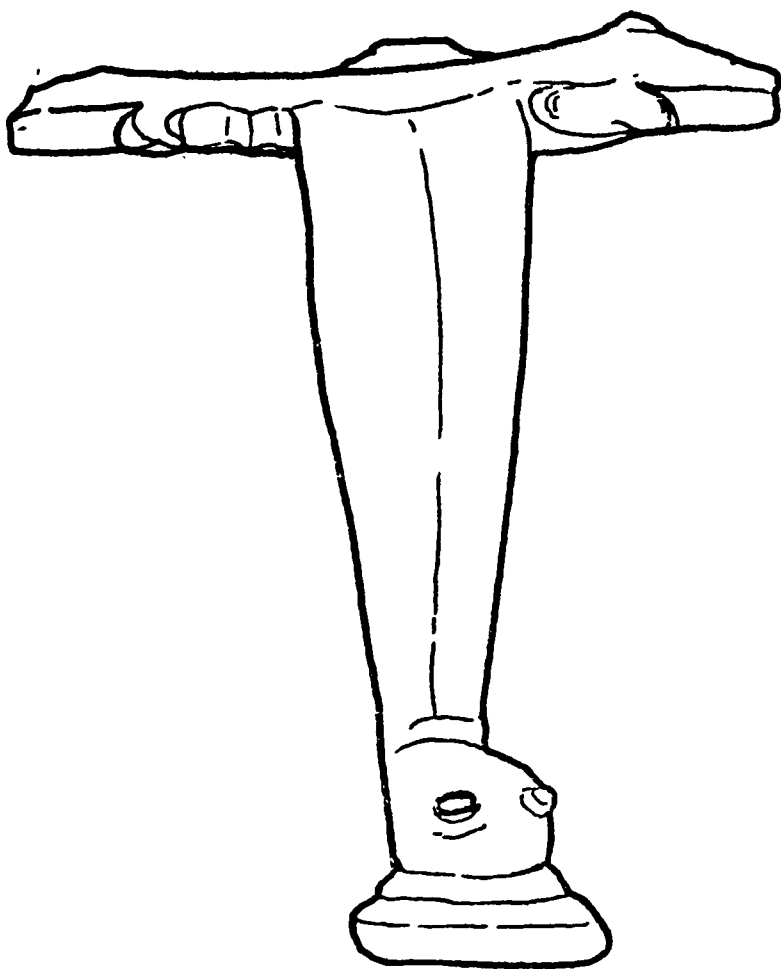
BRONZE



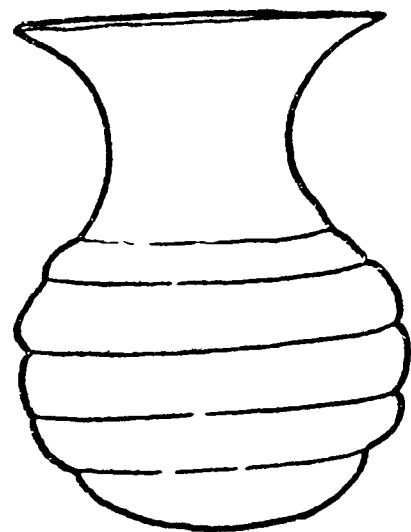
Support fitting A/3/2



Support fitting A/3/4

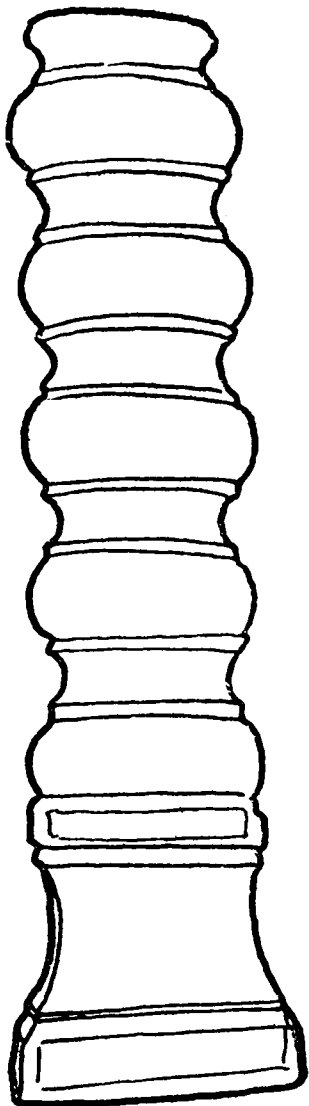


Support fitting A/3/6



Support fitting B/1/1

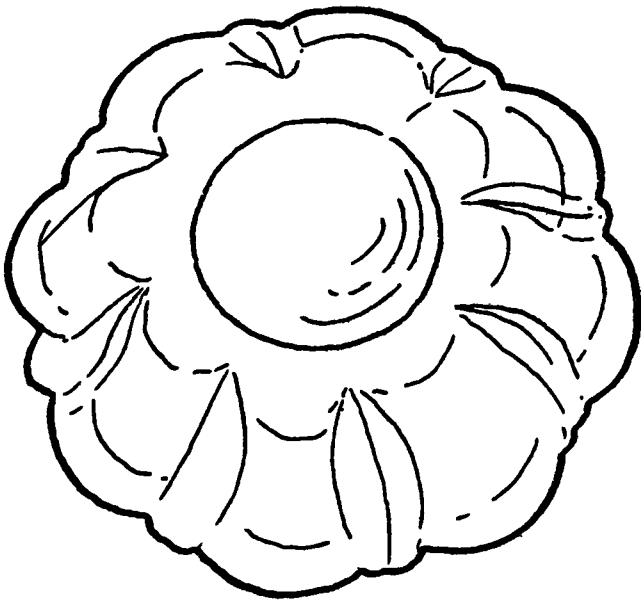
BRONZE



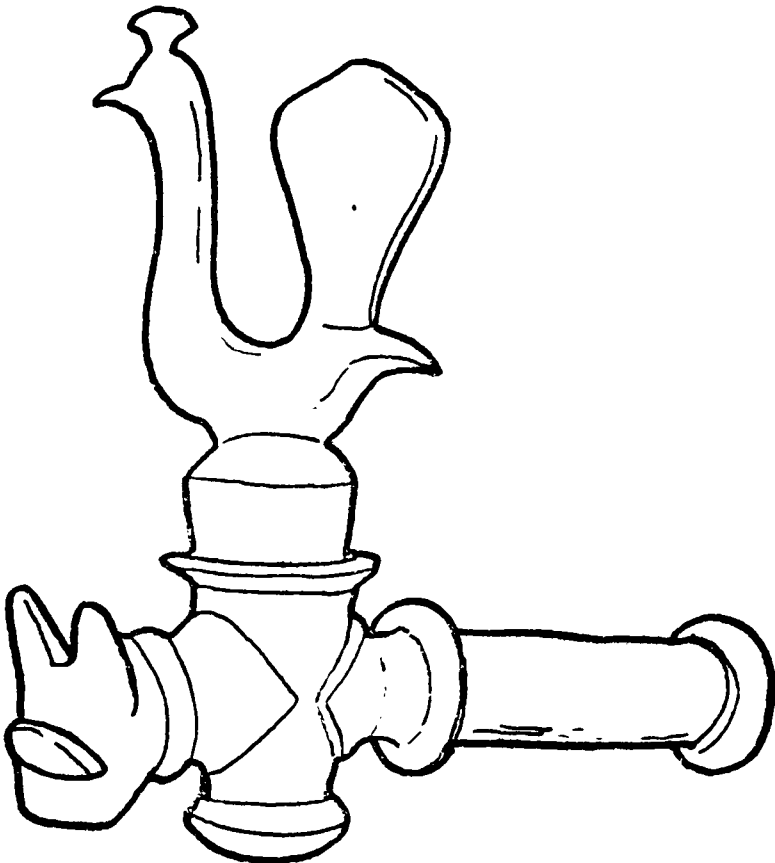
Support fitting B/2/a/1



Support fitting B/2/b/3

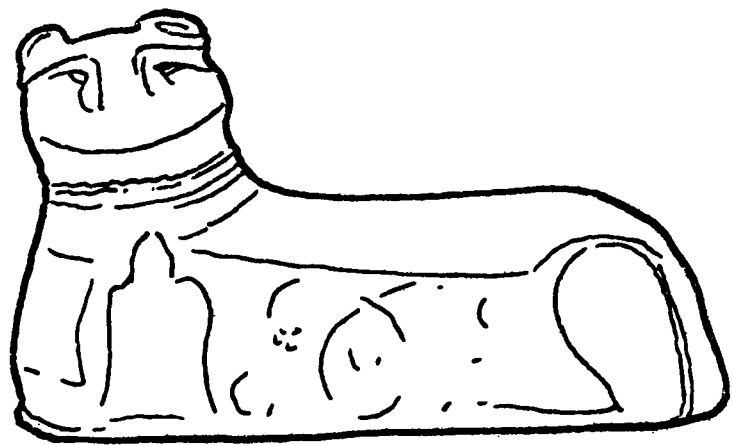


Support fitting B/3/1

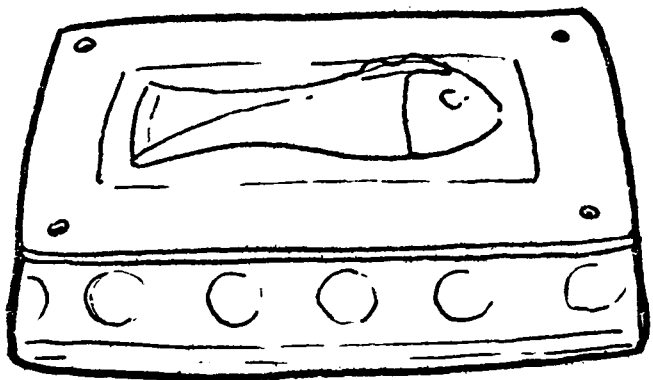


Tap 5

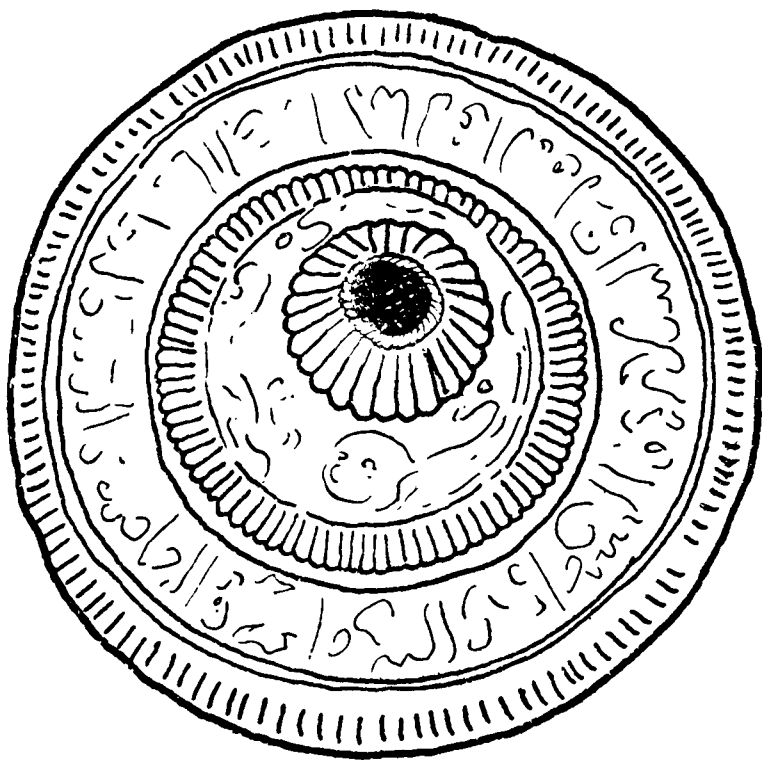
BRONZE



Unidentified object A/1



Unidentified object B/2

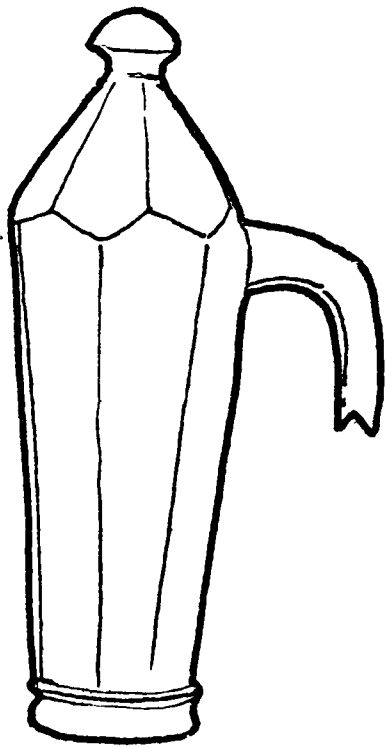


Unidentified object c/1

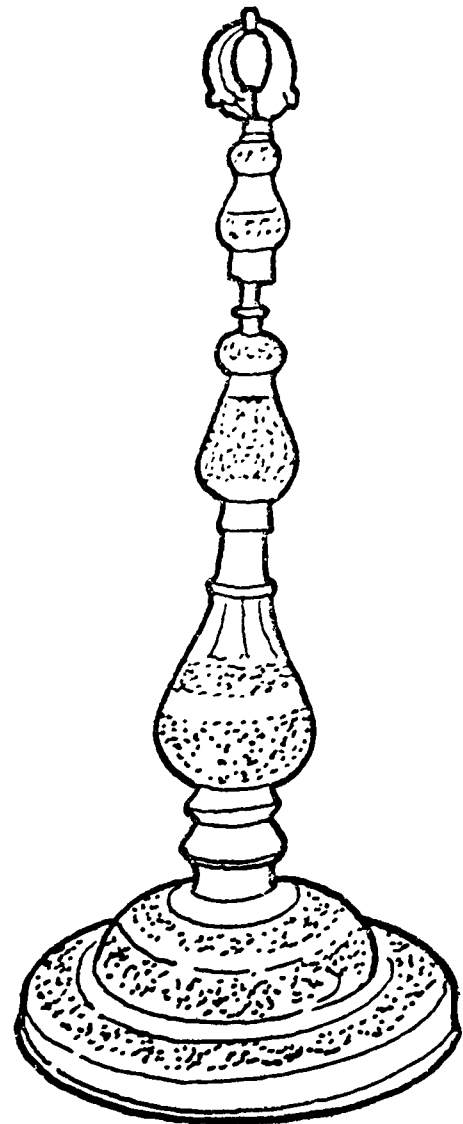


Unidentified object D/1

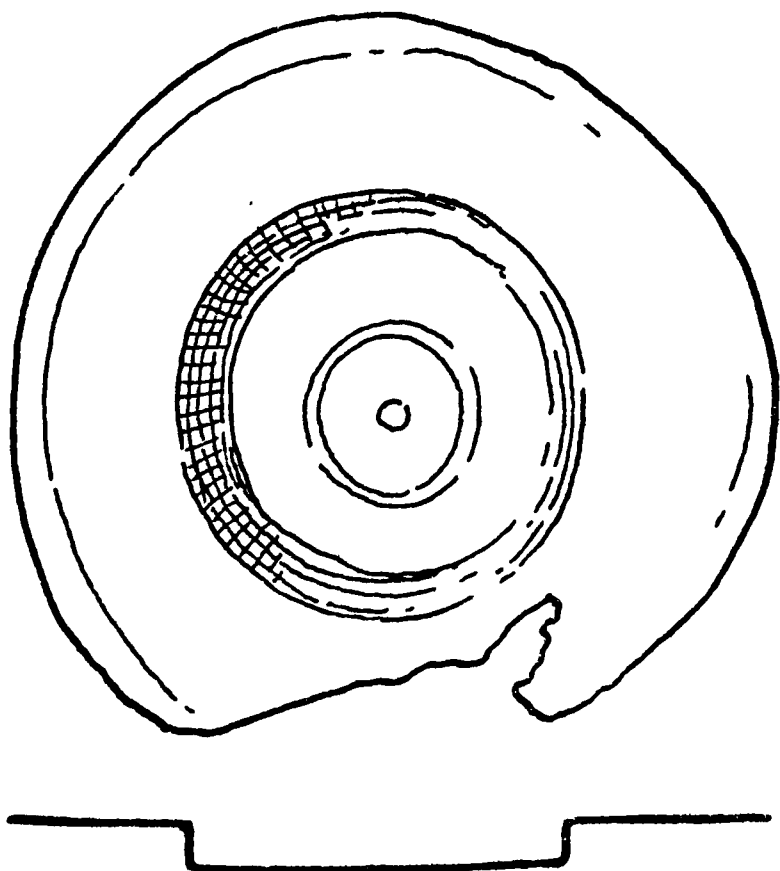
BRONZE & LEAD



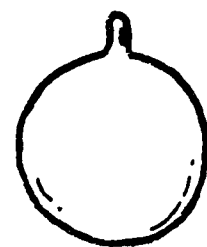
Unidentified object E/1



Unidentified object F/1

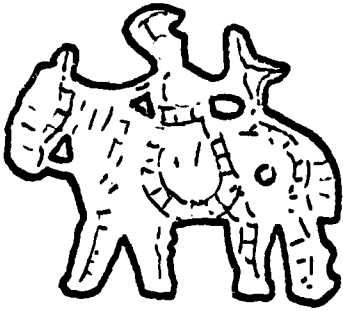


Lead object A/6

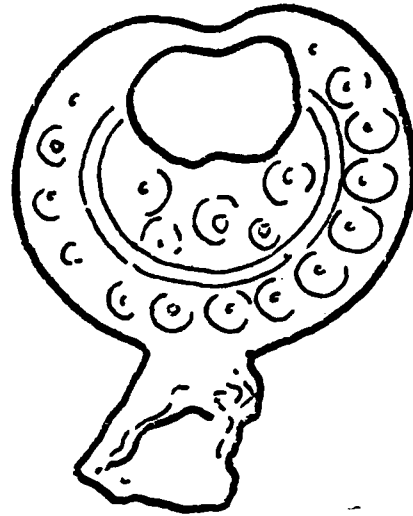


Lead object B/3

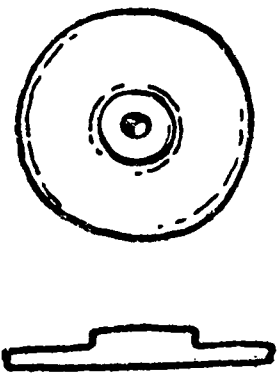
LEAD



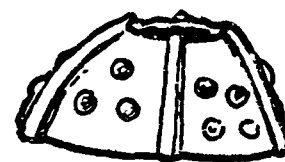
Lead object B/4



Lead object B/6



Lead object c/1



Lead object c/4

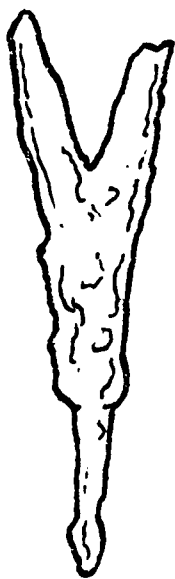
IRON



Arrowhead 2



Arrowhead 3

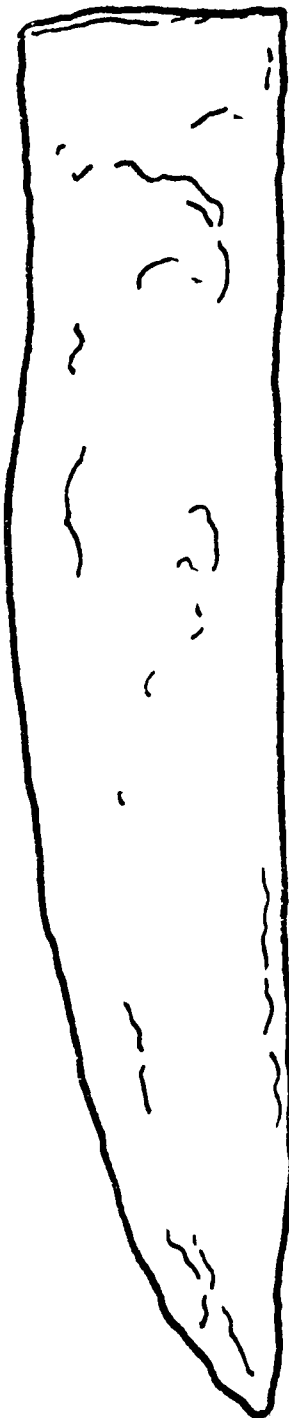


Arrowhead 5

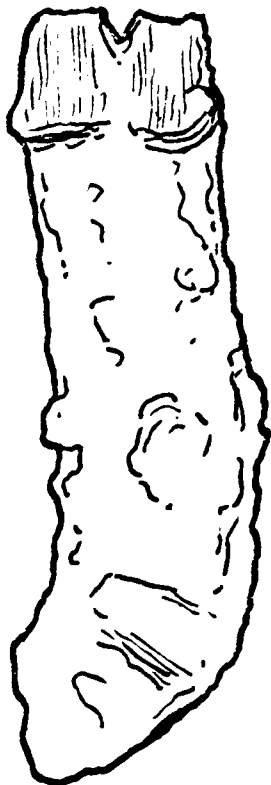
IRON



Dagger-blade 4



Dagger-blade
5

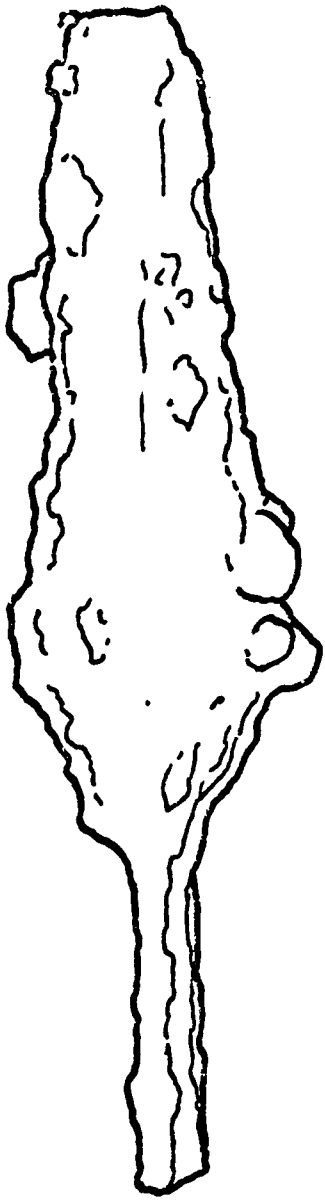


Dagger-blade 11

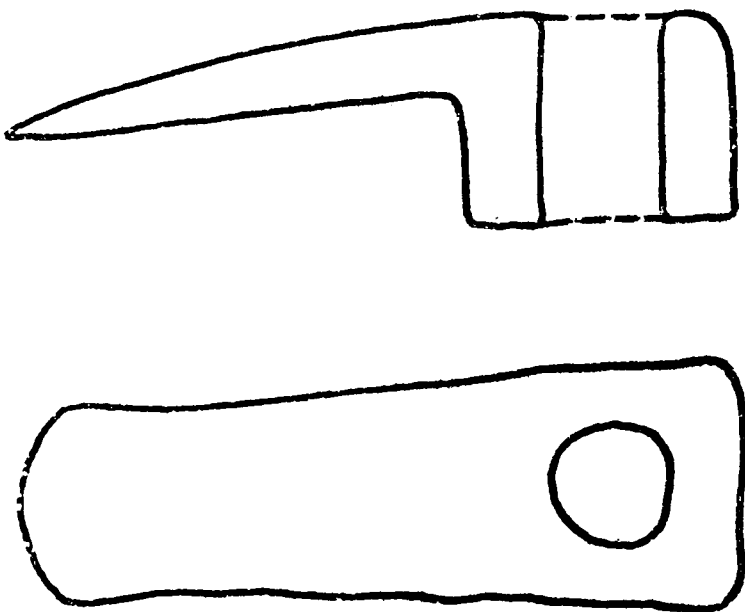


Dagger-blade 12

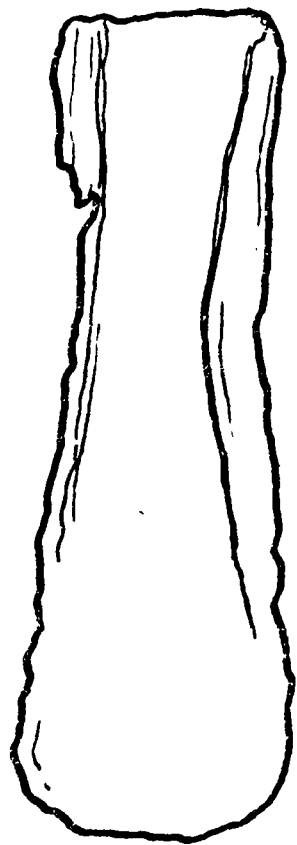
IRON



Spear-head 3

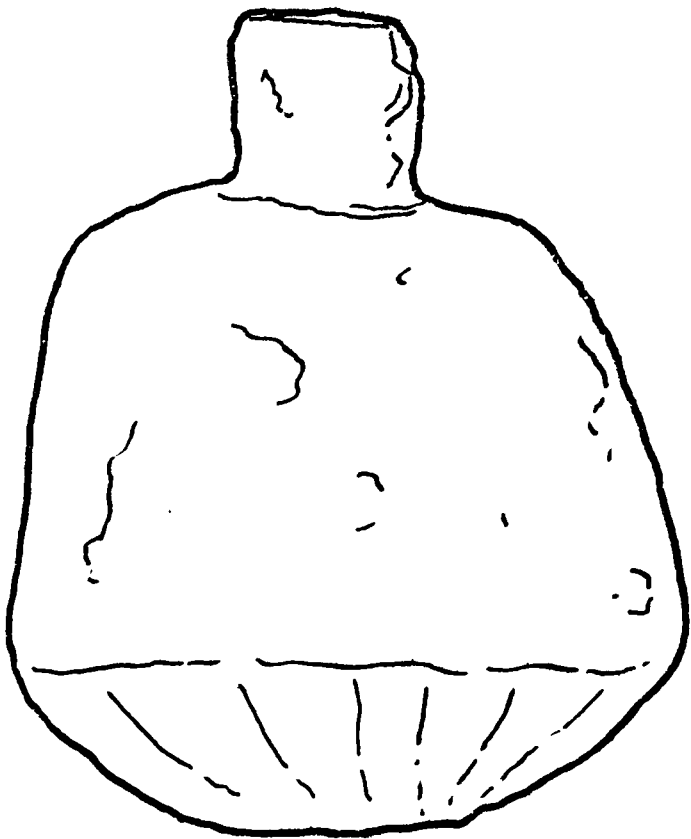


Adze-blade 1

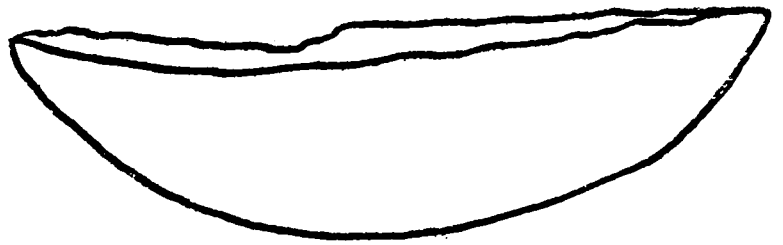


Adze-blade 3

IRON



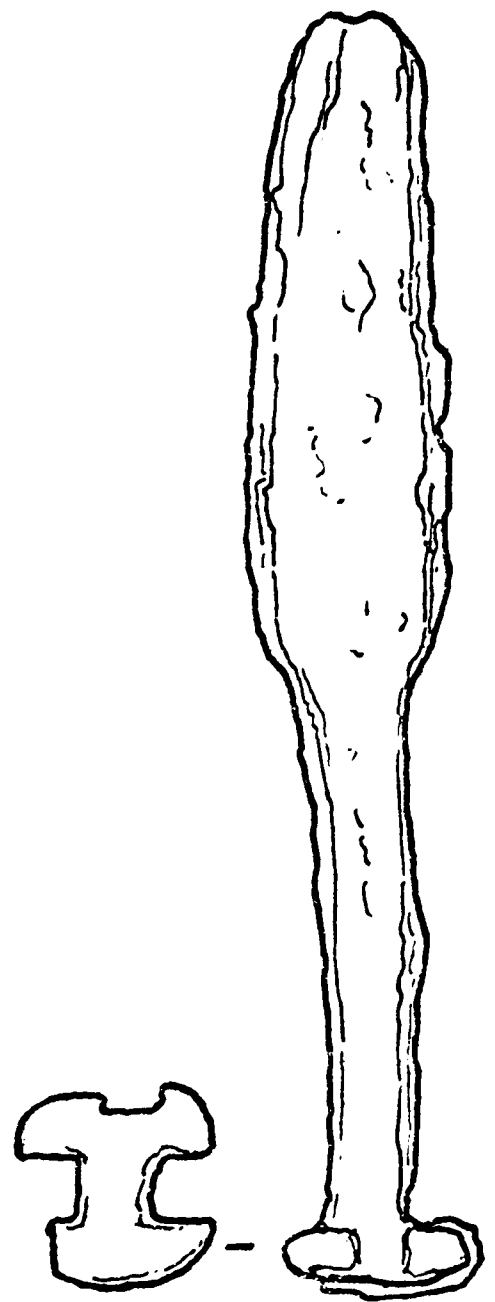
Bell 1



Dish 1

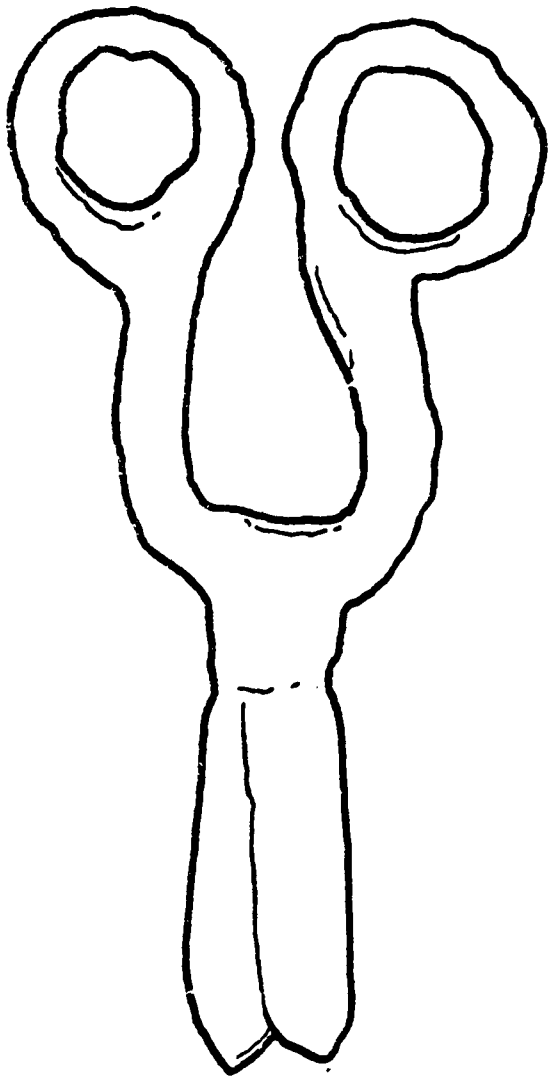


Horseshoe 1

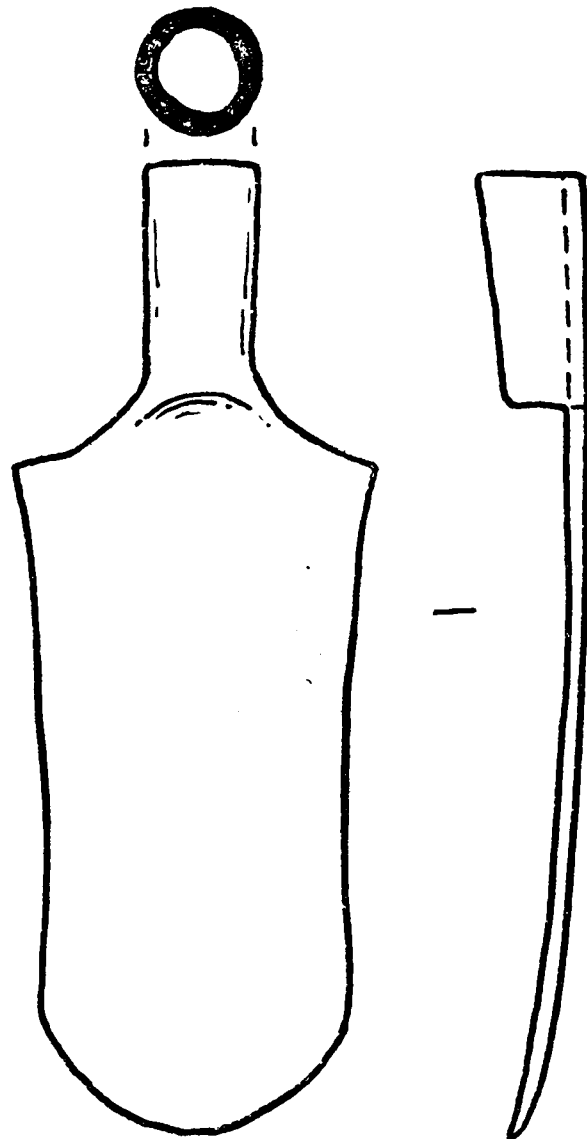


Key 1

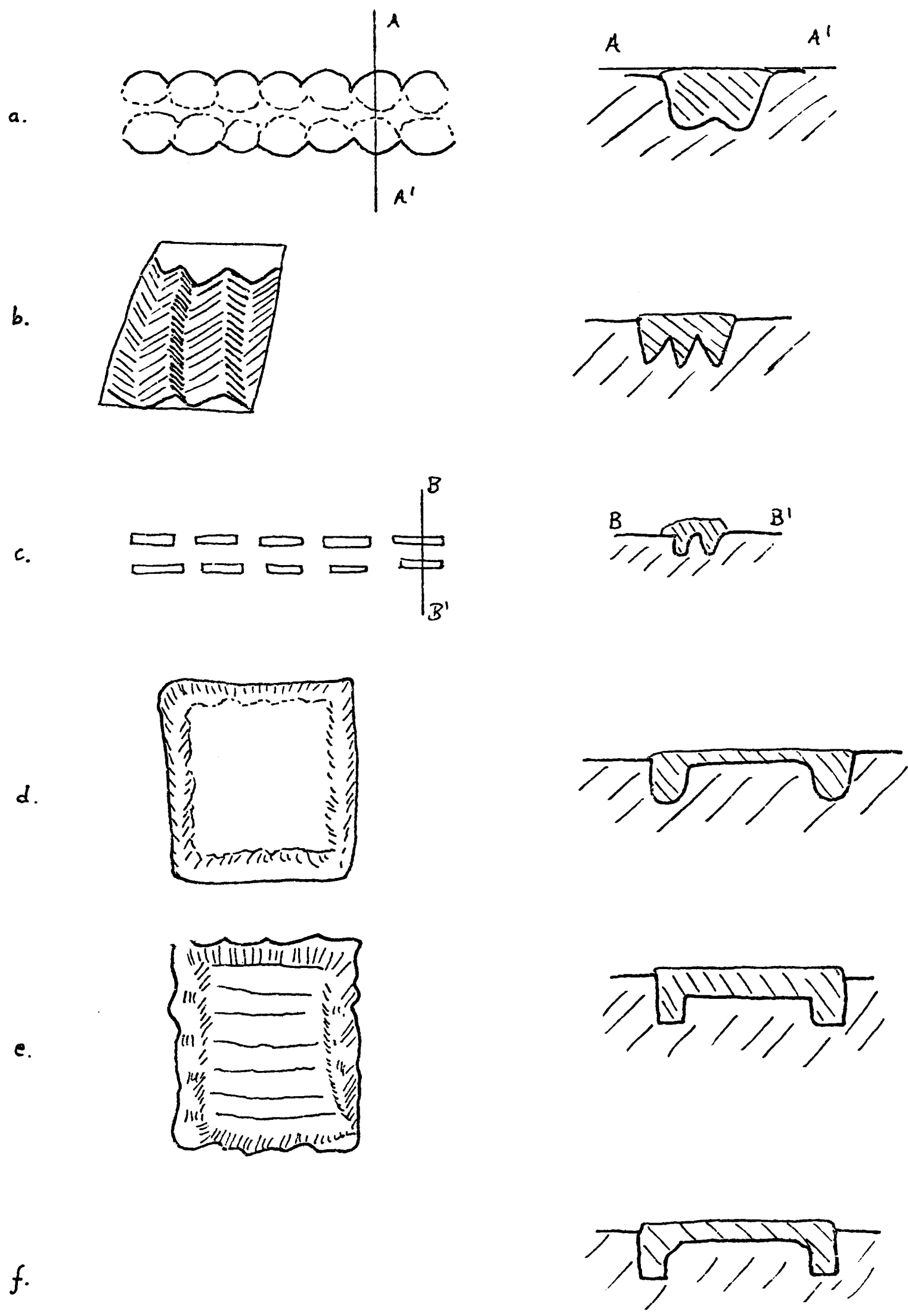
IRON



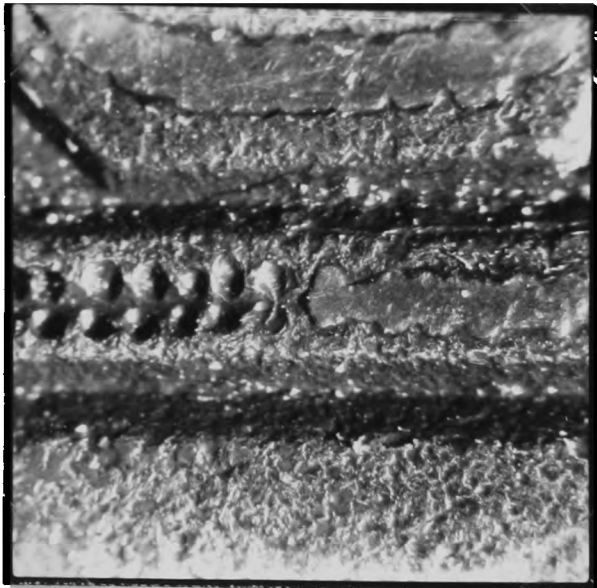
Scissors 1



Shovel blade 1



Linear and spatial inlays.



a



b



c



d