

T  
877

METAL-WORK IN COPPER AND BRONZE AT BYBLOS AND RAS SHAMRA  
DURING THE SECOND MILLENNIUM B.C.

By

Helga Seeden

Submitted in partial fulfillment for the  
requirements of the Degree of Master of Arts in  
Archaeology at the American University of Beirut  
Beirut, Lebanon

1967

**Metal-work at Byblos and Ras Shamra**

**H. Seiden**

### ACKNOWLEDGEMENTS

My thanks are due to Professor J.B. Pritchard for his patience and guidance in supervising the preparation of this thesis; and to Mrs. E. Bridi for typing the manuscript.

## TABLE OF CONTENTS

	Page
LIST OF FIGURES .....	v
ABBREVIATIONS .....	vii
INTRODUCTION .....	1
PART I : CATALOGUE BY TYPES .....	4
BYBLOS .....	11
RAS SHAMRA .....	46
1. Weapons and Tools	
2. Articles of Ornament and Vessels	
3. Figurines	
PART II : COMPARATIVE STUDY .....	73
1. Weapons and Tools	
2. Articles of Ornament and Vessels	
3. Figurines	
CONCLUSIONS	
1. RAW MATERIALS AND LOCAL PRODUCTION .....	118
2. TECHNICAL AND ARTISTIC DEVELOPMENT AND THE QUESTION OF FOREIGN INFLUENCE .....	126
3. COMMERCIAL DIFFUSION AND CULTURAL SIGNIFICANCE ..	131
SELECT BIBLIOGRAPHY .....	134
FIGURES .....	At end

## LIST OF FIGURES

1. BYBLOS: SWORDS and DAGGERS
2. SPEARS, LANCES and ARROWS
3. AXE-HEADS
4. TOOLS
5. TOOLS and PINS
6. ARTICLES of ORNAMENT and VESSELS
7. FIGURINES (Animal and Human)
8. WELL-MODELLED FIGURINE
9. FIGURINES (Male and Female)
10. RAS SHAMRA: SWORDS
11. WEAPONS and TOOLS
12. SOCKETED AXE-HEADS
13. BYBLOS and RS: TRIDENTS, FORK and BIT
14. RAS SHAMRA: ARTICLES of ORNAMENT, VESSELS, STANDS  
and ANIMAL FIGURINES
15. FIGURINES
16. STATUETTE of HORNED GOD
17. FIGURINES of ARMED DEITIES.

## NOTE ON NAMES, MEASUREMENTS AND FIGURES

Geographical and historical personal names are spelt in accordance with the spelling of the Revised edition of volumes I and II of the Cambridge Ancient History.

All measurements of objects in the catalogue (Part I) and on the figures are expressed in centimetres.

The objects illustrated in the figures are taken from the Byblos and Ras Shamra publications, unless otherwise indicated in the text.

## LIST OF ABBREVIATIONS

### Books and Periodicals

1. AAS Annales Archéologiques de Syrie
3. AJA American Journal of Archaeology
4. BCH Bulletin de Correspondance Hellénique
5. BMB Bulletin du Musée de Beyrouth
6. CAH Cambridge Ancient History. Revised edition.
7. Catling, H.W. Catling, Cypriot Bronzework in the Mycenaean World. Oxford, 1964.
8. Deshayes, J. Deshayes, Les outils de bronze de l'Indus au Danube, IVe au IIe millénaire. Paris, 1960.
9. Du. M. Dunand, Fouilles de Byblos. Vols. I; II, parts 1 and 2; 2 vols. of plates. Paris, 1939-1958.
10. JAOS Journal of the American Oriental Society
11. JEA Journal of Egyptian Archaeology
12. JHS Journal of Hellenic Studies
13. M. P. Montet, Byblos et l'Égypte. Camp. 1921-1924. Text and plates. Paris, 1928.
14. Strat. comp. C.F.A. Schaeffer, Stratigraphie comparée et chronologie de l'Asie Occidentale. London, 1948.
15. Syria Syria. Revue d'art oriental et d'archéologie.
16. Ug. C.F.A. Schaeffer, Ugaritica I-IV. Paris, 1939-1962.

## Other Abbreviations

Cat.	Catalogue
Di.	Diameter
H.	Height
L.	Length
Max.	Maximum
W.	Width

Cu	Copper
Sn	Tin

N.	North
S.	South
E.	East
W.	West

RS	Ras Shamra
S. E.	Sacred Enclosure
T. B.	Temple of Ba'alat
T. O.	Temple of Obelisks

EB	Early Bronze Age
IP	Intermediate Early - Middle Bronze Period
MB	Middle Bronze Age
LB	Late Bronze Age
Cent.	Century



## CHRONOLOGICAL SCHEME

Early Bronze III	ca. 2500 - 2300 B.C.
Intermediate Early Middle Bronze period I	ca. 2300 - 2100 B.C.
Intermediate Early Middle Bronze period II	ca. 2100 - 1900 B.C.
Middle Bronze I	ca. 1900 - 1750 B.C.
Middle Bronze II	ca. 1750 - 1600 B.C.
Late Bronze I	ca. 1600 - 1450 B.C.
Late Bronze II	ca. 1450 - 1365 B.C.
Late Bronze III	ca. 1365 - 1200 B.C.

The dates for EB III and LB I-III are in accordance with C.F.A. Schaeffer (see Strat. comp., p. 39). Since the LB metal-work belongs mainly to Ras Shamra, the excavator's three subdivisions of that period are the most convenient. The dates for the subsequent Intermediate EB - MB period are discussed by K.M. Kenyon in Archaeology in the Holy Land (New York, 1960), pp. 135-36, 158-61. For the dates of MB I and II see G. Posener, J. Bottéro and K.M. Kenyon, "Syria and Palestine c. 2160 - 1780 B.C." and K.M. Kenyon, "Palestine in the Middle Bronze Age," CAH fascicles (chronological tables). Although the dates given there do not exactly correspond with the ones given above, the years 1900 and 1600 are chosen for convenience and in order to coincide with the chronologies used by both M. Dunand and C.F.A. Schaeffer.

## INTRODUCTION

The beginning of metallurgy was important for man's technological progress since by its techniques he was able to transform natural resources into new materials for his own designs. The use to which man gradually learnt to put such new materials as copper and bronze had revolutionary effects on all aspects of his material culture. Metal tools greatly advanced the techniques of building and industry; metal weapons brought about large-scale warfare; and masters in fine metal-work produced in the new medium accomplished works of art, such as jewelry and sculpture. The growing importance of metal in such vital branches of man's life, together with the technological difficulties involved in metallurgy, required that the smith from earliest times be a full-time specialist. His art was considered to be of divine invention,<sup>1</sup> demanding mysterious operations beyond the comprehension of the layman who was uninitiated into the peculiar secrets of this profession.<sup>2</sup>

Some outstanding metal treasures have been discovered in tombs, for example in the "Royal" Cemetery of Ur,<sup>3</sup> or the tombs of Alaca Hüyük,<sup>4</sup> Troy and

---

<sup>1</sup>In the mythological texts of Ras Shamra the god of metal-work is Ktr-w-hss. Cf. Ch. Virolleaud, "Un nouveau chant du poème d'Aleïn-Baal," Syria, XIII (1932), pp. 117 and 143.

<sup>2</sup>G. Childe, What Happened in History (Harmondsworth, 1960), p. 77.

<sup>3</sup>See C. L. Woolley, Ur Excavations, II. The Royal Cemetery. A Report on the Predynastic and Sargonic Graves Excavated Between 1927 - 1931 (London and Philadelphia, 1934.)

<sup>4</sup>See H. Z. Koşay, Ausgrabungen von Alaca Höyük (1936) (Ankara: Veröffentlichungen der Türkischen Geschichtskommission V. Serie, Nr. 2a, 1954) and Les Fouilles d'Alaca Höyük (1937-39) (Ankara, 1951.)

Mycenae.<sup>1</sup> These discoveries show that metal-work was mainly preserved in hoards. Metal hoards often contained objects which had been kept as long-cherished heirlooms and were already out of their original context at the time of their burial. Most of the metal implements common in occupation levels are likely to have ended up in foundries to be reworked in new casts. The metal objects actually preserved in a site are, therefore, at best but a small fraction of the local production or foreign importation of metal-work. There is hardly any metal waste comparable to pot-sherds, and broken tools or weapons were only accidentally left behind on the site of an ancient city or battle-field.

If, however, a large amount of bronzes does come to light in an excavated site, the inhabitants must have been more than casually preoccupied with metallurgy. Consequently, detailed studies of the metal-work of such sites may gather useful information about the origin and progress not only of metal-work but of a number of other aspects of the culture as well. Pottery is known to reveal the technical and artistic abilities of the potters who produced it, but for the historian and archaeologist the study of pottery is more important because it can throw light on problems of chronology, on the degree of localization or foreign connections and possibly on the economic situation of the site in which it was found. If metal-work is preserved in sufficient quantity, it should provide a similar source of information.

The two principal sites of the Syro-Lebanese coastline, at which major excavations in Bronze Age levels have been executed, have revealed a vast amount

---

<sup>1</sup>See H. Schliemann, Ilios, the City and Country of the Trojans (London, 1880) and G. Karo, Die Schachtgräber von Mykenae (München, 1930-33.)

of bronzework. Apart from the excavators' publications, this extensive material has been dealt with either in the context of specialized articles on one or a group of related objects<sup>1</sup> or as further evidence in works dealing with "Phoenician" art in general.<sup>2</sup> Metal-work by itself has been relatively neglected. In view of the wide variety and quantity of the objects preserved, the metal industry of Byblos and Ras Shamra deserves an examination. The purpose of this study is to collect and treat the extant bronzework in its bulk, in order to determine the role which these two sites--and hence, the area--played in the development of the metallurgical arts, and, more broadly, to attempt to assess this area's contribution to the progress of Near Eastern civilization during the Bronze Age.

In this study the material excavated and published up to 1966 has been classified under main types (see Part I) to facilitate comparison. In order to cut down the bulk of the catalogue, groups of mass-produced articles have not been listed item by item. Moreover, not every object found has been published, particularly in the case of Ras Shamra. In the second part some of the types represented have been selected for closer examination, because they throw light on the problems to be investigated, i. e., possible origins, development and relationships of the bronzework at Byblos and Ras Shamra. Finally, an attempt has been made to consider whether the art of bronze metallurgy originated in this area and what specialized technical and artistic progress was achieved at these centres and to examine the extent of its diffusion through commerce.

---

<sup>1</sup>An example is the article by R. Maxwell-Hyslop, "Daggers and Swords in Western Asia," *Iraq*, VIII (1946), pp. 1-65.

<sup>2</sup>See R. Dussaud, *L'art phénicien du deuxième millénaire* (Paris, 1949.)

PART I

CATALOGUE BY TYPES

System of Classification

- I. WEAPONS AND TOOLS
- II. ARTICLES OF ORNAMENT and VESSELS
- III. FIGURINES

I  
WEAPONS

A. Swords

- a. Rapier
- b. Short (cutting) sword
- c. Socketed sword
- d. Sickle-sword

B. Daggers

- a. Dagger with long tang or butt
- b. Dagger with short triangular butt
- c. Socketed dagger
- d. Cast-hilted dagger with wide curving flanges
- e. Curved dagger
- f. Dagger-knife

C. Spears, Lances and Javelins

- a. Spearhead with hammer-worked socket
- b. Lance with divided tubular socket
- c. Collared lance with bent nail-headed tang
- d. Lance or javelin with long rat-tail or straight tang

D. Arrowheads

- a. Laurel-leaf shaped arrowhead with tang
- b. Barbed arrowhead
- c. Socketed arrowhead
- d. Percussion arrowhead

E. Battle-axes

- a. Semicircular axe with open socket
- b. Fenestrated axe
- c. Long narrow axe with decorated socket cast in one piece
- d. Ceremonial axe with socket decorated with animals
- e. Double-axe

F. Plate Armour

- a. Scale elements and disks

## TOOLS

A. Axes (and related tools)

- a. Flat axe or adze
- b. Trunnion axe
- c. Axe with "bottle-neck"
- d. Egyptian round axe
- e. Flat socketed adze
- f. Hoe and related tools
- g. Hammer-tool

B. Chisels (and related tools)

- a. Plain rectangular chisel
- b. Tanged chisel
- c. Socketed chisel
- d. Gouge, punch or drill

C. Saws, Sickles and Knives

- a. Saw
- b. Sickle and related tools
- c. Knife and related tools

D. Spatulae and Tweezers

- a. Spatula
- b. Tweezers

E. Hooks, Cotter-pins, Clamps and Nails

- a. Hook
- b. Cotter-pin
- c. Clamp and hinge
- d. Nail and rivet

F. Needles

- a. Sewing needle
- b. Needle with loop-eye

G. Tongs and Forks

- a. Tongs
- b. Fork

H. Animal Gear

- a. Bit



## II

## ARTICLES OF ORNAMENT AND VESSELS

A. Toggle-pins and Fibulae

- a. Toggle-pin with straight or inflated head
- b. Melon-headed toggle-pin
- c. Toggle-pin with pine-seed head
- d. Toggle-pin with poppy-seed head
- e. Pin with animal head
- f. Pin with rolled head (Rollennadel)
- g. Pin with spiral head
- h. Fibula

B. Torques

- a. Torque with curled ends
- b. Torque with cut ends

C. Bracelets, Anklets and Rings

- a. Open bracelet and/or anklet
- b. Finger-ring and swivel mounting

D. Beads, Pendants and Dress Ornaments

- a. Beads
- b. Spiral pendant or bead
- c. Pendant
- d. Dress ornament

E. Mirrors and Musical Instruments

- a. Mirror
- b. Musical instrument

F. Vessels and Stands

- a. Cosmetic or toy object
- b. Ritual vessel and cult object
- c. Household ware, scales and weights
- d. Stand

## III

## FIGURINES

(ANIMAL, HUMAN or DIVINE)

## ANIMAL FIGURES

A. Bulls

- a. Rudimentary
- b. Stylized
- c. Naturalistic
- d. Figurine on bull

B. Other Quadrupeds and Birds

- a. Quadruped
- b. Bird

## HUMAN or DIVINE FIGURES

A. Foil Figurines

- a. Plain silhouette
- b. Silhouette with details added

B. Flat Figurines

- a. Primitive
- b. Stylized

C. Armed Figurines

- a. Hoplite with two or more weapons

D. Well-modelled Figurines

- a. With arms at sides or bent forward
- b. In attitude of brandishing weapon

E. Seated Figurines

- a. Stylized
- b. Naturalistic

F. Female Figurines

- a. Crude
- b. Stylized
- c. Naturalistic

G. Divine Couples

- a. Torque-wearing god and goddess (in silver)
- b. God and goddess in long tunics

## NOTE

In the subsequent list of objects from Byblos (1) and Ras Shamra (2) only the pertinent categories are repeated.

## BYBLOS

Most of the bronze objects from Byblos have been discovered conveniently grouped together in special deposits in the major sanctuaries of the town: the Temple of Baalat Gubla (T.B.), the Temple of Obelisks (T.O.) and the so-called Sacred Enclosure (S.E.). This last building was most likely another temple, although the architectural remains were not coherent enough to give the excavator a clear idea of the type and plan of the building, part of which existed from EB times right through to the MB Age.<sup>1</sup> The south room of the building was perhaps a cella, although in the EB Age levels none of the stone bases for wooden posts, which are a characteristic feature of EB architecture at Byblos,<sup>2</sup> came to light. The amount of collected offerings buried there, makes it, nevertheless, likely that this area belonged to a sacred building to which worshippers brought their votive gifts. These offerings consisted mainly of bronze objects which had been collected and buried either in jars and close to walls or simply in the ground without any protection.

It is extraordinary that these thousands of bronze objects dating mostly from the early second millennium<sup>3</sup> were not found and melted down to be recast by metal smiths in antiquity, as so frequently happened with ancient bronzework. Two reasons may account for the preservation of the bronzework at Byblos: first, the objects were buried as hoards in relatively unobtrusive positions in niches, within

---

<sup>1</sup>Du., II, 1, p. 271.

<sup>2</sup>Du., II, 2, p. 899 (cf. also pls. XIV, XV).

<sup>3</sup>This general date is ascertained by the offering collections which were found in stratified ground, mainly in connection with walls of the T.O., and/or by certain dateable objects in these hoards.

walls or under pavements of buildings and remained well locked up like certain intact tomb collections. Secondly, the objects were buried in sacred areas which were normally safeguarded not only by the contemporary local population and friendly foreigners<sup>1</sup> but even by enemies and invaders who tended to rebuild their own sanctuaries in the traditionally sacred areas of newly subjected people.<sup>2</sup> In short, the burying of these collections of metal votive offerings assured their safety during the lifetime of the generation which buried them, and the sacred areas in which the hoards were kept prompted rapid rebuilding on the same spots even after violent destruction. Hence, the debris layers above these deposits were probably growing fast, and digging for "treasures" or secondary raw materials such as bronze was unlikely in these areas before the sanctuaries finally fell into disuse.<sup>3</sup> By that time these objects were relatively safe from clandestine excavation, until much more recent years, when the bulk of them was fortunately discovered by archaeologists.

Consequently, Byblos provides a unique wealth of material for the study of bronzework in this area during the first half of the second millennium B.C.

---

<sup>1</sup>See the Egyptian gifts deposited in the temples of Byblos. For example, Du., II, 2, p. 702, no. 14499, pl. CXVI.

<sup>2</sup>After a destruction of the city the MB Age T.O. was built on top of the EB temple incorporating sections of the earlier foundation walls. See Du., II, 2, pp. 644 and 651.

<sup>3</sup>In the Bronze Age temple area stood a vast sacred enclosure in Hellenistic-Roman times. See Du., II, 1, chapter IV, pp. 26-51, pl. CCXIII.

The bronze objects from Byblos<sup>1</sup> will be listed in the following catalogue under three major headings, each with a number of subdivisions. The main types are as far as possible selected from among the offering deposits contained in jars, because these objects can generally be dated with greater certainty either internally (from association with other dateable material within the group) or externally (from their stratigraphical position in buildings, wherever this is established). Surface finds and single objects have been published by the excavators only with an indication of the general square and the depth from the surface. They are described in this catalogue, if they represent important types which did not occur in any of the deposits.

---

<sup>1</sup>The material published up to 1960. The later material does not add further information to the knowledge about bronzes because the excavations were mainly in Chalcolithic/Neolithic and Roman/Byzantine levels.

## WEAPONS AND TOOLS

### WEAPONS

#### A. Swords

##### a. Rapier

1. Long narrow sword with rounded or heart-shaped shoulders tapering gradually in a soft inward-outward line to an almost needle-sharp point; round midrib from shoulder to point. Flat and narrow tang; three rivet-holes, two near the edge of the shoulders, one in the tang.  
No. 2178. L. 57. From jar 2132 (Du., I, pl. LXV), deposit d found in Room E of Bâtiment II. Du., I, p. 148, pl. LXVII.<sup>1</sup>  
Fig. 1:1.
2. Same type with straight or slanting angular shoulders. Very long tang, three rivet-holes with rivets preserved.  
Nos. 8822 and 8823. L. 57.8 and 58. From deposit in S.E. Du., II, 1, p. 220, pl. LX.
3. Long sword with angular shoulders, sides tapering straight and steadily to rounded point; midrib from shoulders to point. Tang of rectangular cross section, three rivet-holes in triangular position on tang and both shoulders.  
No. 15078. L. 50.5. From offering deposit found at door-sill in north wall of first T.O. (earliest foundations). This gate was subsequently filled in with masonry (Du., II, 2, p. 732). Du., II, 2, p. 739 and fig. 873.

##### b. Short (cutting) sword

1. Short broad sword with slightly angular shoulders, sides tapering downwards to broad point; wide round or gable-shaped midrib from shoulders to point. Broad rectangular tang with one to three rivet-holes; tang sometimes widens into pommel-like crescent.<sup>2</sup>  
Nos. 8319-8324. L. 37.5 to 23.2. From offering deposit  $\beta$  in S.E. Du., II, 1, p. 188, pl. LVIII. Shorter type more likely used as dagger; same type occurs in even shorter specimens.  
Fig. 1:2.

---

<sup>1</sup>The best preserved and/or most accurately dateable example or examples of each type are listed in this catalogue giving number, size, provenance and reference to publication.

<sup>2</sup>Divergencies refer to other examples of same type.

## d. Sickle-sword

1. Ceremonial weapon with curved cutting edge; convex curve usually sharpened. The three main examples preserved at Byblos came from the more important royal tombs of the period of Ammenemes III and IV (Tombs I, II, III). The best preserved belonged to King Ibshemuabi (Tomb II) whose name appears on it in encrusted hieroglyphs.

Bronze weapon decorated with uraeus inlaid with gold and niello in central groove cut along middle of both flat sides of blade. Blade itself of uniform width and shaped like long narrow question-mark with straight lower half; curved upper part more or less angular (cf. M., no. 654). Wooden haft fixed on to short, narrow tang with splayed end (M., no. 653); gold thimble caps upper end of haft. Both thimble and haft held in position by small nails piercing through eight-petalled flower-heads. Parts of wooden handle remained on nails which were found next to weapon.

Nos. 652/3/4. Average l. between ca. 40 and 50. M., pp. 174-7, pls. XCIX, C, CI.

Cf. fig. 10:6. (RS).

2. Sickle-sword (?) of very shallow s-curve, gradually diminishing in width towards rounded point. Broad, roughly rectangular tang. Both edges of blade were apparently sharpened.

No. 349. L. not given. From deposit discovered during the early excavation seasons in the so-called "Syrian Temple", M. Dunand's Bâtiment II belonging to the Middle Empire period (see Du., I, pl. CCXII). M., p. 105, pl. LVIII.

Fig. 1:3.

B. Daggers

## a. Dagger with long tang or butt

1. Broad blade with more or less angular shoulders, tapering gradually towards more or less blunt point; midrib; flat lozenge-shaped cross section. Broad, long rectangular tang with two rivet-holes along axis of dagger and, in some examples, one or two more on shoulders. Roughly the same type as sword b. Very common. Great variation in length seems to indicate different use.

No. 8381. L. 13.1. From deposit in S.E. Du., II, 1, p. 190, pl. LVI.

Fig. 1:4.

2. Similar; without midrib; bearing engraved oblique lines within rectangle on one side.

No. 18081. L. 19.3. Not found among offering collections; perhaps later than Bronze Age. Du., II, 2, pl. CLXXVIII.



3. Blade with slanting rounded shoulders, sides tapering down in very slightly convex lines to rounded point; flat, round midrib bordered by two grooves from shoulder to about four-fifth of length. Flat, narrow, roughly rectangular tang with two large rivet-holes, two more on shoulders.

No. 8029. L. 22.6. Not from offering deposit. Very rare. Du., II, 1, p. 165, pl. CLXXVIII.

Fig. 1:5.

4. Strong dagger of unusual shape: almost straight, right-angled shoulders, sides widening slightly to about three-quarters of blade, where they taper into point; midrib. Tang of flat rectangular cross section with three rivet-holes.

No. 2179. L. 24.5. From deposit d in Bâtiment II. Du., I, p. 149, pl. LXX.

Fig. 1:6.

b. Dagger with short triangular butt

1. Narrow blade; shoulders and tang forming triangle with two concave sides; cutting edges narrow down right below shoulders into almost parallel lines, blunt point; flat lozenge-shaped cross section with groove from upper rivet-hole down to three-quarters of blade. Four rivet-holes, three in triangular position on shoulders, fourth above central one at point of tang.

No. 9171. L. 13.5. Du., II, 1, p. 254, pl. LXII. From deposits in S.E. and from royal tombs as well. Very common type. No. 9483 from S.E. with double midrib. Du., II, 1, p. 287. Other specimens of same general type show slight variations.

Fig. 1:7.

2. Very common type with straighter sides and variety of midribs: from simple squashed rhomboidal shape to double midrib lined by four to eleven thin grooves, outer ones converging at point, central ones at about three-quarters down the blade (no. 9527. Du., II, 1, p. 292, pl. LXIV). Three or four rivets. Handle covered entire triangular tang and top of shoulders.

No. 9532 has traces of wooden fibers preserved on tang and rivets. L. 20.7. From S.E. deposit t.<sup>1</sup> Du., II, 1, p. 293, fig. 321; pl. LXIV.

Fig. 1:8.

3. Dagger with almost circular tang-shoulder part and very narrow blade with parallel sides; flat midrib. Three rivets.

No. 9535. L. 20.2. From S.E. deposit t. Du., II, 1, p. 293, pl. LXIV.

---

<sup>1</sup>The ceremonial dagger in gold found in a deposit in the court of the T.O. belongs to this type as well. It is more elaborate (no. 14442, Du., II, pl. CXVIII).

This type also exists with distinct rectangular tang (no. 2184, Du., I, pl. LXX).

Fig. 1:9.

d. Cast-hilted dagger

1. Dagger with angular shoulders; straight sides tapering towards point; no midrib. Handle of rounded cross section, widening towards top. Just below shoulders, band of herring-bone pattern bordered and divided by three engraved lines. Broken into three pieces.  
No. 5054. L. 22. No exact provenance. Undated. Du., I, p. 283, pl. XCIV.

e. Curved dagger

1. Long narrow blade with rounded, barely marked shoulders, parallel sides and squashed rhomboidal cross section. Very broad tang, three big rivet-holes. Blade slightly curved, point off centre at end of inside cutting edge.  
No. 8042. L. 19.5. Not from offering deposit; Square 10/22. Du., II, 1, p. 165, pl. CLXXVIII.  
Fig. 1:10.

f. Dagger-knife with large terminal hole

1. Lanceolate blade hardly widened at shoulders, blunt point; no midrib. Broad tang of equal length as blade and of rectangular cross section, rounded at end and pierced by almond-shaped hole possibly for suspension.  
No. 18684. L. 28.5. Not from offering deposit. Du., II, 2, fig. 1093.  
Fig. 1:11.

C. Spears, Lances and Javelins

a. Spearhead with hammer-worked socket

1. Forged spear, possibly for hunting. Strong blade with fine midrib on one side only. Above shoulder, blade widens into two broad wings which were hammered around haft, thus forming socket with one wing slightly overlapping the other. Two rivet-holes indicate how haft was kept in position.  
No. 2177. L. 44. From jar no. 2131 (Du., I, pl. LXV), i.e. deposit d in Bâtiment II. Du., I, p. 148, pl. LXVII.  
Fig. 2:1.

## b. Lance with long divided or closed tubular socket

1. Lance equal to or smaller in length than socket, slanting angular or rounded shoulders, sides tapering gradually towards point; simple midrib or bordered by two or several grooves. Long tubular socket split open from top of midrib so that wooden haft must have been sharpened at head to be inserted into socket. Average l. ca. 27.  
No. 8440. L. 25.5. From deposit  $\beta$  in S.E. Du., II, 1, p. 192, pl. LVI. Fig. 2:2.
2. Extremely long lance, obviously weapon for hurling. Head about one third the length of socket. Narrow, slanting shoulders, hardly set off; elongated sides tapering towards point; flat midrib, in some specimens bordered by fine lines. Split socket, gradually tapering and opening towards upper end. Average l. between ca. 60 and 43; di. of socket not more than 2; thickness of metal forming socket ca. 0.1. Socket sheet hammered around wooden haft; edges, in some cases, slightly overlapping.  
Nos. 8346-8352. From deposit  $\beta$  in S.E. Du., II, 1, p. 189, pl. LVIII. Also no. 9523 (Du., II, 1, p. 291, pl. LXV) and many others.  
Fig. 2:3.
3. Similar weapon but with very wide midrib of roughly circular cross section prolonging socket-hole and gradually tapering towards point. Sharpened haft clearly entered deeply into actual lance-head, beyond its shoulders.  
Nos. 8824 and 8825. L. 44 and 50.5. From deposit  $\epsilon$  in S.E. Du., II, 1, p. 220, pl. LX.
4. Lance with pronounced right-angled shoulders, gabled or semicircular midrib distinctly narrower than socket, hence haft point must have stopped short before entering into actual head. Heads much wider than sockets most of which were broken and repaired by tightening metal collars round them. Traces of wooden hafts remained in some specimens.  
Nos. 8845-8850 (Du., II, 1, p. 220, pl. LX), and 10834 (Du., II, 1, p. 292, pl. LXXVIII). L. between 30 and 9. Also in smaller sizes, probably used as lighter javelins. From S.E., deposits  $\epsilon, \chi$ .  
Fig. 2:4.

## c. Collared lance with bent nail-headed tang

1. Lance with slanting, softly angular shoulders; straight sides tapering off to point. Solid rounded midrib ending in solid cylindrical or polygonal central piece between shoulder and tang. In some specimens, this section of lance is decorated with cast rings and ends in slightly larger collar at which haft stopped. Tang rectangular in cross section and tapering towards top, which consists of bent over, inflated head intended to prevent lance from

being loosened or pulled out.<sup>1</sup>

No. 10682. L. 23.5. From S.E., deposit v. Du., II, 1, p. 383, pl. LXXV.  
Also no. 9524. L. 35. Du., II, 1, p. 291, pl. LXV.  
Fig. 2:5.

d. Lance or javelin with long rat-tail or straight tang

1. Lance with slanting, angular shoulders, straight sides tapering down towards rounded (?) point; rectangular midrib continuing into long rat-tail tang.  
No. 8261. L. 20.8. From isolated deposit in Square 14/20. Du., II, 1, p. 184, pl. LIX.  
Fig. 2:6.
2. Lance with slanting rounded shoulders, straight sides tapering downwards to blunted point. Relatively long, straight tang ending in knob. Haft was riveted on to shoulders, the two rivets remained in position.  
No. 964. L. 23.5. From the later royal tombs (nos. VI-IX). M., p. 254, pl. CXLIX.  
Fig. 2:7.
3. Flat javelin of lanceolate shape with or without (no. 7260. Du., II, 1, p. 83, pl. CLXXVII) rectangular midrib. Long rectangular or rhomboidal (no. 9824. Du., II, 1, p. 318, pl. CLXXVII) tang tapering towards top.  
No. 9410. L. 14.5. From Square 13/16. Du., II, 1, p. 281, pl. CLXXVII.  
Shorter varieties of this type probably used as arrowheads (no. 7438. L. 7.3. Du., II, 1, p. 99, pl. CLXXVII).  
Fig. 2:8.

D. Arrowheads

Arrowheads were not found in the offering deposits. Most types came from various squares and levels of the excavations.

a. Laurel-leaf shaped arrowhead with tang

1. Roughly lozenge-shaped arrow with sharp point; flat rectangular midrib and tang.  
Nos. 8473 and 12769. L. 5.1 and 7.4. Du., II, 1, p. 194, pl. CLXXVII and Du., II, 2, p. 549, pl. CLXXVII.  
Fig. 2:9.

---

<sup>1</sup>Strat. comp., fig. 199:3.

2. Common arrowhead of lanceolate shape, bevelled along edges. Long tang of angular cross section.  
No. 7360. L. 5.6. From Square 19/21. Du., II, 1, p. 91, pl. CLXXVII.  
Fig. 2:10.
3. Flat arrow of similar shape but wider around middle; with flat rectangular midrib narrowing towards point and tang. Long rectangular tang tapering to pointed top. Four lines engraved over midrib in criss-cross pattern.  
No. 13104. L. 6.5. From Square 13/19. Du., II, 2, p. 575, pl. CLXXVII.  
Fig. 2:11.

b. Barbed arrowhead with tang

1. Arrow of roughly rhomboidal cross section; two edges prolonged into thin rectangular barbs. Long, roughly rectangular tang. Four engraved lines on midrib arranged to form a capital E standing on its legs. Signs of secondary cold working after casting.  
No. 7281. L. 8.7. From Square 17/20. Du., II, 1, p. 85, pl. CLXXVII.  
Fig. 2:12.
2. Flat short arrowhead with extremely long curved barbs; midrib. Thin tang of equal length as barbs.  
No. 17688. L. 3.6. From Square 11/19. Du., II, 2, p. 945, pl. CLXXXII.  
Fig. 2:13.

c. Socketed arrowhead

1. Flat arrow with barbed shoulders and bevelled edges; round midrib widening into short, wide socket.  
No. 10204. L. 4.4. From Square 16/11. Du., II, 1, p. 346, pl. CLXXVII.  
Perhaps too late for the period under study.  
Fig. 2:14.
2. Flat arrowhead, laurel-leaf shaped; pronounced midrib of round cross section, widening gradually from sharp point into round socket.  
No. 12909. L. 4.9. From Square 20/14. Du., II, 2, p. 560, pl. CLXXVII.  
Fig. 2:15.

E. Battle-axes

The most characteristic and common type of battle-axe at Byblos was the so-called Syrian fenestrated axe. Technically and artistically perfected examples of precious metal have been found mostly in the collections of offerings from the T.O. The bronze types are generally plain, and their use as true weapons is demonstrated by a number of bronze figurines which carry the very same axe types as well as other armament (see under armed figurines).

## a. Semicircular axe with open socket

1. Axe with the two horns of crescent touching haft but not joining back of socket. No. 3070. H. of socket, 11. Not from deposit. Du., I, p. 199, pl. XCVI. Fig. 3:1.

## b. Fenestrated axe

1. Semicircular type with or without relief ring framing oblong holes. Some sockets lined with especially fitted and decorated metal tube to strengthen wooden handle. Nos. 8817-8821. H. of socket ca. 10. From S.E., deposit  $\epsilon$ . Du., II, 1, p. 219, pl. LX.
2. Ceremonial axe of same type with relief sculpture on both sides, rather large eyes leaving socket with very narrow back to grip haft. Hence probably not used for fighting. No. 10823. L. 11.1. From S.E., deposit  $\chi$ . Du., II, 1, pp. 390-391, pl. LXXVIII.<sup>1</sup> Fig. 3:2.
3. Semi-elliptical axe illustrating gradual development from semicircular to later narrow type which is rarely found at Byblos, since it came into use in the later MB and LB periods. This example is of gold and hence purely ceremonial. (Some of these weapons were hafted on to handles sheathed in metal). No. 16714. H. 7.2; l. 7.5. From deposit discovered in the forecourt of T.O. Du., II, 2, p. 857, pl. CXXXVII. Fig. 3:3.
4. Narrow elongated axe of the later variety. No. 10645. H. 5.3; l. 11.6. From S.E., deposit  $\delta$ . Du., II, 1, p. 380, pl. LXXIV. Nos. 940 and 941 are cross-dating the ones from the S.E., since they come from one of the later chamber tombs of unknown individuals, discovered in 1924. M., p. 247, pl. CXLIX. Fig. 3:4.

## c. Long narrow axe with decorated socket cast in one piece

1. Axe with symmetrical socket decorated with grooves. Nail-like protruberance on top of semicircular back of socket.

---

<sup>1</sup>For relief design see op. cit., pp. 390/91 and fig. 422.

No. 1127. L. 10. From temple area. Du., I, p. 28, pl. XCVI.  
Fig. 3:7.

2. Axe-head with asymmetrical, grooved socket.  
No. 5170. L. 14. From TB. (Room C of Bâtiment XVIII). Du., I, p. 20,  
pl. XCVIII.  
Fig. 3:8.

e. Double axe

1. Axe with double cutting edge; fragments of haft preserved in socket.  
No. 963. L. not given. From royal tomb. M., p. 254, pl. CXLIX.

F. Plate Armour

a. Scale elements and disks

1. Disks with central raised bosses, repoussé decoration and one to four rivets or rivet-holes. Possibly umboes.  
Nos. 10093-10095. Di. 14.3, 14 and 10.2. From offering deposit  $\xi$  in jar no. 10011. Du., II, p. 339, pl. LXIX.

TOOLS

A. Axes (and related tools)

a. Flat axe or adze

1. Flat elongated axe with convex or straight sides gradually widening towards (sometimes splayed) cutting edge, with or without cast circular suspension or hafting hole at small end. Some specimens bear an engraving of a stag's head.

No. 3680. L. 14.7. From T.B. Du., I, p. 251, pl. XLVII. This axe has been analysed chemically and the content of Sn has been shown to be 8.7 per cent, i. e. the metal is a true Cu-Sn alloy.<sup>1</sup>

Fig. 4:3.

Nos. 4374 and 4375 are examples from Room B of Bâtiment XVIII (EB period?).

L. 15.2 (both). Du., I, p. 317, pl. XCVII.

Fig. 4:1 and 2.

From Room E of the T.B., deposit d, came a whole hoard of similar axes with straight or convex cutting edge and of various sizes, with or without hole at upper end.

Nos. 2135-2159 found in jar no. 2132. L. between 19.7 and 12.7. Du., I,

---

<sup>1</sup>See Du., I, appendix.

p. 145, pls. LXVIII, LXX and LXXI.

b. Trunnion axe (see Catling, p. 87 and fig. 8:11).

1. Flat, elongated axe with broad square butt; engraved with lines forming a palm-branch.

No. 6571. L. 13.7. Du., I, pl. XCV.

Fig. 3:6.

c. Axe with "bottle-neck"

1. Axe-shaped tool flattened towards sharpened edge, with peculiar provision possibly for fitting into handle: upper part of blade tapering off to flat "bottle-neck" shape and topped by high crescent-shaped end. This suggests fitting into especially carved wooden haft; hence, it may have been used as adze, axe or scraper.

No. 3550. L. 19.8. From Room B in T.B. Du., I, p. 242, pl. XCVIII.

Fig. 4:4.

2. Axe shaped like cross section through vase: wide, rounded blade, neck-like provision with splayed end for hafting (similar to 1, above). Its use as an axe is doubtful.

No. 2134. H. 17; l. 19. From T.B., deposit d. Du., I, p. 146, fig. 134, pl. LXV.

Fig. 4:5.

d. Egyptian round axe

1. Round axe-head; straight back with prolonged ends for fixing into haft. Well known Egyptian type.<sup>1</sup>

No. 1916. Di. ca. 13. No exact provenance. Du., I, p. 130, pl. XCV.

Fig. 4:6.

g. Hammer-tool

1. Hammer-head (?) shaped like parallelepiped.

No. 2862. Size: 9.5 x 5.5. No exact provenance. Du., I, p. 182, fig. 169.

---

<sup>1</sup>See W. Wolf, Die Bewaffnung des altägyptischen Heeres (Leipzig, 1926), p. 22, fig. 9 and pl. II:5.



## B. Chisels (and similar tools)

### a. Plain rectangular chisel

1. Long, roughly rectangular chisel with cutting-edge splayed by forging; percussion end flattened for hammering. Rough line incision of stag head on upper half of broad side.  
No. 11598. L. 19. Surface find. Du., II, 1, p. 460, pl. CLXXVIII.  
Fig. 4:7.
2. Long chisel of flat rectangular cross section; sides widening towards straight or slightly convex chiselling edge. Round gripping end with circular or elliptical suspension (?) hole.  
Nos. 8594 and 13922. L. ca. 21 (both). Du., II, 1, p. 204 and Du., II, 2, p. 635, pl. CLXXVIII.
3. Broad, flat chisel with parallel sides; chiselling edge slightly convex; straight upper end. Engraved sign.  
No. 10644. L. 21.5. From S.E. deposit c. Du., II, 1, p. 380, pl. LXXIV.
4. Flat, pointed chisel (?), perhaps for engraving. Parallel sides, edges bevelled at point; percussion end straight.  
No. 6900. L. 15.6. No exact provenance. Du., II, 1, p. 22, pl. CLXXVIII.  
Fig. 4:8.

### b. Tanged chisel

1. Chisel with slanting angular shoulders, slightly concave sides and narrow rectangular tang.  
No. 5117. L. 20. No exact provenance. Undated. Du., I, p. 343, fig. 274.

### d. Gouge, punch or drill

1. Gouge of square cross section, rounded towards hollow cutting edge.  
No. 2193. L. 30.5. From jar 2132 found in Room E of Bâtiment II. Du., I, p. 151, pl. LXIX.  
Fig. 4:9.
2. Punch or skewer (?) with suspension hole at top, of square cross section, tapering gradually off to point. Exists in various different sizes; smaller types possibly awls.  
No. 2192. L. 31.5. From T.B., deposit d. Du., I, p. 151, pl. LXIX.  
Fig. 4:10.

### C. Saws, Sickles and Knives

#### a. Saw

1. Long blade with blunt point; small rectangular tang with rivet-hole at upper end, two rivet-holes on shoulders. Blade very slightly curved and one edge indented (?).

No. 2176. L. 29.4. From T.B., deposit d. Du., I, p. 148, pl. LXVIII.  
Fig. 5:1.

#### b. Sickle (and related tools)

1. Sickle blade (?) gradually tapering off to rounded point, bevelled edges. No traces of hafting or riveting remain.

No. 7451. L. 21. From Square 18/21, S.-E. of temple area. Du., II, 1, p. 101, pl. CLXXVIII.  
Fig. 5:2.

#### c. Knife (and similar tools)

1. Knife (?) of rectangular shape, slightly concave or straight, sharpened sides; narrow neck and wide round pommel, hollowed for suspension (?). Only two examples of this type of instrument were found inside one of the jars with offerings discovered in the early excavation seasons.

Nos. 599 and 600. L. 13.5. From deposit in Bâtiment II. M., pp. 124-25, fig. 56 and pl. LXIX; also no. 2208. L. 7. From T.B., deposit d. Du., I, p. 153, pl. LXV.  
Fig. 5:3.

### D. Spatulae and Tweezers

#### a. Spatula

1. Inscribed spatula of triangular shape with short, pointed tang.

No. 6894. L. 9.8; w. of base, 5. No exact provenance. Du., II, 1, p. 21. Three lines of pseudo-hieroglyphic inscription on obverse, four on reverse. No. 9942 similar but with tang broken off. Inscription of three lines on one side. Du., II, 1, p. 327 and fig. 14, pl. CXLVII.

The peculiar shape of these spatulae suggests that they were perhaps intended for bearing a written account,<sup>1</sup> since spatulae used as (household) utensils are normally much narrower and not entirely flat. They were perhaps of a similar nature as the inscribed bronze tablets from Byblos (no. 8917 for example; Du., II, 1, p. 228).

---

<sup>1</sup>For inscription see M. Dunand, Byblia Grammata, (Beirut, 1945), p. 78 f., pl. XII, fig. 30.

2. Similarly shaped spatula, uninscribed.  
No. 10482. L. 7.7. From Square 12/21. Du., II, p. 369, pl. CLXXXII.  
Fig. 5:4.
3. Small round spoon. Its very thin and short tang must have been attached to handle of different material.  
No. 601. L. not given. From one of the jars with offering deposits discovered by P. Montet. M., p. 125, pl. LXVI.  
Fig. 5:5.

b. Tweezers

1. Tweezers, soldered at one end.  
No. 18033. L. 6.5. From Square 9/6. Du., II, 2, p. 979, pl. CLXXIX.

E. Hooks, Cotter-pins, Clamps and Nails

a. Hook

1. Large hook of angular cross section; barbed point. Diameter of bronze rod increases below barb. Probably too late for period under study.  
No. 7664. L. 11.6. From Square 14/17, immediately S-E. of "champ d'offrandes", but in higher level. Du., II, 1, p. 133, pl. CLXXX.  
Fig. 5:6.
2. Plain hook of round or rhomboidal cross section; both long and short end tapering off to points. This type also exists barbed.  
Nos. 6583 and 1941. L. 6.5 and 5.5. No exact provenance. Du., I, pp. 427 and 133, pl. CIII.

b. Cotter-pin

1. Cotter-pin with ring head of circular cross section; long, flat, rectangular shafts, the two ends of which are bent apart (after insertion into possibly wooden door (?)). To secure its position a nail has been driven through ends of shafts, just below bent.  
No. 736. L. ca. 30. From royal tombs. M., p. 189, pl. CIX.  
Fig. 5:7.
2. Similar cotter-pin which, instead of bending after insertion, was secured with two long, parallel nails, one above the other.  
No. 737. No measurements. From Tomb II. M., p. 189, pl. CVIII.

## c. Clamp and hinge

1. Clamp consisting of thin flattened strip of metal forged into circular collar; the two ends bent at right angles to ring and kept either close together (nos. 738 and 741), bent outwards at their tips (no. 739) or secured with long nail.  
Nos. 738-741. L. not given. From Tombs I and II. M., p. 189, pl. CX.  
Fig. 5:8.
2. Open clamp or bow made of metal rod of circular cross section, bent until shafts were parallel; tips bent outwards.  
No. 722. L. not given. From royal tomb. M., p. 186, pl. CVII.  
Fig. 5:9.

## d. Nail and rivet

1. Nail with slightly splayed or thickened circular head.  
Cf. nails used to secure cotter-pins and clamps in position; also nails on object, no. 735 in M., pl. CVII. From Tombs I and II.  
Fig. 5: 7 and 8.
2. Decorative nail with head of precious metal for studding ceremonial objects and dagger sheaths. See also the more elaborate ones used for the sickle sword.  
No. 653. L. not given. From tombs and offering deposits. M., p. 174, pl. CI.

F. Needles

## a. Sewing needle

1. Needle with flattened head pierced by elliptical eye.  
No. 17662. L. 12.1. From Square 11/12. Du., II, 2, p. 943, pl. CLXXIX.  
Fig. 5:10.

## b. Needle with loop-eye

1. Needle with terminal eye formed by bending one end of pin into loop and joining its thin tip on to shaft.  
No. 8964. L. 13.1. No exact provenance. Du., II, 1, p. 233, pl. CLXXIX.  
Fig. 5:11.

2. Needle or pin with circular loop-eye; thin wire end twisted around shaft in spirals (Schleifennadel).

No. 4386. L. 7.6. No exact provenance. Du., I, p. 318, Pl. CII.

Fig. 5:12.

#### G. Tongs and Forks

##### b. Fork

1. Trident cast in shape of cross with pointed prongs, subsequently hammer worked. Two lateral prongs curved upwards in form of letter  $\Psi$ . Pierced towards lower end of shaft, possibly for rivet or suspension ring.

Nos 666-668. Medium l. 43. From Tomb I; found outside sarcophagus.<sup>1</sup>  
M., p. 181, pls. CVIII-CIX.

Fig. 13:1.

#### H. Animal Gear

##### a. Bit

1. Two fragments of bit, consisting of thick, slightly curved rods terminating in rings.

Nos. 15725 and 15726. L. 15. No exact provenance. Possibly later in date.  
Du., II, 2, p. 796, fig. 908.

---

<sup>1</sup>Ch. Virolleaud, "Découverte à Byblos d'un hypogée de la douzième dynastie égyptienne," Syria, III (1922), pp. 277, fig. 2 and 286, fig. 3:14.

## II

### ARTICLES OF ORNAMENT and VESSELS

#### A. Toggle-pins and Fibulae

##### a. Toggle-pin with straight or inflated head

1. **Pin** with simple splayed or nail-head, flat or convex; oblong pierced eye through upper part of shaft. Rather common.  
No. 19304. L. 12.9. From Square 11/14. Du., II, 2, p. 1081, pl. CLXXIX.  
Fig. 5:13.
2. Toggle-pin with rounded or conical head (no. 342. L. not given. From deposit in Bâtiment II. M., p. 104, pl. LVIII). This type of pin has mostly cast or pierced eye in swollen upper section of shaft; part above and below eye decorated with striations in parallel bands, chevron or other line patterns. No. 588 (hoard of ca. fifty bronze pins). L. between ca. 9 and 20. From "Montet jar" in Bâtiment II. M., p. 122, fig. 55 and pl. LXIX.  
Fig. 5:14.
3. Twin-headed pin split into two above middle of shaft; heads, two round knobs which touch each other, leaving large oblong opening from splitting point to heads.  
No. 341. L. 10. From deposit in Bâtiment II. M., p. 104, pl. LVIII.  
Fig. 5:15.

##### b. Melon-headed toggle-pin

1. Pin with melon-shaped head divided into six deep sections; upper half of shaft gadrooned; halfway down shaft widening into sharp-edged disk commonly pierced.  
No. 9274. L. 15.3. Not from deposit. Du., II, 1, p. 264; fig. 268 and pl. CLXXX.  
Fig. 5:16.

##### c. Pin with pine-seed head

1. Slender pin with pine-seed shaped head and swelling of shaft along upper part for cast round or pierced lozenge-shaped eye (no. 18888. L. 11.6. Provenance and reference same as for no. 18887, below). Fine gadrooning below and above eye.  
No. 18718. L. 11.8. From Square 11/15. Du., II, 2, p. 1026, pl. CLXXIX.  
Pin left unfinished, showing neither eye nor gadrooning. Eye was to be pierced since shaft had been flattened by hammering.

No. 18887. L. 12.4. Found buried underneath offering deposit near S.E.; hence, earlier than or contemporary with hoard. Du., II, 2, p. 1041, pl. CLXXIX.  
Fig. 5:17.

d. Pin with poppy-seed head

1. Pin with poppy-seed head; bead-shaped swelling along upper section of shaft for cast eye; several cast rings just below head, above and below eye. No. 5228. L. 12.8. No exact provenance. Du., I, 1, p. 59, fig. 277 and pl. CIV. Also nos. 18707, 18873 and 19301. Medium l. ca. 11. From various squares. Du., II, 2, pp. 1025, 1038 and 1080, pl. CLXXIX.  
Fig. 5:18.

e. Pin with animal head

1. Pin with animal-shaped head, mostly bouquetins with all four legs joined on top of shaft. Nos. 6897 and 11448. L. 6.4 and 10.6. No exact provenance. Du. II, 1, p. 448, pl. CLXXIX. No. 7176 with twelve foil animals on head. Preserved l. 6.1. From Square 15/17. Du., II, 1, p. 75, fig. 54, pl. CLXXIX. Cf. also under animals.

f. Pin with rolled head (Rollennadel)

1. Pin without eye and with hammer-flattened rolled head. Nos. 9790 and 19303. L. 11.5 and 10.4. From Squares 18/21 and 10/14. Du., II, 1, p. 314 and 2, p. 1081, pl. CLXXIX.  
Fig. 5:19.

h. Fibula

1. Bow-shaped fibula: pin curved into bow, twisted round into double spiral, pin-point fitting into flattened and bent-over pin-head. Back of bow of thicker wire than remainder of pin. No. 12516. L. 4.9. No exact provenance. Square 14/23. Du., II, 2, p. 530, pl. CLXXXI.  
Fig. 15:20.

B. Torques

a. Torque with curled ends

1. Torque of circular cross section with tapering, flattened and/or rolled ends; diameter varies, mostly; however, of a size suitable to be worn around neck.

No. 595, ca. forty torques found in a jar with offerings. Di. between ca. 13 and 18. From Bâtiment II, "Montet jar". M., p. 123, pl. LXX.

Fig. 6:1.

b. Torque with cut ends

1. Plain torque with straight cut ends, more likely worn as anklet or bracelet. Mostly of small diameter.

No. 5343. Di. 7. No exact provenance. Du., I, p. 365, pl. XCIII.

C. Bracelets, Anklets and Rings

a. Open bracelet and/or anklet

1. Simple bracelet of circular cross section with ends cut off straight. Nos. 2516-2518. No exact size and provenance indicated. Du., I, p. 174, pl. LXXII.
2. Open bracelet; ends decorated with three to six striations or grooves. No. 2544. Di. not indicated. No exact provenance. Du., I, p. 174, pl. LXXII.
3. Open bracelet with animal heads (rams?) facing each other. No. 3054. Di. 6.1. No exact provenance. Du., I, p. 194, pl. XCIII. Fig. 6:2.
4. Wire of roughly round cross section twisted into spiral or spirals. Common as bracelets. Example no. 7669. Di. not given. From Square 14/15, N. of "champ d'offrandes". Du., II, 1, p. 134, pl. CLXXXII.

b. Finger-ring and swivel mounting

1. Finger-ring of delicate filigree work: band of regular loops held between two rings of flat cross section. Nos. 413-415. Di. ca. 2. From "Montet jar" in Bâtiment II. M., p. 118, pl. LXIII. Fig. 6:3.
2. Plain open rings of various sizes with ends open, joining or overlapping. No. 598, hoard containing 34 rings; di. of finger-rings ca. 3. M., p. 124, pl. LXX. Fig. 6:4.
3. Rings made of metal wire, twisted or knotted in various ways. Example no. 10272. Di. 3.5. From offering deposit  $\rho$ . Du., II, 1, p. 352, pl. LXXII.



4. Swivel mountings for scarabs, seals or stones. Rings intended for fitting into scarabs to be worn as rings and used as seals. For types see nos. 419, 420 and 422. M., p. 118, pl. LXIII.

#### D. Beads and Pendants

##### a. Beads

1. Biconical.  
No. 551. Size not indicated. From "Montet jar". M., p. 121, pl. LXIX. Cf. also no. 18354 in gold, bigger in size and polygonal biconical in shape. From deposit near S.E. Du., II, 2, p. 1003.  
Fig. 6:5.
2. Globular or olive shaped bead.  
No. 280. L. 1-2. From hoard. M., p. 100.

##### b. Spiral pendant or bead

1. Cylindrical bead or pendant formed by wire wound into tight spirals.  
No. 596. L. 4. From hoard. Also no. 2565. L. 1.7. Du., I, p. 177, pl. LXXII.  
Fig. 6:6.

##### c. Pendants

1. Heads or masks. Nos. 2550, 2553 and 2554.
2. Figurines of Bes. No. 2549.
3. Figurines of animals. No. 2547.

All from deposits. Du., I, pp. 174/75, pl. LXXII.

##### d. Dress ornament

Some unidentified fragments of sheet metal from among offering deposits may have adorned belts or garments. Example no. 10191. From Square 15/19. Du., II, 1, p. 345.

#### E. Mirrors and Musical Instruments

##### a. Mirror

A silver mirror was preserved with its gold fittings for the handle. It represents the Aton-disk rising out of a stylized lotus flower, the handle forming the stem.

This mirror was a special funerary gift found in Tomb II of the royal necropolis. M., p. 161, pls. XCII and XCIII.

It is a common mirror of Egyptian type dated to the period of Ammenemes IV. A short pointed or rectangular tang was fixed into a haft of different material. The size and shape of the tang can be seen on various other mirrors in bronze from the tombs and offering deposits.

No. 615, M., p. 161, pl. XCVIII and no. 603, M., p. 125, pl. LXVI.

#### F. Vessels and Stands

##### a. Cosmetic or toy object

1. Miniature flat-based bowl (possibly for kohl or other cosmetic paint?).  
No. 9408. H. 1.4; di. 3.4. From Square 13/15. Du., II, 1, p. 281, fig. 310.
2. Small conical bowl.  
No. 15957. H. 3.2; di. 6.5. Du., II, 2, p. 813, fig. 929. Also no. 16192. H. 3.5. Both from hoards in T.O., S. and N. deposits. Du., II, 2, p. 822, fig. 934.
3. Miniature stemmed bowl.  
No. 363. H. 3. From T.B. area. M., p. 107, pl. LIX.  
Fig. 6:7.
4. Miniature vase with flat ring base, piriform body, large horizontal rim, carinated at right angle to neck.  
No. 362. H. 3. From hoard in T.B. area. M., p. 107, pl. LIX.  
Like no. 10196. H. 3.2. From Square 15/20. Du., II, 1, p. 345, pl. CLXXXII.  
Fig. 6:8.
5. Small dipper with flat ring base.  
No. 15964. H. 6. di. 4. From court of T.O. Du., II, 2, p. 814, pl. CXXVIII.  
Two dippers with conical knob base, ovoid body and pinched rim came from N. deposit, also in the court of T.O.  
Nos. 16182 (h. 5.6; di. 4) and 16183 (h. 8.1). Du., II, 2, p. 821, pl. CXXIX.<sup>1</sup>  
Fig. 6:9.
6. Small bronze flask with flat base, piriform body, high tapering neck, rim everted horizontally, sharp carination between neck and rim. Body and lower part of neck decorated with ribs of rounded or angular cross section, two near

---

<sup>1</sup>A small cylinder may have served as support for a similar dipper or juglet. No. 15978. H. 3.7. Same provenance as dippers. Du., II, 2, p. 815, fig. 929.

base, one on shoulder, three narrow ones at base of neck.

No. 608. H. 8.6 From hoard in "Montet jar". M., p. 125, pl. LXXI.

7. Twin vessel of two spherical recipients linked by hollow tube; vessels have small openings not on same axis.

No. 609. H. ca. 3.; w. ca. 6.5. From "Montet jar". M., p. 125, pl. LXXI.

8. Small cubic bronze chest with cover turning on hinge.

No. 19242. H. 2; l. 2.7; w. 2.6. From Square 12/9. Du., II, 2, p. 1074 and fig. 1184.

9. Miniature tabourets, square or rectangular; on four legs. (nos. 370 and 371) or round, on stem split into tripod at base (no. 372. H. 3). M., p. 108, pl. LIX. All from deposits in T.B. area.

Fig. 6:10.

b. Ritual vessel and cult object

1. Ceremonial situla shaped like bull's head standing on its nostrils. Flat base; truncated biconical body with slightly concave walls, the middle being marked by deep groove; rolled rim. Nostrils of bull indicated by incised lines, eyes represented by three concentric repoussé rings of different thickness. Ears and horns applied, one horn missing. Two vertical twin lug handles hold bent rod forming loop above rim, to which curved tips of semicircular handle are hooked.

No. 10586. H. 11. From S.E., deposit  $\zeta$ . Du. II, 1, p. 377, pl. LXXIII.

2. Model of skiff with pointed bow and round stern. Raised out of sheet metal. Some with holes for lost masts at centre. One with rudder.

No. 10089. L. 17.2; w. 3.9; h. 1.5. From deposit  $\xi$  in S.E. All come from offering deposits. Du., II, 1, p. 338-339, pl. LXIX.

c. Household ware, scales and weights.

1. Bowl with ring base; sharp carination on lower part of body; walls tapering in slightly concave line; everted rolled rim.

No. 2171. H. 7.3; di. 8.5. From deposit d in Bâtiment II. Du., I, p. 147, pl. LXVI.

Fig. 6:11.

2. Bowl with ring base, body with straight flaring walls, tapering above carination at shoulder, wide rolled rim.

No. 607. H. 7. From "Montet jar". M., p. 125, pl. LXXI.

Fig. 6:12.

3. Bowl or dish of conical or round shape with rounded or flat base.  
No. 771. H. 13.5; di. 35. From Tomb II. M., p. 194, pl. CXIV.
4. Large bowl with flat disk base, wide rim everted almost horizontally, sharp carination between body and rim.  
No. 775. H. 11.4; di. 47.5. M., p. 194, pl. CXIV. Also no. 777 of similar shape and size. Both from Tomb II. M., p. 194, pl. CXV.
5. Huge basin with flat base, straight flaring walls and rolled rim.  
No. 776. H. 11; di. 43. From Tomb I. M., p. 194, pl. CXIV.
6. Large jug with trumpet base, high piriform body, trefoil rim cut like beak for pouring (?). High handle attached at body and rim.  
No. 781. H. 35. From Tomb I., M., p. 194 and *Syria*, III (1922), p. 288, pl. LXVI:12 and fig. 4:12. No. 782 possibly alike; broken off at shoulder; lower part of straight handle preserved; suggesting rather high neck and rim. Size not indicated. From Tomb II. M., p. 194, pl. CXV.
7. Flask with flattened base, elongated ovoid body, everted rolled rim.  
No. 779. H. 38. From Tomb I. M., p. 194 and *Syria*, III (1922), pl. LXII:4.
8. Weight in the shape of truncated pyramid, square base.  
No. 19202. H. 1.5. 29.5 gr. No exact provenance (Square 8/6). Du., II, 2, p. 1070.  
Weights of similar and different shapes have been found but are probably of later date than period under study.

d. Stand

1. High biconic stand with everted rolled rim. Possibly stand for vessel with pointed base.  
No. 783. H. 45. From Tomb II. M., p. 195, pl. CXV. Perhaps no. 14501, baseless and of cylindrical shape belongs into same category. H. 33.5. From offering deposit. Du., II, 2, p. 702, fig. 834.

### III

#### FIGURINES

(ANIMAL, HUMAN or DIVINE)

#### ANIMAL FIGURES

##### A. Bulls

##### a. Rudimentary

1. Crude quadruped with bull's horns but no representation of details; legs, head and tail mere pegs.  
No. 7857 for example. H. 3.1. From deposit  $\alpha$  in S.E. Du., II, 1, p. 52, pl. LIII.  
Fig. 7:1.
2. Bovine, more rounded and with more distinct rendering of details such as an incised line to indicate mouth, a more shapely head, representation of feet (usually provided with tangs) and male sex.  
No. 7853. L. 7.4; h. 4.7 (including tangs). From deposit  $\alpha$  in S.E. Du., II, 1, p. 151, pl. LIII. Other examples from deposits in T.O., nos. 15565 (h. 4; l. 4.2) and 17801 (h. 4.4; l. 6.5). Du., II, 2, p. 781, pl. CX and p. 960, pl. CXLII. No. 17801 with fragment of gold-foil like belt around body.
3. Similar bull seated on hind legs. No indication in the cast as to whether legs were bent accidentally into seated position.  
No. 4051. H. 5.5. No exact provenance. Du., I, p. 282, pl. LVI.  
Some of these figurines show traces of gold-foil which once enveloped them.

##### b. Stylized

1. Standing bull with fine head, accentuated occipital bones, correctly curved horns and straight legs. Hind legs and hips distinctly set off, marked sex, long tail. Metal bars with central hole connect front and hind legs; bent rod passed through bars to fix the animal on stand now lost. Engraved lines.  
No. 9687. H. 5.1; l. 9.3. From S.E. deposit. Du., II, 1, p. 304 and pl. LXIII.  
Fig. 7:3.

2. Similar type with traces of gold-foil.

No. 2059. H. 3.2. From Room E of Bâtiment II; in jar 2000 hidden in one of the niches of a stone structure which contained two jars. Result of analysis: 4 per cent Sn to 96 per cent Cu. Du., I, p. 140, pl. LVIII.

c. Realistic

1. Apis (?) bull. Nostrils, eyes, ears and hooves as well as bone structure and muscles much more life-like than in any of types listed above. Entirely covered with gold-foil. Difficult to assign to any particular stratum from given indications of provenance.

No. 1662. H. 8.6; l. 11.5. Du., I, p. 110, pl. LV and II, pl. CXVI (where it is erroneously republished under no. 14500 ).

d. Figurine on bull

1. Male figurine with hands at sides and left leg forward; standing on bull. No. 9144. L. of animal, 4.5; h. with man, 7.3. From offering deposit ζ in S.E. Du., II, 1, p. 250, pl. LXI. Fig. 7:2.

B. Other Quadrupeds and Birds

a. Quadruped

1. Dog (?) standing with ears pointing forward and long tail. Once covered with gold-foil. No. 8781. L. 4.6. From S.E., deposit ε. Du., II, 1, p. 219, pl. LX.
2. Quadruped with long body. Legs short straight tangs. Metal blob that forms over filling-hole of mould still adhering to figurine. Although this animal resembles a dog, it is more likely an unsuccessful and unfinished cast of a bull. No. 10587. H. 3.4, l. 5.4. From S.E., deposit σ. Du., II, 1, p. 378.
3. Male feline clearly moulded; pellet eyes, upright pointed ears, powerful neck, typical slim body, strong legs curved into paws provided with tangs; two left legs forward; long tail. No. 9156. H. 4.1; l. 6.7. From S.E., deposit ζ. Nos. 180 and 181 similar. H. 4.5 and 4. From T.B. deposit. M., p. 91, pl. LII. Fig. 7:7.
4. Miniature stag, standing legs apart; antlers with one branch, one missing. No. 197. Size not indicated. From T.B. deposit. M., p. 93, pl. LIII.

5. Antelope (?); thin body, long straight ears or horns bent backwards.  
No. 194. Size not given. From deposit in area of T.B. M., p. 93, pl. LIII.
6. Rams, bouquetins and stags also appear as heads of pins (possibly later), or in relief on the fenestrated axe-head in gold, no. 14434. Du., II, 2, p. 694, pl. CXIX. Very curious are the pin-heads made up of a number--five or twelve--of stags the feet of which are all gathered in one point.  
No. 193. Size not indicated. From temple area. M., p. 93, pl. LIII.  
Also no. 2283. From deposit d in Room E of Bâtiment II, in jar 2132. Du., I, p. 154, pl. XLVII.

b. Bird

1. Standing bird in the round.  
No. 2058. H. 2. From hoard in jar 2000 in Bâtiment II. Du., I, p.140, pl. LVIII.
2. Flying bird cut out of bronze sheet, wings spread, splayed tail.  
No. 172. Size not indicated. From T.B. deposit. M., p. 90, pl. LII.

## HUMAN or DIVINE FIGURES<sup>1</sup>

### A. Foil Figurines

All these figurines with the exception of several stray finds were found in offering deposits, either in closed jars or at least in or near groups of offerings. They are all cut out of thin metal-foil; quite a number are of gold, a few of the bronze ones show traces of a thin covering in gold-foil.

a. Plain silhouette

1. Figure with body facing, legs apart, arms hanging down and head in profile; nose and chin more or less sharply cut; wearing conical head-dress of varying length.  
No. 15559. H. 10.2. From deposit in T.O. Du., II, 2, p. 780, pl. CX.  
Fig. 7:8.

Some of these figurines have the head turned in an angle of ninety degrees to the body. If they were not accidentally twisted, this may be an attempt at rendering these schematic figurines somewhat more plastic and life-like.

---

<sup>1</sup>All figurines are male except for a few female statuettes (see below under F).

2. Similar type but without indication of either head-dress or features of face. No. 13605. H. 5.4. From offering deposit in S.E. Du., II, 2, p. 617, pl. LXXXI.  
Fig. 7:9.

b. Silhouette with details added

1. Similar to previous but more details added; four chisel strokes form lozenge shaped eye and parallel strokes indicate hair. Very long hair-do, resembling horse-tail, hangs down from back of head. No. 15557. H. 7.4. From deposit in T.O. Du., II, 2, p. 780, pl. CX. In some other specimens, an engraved line may indicate garment hanging over one shoulder.  
Fig. 7:10.
2. Silhouette in more lively attitude, one leg advancing and one arm bent forward with hand extended. Also indication of feet. No. 10625. H. 6.2. From deposit in S.E. Du., II, 2, p. 379, pl. LXXIV.  
Fig. 7:11.

B. Flat Figurines

a. Primitive

1. Flat anthropomorphic figure; roughly round head, arms hanging down, legs apart; without indication of any details. No. 10013. H. 11.6. From deposit  $\xi$  in S.E. Du., II, 1, p. 335, pl. LXX.  
Fig. 7:13.
2. Similar but with crudely exaggerated representation of nose and/or chin and male sex. More or less high cylindrical or conical head-dress. Nos. 13617 and 13650. Medium h. ca. 6. From deposit in S.E. Du., II, 2, p. 617, pl. LXXXI. Nos. 2006 and 2037 from jar 2000 of Bâtiment II have their arms curled forward. Du., I, p. 138, pl. LX.

Many of these figurines are badly cast or unfinished with casting beads along the lines between the two halves of the mould. In a number of cases the moulds do not seem to have fitted properly. Spilt metal has joined the arms to the sides of the body, giving the figurines a very primitive appearance indeed.

b. Stylized

1. Flat figurine with fair delineation of body and high conical crown. Casting blob still preserved as mushroom-shaped enlargement on top of head, roughly



resembling a kalathos (no. 14873, see fig. 7:15). Shoulders nicely squared, arms hang straight down, chest tapering off to narrow waist, hips rounded. Figure wears short kilt reaching down to above knees. Legs straight and shaped like tangs to be fixed into stand. This type of figurine was cast in bivalve moulds, casting beads still show along sides of legs, arms and bodies in a number of specimens.

Most figurines of this type either entirely or partially (face and head-dress or head-dress and kilt etc.) clad in thin gold-foil in which greater details like facial features were finely marked (see fig. 7:15). One statuette wears broad silver belt much too wide for its waist and hips (no. 14905).

Nos. 14873 and 14905. H. 16.5. From deposit in T.O., N. wall. Du., II, 2, p. 734, pl. CXXVI.

Fig. 7: 14 and 15.

2. Same figurine but improved after casting by cold working or annealing to add motion. Usually left leg bent forward in attitude of advancing. No. 13655. H. 9.3. From S.E. Du., II, 2, p. 617, pl. LXXXI. One arm, usually the left, also bent forward and provided with rod, possibly weapon or sceptre. Nos. 15981 and 15982. H. 9.7 and 10. From N. deposit in T.O. Du., II, 2, p. 816, pl. CXXX. Fig. 7:16.
3. Same but with distinct representation of facial features; hands and feet provided with additional tangs to be fitted into holes of stand. Extended hand closed around haft of sceptre or lance mostly lost. In some cases fingers and toes represented by grooves, as in no. 9470. H. 11.7. From S.E., deposit  $\eta$ . Du., II, 1, p. 286, pl. LXIII. Conical cap often set apart from forehead by groove or ridge. No. 9691. H. 9.8. From deposit  $\nu$  in S.E. Du., II, 1, p. 306, pl. LXIII. Fig. 7:17.
4. Similar but with one or both arms lifted, right in attitude of hurling object. Prototype of later well-rounded figurines brandishing weapon (cf. below, no. 7826 and Du., II, pl. CLXII. No. 7107. H. 10.9. From area of T.O. Du., II, 1, p. 67, pl. CLXII.
5. More or less rounded figurines with exaggerated features; prominent nose, very large lips, pellet or ring eyes and often with exaggerated sexual organ. No. 15897. H. 8.5. From S. deposit in T.O. Du., II, 2, p. 809, pl. CXXVIII. Fig. 7:18.

### C. Armed Figurines

Although it is likely that most of the figurines from Byblos bore some attributes, added to them after casting and now in most cases lost, there are some statuettes with heavy armament preserved in detail, which gives them the aspect of hoplites.

#### a. Hoplite with two or more weapons

1. Figure with three weapons. Left leg and both elbows bent forward. Nose, eye brows and sexual organ especially marked. Figure carries spear with lanceolate head in left hand and semicircular fenestrated axe in right. Hafts of weapons fit neatly into cast circular holes in hands. At waist, dagger with large hilt, badly corroded; attached as if the figure held it clasped under arm to prevent it from falling.  
No. 9145. H. 10. From S.E., deposit  $\zeta$ . Du., II, 1, p. 250, pl. LXI.  
Fig. 9:1.
2. Figure armed with dagger as in 1; left arm bent with hand extended and closed around missing rod, right arm at side.  
No. 17782. H. 7. From Square 11/22. Du., II, 2, p. 957, pl. CLXIII.
3. Figurine with big round head, features and ears roughly marked, flat body with navel and exaggerated sexual organ. Left leg forward, tangs under feet; arms at sides, hands rounded into fists through which passed two long lances or rods.  
Nos. 2012 and 2017. H. ca. 8. From deposit in Room E of Bâtiment II.  
Du., I, p. 138, pl. LIX.

Probably most figurines in this attitude were heavily armed, but the weapons have fallen off or corroded due to their extreme thinness and fragility.

### D. Well-modelled Figurines

#### a. With arms at sides or bent forward

1. Silver statuette standing with one leg forward. Cast in lost wax process with clear attempt at modelling face and figure of a youth. Very large almond-shaped eyes with central groove for pupils, bridged by heavily ridged lids and arch-shaped eye brows spanning forehead from ear to ear; prominent straight nose continuing without break in line of forehead; full lips, mouth being well-proportioned, adding to handsome youthful expression of face. Small chin; ears without lobes, well-moulded and relatively small in comparison to other earlier figurines. Well-squared shoulders and moulded upper part of chest with muscles showing; very narrow waist; widening over hip bones into strong long legs in which both knees and calves are well-modelled.

Ankles and toes also designed. Left leg placed forward, right slightly backward from axis of body, indicating that the figure is walking. Modelling of arms slightly less successful, right arm kept straight at side, left seemingly added and bent at elbow; both fists closed around hafts of lost or broken objects, probably lance and axe; thumbs are kept straight. Figure in the nude but wears high conical head-dress. Once entirely covered with thin gold-foil. In profile, the body shows a rather narrow and elongated upper part with some attempts at modelling more life-like curves.

No. 14467. H. 34. From deposit in T.O. Du., II, 2, p. 699/700, pl. CXV.  
Fig. 8

Although this particular figurine was cast in silver, it is perhaps the best and most successful example of a large number of similar figurines, the others cast in bronze, which were attempts to represent the same personality but fell more or less short of this model. Cf. no. 8758, (Du., II, pl. LIX), very badly corroded; and no. 14468, (Du., II, pl. CXVI). Also no. 14841, with long rectangular beard. H. 24.5. From offering deposit of N. wall of T.O. Du., II, 2, p. 733, pl. CXXV. A relief representation of this type of figurine appears on the gold covering of the haft of dagger no. 14442 (Du., II, pl. CXIV).

2. Similar figurines in slightly different, more lively positions, wearing short kilts; smaller and less carefully executed; in short, less successful varieties of 1.

No. 14842. H. 25. From deposit in T.O. and Du., II, 2, p. 733, pl. CXXV.  
Also no. 8758, very badly corroded. H. 16.2. From deposit in S.E. Du., II, 1, p. 218, pl. LIX.

#### b. In attitude of brandishing weapon

1. The so-called Reshef type with one arm uplifted, other hand extended forward holding lance (?).

No. 1819. Preserved l. 7. No exact provenance. Du., I, p. 122, pl. XLVII.  
Also no. 2555. Broken off at waist; preserved l. 4. From deposit. Du., I, p. 175, pl. LXXII. Fig. 9:2.

### E. Seated Figurines

#### a. Stylized

1. Badly corroded figurine wearing long tunic; without head-dress; arms bent, left forward, right hand on left shoulder.

No. 14836. H. 11.7. From Square 11/19, S. of "champ d'offrandes".  
Du., II, 2, p. 732, pl. CLXIII.

2. Seated figurine with long garment slung cape-like across left shoulder. Right hand raised.  
No. 8957 (h. 10.2) and 14609 (same h.). No dateable stratification indicated. Du., II, 1, p. 231 and 2, p. 710, pl. CLXII.

b. Naturalistic

1. Figurine of deity wearing high conical crown ending in four rings below striated melon-shaped knob; front of crown decorated with uraeus; on either side wing and ram's horn bent down and backwards, one horn missing; two grooves mark crown's edge. Large eyes now hollow, inlay lost; fine curved nose; small mouth with corners slightly uplifted in a smile (?). Arms extended forward; right with uplifted hand in attitude of benediction, left lower, closing fist around lost object (sceptre?). Figure wears long skirt with high belt and two borders at bottom indicated by two grooves. Feet placed side by side in front of throne on little slanting footstool decorated along three sides with vertical grooves. Throne borne on fore and hind legs of feline, possibly sphinx. Straight back of seat reinforced from behind by three vertical bars. Throne and footstool stand on two separate but joining bronze plinths which are in turn provided with five cylindrical tangs for fixing into second stand of different material.  
No. 7190. H. 16.4. From Square 15/23, very close to EB-MB city-wall, stratum not indicated. Du., II, p. 76, pl. CLXI.  
Fig. 9:7.

F. Female Figurines

a. Crude

1. Female foil figurine.  
No. 10627. H. 6.2. From offering deposit  $\sigma$ . Du., II, 1, p. 379, pl. LXXIV.  
Only one example extant.
2. Flat figurine with round head and crude unrecognizable features; long flat body, highly placed pellet breasts; arms and legs straight rods in same plain with body. Some specimens have tangs.  
Nos. 152 and 153. H. 6.4 and 6.8. From foundation deposit in Bâtiment II.  
M., p. 87, pl. L.  
Fig. 9:3.
3. Female (?) figurines of flat type with eyes and breasts marked as large pellets, protruding chin; long straight waist; hips indicated by two triangular protuberances. Arms and legs straight; tangs (?).  
No. 15895. H. 7.9. From offering deposit of T.O. Du., II, 2, p. 809, pl. CXXVIII.  
Fig. 9:4.

## b. Stylized

1. Incomplete figurine of flat type; unusual head with protruding angular temples and peculiar conical protuberances on top of head and below temples. Eyes small pellets, beak-like nose, mouth short oblong groove. Very long neck; body straight and flat, steatopygous. Small pellet breasts placed at height of shoulders; lower part of hips and legs missing. Hips and breasts indicate sex of figurine. She wears necklace (torque?) and oblong rod (like dagger) obliquely across stomach.

No. 1163. H. 6.3. From temple area. Du., I, p. 37, pl. XLV.

Fig. 9:5.

The pellet eyes and breasts, the beak-like nose as well as the necklace strongly resemble female figurines of clay from the Amorite period found in great quantities in the Hama region.<sup>1</sup> Since the provenance of the bronze figurine from Byblos is only vaguely indicated, it cannot be dated on stratigraphical grounds.

2. Standing figurine; round head, indistinct corroded features, long hathoric locks; narrow waist; long straight legs separated by groove, feet indicated by knob, very much like casting "mushroom"; arms at sides; pubic triangle indicated by grooves.

No. 2018. H. 8. From jar 2000 in T.B. Du., I, p. 138, pl. LVIX.

Fig. 9:6.

## c. Naturalistic

1. Standing figurine with long hair and bare head; slim body; arms and legs straight; eyes two opposed triangles; pointed nose; representation of breasts (as two nibs), navel and pubic triangle. Tangs underneath feet.

No. 15893. H. 6.5. From deposit in T.O. Du., II, 2, p. 809, pl. CXXVIII.

2. Well-developed female figurine with long hair plaited at back of head and opening up into four locks below waist. Well-shaped body, arms and legs. Small breasts; left arm raised to cup left breast, right arm at side; shapely legs straight together; double anklet around both ankles; feet on rectangular metal plinth.

No. 7638. H. 10. No dateable stratigraphical reference given. Du., II, 1, p. 130, pl. CLXIV.

---

<sup>1</sup>For example the recently discovered figurines from Tell Mardikh. See G. Castellino, and others, Missione archeologica italiana in Siria, Rapporto preliminare della campagna 1965 Tell Mardikh (Roma, 1966), pls. LIX-LX.

## g. Divine couples

There are a few bronze figurines on stands of the same metal.

1. Double figurine on T-shaped flat plinth provided with short tang. Couple of crude type with unshapely, neckless heads, unrecognizable features, straight bodies and members. Casting beards appear along sides of legs; neither legs nor arms are separated; arms appear to be bent double or broken. No indication of sex, but right figurine of smaller size than left.

No. 163. H. 6.1. From T.B. area. M., p. 89, pl. LI.

Fig. 7:12.

No representations of divine couples of the RS type (see RS cat.) have been found.

There are a few copies of typical Egyptian deity figurines, well known and easily recognizable. Their number is very small indeed compared to the extensive material representing local and other types. The seated statuettes of Harpocrates (nos. 147 and 401) are perhaps the best examples to illustrate these figurines. They come from the deposits in the so-called 'Temple Syrien' or Bâtiment II. No. 147 (M., p. 86, pl. L) is a small figurine of a child seated on a thin base. He has his finger in his mouth. Since the origin of these and similar figurines of Egyptian deities can be clearly traced, it is not necessary to deal with them here.

## RAS SHAMRA

The tell of Ras Shamra-Ugarit, unlike Byblos, is far from having been completely excavated. The major parts of the areas so far uncovered belong to the Late Bronze Age city, consisting of a palace or palaces, a temple area, quarters of the burghers and tombs. The important finds from Minet el-Beida, the LB harbour of Ras Shamra, and its tombs must be mentioned in this context. Only in some sections of the city have the MB levels been reached. The stratification of Ras Shamra, for the earlier periods down to the Neolithic levels, is known from a number of soundings, the principal ones having been made near the Palace and in the Temple Area. Material of the Intermediate Early - Middle Bronze Period, dating roughly from 2300 to 1900 B.C., was discovered mainly in tombs. The so-called torque-wearer burials are of especial importance with respect to bronzework.

Although it is not yet possible to compare the bronzework of Ras Shamra in its entirety with that of Byblos, enough material has been brought to light to attempt a temporary cataloguing of the objects so far found, for the purpose of determining the types comparable with those represented at Byblos. Naturally, the earlier material is outnumbered by the amount of bronzework from the LB levels. Whole hoards of bronzes belonging to that period were discovered. In comparison with Byblos, however, the deposits from Ras Shamra were few in number. The largest and most important one was found in the House of the High Priest.<sup>1</sup> It consisted of seventy-four

---

<sup>1</sup>See Ug. III, pp. 251-275.

bronze weapons, tools and a cast tripod that testifies to the high technical and artistic ability of the Ras Shamra metal-workers of the Late Bronze Age.

In the following catalogue the Ras Shamra bronzework has been grouped under the same typological divisions as the objects from Byblos above.

C.F.A. Schaeffer's level and period designations have been used as given in Strat. comp., p. 39, with the following equations:

Level III: Ugarit Ancien

RS III, 2 - U.A. 2 = EB III (ca. 2500-2300 B.C.)

RS III, 3 - U.A. 3 = IP I (ca. 2300-2100 B.C.)

Level II : Ugarit Moyen

RS II, 1 - U.M. 1 = IP II (ca. 2100-1900 B.C.)

RS II, 2 - U.M. 2 = MB I (ca. 1900-1750 B.C.)

RS II, 3 - U.M. 3 = MB II (ca. 1750-1600 B.C.)

Level I : Ugarit Récent

RS I, 1 - U.R. 1 = LB I (ca. 1600-1450 B.C.)

RS I, 2 - U.R. 2 = LB I-II (ca. 1450-1365 B.C.)

RS I, 3 - U.R. 3 = LB II-III (ca. 1365-1200 B.C.)<sup>1</sup>

Only the published material up to 1966 has been included.<sup>2</sup> Since many of the objects are described and/or illustrated in the RS publications, without their inventory numbers, only such numbers as have been given appear in this catalogue.

---

<sup>1</sup>Cf. the chronological scheme on p. vii.

<sup>2</sup>As it appeared mainly in Syria, AAS, and Ug. I-IV.



## WEAPONS AND TOOLS

### WEAPONS

#### A. Swords

##### a. Rapier

1. Long narrow sword with triangular or rounded shoulders, parallel edges and sharp or rounded point. Simple midrib from shoulder to point. Flat rectangular hilt piece topped, in three out of the four examples, by narrow tang. All four specimens found were left unfinished: tangs and hilts without rivets to fix handles; edges and points not sharpened.

L. between 73 and 63. From hoard of seventy-four bronzes found in House of the High Priest. Ug. III, pp. 256-260, figs. 223 and 224.

Fig. 10:1 and 2.

2. Sword with slightly slanting, angular shoulders, tapering very gradually off to sharp point; edges not sharpened. Three grooves along centre, joining towards point; at their top, near hilt, engraved cartouche of Merneptah in hieroglyphs. Short hilt narrowing into long thin tang; edges of hilt and tang blunted.

L. 74. From quarter of private houses to E. of Palace. Ug. III, p. 169 ff., figs. 122-125, and pl. VIII.

Fig. 10:3.

##### b. Short (cutting) sword

1. Sword with straight sides tapering off to point (broken off); no midrib. Rudimentary horns at shoulders. Short rectangular tang with concave and raised edges to hold haft; four rivet-holes with one rivet preserved.

No. 7353. L. ca. 40. From Tomb LVI dated to 17-16th cent. Syria, XVII (1936)<sup>13</sup>, pp. 143-144; figs. 17, 20 and 22 C.

2. Sword with straight edges tapering gradually off to point; three-ridged midrib from below hilt to point. Shoulders widening into upward curved horns at base of hilt; hilt inlaid with wood held within open-work silver sheath which is tied at upper end by silver collar; from it protrudes flat tapering tang ending in nail-head which held lost pommel.

No. 18.14. L. 46; hilt including crescent, 12.5. From debris of W. wall fallen into Court V of Palace. Ug. III, pp. 172, fig. 124:5, and 277-78, pl. X. Fig. 10:4.

##### c. Socketed sword

1. Sword with long, slanting shoulders; narrow blade with parallel sides decorated with number of grooves on either side of round midrib. Midrib widens into long and large socket tightened by terminal ring, which is decorated with two

boars' heads on sides. Likely to have been a hunting weapon.

No. 4417. L. 51. Hidden under inside door-sill of N. wall of House of High Priest. Ug. I, p. 113, fig. 104, pl. XXIII.

Fig. 10:5.

d. Sickle-sword

1. Curved sword cast in one piece with hilt. Hilt set off by sharp edged flanges and inlaid. Blade decorated with grooved design following curve of weapon. L. 58. From layer dateable to first half of 14th cent. Syria, XVII (1936), p. 145 and pl. XVIII:2.  
Fig. 10:6.

B. Daggers

a. Dagger with long tang or butt

1. Cypriote<sup>1</sup> dagger with slanting, rounded shoulders, edges tapering straight off to rounded point; round midrib. Long rat-tail tang of rhomboid cross section. No. 9567.86. L. 42.5. From lower level of Tomb LIV dated to 17th or beginning of 16th cent.<sup>2</sup> Found bent like a bracelet around radius of skeleton. Syria, XIX (1938), p. 228, fig. 23 A.
2. Dagger with slanting, angular shoulders; slightly convex, straight or concave sides; midrib. Long tang with end folded over; no rivets. Two examples. L. 32 and 28.5. From sounding of 1953, to N.-W. of acropolis. Ug. IV, p. 333, fig. 4.
3. Dagger of lanceolate shape with rounded point; no midrib. Long tang widening at top. Two examples: one from Minet el-Beida; l. ca. 40; Syria, XIII (1932), pl. X:1. The second, about half the size, from Level II in garden of Palace, found together with MB pottery; Ug. IV, pp. 295, 306; pl. XVII:5.
4. Dagger or knife with slanting, rounded shoulders, long narrow blade with edges tapering gradually off to rounded point. Long tang with parallel sides; three rivets; central hole reinforced. No. 9887. L. ca. 18.2. From Tomb LVII, Hyksos period. Ug. I, p. 67, fig. 56 B.
5. Dagger with slanting, angular shoulders and straight sides tapering off to sharp point. Midrib and long tang; edges of tang and shoulders raised. L. 30. From sounding to N.-W. of acropolis. Ug. IV, p. 241, fig. 32 E.

---

<sup>1</sup>Cf. Catling's Early and Middle Cypriote rat-tanged weapons (figs. 1:5, 2:1).

<sup>2</sup>See Syria, XIX (1938), p. 219.

6. Similar dagger but with angular midrib and tang bent over into loop.  
L. 28.2. From sounding to N.-W. of acropolis and in EB III context.  
Ug. IV, p. 241, fig. 32 F.

b. Dagger with short triangular butt

1. Dagger with rounded or angular shoulders, sides tapering straight off to point; ~~with~~ simple or double midrib. Short, roughly triangular butt with straight, convex or concave sides; three or more rivets to fasten hilt. Some unfinished; others found together with crescent-shaped pommels; one repaired in antiquity (no. RS 4508).

Average l. between 25 and 15. Found in context with weapons and objects of U.M.1 (ca. 2100-1900). Nos. RS 4508 and 4527; Ug. II, p. 52, fig. 19:3, 4. Also Ug. I, p. 50, fig. 18:23-25, 31. Cf. Byblos cat., fig. 1:8.

2. Dagger with slanting, angular shoulders; long blade; sides tapering off to rounded point. Three rivets held haft over reinforced large tang.  
No. 9885-39. L. ca. 18. From Tomb LVII, Hyksos period. Ug. I, p. 67, fig. 56 A.

c. Socketed dagger

1. Dagger with straight, angular shoulders; straight sides tapering off to rounded point. Long socket reinforced by metal band at end to prevent sides from opening. Possibly also used as lances. Cf. Byblos cat., fig. 2:4.

Nos. 9728-20 and 9722-60. L. ca. 28.5 and 21.6. From Tomb LVI, 17th-16th cent. Ug. I, p. 74, fig. 63 A, B.

d. Cast-hilted dagger with wide curving flanges

1. Dagger without distinct shoulders; short blade with straight sides tapering slightly off to rounded point. Hilt with more or less distinctly angular blade-guard, narrowing upwards, then widening again; borders raised to hold wooden inlay.

L. 25.2; handle alone, 10.5. From Level I. Ug. III, p. 177 and figs. 123, 124. Another example (l. 32) from Room 82 in the annex of S.-W. Archives. Ug. IV, p. 78, fig. 63 C. Two from hoard in House of High Priest. Ug. III, p. 259 and figs. 223, 224:17.

Longest example, about 45. Syria, XIII (1932), pl. X:1. Fig. 11:1.

2. Narrow dagger with shoulders marked and sharp point.

No. 7298/42. L. ca. 34. From niche in Tomb XIII, dated by pottery context to 14th cent. Syria, XVII (1936), p. 121, fig. 13 P. Fig. 11:2.

3. Narrow blade with sides tapering straight off to rounded point. Hilt widening into lateral horns at hilt-guard and at top. Raised edges of hilt and two rivets held inlay of different material.

No. 9724-2. L. ca. 38.5. From Tomb LVI, dated to Hyksos period by ceramic context. Ug. I, p. 74, fig. 63 U.

Fig. 11:3.

### C. Spears, Lances and Javelins

#### b. Lance with divided or closed tubular socket

1. Lance with slanting, angular or rounded shoulders; convex or straight sides tapering off to point; angular midrib. Tubular socket split open from top of midrib to admit sharpened haft; two rivet-holes at wide end of socket to keep haft in position.

Seven of this type came from hoard of unused bronze weapons and tools discovered in House of High Priest. L. between ca. 38 and 22. The longest was engraved with stylized palm-branch on upper part of broad midrib. Ug. III, p. 259 and fig. 224.

Fig. 11:4.

2. Same type of lance except for sharp, right-angled shoulders. With or without terminal ring for tightening upper end of socket around haft.

Nos. RS 4540 and RS 4478. L. between ca. 30 and 15. From tomb group of torque-wearers. IP I, ca. 2100-1900 B.C. Ug. II, p. 50, fig. 18:9, 26.

3. Very long lance of lanceolate shape; long, closed socket tightened by broad terminal ring. Blade and socket of almost equal length.

L. ca. 45. From hoard under door-sill of House of High Priest and Library. Dated by pottery context to 15th or 14th cent. Ug. I, p. 112 and pl. XXIII.

4. Smaller specimen with open socket and without terminal socket ring; two rivet-holes instead.

L. ca. 18.5. From Palace of Ugarit. Ug. III, p. 278, fig. 241.

Fig. 11:5.

#### c. Collared lance with bent nail-headed tang

1. Lance with slanting, angular shoulders; sides tapering off to point; strong midrib. Collar polygonal or divided into horizontal rings. Ring-shaped reinforcement between collar and long, angular tang with nail-head, bent over at sharp angle to keep split haft in position.<sup>1</sup>

Average l. between 25 and 18. From silo in sounding S. of Library of High Priest, dateable to IP (2300-1900 B.C.).

<sup>1</sup> Cf. Strat. comp., fig. 199:3.

Ug. IV, p. 232, fig. 28 A.  
Cf. Byblos cat., fig. 2:5.

d. Lance or javelin with long rat-tail or straight tang

1. Laurel-leaf shaped javelin with sharp point and minimal midrib; short collar of rhomboid cross section between shoulders and straight tang.  
No. 19.229. L. 15.8. From S. square of Palace. Ug. IV, p. 78, fig. 63.  
Another example from hoard in private house to E. of Palace. Ug. III, p. 172, fig. 124:3.

D. Arrowheads

a. Laurel-leaf shaped arrowhead with tang

1. Lanceolate arrowhead with sharp point and minimal midrib; short angular collar and long tang.  
L. ca. 8. From among debris in street outside Palace enclosure wall, immediately behind S. Archives. Ug. III, pl. X.  
Fig. 11:6.
2. Similar arrowhead but with more distinct shoulders and thickened collar.  
L. ca. 12. Found with two others of different size (9 and 14.5) in bronze hoard of House of High Priest. Ug. III, p. 259, fig. 224:7.  
Fig. 11:7.

c. Socketed arrowhead

1. Flat triangular arrowhead with rounded shoulders at right angle. Hollow round midrib widening into broad fragmentary socket. Possibly javelin.  
L. ca. 9. Dateable by context to IP II (ca. 2100-1900 B.C.). Ug. II, p. 50, fig. 18:21.

d. Percussion arrowhead (?)

1. Possible missile with flat circular base narrowing into straight tang of circular cross section.  
L. 4.4. Found with eleven regular arrowheads and other elements of armament to W. of basin in Palace Court V. Ug. IV, p. 99, fig. 61 G.

E. Battle-axes

a. Semicircular axe with open socket

1. Fragmentary axe with bevelled edge. Two wings of semicircle not joining back of socket.

No. RS 6320. L. of broken off central piece, ca. 8. From hoard of incomplete bronzes belonging to beginning of Level II, possibly kept for melting down and recasting.<sup>1</sup> The axe was analyzed and contains 9.77 per cent tin. (Ug. II, p. 64). Ug. II, p. 63, fig. 26:8.

b. Fenestrated axe

1. Semicircular type with round or oblong holes.  
Nos. RS 4503 and 4509. From tomb group of torque-wearer period, hence dated by context to IP II (ca. 2100-1900 B.C.).  
Cf. Byblos example, fig. 3:2 and Ug. II, p. 52, fig. 19:13, 14.
2. Miniature votive axe of semi-elliptical shape; decorated with chevrons in relief; figure-of-eight reliefs around holes.  
L. 4.8; w., at socket, 4.3. From Stratum A in lower sounding, E. of Temple of Ba'al. Ug. IV, p. 411 and fig. 51 B.

A large number of fenestrated axes and other weapons and tools of miniature size were found in Level II and are dateable to IP I and II. They may have been used as votive offerings. Cf. Ug. II, p. 62, fig. 25.

3. Elongated type with oblong socket; later variety.  
No. RS 6185. L. ca. 16. From IP II context. Ug. II, p. 50, fig. 18:29.  
Cf. Byblos cat., fig. 3:4.

c. Long narrow axe with decorated socket cast in one piece

1. Axe with socket decorated with grooves. Nail-like protuberance on top of semicircular back of socket.  
No. RS 5052. L. ca. 14. Dated from context to MB I (ca. 1900-1750 B.C.). Almost identical with no. 1127 from Byblos. Ug. II, p. 50, fig. 18:15.  
Fig. 3:5.
2. Axe with long narrow blade, straight cutting edge and oblong socket. Socket holes framed by round relief border which continues down sides of blade as well. Small rod bridges top of socket hole to keep haft from being pushed through. Small hook at edge of shoulder, probably for securing position of haft in socket.  
No. 9870-78. L. ca. 15. From Tomb LVII; found together with Hyksos ware ("Tell el-Yahudiya juglets". See Ug. I, p. 66, fig. 55). Ug. I, p. 67, fig. 56 H.

---

<sup>1</sup>Cf. Ug. II, p. 66.

3. Axe with raised edges of rounded sides and two lateral horn-like projections at joint between blade and socket. Socket grooved and prolonged at back by three spikes.

L, ca. 14. From debris which covered street outside enclosure wall of Palace, behind S. Archives; dated to 13th cent. Ug. III, p. 279, pl. X, and fig. 242.

Fig. 11:8.

d. Ceremonial axe with socket decorated with animals

1. Axe with tripartite socket, prolonged at back by three long pointed prongs. Top of socket closed by head of lion. Upper half of axe blade incised with three parallel double lines between zigzag patterns. Silver plated.

L. 18.4. From 14th cent. house in Area B, N. of Temple Area. Syria, XVIII (1937), p. 147 and pl. XIX.

Fig. 12:1.

2. Axe-head of iron set in socket made of copper and gold. Oval, almost round socket hole. High relief boar, looking down haft, decorates back of socket. Bristles of animal and flower motifs on sides of socket inlaid with gold wire. Socket opens to receive iron blade between two lion-heads equally incrustated with gold wire. Blade with straight sides widening slightly towards straight cutting edge, resembles bronze axe blades from Ras Shamra of 15th-14th cent. B.C. Cf. Ug. I, pl. XXIII. Socket was cast around blade end, tightening its grip in the process of cooling; hence no rivets necessary.

L. of socket and blade, 19.5. 852 gr. From small two room building on N.-W. edge of tell, found in N.-E. corner of southern room. Dated to 15th to 14th century from associated pottery. The socket was analyzed and consists of almost pure copper, 98.30 per cent; only 0.22 per cent of tin.

Ug. I, pp. 107-25, pl. XXII; for metal analysis see p. 108.

Fig. 12:2.

F. Plate Armour

a. Scale elements and disks

1. Small rectangular plaques with triangular or rounded base, relief ridge along centre and several holes for attachment. Possibly for corslet. About twenty two such plaques were found in Palace, Court V. L. between 4 and 8.

Example no. RS 15.217. L. 4. From Court V, W. of basin. Ug. IV, pp. 99 and 74, fig. 61 C. Also Syria, XVIII (1937), p. 144, fig. 9.

## TOOLS

A. Axes (and similar tools)

## a. Flat axe or adze

1. Axe (mostly) without hole in upper end; straight sides more or less widening towards (sometimes splayed) straight or convex cutting edge. Twenty-seven of these tools of various shapes and sizes came from bronze hoard in House of High Priest.  
L. between 22 and 14. Mostly cutting edges not sharpened, i.e. pieces unused. Also no. 18.94. L. 23. From under staircase leading to first floor of S. Archives in S.-E. corner of Court V. Ug. III, p. 261 f., figs. 234-236; p. 278, fig. 240 and pl. X.
2. Axe decorated on hafting end, with engraved lines; two parallel lines bordering five x-shaped signs. Three specimens.  
L. between ca. 25 and 15. From hoard under sill of N. door of House of High Priest. Dated by pottery to 15th - 14th century B.C. Ug. I, pl. XXIII.
3. Flat axe with cast suspension hole at narrow end and splayed cutting edge. No. 22.299. L. 29. From sounding S. of Library, near S. basin. First axe of this type from RS, although common in Byblos.  
Cf. Byblos cat., fig. 4:3. Ug. IV, p. 427, fig. 14:1.

## b. Trunnion axe

1. Flat blade with barely marked shoulder protrusions.<sup>1</sup>  
Three examples came from hoard in House of High Priest.  
L. between ca. 19 and 16. Ug. III, p. 270, fig. 234:7, 8, 19, 26 and figs. 235, 236; see also Byblos cat. fig. 3:6.

## e. Flat socketed adze

1. Adze with straight sides widening towards slightly convex cutting edge. Circular socket ring closed by hot hammering. Haft set perpendicularly to cutting edge. Four out of the nine found in bronze hoard bear alphabetic cuneiform dedications to High Priest.  
L. ca. 23. From hoard under door-sill of House of High Priest. Contemporary with alphabetic tablets of same level, i.e. 15th - 14th century B.C. Ug. III, p. 259 and figs. 229-233.  
Fig. 11:9.

---

<sup>1</sup>See Catling, fig. 8:11.



## f. Hoe and similar tools

1. Hoe with sides widening slightly towards straight cutting edge. Socket formed by forging.  
Three examples from hoard in High Priest's House, one with dedication. L. 23-18; di. of socket ca. 5. Ug. III, p. 259, and figs. 227, 230, 232: 1, 2, 3.  
Fig. 11:10.
2. Hoe with sides of blade widening below socket. Possibly ploughshares; (cf. Catling, p. 80-81 and fig. 7:3, 4.)  
L. between ca. 28 and 18. From hoard in House of High Priest. Ug. III, p. 267, fig. 232: 4, 6.  
Fig. 11:11.

B. Chisels (and similar tools)

## a. Plain rectangular chisel

1. Chisel of almost square cross section with flattened, slightly splayed sides of chiselling edge.  
L. between 22.5 and 11. From hoard in House of High Priest. Ug. III, p. 261; fig. 233:9, 10, 12.

## b. Tanged chisel

1. Narrow chisel with triangular shoulder protrusions to keep handle fastened on tang.  
No. 22.363. L. ca. 9.5. From sounding S. of Library. Ug. IV, p. 427, fig. 14:6.

## c. Socketed chisel

1. Flat chisel with splayed sides of straight chiselling edge. Circular socket reinforced by ring at upper end.  
L. 18. From Room 82 in annex of S.-W. Archives. Ug. IV, p. 76 and fig. 62 H.

## d. Gouge, punch or drill

1. Gouge with lozenge-shaped, hollow (?) point.  
L. ca. 12. No indication of provenance. Dated 14th - 13th century. Syria, XVIII (1937), pl. XIX.  
Cf. Byblos cat., fig. 4:9.

2. Punch or drill of rectangular cross section with roughly lozenge-shaped head. Two examples from hoard of bronzes in House of High Priest. L. 21.6 and 16.4. Ug. III, pp. 261; figs. 233:11, 13 and 273. Fig. 11:12,13.

### C. Saws, Sickles and Knives

#### b. Sickle and similar tools

1. Sickle with parallel sides and convex point; more or less sinuous. Long flat tang bent over at end to hold wooden (?) handle. Inside curve of blade sharpened by hammering. Four examples from hoard in House of High Priest. L. between 20 and 16.5. Ug. III, p. 261; figs. 222, 232:7-10. Fig. 11:14.
2. Same sickle but with sides widening just below tang and tapering off to rounded point. Three examples from rooms of building S. of Ba'al Temple, dated by context to ca. 1500 B.C. L. between ca. 16 and 9. Syria, XVI (1935), p. 143, fig. 2 and p. 144.
3. Pruning-hook with two cutting edges, one straight, one curved, opposed to each other. Broad tang with flanged edges and two rivet-holes; "...probably used for pruning vines, and would have been serviceable for cutting and trimming light timber."<sup>1</sup> L. ca. 16. From building S. of Temple of Ba'al. Syria, XVI (1935), p. 143, fig. 2. Fig. 11:18.

#### c. Knife and similar tools

1. Long narrow knife with one straight edge, the other widening below handle and then tapering gradually off to point. Upper end of blade curved like sickle. Handle ending in deer's foot. L. ca. 30. Dated by context to 14th century. Syria, XVII (1936), p. 141, fig. 22 B. Fig. 11:15.
2. Spatula-shaped knife (?) with slanting rounded shoulders, concave sides and rounded or flattened blunt point; slight midrib. Thin elastic blade and rectangular long, straight tang. Possibly hunting knife.<sup>1</sup>

---

<sup>1</sup>Catling, p. 85, agricultural tools (G.1). Fig. 8:5 and pl. 5 h. For the example from RS see Deshayes, no. 2865.

L. ca. 30. Two from hoard in House of High Priest. Ug. III, p. 259; fig. 224: 10, 11.  
Fig. 11:16.

3. Razor blade of roughly elliptical shape; central notch in curved cutting edge sharpened by hammering. Long, thin tang to fix into handle.  
L. including handle, 15.3; di. 17.2. From E. Archives. Dated by context to 14th century. Syria, XVIII (1937), p. 144, fig. 9; also Ug. IV, p. 70, fig. 57.  
Fig. 11:17.

#### D. Spatulae and Tweezers

##### a. Spatula

1. Flat spatula. (Not described or illustrated).  
L. not indicated. From basin in Court V of Palace. Ug. IV, p. 97.

##### b. Tweezers

1. Pair of tweezers; hammer-worked out of long, flat metal strip.  
L. ca. 6. Two similar pairs found with pins and razor blade in E. Archives of Palace. Dated by context to 14th century. Syria, XVIII (1937), p. 144, fig. 9.  
Fig. 11:19.

#### E. Hooks, Cotter-pins, Clamps and Nails

##### a. Hook

1. Hook with barbed point and butt pierced for suspension. Possibly for fishing.  
L. 5.5 From Palace. Dated to 14th century. Syria, XVIII (1937), p. 144, fig. 9.  
Fig. 11:20.

##### c. Clamp and hinge

1. Clamp, cold worked out of piece of wire. Middle bent into loop-head, two ends close together, points bent outwards after insertion through wood (?) to lock it in position.  
No. 7420. L. ca. 4. From tomb. Dated to 18th - 16th century from context of MB juglets and dippers. Syria, XVII (1936), p. 133, fig. 19 K.
2. Hinge element, hammer-worked out of thin flat metal sheet; bent into oblong socket with two pairs of rectangular, teeth-like projections at both ends and

open central part, into which must have fitted missing companion piece.  
L. 3.7. From Room 68 of S. Archives. Ug. IV, p. 78, fig. 63 B.

d. Nail and rivet

1. Circular nail of equal cross section all through and with hemispherical head. Lower end riveted with identical head.  
No. 15.306. L. 5.5. From E. Archives, found between tablets from collapsed upper floor of Rooms 52-56. Ug. IV, pp. 95 and 72, fig. 60 J.

F. Needles

a. Sewing needle

1. Needle with pierced terminal eye.  
No. 9705-125. L. ca. 13. From Tomb LVI dated to Hyksos period. Ug. I, p. 74, fig. 63 M.  
Cf. Byblos cat., fig. 5:10.
2. Needle with pierced oblong eye in flattened part of upper half of shaft.  
L. ca. 12. From sounding S. of Library. Ug. IV, p. 427, fig. 14:9.

b. Needle with loop-eye

1. Needle with terminal eye formed by bending head into loop.  
No. 18.228. L. ca. 10. From tomb of MB date, discovered in sounding of Palace garden. Ug. IV, p. 308, fig. 6.
2. Needle or pin with head drawn out into long wire, twisted into double loop and around stem in spirals.  
L. ca. 12.8. From Stratum B, lower sounding, E. of Temple of Ba'al. Ug. IV, p. 411, fig. 51 A.

G. Tongs and Forks

a. Tongs

1. Pair of tongs cast in one-piece mould and hammer-worked. Open loop at top; four-ring collar fitted below loop with both blades together; below collar, shoulders bent into angular shape.  
No indication of size or provenance; likely to be from Palace Archives, since photographed in situ with tablet. AAS, II (1952), pl. III:1. Very similar to tongs from Cyprus. See Catling, p. 99, A.1; fig. 11:4; see also Deshayes, p. 377, no. 3054.

## b. Fork

1. Trident. Socket reinforced by terminal ring. Very long, flexible prongs; lateral ones curved downwards into loop, then upwards, parallel to central prong. Three points flattened. One prong broken and repaired in antiquity. L. 65; socket, 16. Found together with other bronzes, including sword of Merneptah, in quarter of private houses to E. of Palace. Ug. III, p. 178; figs. 123, 124:4.  
Fig. 13:2.
2. Fork with two prongs; cast and hammered into shape. Divided socket with rivet preserved in lower end. One prong curved sideways, both bent into parallel double hook.  
L. after bending, 23. From quarter in Area B, N. of Temple Area. Syria, XVIII (1937), pl. XIX.  
Fig. 13:3.

H. Animal Gear

## a. Bit

1. Bit consisting of nail-headed rod passed through tubular openings of pair of cast disks decorated with relief rings. End of rod bent to prevent disk from slipping off. Two (possibly three?) lugs brazed to broad rim of each disk for attachment of reins, noseband and head-strap.  
L. not given. From lowest--15th-16th century--level of building to E. of Great Residence; Area B at N.-W. edge of tell. Syria, XIX (1938), p. 318-19 and fig. 46.  
Fig. 13:4.

## II

### ARTICLES OF ORNAMENT and VESSELS

#### A. Toggle-pins and Fibulae

##### a. Toggle-pin with straight or inflated head

1. Pin with straight, flat or convex head, decorated with parallel incised lines; about half-way down shaft, pierced by ring for fastening on garment.  
Example nos. 9701-147 and 9703-65. L. between ca. 15 and 7. From Tomb LVI; found together with other pins and weapons dated to MB II. Ug. I, p. 74, fig. 63 H and K.
2. Similar pin with head made up of three rings slightly wider than shaft. Decorated with rings and zigzag lines above and below ring hole.  
No. 18.196. L. 13. From tomb of MB period, discovered in sounding of Palace garden. Ug. IV, p. 308, fig. 6.
3. Pin with flat nail-head and oblong pierced hole for ring through middle of shaft.  
No. RS 4541. L. 14.5. From U.M.1 context (ca. 2100-1900 B.C.). Metal analysis revealed 7.6 per cent tin and 90.1 per cent copper. Ug. II, p. 58, fig. 22 F.
4. Club-headed pin, head more or less swollen, with oblong pierced eye through which passed ring or metal thread.  
No. RS 4521. L. ca. 17. From IP I context. Analysis showed 6.80 per cent Sn and 91.75 per cent Cu. Ug. II, p. 58, fig. 22 D and p. 64.

##### b. Melon-headed toggle-pin

1. Pin with squashed melon-head divided into eight deep sections. Upper part of shaft divided into rings, one of which widened into sharp-edged disk above middle of shaft.  
L. 21. From final level of U.M. 2, i.e. MB I, ca. 1900-1750 B.C. Ug. II, p. 253, fig. 107:3.  
Fig. 14:1.
2. Pin with squashed melon-head with many shallow sections. Upper half of shaft twisted like screw and pierced about half-way down by ring hole; ring preserved.  
No. 18.193. L. ca. 12. From MB tomb discovered in sounding of Palace garden. Ug. IV, p. 308, fig. 6.

3. Pin with spherical head, undivided. Upper half of shaft gadrooned and pierced by ring.

No. 18.195. L. 13. From MB tomb. Ug. IV, p. 295 and pl. XVII:4.

4. Small pin with sub-spherical, ribbed head. Circular eye in round widening of upper part of shaft.

L. 7.6. From sounding to E. of Temple of Ba'al, dated to Level III, i.e. EB III, ca. 2500-2300 B.C. Ug. IV, pp. 241, fig. 32 B and 333, fig. 4:1, 2.

e. Pin with animal head

1. Pin with terminal eye formed by head of duck or swan turned over into loop, beak touching shaft.

No. 9434. L. 13. From Tomb LIII, dated to LB. Ug. I, p. 80, fig. 72 e.

f. Pin with rolled head (Rollennadel)

1. Pin with hammer-flattened rolled head.

L. ca. 15. From tomb of MB I or beginning of MB II.

Cf. Byblos cat., fig. 5:18 and Ug. II, p. 249, fig. 105 e; another example (l. ca. 9) came from silo dated to EB III, found underneath levels of MB necropolis in Temple Area. Ug. IV, p. 232, fig. 28 H.

2. Rollennadel with terminal ring passed through rolled head.

L. ca. 14. From IP I and II context. Ug. II, p. 50, fig. 18:8. Fig. 14:2.

g. Pin with spiral head

1. Pin with flat lozenge-shaped head, point of lozenge opening into flat double spiral like stylized tree-of-life motif.

L. 10.7. From sounding to E. of Temple of Ba'al. Dateable to IP I-II (ca. 2200-2000). Ug. IV, pp. 236, fig. 30, and 331, fig. 2.

h. Fibula

1. Bow-shaped double hook; two ends widening into flattened, roughly rectangular, spatula-shaped guards. Sharp upward bends of guards formed narrow loops through which only a slender pin could have passed.

No. <sup>7419</sup><sub>18</sub>. L., from guard to guard, ca. 13. From tomb dated to MB II by context. Syria, XVII (1936), p. 133, fig. 19 L.

2. Fragmentary fibula (?), bow-shaped; one end flattened and bent over to form guard, other end broken off. Decorated with striations on upper half.

No. 6069. L. ca. 8. From IP II context. Ug. II, p. 50, fig. 18:28. Fig. 14:3.

B. Torques

## a. Torque with curled ends

1. Torque of circular cross section with thinning rolled ends, one missing.  
No. RS 4433. Max. di. ca. 17. From IP II context. Metal analysis revealed 98.10 per cent Cu and no Sn. Cf. Byblos cat., fig. 6:1 and Ug. II, p. 58, fig. 22 G.

## b. Torque with cut ends

See under bracelets etc.

C. Bracelets, Anklets and Rings

## a. Open bracelet and/or anklet

1. Bracelet of circular cross section with ends cut off straight.  
No. RS 1932. Di. ca. 7.5. From tomb group of torque-wearer period, IP II, ca. 2100-1900 B.C. Ug. II, p. 52, fig. 19:12.
2. Open semicircular ornament of rhomboidal cross section; one end with terminal ring, the other with thin hook; both ends decorated with narrow wire spirals.  
No. 9717 <sup>55</sup>. D. ca. 9. From Tomb LVI, dated to MB II (?). Ug. I, p. 74, fig. 63 V. <sup>56</sup>  
Fig. 14:4.

## b. Finger-ring and swivel mounting

1. Open ring with thinning ends overlapping.  
Di. ca. 2.5. From sounding N.-W. of acropolis. EB III context. Ug. IV, p. 241, fig. 32 C.
2. Ring set with scarab bearing spiral design. Ring ends tied with wire spirals.  
No. 7407 RS 19289 AO. Di. ca. 2.3. From Tomb LXV. Ug. I, p. 76, fig. 67.  
Fig. 14:5.
3. Open ring with scarab  
No. 9873. Di. ca. 2. From Tomb LVII. Ug. I, p. 67, fig. 56 G.



## D. Beads, Pendants and Dress Ornaments

### a. Beads

#### 1. Biconical.

Example no. RS 7932. L. less than 2. From tomb group of U.M. 1, ca. 2100-1900 B.C. Cf. Byblos cat., fig. 6:5 and Ug. II, p. 52, fig. 19:10. For other and bigger specimens, see Strat. comp., pl. XII.

### b. Spiral pendant or bead

#### 1. Cylindrical pendant formed by wire wound into tight spirals.

One example from Tomb L of IP II, underneath MB I Tomb LV. L. and di. vary. Cf. Byblos cat., fig. 6:6 and Ug. II, p. 57, fig. 21:52.

### c. Pendant

#### 1. Pendant of tiny closed or open pomegranate bud.

L. ca. 2. From tripod of hoard in House of High Priest (see under vessels: tripod). Also found isolated. Ug. III, p. 267, fig. 232:5.

#### 2. Pendant of three figurines in electrum. Central figure bull-headed. Ug. III, pp. 94-5, figs. 113, 114.

### d. Dress ornament

#### 1. Small plaques of various shapes mostly rounded or rectangular; cut out of thin sheet metal, with nail-point repoussé decoration at centre and/or around border. Holes for sewing (or other attachment) on material.

L. between ca. 1.5 and 4.5. From metal hoard hidden in vase in house S. of Temple of Ba'al. Possibly foundry hoard. Syria, XVI (1935), p. 145, fig. 4.

#### 2. Belt (?) made of sheet metal with rounded ends; holes for attachment to soft material such as leather or cloth.

W. 10. From Tomb LVII. Syria, XIX (1938), pp. 240-41, fig. 32 w.

## E. Mirrors and Musical Instruments

### b. Musical instrument

#### 1. Pair of cymbals (?) with raised central boss, carination and raised, flaring rim. Hole for attachment of lost handle at centre (?). Possibly finger-cymbals. Di. 7. From sounding at N.-W. edge of acropolis, where L and MB layers have been destroyed by erosion. Dateable to IP I-II, ca. 2200-2000 B.C. Ug. IV, pp. 241, fig. 32 A and 333, fig. 4:16.

## F. Vessels and Stands

### b. Ritual vessel and cult object

1. Lid of ritual vessel (?). Decorated, straight rim, sides tapering off to handle which appears to be a crude representation of ram's head.  
Di. ca. 7. From sounding of 1953 to N.-W. of acropolis. End of EB III context, found ca. twenty centimetres below above-cited cymbals. Ug. IV, pp. 335 and 337, fig. 8.

### c. Household ware, scales and weights

1. Fragments of bowl of repoussé work. Flat base in several rings; outer ring decorated with elliptical reliefs; body decorated with petal-like fluting divided by thin ridges; rolled rim.  
Di. ca. 15.2. From Tomb LVII dated to Hyksos period. Ug. I, pp. 68, fig. 57 and 69, fig. 58.  
Fig. 14:6.
2. Pair of scale pans raised from flat cast disk. Floors flat and plain, low rims. Floor pierced for four suspension cords or chains.  
Di. 9.6. From hoard in house of Area B, N. of Temple Area. Syria, XVIII (1937), p. 147; pl. XXIV.
3. Weight in the shape of man's head, crude but expressive representation of features. Weight, 190 gr.  
H. 3.8. From hoard in Area A at N.-W. end of tell, to N.-W. of Temple of Ba'al. A whole set of weights was discovered in same hoard. For bronze weight representing reclining bull, see under animal figurines. Syria, XVIII (1937), p. 151; pl. XXIV, also Ug. I, p. 44 f., pl. XII.
4. Weight of 922 gr. Flat base, sides widening upwards and convex top.  
No. 15.229. Di. 6.6. From E. Archives, found among tablets fallen down with collapse of first floor, Rooms 52-56. Ug. IV, p. 72, fig. 60 C.

### d. Stand

1. Tripod. Ring with wide flanged rim at top, narrow one at bottom, single horizontal ridge around middle. Legs with relief ridges at edges and in centre curve into naturalistically modelled feline pads. Feet brazed to plinth made of flat strip metal with ends folded over at right angles to serve as stand or dowels. Rosette in high relief brazed at centre of plinth. Fifteen pendant rings attached to ring in groups of five in interspaces between legs. Fifteen pomegranate-shaped pendants with open-ended rings on top hang from ring. Intermediary rings of fine wire link suspension rings of pendants to

pendant rings of tripod.<sup>1</sup>

H. 12; di. 14.3. From hoard in House of High Priest.

Fig. 14:7. After Catling, pl. 32:f.

2. Offering stand consisting of tripod and shallow, broad-rimmed saucer riveted on to stem of tripod. Plain stem opening into three composite legs made up of double rods of round cross section, with ends coiled into double spirals which are brazed on to open base ring. Junction of stem and legs concealed by wire wrapping at top of which four metal "petals".<sup>2</sup>

No. 11.119 C.E. 2211. Measurements not indicated. Found associated with painted sherd of imitated Mycenaean ware dated to the 13th century B.C.

C.F.A. Schaeffer, *Enkomi-Alasia* (Paris, 1952), p. 65, fig. 18.

Fig. 14:8. After Catling, pl. 37:b.

---

<sup>1</sup>Catling, p. 202.

<sup>2</sup>Catling, p. 212.

### III

#### FIGURINES

##### ANIMAL, HUMAN or DIVINE

##### ANIMAL FIGURES

###### A. Bulls

###### a. Rudimentary

1. Figurine of bull with details represented: mouth, eyes, ears, crescent-shaped horns, tail and male sex. Legs like pointed rods.  
No. and size not indicated. From Level II; MB context. Syria, XIV (1933), pl. XXXIII.  
Fig. 14:9.
2. Small bull of similar type with curved horns added after casting.  
No. RS 5093. L. ca. 6. From MB I context. Ug. II, p. 50, fig. 18:18.

###### c. Naturalistic

1. Standing bull on rectangular thin plinth.  
H. less than 5. From bronze-worker's hoard in S. town of Ugarit. Found with three deity figurines wrapped in linen cloth and hidden between four stones near wall of private house. AAS, XI-XII (1961/2), p. 191, fig. 7.
2. Weight shaped like reclining bull with heads, legs and muscles carefully portrayed. Sex indicated. Tail lying on right flank. Two signs incised on back:  $\cap\cap$  (Egyptian hieroglyphic sign for 20).<sup>1</sup> Weight 468.50 gr.  
L. 17. From house in Area B, N. of Temple Area. Syria, XVIII (1937), pl. XXIII and Ug. I, p. 46, fig. 35.
3. Weight representing reclining calf with horns not yet grown. Open ring around neck. Inside filled with lead.  
Size not indicated. From Level I, LB. Syria, XVI (1935), pl. XXXIII, 5.

###### B. Other Quadrupeds and Birds

###### a. Quadruped

1. Dog-like animal with moulded paws and two tangs.

---

<sup>1</sup>See Syria, XVIII (1937), p. 147.

L. 6.5. Found together with figurine no. 18.204 under floor of court in front of S. wing of Palace. AAS, IV-V (1954-55), pl. III:2 and Ug. IV, pp. 119 and 98, fig. 81.  
Fig. 14:10.

b. Bird

1. Falcon on T-shaped stand with uraeus between legs. Feathers incrustated with gold wire.  
H. ca. 8. From Minet el-Beida. Ug. I, pp. 32, 35, fig. 24.

### HUMAN or DIVINE FIGURES

#### B. Flat Figurines

Most flat figurines from RS are well-modelled. Details like heads, arms and legs are cast in the round proving that the technique of round moulding was known to the metal-workers. These statuettes, therefore, cannot be dealt with under this category. There is, however, one representation roughly comparable to Byblos no. 15897. See fig. 7:18 and below.

b. Stylized

1. Figurine with exaggerated features, conical hat, flat body, left leg slightly forward; tanged. Right arm with pierced fist uplifted, left bent forward.  
H. 9.5. From Level I. 14th-13th century context. Syria, XVIII (1937), pl. XXIII.  
Fig. 15:1.
2. Thin figurine with two protuberances on top and at side of head, hands joined over waist and very long legs, possibly lower part used as tang. Not clear from illustration whether statuette is male or female.  
H. slightly over 8. From Level II; MB burial. Syria, XIII (1932), pl. XIII.

#### C. Armed Figurines

None of the type known from Byblos were found at RS. There is, however, one particular statuette the armament of which deserves especial notice.

a. Hoplite with two or more weapons

1. Figurine with broad features and shoulders, slim body and legs; wearing high conical head-dress and short, belted kilt. Standing in position of attack or

defence, left leg with bent knee placed forward, right arm raised, fist closing around weapon, now lost; left arm holding oblong, bent shield with rounded corners. Huge dagger with rounded pommel in sheath attached to belt.

H. 15.8. Provenance not indicated, said to be from RS. A. Parrot, Le Musée du Louvre et la Bible (Paris et Neuchatel, 1957), p. 50 and fig. 25 and idem, "Acquisitions et inédits du Musée du Louvre," Syria, XXXV (1958), pp. 169-71, fig. 3 and pl. XII. Also Hachette, Chefs-d'œuvre de l'Art (Paris, 1963), vol. I, no. 8, p. 133.

Fig. 17:1.

#### D. Well-modelled Figurines

##### b. Figurine in attitude of brandishing weapon

The great majority of well-modelled figurines from RS are represented in this attitude.

1. Slender, elongated figurine. High conical hat with terminal knob; fine features. Left leg forward; tanged. Right arm hurling weapon.  
H. and provenance not indicated. Level I. Syria, XVI (1935), pl. XXXIII:1.  
Fig. 15:2.
2. Statuette, less elongated than previous example, wearing short kilt with belt and hemmed lower border. V-shaped tang.  
No. 18.204. H. 11. Found next to basin under floor of court in front of S. wing of Palace; dateable to before 14th century. AAS, IV-V (1954-55), pl. III:2 and Ug. IV, pp. 119 and 98, fig. 81.  
Fig. 15:3.
3. Same type with separate tangs. Wearing two heavy anklets.  
H. 11. From Level I, 14th - 13th century. Syria, XVIII (1937), pl. XXIII.  
Fig. 15:4.
4. Same type with head-dress divided into seven rings (horns?), necklace (torque?) and dagger with round pommel at waist.  
H. and provenance not indicated. Level I. Syria, XVI (1935), pl. XXXIII:2.  
Fig. 15:5.
5. Well-proportioned statuette with very high crown of Upper Egypt. Fine features rendered in gold-leaf which covered head and head-dress. Slim body. Left leg forward; tangs. Right arm with silver bracelet brandishing lost weapon, left arm stretched forward, fist closed around object, now lost. Short kilt. Chest, arms, and legs were clad in silver foil, representing possibly plate armour, corslet and greaves.  
H. 22. From Minet el-Beida; 15th-14th century context. Syria, X (1929), p. 288 and pl. XXV.  
Fig. 15:6.

6. Same type, wearing helmet with neck piece of greyish-green steatite (?); horns of electrum fixed to helmet. Belted kilt with striated bands along left hip and around hem. Left arm cast apart and fixed with silver tang. Grooves along neck, underneath arms, along sides and back of legs for attachment of gold-foil, traces of it preserved on right arm and part of legs.

H. 19. From Level I; first half of 14th century context. Syria, XVII, (1936), pp. 145-46, 147, fig. 25; and pl. XXI.  
Fig. 16.

### E. Seated Figurines

#### a. Stylized

1. Seated deity. Conical crown with feathers at sides. Long garment with fur (?) border, draped cape-like around both shoulders, along front and around hem. Both arms bent forward. Covered with gold-foil.

H. less than 10. From bronzeworker's hoard in S. town of Ugarit, to S. of quarter of artisans. Found with two statuettes of deities brandishing weapons and a standing bull; all four wrapped in linen cloth and hidden between four stones near wall in private house. AAS, XI-XII (1961/2), p. 191 and fig 6. ? Syria

#### b. Naturalistic

1. Statuette without head-dress, wearing long, belted skirt. Eyes incrustated with white enamel and silver. Both arms bent forward, right hand higher than left.

H. 12.1. From Minet el-Beida. Syria, X (1929), p. 288, pl. LIV: 1.

2. Deity with egyptianized crown and garment: High conical head-dress with two feathers at sides; broad necklace; finely incised pleats on long narrow tunic with striated borders around short sleeves and hem. Both arms bent forward, left hand closed around lost object, right open in gesture of benediction. Two tangs under feet, third to be fixed into lost seat.

H. not indicated. From Area C, N.-W. of Temple Area, in lower strata of Level I, 14th century.<sup>1</sup>

Fig. 15:7.

### F. Female Figurines

#### a. Crude

1. Flat figurine with indistinct features, arms at sides, legs separated, feet

---

<sup>1</sup>Republished in 1939 in C.F.A. Schaeffer, Cuneiform Texts of Ras Shamra, (London, 1939), pl. XXXV, as portraying the goddess Anat, mistress of Aliyan.

together; casting "mushroom" under feet. Breasts represented as two pellets. Size not indicated. From Level I, strata belonging to the 14th and 13th centuries. Syria, XVII (1936), p. 145 and pl. XV:1. Fig. 15:8.

2. Similar type but both arms bent forward; two tangs under divided feet with toes. Mouth wide groove. Size not indicated. From Level I, strata belonging to 14th and 13th centuries. Syria, XVII (1936), p. 145 and pl. XV:2. Fig. 15:9.

b. Stylized

1. Goddess holding her breasts. Chignon and sex marked. Silver plated. H. 12.2. From Room 81 in S.-W. Archives. Ug. IV, p. 99.

c. Naturalistic

See footnote 1 on previous page.

G. Divine Couples

a. Torque-wearing god and goddess

1. Flat silver statuettes of tall torque-wearing god and smaller goddess. Found together in jar, W. of Ba'al Temple; in IP II - MB I context. See Ug. II, p. 71 ff., fig. 31 and pls. XVII-XIX, XXI.

b. God and goddess in long tunics

1. Copper figurine of standing god. High grooved conical head-dress with point bent slightly forward. Two holes at sides seem to indicate attachments for horns. Thick border around base of head-dress. Very large eyes inlaid with three different materials, white stone, gold and dark traces for pupils; straight nose, small mouth, triangular face; ears protruding. Flat body clad in long narrow tunic with rope border draped around neck, shoulders, arms, along left front side and around hem. Ankles rounded; small feet with toes, provided with triangular tangs. Arms bent forward, missing from elbow on; two rivets indicate fixing points of lost parts which must have been added after casting. Grooves along sides and in back of heels indicate fastening of electrum foil; body clad with two sheets, for back and front, stuck into lateral grooves and kept in position by lead thread. H. 19.9. From Level II, 19th-17th century B.C. Found ca. 6 m. to N.-W. from goddess (see below), in building situated on N.-W. edge of tell, so-called Sanctuary of "Mitannian" axe. (Cf. ceremonial axe with boar-and-lion handle on p. 54.) Ug. I, p. 127 ff. and pls. XXXI, XXXII.



2. Copper statuette of seated goddess wearing turban-like head-dress knotted over forehead. Large, once inlaid eyes, prominent, curved nose, small mouth. Well-proportioned neck, shoulders and arms; body flat and thin, bent twice to give seated position. Ankles and feet rounded and toes indicated. Arms bent forward, right hand outstretched, left closed around object. Long, narrow, seemingly knitted dress with thick border running around neck and shoulders, underneath small nude breasts, around waist and hem. This rope-like thread kept in position on shoulders by thin string above breasts. Material of dress shows deeply engraved lozenges with less deeply cut vertical lines. Along front of dress flat, obliquely striated band. Flat back of figurine shows deep grooves for fixing of foil covering of whitish metal. Remains of lead thread holding foil in position, preserved in grooves. Feet on flat rectangular footstool with V-shaped tang.
- H. 24.8. From "Sanctuary of 'Mitannian' axe", at foot of interior staircase leading to terraced roof (?). Analysis revealed almost pure copper with very small accidental or natural impurities of tin, lead, zinc and sulphur. See Ug. I, p. 128). Ug. I, p. 127 ff. and pls. XXVIII- XXX.

PART II

COMPARATIVE STUDY

## COMPARATIVE STUDY

Before comparing the metal-work of Byblos and Ras Shamra, it will be useful to list the most striking features in the nature and provenance of the finds. As stated above (pp. 11-12), most of the bronzes from Byblos came from hoards buried or stored in the three temples of the city. Although the stratigraphical positions of these votive deposits have so far only summarily been described in the publications, it may be concluded that these offerings were associated with the various architectural phases of the T.O., T.B. and S.E. The earliest deposits belonged to the foundations erected above the burnt layers dated to the end of the Old Egyptian Empire, whereas some of the latest offerings were sealed by the floors of the last buildings attributed to the Middle Kingdom period.<sup>1</sup> Hence, most bronze objects from Byblos must be dated roughly between 2200 and 1700 B.C.<sup>2</sup> After the original publication of the objects, only one offering deposit has been studied in detail: the so-called Montet jar discovered in 1922. This study resulted in a dating for the jar and its contents being given as between ca. 2130 and 2040 B.C.<sup>3</sup> Both the T.O. and the T.B. were preceded

---

<sup>1</sup>Strat. comp., p. 53 f.

<sup>2</sup>The comparative Egyptian chronology follows J.A. Wilson, The Culture of Ancient Egypt, (9th impression; Chicago, 1963) and the corresponding fascicles of the revised edition of vols. I and II of the CAH (Cambridge, 1964).

<sup>3</sup>O. Tufnell and W.A. Ward, "Relations between Byblos, Egypt and Mesopotamia at the end of the Third Millennium B.C.," to be published in Syria, 1967, in the press; p. 64 of typewritten manuscript.

by earlier temples. No deposits have been found in any of these lower buildings clearly attributable to the EB period. The latest deposit contained a figurine which must be dated after the end of MB II.<sup>1</sup> Hence, earlier and later artefacts in bronze from Byblos were isolated finds, not necessarily associated either with the temples in general or with hoards in particular.

The Byblos hoards were composed mainly of human or animal statuettes, weapons, including ceremonial ones of precious metal,<sup>2</sup> or a mixture of these two types. One deposit from the S. E. contained only a group of twenty-three figurines.<sup>3</sup> Some hoards included personal objects of ornament, with the exception of one deposit of bracelets.<sup>4</sup> Others contained a small number of metal or pottery vessels in addition.<sup>5</sup> The contents and provenance of the hoards established beyond doubt their character as collections of offerings.

By contrast the largest metal hoard from RS could be dated from ceramic fragments nearby to the later part of the LB period,<sup>6</sup> that is to say, later than all the deposits from Byblos. It was not found in a temple, but buried under the door

<sup>1</sup>Du., I, p. 175, pl. LXXII.

<sup>2</sup>Du., II, 2, p. 696, pl. CXVII.

<sup>3</sup>Du., II, 1, pp. 217-18.

<sup>4</sup>Du., II, 2, p. 949, pl. XCI:6.

<sup>5</sup>Du., I, 1, p. 140 and II, 2, p. 821, pl. CXXIX.

<sup>6</sup>Ug. III, pp. 254. For a substantial lowering of this date proposed by H.C. Catling see below, p. 104, footnote 1.

sill of the House of the High Priest in the Temple Area. The unused state of some of the seventy-four objects and the dedication to the High Priest on four of the tools suggest that this deposit was a ceremonial gift rather than a collection of tools and weapons designed for actual use. In contrast to discoveries at Byblos, most of the objects of this hoard were not weapons but tools.<sup>1</sup> The hoard contained neither figurines nor jewelry and other personal objects.

Another small deposit of four votive statuettes, three deities and one animal, came not from a temple, but from a bronzeworker's house near the artisans' quarter of Ugarit.<sup>2</sup> It seems, therefore, to have been stored by the metal-worker himself. Other metal deposits from RS were clearly recognized as foundry hoards because they included faulty casts, broken objects which had been cut up and items of scrap found in the artisans' quarter or in private houses.<sup>3</sup> The only definitely identifiable votive deposit, found very close to the Temple of Ba'al and buried in a jar, consisted of two silver figurines of a god and a goddess.<sup>4</sup> This circumstance of discovery is unusual at RS and thus contrasts with the wide-spread custom at Byblos of collecting and burying offerings after their deposit in the sanctuaries.

Other dateable groups of bronzes from Byblos were found in the royal tombs of Abishemu and his successors, contemporary with Ammenemes III (1842-1797) and

<sup>1</sup>Ug. III, p. 255.

<sup>2</sup>AAS, XI-XII (1961-62), p. 191.

<sup>3</sup>Strat. comp., p. 544 and Ug. I, pp. 43-44; also Syria, XII (1931), p. 7.

<sup>4</sup>Ug. II, p. 75 and figs. 30-32.

the Twelfth Dynasty.<sup>1</sup> Many of the RS bronzes also came from tombs. At this site, however, they were private tombs: either the burial chambers of Minet el-Beida of LB date or the necropolis of the Temple Area at Ugarit proper, where burials of the MB Age and even earlier established a whole sequence of funerary customs and offerings from the IP to the LB Age.<sup>2</sup>

At Byblos the evidence of tools, weapons and personal objects found in the context of their actual use is relatively scanty. The only noticeable instance was a group of tools left behind by a metal-worker in the vicinity of the Obelisk Temple.<sup>3</sup> RS provided a number of bronzes of which the use for which they were intended could be determined from the context in which they were discovered. For example arrow-heads were found in the destruction debris of the Palace Court and Archives;<sup>4</sup> a riveted metal rod and hinge elements were associated with the fallen upper storeys of the Archive rooms where the tablets had been filed on shelves, possibly in boxes or other containers;<sup>5</sup> and a set of weights had been kept together with a pair of scale pans in a private house.<sup>6</sup>

---

<sup>1</sup>W. F. Albright, "The Eighteenth-Century Princes of Byblos and the Chronology of Middle Bronze," Bulletin of the American Schools of Oriental Research (no. 176, December 1964), pp. 39, 43.

<sup>2</sup>Strat. comp., p. 15 ff. and pl. V.

<sup>3</sup>Du., II, 2, p. 635.

<sup>4</sup>Ug. IV, p. 99.

<sup>5</sup>Ibid., p. xv

<sup>6</sup>Ug. I, pp. 43-44.

M. Dunand identified the western room of the T.O. in its first stage as the centre of metal manufacture at Byblos because in it he found a cylindrical working table with ashes around<sup>1</sup> and nearby the above-mentioned group of tools (see p. 77). Being in clear association with the temple, the manufacture of bronze votive offerings seems a plausible explanation and in accordance with the finds from Byblos. At RS, next to the principal Palace Archives, there existed workshops in which jewellers' and metal-workers' tools, moulds and raw materials were still in situ.<sup>2</sup> These discoveries were again in keeping with the other metal finds from the city.

With these basic differences and similarities in mind, the comparison and interrelation of some of the bronzes from Byblos and Ras Shamra should reveal further details. Selections will be taken from each of the three main groups as listed in the catalogue (Part I). Objects will be chosen first, because they show parallels between Byblos and Ras Shamra; secondly, because the objects themselves or new or improved techniques of their manufacture originated at Byblos or RS; and thirdly, because they give evidence for the foreign distribution of metal types or manufacturing techniques at other sites of a contemporary or later date in and around the eastern Mediterranean.

---

<sup>1</sup>Du., II, 2, p. 651.

<sup>2</sup>Ug. IV, chapter I, p. xvii.

## WEAPONS AND TOOLS

### WEAPONS

Swords and daggers appear to have been the most common type of armament at both Byblos and RS. Daggers were the earlier and more frequent weapon which developed into the longer and very long sword types known from both sites.

The earliest sword from Byblos is of the long, flexible rapier type (fig. 1:1). The hoard with which it was buried was dated by M. Dunand to the period of Ammenemes III (Du. I, p. 148) and by C.F.A. Schaeffer to Sesostris III (Strat. comp., pp. 60-61). Its general date falls into the early MB I period, i.e. the 19th century B.C. The Byblos rapier is the earliest known of its type. Comparable weapons were found in Crete. An early example from the first palace at Mallia seems to have been a ceremonial sword; and the large number of blades found in a sacred cave of Arkalochori in the Mesara Plain constituted a deposit of votive offerings.<sup>1</sup> These Cretan rapiers are dated by J.D.S. Pendlebury to Middle Minoan III,<sup>2</sup> and are thus distinctly later than the Byblos example. Middle Minoan pottery from Byblos<sup>3</sup> makes trade with Crete in the MB Age seem likely. Hence, the Byblos sword appears to be the prototype of

---

<sup>1</sup>H. L. Lorimer, Homer and the Monuments (London, 1950), p. 262, pl. XVIII.

<sup>2</sup>J.D.S. Pendlebury, The Archaeology of Crete (London, 1939), p. 164.

<sup>3</sup>A Middle Minoan bridge-spout jug from a Byblos tomb of the EB period re-used in MB is exhibited in the Museum of the American University of Beirut (Inv. no. 55.121). See also Strat. comp., p. 66.



comparable blades in the Aegean.<sup>1</sup> It is above all noticeable that these rapiers were of votive character. The fact that they were not very manageable strengthens the evidence that the extant examples were never actually used as offensive weapons.

The RS swords are of a later period; the latest is dated to the very end of the 13th century B.C. by the cartouche of Merneptah. The sword with raised flanges and rudimentary horns (see catalogue A, b:1) also seems to be of Syrian origin. It has been dated to MB II by some local imitations of Middle Minoan pottery and by Hyksos ware.<sup>2</sup> Related flanged swords and daggers came from Syria and Crete. A fragmentary flanged sword was found at Tell Atchana, Level VII contemporary with Hammurabi.<sup>3</sup> Another specimen of Twelfth Dynasty date (?) came from Tell el-Ajjul,<sup>4</sup> and yet another from Mersin, Levels XI-X.<sup>5</sup> Two examples have been discovered in Crete, one from Hagia Triada,<sup>6</sup> the other from Gournia.<sup>7</sup> The flanged cast-hilted weapon

<sup>1</sup>N.K. Sandars, "The First Aegean Swords and Their Ancestry," AJA, LXV (1961), p. 21.

<sup>2</sup>Ug. I, pp. 63-69.

<sup>3</sup>C.L. Woolley, Alalakh. An Account of the Excavations at Tell Atchana in the Hatay, 1937-1949 (Oxford, 1955), p. 283.

<sup>4</sup>W.M. Flinders Petrie, Ancient Gaza (4 vols.; London, 1934), vol. IV, p. 10, pl. XXVIII:297.

<sup>5</sup>J. Garstang, Prehistoric Mersin (Oxford, 1953), pl. XXIX, fig. 149.

<sup>6</sup>A. Evans, The Palace of Minos (4 vols. in 6; London, 1921-35), vol. II, p. 195, fig. 142 C. Very rudimentary flanges.

<sup>7</sup>H. Boyd Hawes, and others, Gournia, Vasiliki, and other Prehistoric Sites on the Isthmus of Hierapetra (Philadelphia, 1908), pl. IV:50.

with more pronounced horns appeared in MB II Ugarit<sup>1</sup> and later on also, in the Mycenaean shaft graves.<sup>2</sup>

It may be said then that the flanged sword or dagger made its appearance in the Hyksos period (MB II) in North Syria and Palestine and was passed into the Aegean and Greece where it developed into the typical sword with pronounced horns. A very successful product of this type was the sword found in Court V of the RS Palace (cat. fig. 10:3). Its open-work silver sheathed hilt above the crescent was inlaid with wood. It has an exact replica of equal dimensions and workmanship from Alalakh, where it was found above a floor of Level II.<sup>3</sup> The common features of these two swords would support the reconstruction of the lost pommel of the RS sword after the crescent-shaped example from Alalakh. A sword of the same type and date was recently discovered in a LB tomb of Tell es-Sa'idiyeh.<sup>4</sup> The complete design of this type of sword is represented on an ivory panel of the bed found in Court III of the RS Palace and dated to the reign of King Niqmad II (ca. 1400-1350).<sup>5</sup> A sword with sharply raised, very long horns

---

<sup>1</sup>Ug. I, p. 74. Also catalogue B, d:3 and fig. 11:3.

<sup>2</sup>G. Mylonas, Ancient Mycenae (Princeton, 1957), pp. 140-41.

<sup>3</sup>C. L. Woolley, Alalakh. An Account of the Excavations at Tell Atchana in the Hatay, 1937-1949 (Oxford, 1955), p. 276, pl. LXX.

<sup>4</sup>J. B. Pritchard, "Excavating a Biblical Site in Jordan: Joshua's and Solomon's Zarethan Identified," Illustrated London News, 28/III/1964, p. 490, fig. 14.

<sup>5</sup>Ug. III, pp. 276-77, fig. 239.

came from Tomb 30 at Gezer,<sup>1</sup> and a Late Minoan II specimen of the same type but with elaborate rivets and pommel was discovered in the necropolis north of Knossos at Zapher Papoura.<sup>2</sup>

The invention of swords with raised hilt edges to hold the handle inlay was a true technical improvement compared to the hilts of the earlier rapiers. The actual use and efficiency of the cast-hilted weapons needs no demonstration. Both the Byblos rapier and the RS flanged short sword with its horn-hilted successor, therefore, are likely to have originated in the Near East, whence they were exported and developed into later, typical Aegean and Mycenaean weapon forms.<sup>3</sup>

Possibly the earliest weapons represented both at Byblos and Ras Shamra were the daggers with short triangular or rounded butts (fig. 1:7-9). At Byblos this was the most common type of dagger. Its remote ancestor may be sought in the copper daggers of the Chalcolithic jar burials.<sup>4</sup> They already had the triangular or rounded butt with the typical three-rivet arrangement. The Bronze Age successors of these daggers date from the period between ca. 2300 and 1900 B.C. In Ugarit they seem to

---

<sup>1</sup>R.A.S. Macalister, The Excavations of Gezer (1902-1905 and 1907-1909) (3 vols.; London, 1912), vol. III, pl. LXXV:13.

<sup>2</sup>R. Dussaud, Les civilisations préhelléniques dans le bassin de la Mer Egée (Paris, 1914), fig. 32.

<sup>3</sup>N.K. Sandars, "The First Aegean Swords and Their Ancestry," AJA, LXV (1961), p. 25.

<sup>4</sup>Five examples came from Tomb 84. See Du., I, p. 437 and pl. CLXXXIX.

have disappeared completely in the 19th century.<sup>1</sup> This dagger was so common both at Byblos and Ras Shamra that a complete reconstruction of the type is possible. The hilt was riveted on to the butt with three or more rivets and a crescent-shaped pommel with a central tenon was fixed to its upper end.<sup>2</sup> A vast number of these pommels in limestone--or more rarely of ivory or bronze--came from Byblos.<sup>3</sup> A fragment of a steatite bivalve mould was designed for receiving the cast of a crescent-shaped pommel with central tenon.<sup>4</sup> The daggers were sheathed, some of them in bronze.<sup>5</sup> Unfinished pieces and corresponding moulds from RS prove the local manufacture of this weapon at Ugarit as well.<sup>6</sup>

The technical and artistic masterpiece of this dagger type from Byblos is a specimen in gold--almost entirely preserved--from a deposit in the court of the T.O.<sup>7</sup> The various different techniques at the command of the artist craftsman who produced this ceremonial dagger were unsurpassed in contemporary metal-work.

---

<sup>1</sup>Ug. II, p. 59.

<sup>2</sup>Ug. II, p. 50, fig. 18 for example.

<sup>3</sup>A whole collection was discovered inside jars from the metal workshop in the annex of the T.O. See Du., II, 2, p. 651.

<sup>4</sup>Du., II, 1, p. 199, pl. CLXXXIV, no. 8526.

<sup>5</sup>Du., II, 2, p. 696; Ug. II, p. 59.

<sup>6</sup>Ug. II, p. 59.

<sup>7</sup>Du., II, pls. CXVII and CXVIII.

Daggers of this type in bronze can be cited from all over the ancient Near East, in coastal, i. e. Phoenician territory<sup>1</sup> as well as in Palestine<sup>2</sup> and Syria.<sup>3</sup> Related Egyptian types were similarly hilted but varied in the form of the blade and the width of the hilt.<sup>4</sup> Farther to the north these daggers or related examples seem to date to the same period as the ones from RS and Byblos. One is known from Soli.<sup>5</sup> The large quantity of these daggers at Byblos and Ras Shamra and the appearance of their early prototypes at Byblos provide evidence for their Near Eastern origin.

An outsider among the weapons was the Asiatic sickle-sword.<sup>6</sup> One of the earliest known examples is the weapon from Byblos Tomb II bearing the incrustated inscription of its royal owner (cat. A, d:1). This type of curved dagger is known from slightly earlier contexts: two specimens from a pithos tomb at Lagash are dated to

---

<sup>1</sup>P. E. Guigues, "Lebe'a, Kafer-Ġarra, Qrayé, nécropoles de la région sidonienne," BMB, II (1938), fig. 52.

<sup>2</sup>O. Tufnell, and others, Lachish IV, The Bronze Age (London, 1958), p. 6.

<sup>3</sup>H. Ingholt, Rapport préliminaire sur les sept campagnes de fouilles à Hama en Syrie (Copenhagen, 1940), pp. 63-64.

<sup>4</sup>Y. Yadin, The Art of Warfare in Biblical Lands (2 vols.; New York, 1963), vol. I, p. 175. For a discussion of the Egyptian examples see W. Wolf, Die Bewaffnung des altägyptischen Heeres (Leipzig, 1926), pp. 39-41 and pl. 4.

<sup>5</sup>K. Bittel, "Der Depotfund von Soloi-Pompeiopolis," Zeitschrift für Assyriologie, XII (1940), pl. IV, fig. 6, no. S3414.

<sup>6</sup>See W. Wolf, Die Bewaffnung des altägyptischen Heeres (Leipzig, 1926), pp. 66-68.

the Ur III period (end third millennium B.C.).<sup>1</sup> In Mesopotamia these objects seem to have been used exclusively as ceremonial staffs as can be seen by the way in which they were carried on some representations.<sup>2</sup> Their use as true weapons was a later Near Eastern development, not common until LB times. The continuation of the use of the sickle-sword both as a ceremonial and a true weapon can be observed in the 14th century example from RS (fig. 10:6). By this time it had become narrower, and the hilt had been cast in one piece with the weapon. From MB to LB times a general tendency in the development of weapons towards cast-hilted forms can also be observed in swords and daggers (see above, p. 82). The RS sickle-sword has an exact and closely contemporary counterpart from Gezer.<sup>3</sup>

Abishemu's sickle-sword was the earliest adaptation of this Mesopotamian form in the west. The advanced technique of gold-and-niello inlay, however, is first known from Byblos. H. Kantor has observed that "this technique flourished in Syria during the XIIth Dynasty, long before its use in either the Aegean or Egypt; its original home must be sought in that direction."<sup>4</sup> Just as the inlay technique of "metal-painting"

---

<sup>1</sup>A. Parrot, Tello (Paris, 1948), pp. 267-68, fig. 54:a and b.

<sup>2</sup>Ibid., p. 285, fig. 59. The sickle-staff held in the right hand is resting on the bent left arm. It is not raised like a weapon.

<sup>3</sup>R.A.S. Macalister, The Excavations of Gezer (3 vols.; London, 1912), pl. LXXV:16, and R. Dussaud, "Le sanctuaire phénicien de Byblos," Syria, VII (1926), p. 255 and fig. 1:d.

<sup>4</sup>H. Kantor, "The Aegean and the Orient in the Second Millennium B.C.," AJA, LI (1947), p. 65.

originated at Byblos and was brought to perfection in the well-known daggers with hunting scenes from the Mycenaean shaft-tombs,<sup>1</sup> similarly the treasures of artistic metal-work from the royal tombs of Byblos were precursors of those found in the later shaft-graves at Mycenae.<sup>2</sup>

The geographical position of Cyprus and its mineral deposits make the comparison of the island's metal-work with that of the great harbour-towns along the Levantine coast particularly rewarding. Such a comparison considerably enlarges the body of facts already known from the examination of Cypriote pottery and its eastern parallels due to imports and exports and subsequent local imitations.

The daggers with triangular butts and those with raised hilt edges are represented among Early and Middle Cypriote weapons.<sup>3</sup> The first type is dated to ca. 2050-1900 B.C., whereas the flanged daggers are considered to be imports from the Near East.<sup>4</sup> The traffic of arms in the opposite direction is attested by a typical Cypriote rat-tanged dagger that found its way into a RS tomb of the MB II period (cat. RS:B, a:1). In Cyprus this type of weapon had at that time already been manufactured

---

<sup>1</sup>F. Matz, Crete and Early Greece (London, 1962), pp. 168-69, pl. 41.

<sup>2</sup>N.K. Sandars, "The First Aegean Swords and Their Ancestry," AJA, LXV (1961), p. 21.

<sup>3</sup>Catling, pp. 60-62, fig. 3:7 (tomb at Lapithos), 8 and 9 (tomb at Vounous) and fig. 3:17, 18 (Nicosia, without provenance).

<sup>4</sup>Ibid., p. 62.

and used in large numbers for at least a century.<sup>1</sup> Possibly the shorter dagger found at Hazor and dated to MB I (?)<sup>2</sup> reached this southern city through one of the northern ports and may consequently be contemporary with the one from RS. The only weapon with a rat-tail tang from Byblos is much shorter, has a thicker tang and a round point. It is not closely related to the contemporary Cypriote imports (cat., lance d:1, fig.2:7).

Socketed lances evidence considerable progress in casting techniques. The first clumsy attempts at hafting the metal head of a weapon by means of a socket resulted in shoulder wings folded around and riveted on to the haft (cat. Byblos, spear a:1, fig 2:1). How inefficient this method of attachment was for weapons intended to be hurled becomes evident when it is compared with the light lances provided with tubular sockets (cat. Byblos, lances b; fig. 2:2-4). At the end of the third millennium the socketed lance existed side by side with the tanged one at Ras Shamra.<sup>3</sup> The so-called torque-wearer tombs of RS contained only socketed lances<sup>4</sup> which were manufactured with great facility, in large quantities and in a number of varieties (cf. cat., socketed lances). The straight angular shoulders appeared as early as IP II (cf. cat. Byblos, C, b:4, fig. 2:4, and RS b:2).

---

<sup>1</sup>Catling dates identical types to MC I-III (ca. 1900-1550); see op. cit., pp. 57-58.

<sup>2</sup>Y. Yadin, Hazor (4 vols. in three; Jerusalem, 1963), vol. III and IV, pl. CCXLIV, no. 23.

<sup>3</sup>Ug., IV, p. 232.

<sup>4</sup>Ug. II, p. 56.



Socketed lances were widely spread over all the Near East. Two examples with fragments of the wooden shaft preserved in the sockets were found in Tomb I at Qatna in Syria,<sup>1</sup> where the pottery context indicated a date between late IP and early MB I. From the end of the third millennium B.C. onwards, practically all Syrian and Palestinian sites have revealed a variety of examples.

At RS lances with slanting shoulders were in use right through to the LB Age. Seven unused examples formed part of the hoard in the House of the High Priest (fig. 11:4). In Cyprus the socketed lances belonged generally to the LB Age, and were possibly imitations of foreign Near Eastern imports.<sup>2</sup> A type with terminal ring instead of rivets was in existence in Crete,<sup>3</sup> whence it spread to the Greek mainland.<sup>4</sup> Since it appeared in Crete during the Middle Minoan III period,<sup>5</sup> the possibility of its importation from one of the Near Eastern ports cannot be excluded.

Metal arrowheads were relatively late in supplanting those of stone and other materials. Metal was too precious, and arrowheads could rarely be retrieved. Probably the earliest specimen, barbed and tanged, came from Tell el-Hesi.<sup>6</sup>

---

<sup>1</sup>Comte du Mesnil du Buisson, "Les ruines d'el-Mishrife," Syria, VIII (1927), pl. XIII:4 (Γ and Δ).

<sup>2</sup>Catling, p. 119.

<sup>3</sup>A. Evans, The Palace of Minos, (4 vols.; London, 1921-35), vol. IV, pp. 841 ff., figs. 821-23.

<sup>4</sup>H. L. Lorimer, Homer and the Monuments, (London, 1950), p. 254.

<sup>5</sup>Ibid., p. 255.

<sup>6</sup>F. J. Bliss, A Mound of Many Cities or Tell el Hesi Excavated (London, 1894), p. 36-7.

In Egypt it was only during the New Empire that arrowheads used in warfare were exclusively of bronze.<sup>1</sup>

In the Near East the adoption of metal arrowheads seems to have been similarly slow. The offering deposits of Byblos and the early levels of RS included a number of small size copies of lance and javelin types but no true arrowheads (see cat. RS, D, c:1). The arrowheads from Byblos (fig. 2:9-15) were not published with an exact stratification, and none of them came from an established context dateable to a period before the LB Age. The RS arrowheads also belong to the LB Age. Most of them came from the area in and around the Palace (see cat., D, a:1). One example was included among the objects of the hoard in the House of the High Priest (cat. a:2, fig. 11:7). A similar leaf-shaped arrowhead is known to have caused a mortal wound. The weapon transversed the spine and was found in two vertebrae of a skeleton buried in Tomb LXXV dated by pottery to the first half of the 14th century.<sup>2</sup> The bow is only known from textual evidence in Ras Shamra. It appears in the lists of the RS Arsenal.<sup>3</sup>

The appearance of scale corslets in the Near East coincided with the general use of bronze arrowheads. Most likely the use of the more deadly metal arrowheads (see the above-cited tomb find) prompted Near Eastern bronze smiths to develop an adequate defensive armour. The earliest finds of scale elements were made at Nuzi

---

<sup>1</sup>W. Wolf, Die Bewaffnung des altägyptischen Heeres (Leipzig, 1926), p. 85.

<sup>2</sup>Syria, XX (1939), pp. 280-82 and 293-95.

<sup>3</sup>Ibid., p. 279.

and date to the early 15th century.<sup>1</sup> To the later 15th century belonged identical scales from both Alalakh<sup>2</sup> and Ras Shamra (see cat., F, a:1). The scales were sewn on a leather garment with their round or triangular ends pointing downwards and covering the straight tops of the lower row. An Asiatic wearing full plate armour is depicted on the chariot of Tuthmosis IV.<sup>3</sup> In Egypt plate armour seems to have been adopted only gradually during the latter part of the LB Age.<sup>4</sup> In the Mycenaean West and in Cyprus it was equally late and hence its Near Eastern origin is quite certain.<sup>5</sup> It is possible that the appearance both of bronze arrowheads and scale armour was interconnected with the introduction of the war chariot into Near Eastern warfare.<sup>6</sup>

A typically Syrian weapon was the fenestrated axe. Its remote ancestor appears to have been the long C-shaped axe found in the tomb of Queen Shub-ad of the Royal Cemetery of Ur.<sup>7</sup> From the beginning of the second millennium there are two

<sup>1</sup>R. F. S. Starr, Nuzi (2 vols.; Cambridge, Mass., 1937-39), pp. 475 ff.; pl. 126:A-K; cf. also Appendix D: Armour.

<sup>2</sup>C. L. Woolley, Alalakh. An Account of the Excavations at Tell Atchana in the Hatay, 1937-1949 (Oxford, 1955), p. 278; pl. LXXI.

<sup>3</sup>W. Wolf, Die Bewaffnung des altägyptischen Heeres (Leipzig, 1926), p. 96, fig. 67.

<sup>4</sup>Ibid., pp. 96-97.

<sup>5</sup>H. L. Lorimer, Homer and the Monuments (London, 1950), p. 199.

<sup>6</sup>R. Dussaud, L'art phenicien du IIe millénaire (Paris, 1949), p. 57.

<sup>7</sup>R. Maxwell-Hyslop, "Western Asiatic Shaft-hole Axes," Iraq, XI (1949), p. 116.

close parallels: one from a hoard found at Soli in the north,<sup>1</sup> and another, southern example from Tell el-Hesi.<sup>2</sup> The C-shaped axe developed into the roughly semicircular type with open socket, and is represented at Byblos as well as at RS by a fragmentary example (cat., E, a:1 and fig. 3:1). Its more elongated predecessor may well be the weapon from a grave at Ur dated to the period of Sargon of Akkad.<sup>3</sup> Three other examples without exact provenance were found in Syria.<sup>4</sup>

The proper semicircular fenestrated axe was discovered at many Syrian and Palestinian sites in IP II to MB context. This axe appears in a painting on one of the Beni Hasan tombs of IP II date; it is carried by an Asiatic.<sup>5</sup> By far the largest quantity of these weapons came from Byblos and RS. At Byblos, moreover, the ceremonial axes in bronze, silver or gold revealed a wide range of new technical achievements, such as relief casting in bivalve moulds and granulation work. R. Maxwell-Hyslop has observed that at Byblos the metal smiths began to lengthen the blade and cast the openings oval-shaped.<sup>6</sup> The development of the fenestrated axe from the first specimens

---

<sup>1</sup>Ug. II, p. 68, fig. 28:3, 4. After K. Bittel, "Der Depotfund von Soloi-Pompeipolis," *Zeitschrift für Assyriologie*, XII (1940), p. 202.

<sup>2</sup>F. J. Bliss, *A Mound of Many Cities or Tell el Hesi Excavated* (London, 1894), p. 35, fig. 69.

<sup>3</sup>C. L. Woolley, *Ur Excavations. The Royal Cemetery* (2 vols.; London and Philadelphia, 1934), p. 306, pl. 224 A:14. Cited by C. F. A. Schaeffer in Ug. II, p. 68, fig. 28:5.

<sup>4</sup>*Ibid.*, fig. 28:7; and two unpublished examples in the Museum of the American University of Beirut. Inventory nos. 62.45 and 60.90. No. 60.90 demonstrates the development towards the fenestrated axe with closed socket.

<sup>5</sup>P. E. Newberry, *Beni Hasan* (London, 1893-94), vol. I, pl. XLVII.

<sup>6</sup>R. Maxwell-Hyslop, "Western Asiatic Shaft-hole Axes," *Iraq*, XI (1949), p. 119.

with open sockets to the later elongated examples can, therefore, clearly be observed in the sequence of types represented at Byblos.

That these axes found their way to the west is shown by the appearance of one early semicircular specimen with a tripartite socket at Vapheio<sup>1</sup> and other semicircular and elongated examples in Cyprus.<sup>2</sup> An elongated axe in the British Museum has the back of the socket decorated with a vivid representation of a lion striking down a ram.<sup>3</sup> Although its exact provenance is not known, the shape of the axe itself, the casting techniques employed and the animal decoration are ample proof for its Syrian origin.

Animals also decorated the sockets of two long flat axes from RS (see fig. 12). The gold wire incrustation on one has already been recognized as a Syrian technique.<sup>4</sup> The casting of the copper socket around an iron blade--thus eliminating the need for riveting--revealed a mastery of a newly acquired technique and the knowledge of the properties of the two different metals.<sup>5</sup>

---

<sup>1</sup>A. J. B. Wace, Mycenae (Princeton, 1949), fig. 110.

<sup>2</sup>A. Evans, The Palace of Minos (4 vols. in 6; London, 1921-35), vol. IV, 2, p. 416.

<sup>3</sup>R. Dussaud, "Haches à douille de type asiatique," Syria, XI (1930), p. 253, fig. 13.

<sup>4</sup>See above, p. 85.

<sup>5</sup>Ug. I, p. 111.

## TOOLS

Early metal tools present a number of problems. They must have formed only a small proportion of the implements made from a great variety of materials. The earliest types were obviously imitations of stone implements, because the particular properties of metal were only gradually discovered. Thus the advantage of a cast and hammered socket for the hafting of a plain flat axe or adze is evident, if one compares the plain examples provided with a terminal hole from Byblos (cat. Byblos, A, a:1 and fig. 4:1-3) with the socketed adzes of LB date from RS (cat. RS, A, d:1 and fig. 11:9). Moreover, it is often difficult or impossible to determine the exact use of a tool, because generally no provision for haft or handle was made on the tool itself and again, because invariably the haft, handle and ligaments were made of perishable material rarely preserved. The plain types without hole (cat., axes a:1) may have been axes, adzes or both. It can be assumed that most Bronze Age tools were employed for more than one purpose. It would transcend the limited scope of this study to examine the possible use of the more common bronze implements from Byblos and RS.<sup>1</sup>

Some tools, however, can clearly be attributed to a specialized function. Of particular importance is the consideration of the few tools that may definitely be ascribed to workshops of metal-workers. There are no anvils extant from either Byblos or Ras Shamra, but some of the "trunnion axes" (see RS cat. A, b:1) could possibly have been used for "turning over" and carinating edges of sheet metal. They

---

<sup>1</sup>For a detailed analysis and comparison of bronze tools see Deshayes.

should then more correctly be called "trunnion anvils," the trunnions serving to fix the tenon end of the anvil into a working table.<sup>1</sup>

There is but a single example of an undated bronze hammer from Byblos (cat. A, g:1). Its size and shape seem to suggest that it was used in connection with a chisel. Bronze hammers were essentially metal-workers' tools.<sup>2</sup> Their extreme scarcity is obviously due to the fact that raising and sinking hammers were mostly of wood.<sup>3</sup>

The general simplicity of the shapes of chisels, gouges and punches makes it very difficult to determine their origin and use (see cat. figs. 4:8-10 and 11:12). The tracing, chasing, stamping and engraving tools for fine metal-work<sup>4</sup> tended to resemble the somewhat heavier implements for carpentry and stone work. Some of the more delicate examples from RS were probably metal-workers' tools.<sup>5</sup> The bronze smith needed both blunt and sharp-edged tools for tracing, whereas in woodcarving thick blunt edges are more useful.<sup>6</sup>

The fire-tongs from RS (cat. G, a:1) were quite distinctly metallurgical

<sup>1</sup>H. Maryon, "Some Prehistoric Metal-workers' Tools," Antiquaries' Journal, XVIII (1938), p. 248 and fig. 19.

<sup>2</sup>Deshayes, p. 299.

<sup>3</sup>For metal-working processes and terminology see H. Maryon, "Metal Working in the Ancient World," AJA, LIII (1949), pp. 94-101; (bowl making, sinking and raising).

<sup>4</sup>Cf. H. Maryon and H. J. Pleinderleith in History of Technology, C. Singer, and others, ed.; (Oxford, 1955), chapter 23, pp. 647-48.

<sup>5</sup>Ug. III, p. 262 and fig. 233.

<sup>6</sup>H. Maryon, "Some Prehistoric Metal-workers' Tools," loc. cit., p. 247.

implements. An almost identical pair came from a foundry hoard at Enkomi dated to the 12th century (?)<sup>1</sup> and hence later than the RS example which was found in situ with a clay tablet. The two other Near Eastern examples from a Megiddo tomb are possibly of LB II date<sup>2</sup> and, therefore, earlier. It follows that the use of this founder's tool spread from the Near East to the west.

Among the tools produced in metal workshops and intended for cosmetic use, the tweezers from Byblos and Ras Shamra are worth remarking upon. These were depilatory tweezers (cat. D, b:1 and fig. 11:19) functioning on the same principle as the tongs just cited. The two pairs from RS are dated to the 14th century, although this type of cosmetic instrument was already known in Mesopotamia (Tell Asmar) and in Crete (Mochlos) from the end of the third millennium B.C.<sup>3</sup> An unusual razor blade was found along with the tweezers in the East Archives of the RS Palace (cat. fig. 11:17). An identical blade came from Level I of Alalakh.<sup>4</sup> Its local manufacture seems to be indicated by its roughly contemporary occurrence in these two sites only.

---

<sup>1</sup>Catling, p. 99, fig. 11:4 and pl. 10a.

<sup>2</sup>P. L. O. Guy, Megiddo Tombs (Chicago, 1938; Oriental Institute Publication, vol. XXXIII), pl. 125:10.

<sup>3</sup>Deshayes, p. 377.

<sup>4</sup>C. L. Woolley, Alalakh. An Account of the Excavations at Tell Atchana in the Hatay, 1937-1949 (Oxford, 1955), p. 281.



The "pins" with terminal eyes (cat. F, a) were obviously used as sewing-needles rather than as ornamental pins, since in a number of cases bunches of these needles have been found enclosed in tubes of bone or metal.<sup>1</sup> Examples in bone are known from Byblos<sup>2</sup> as well as from a rock-cut tomb of MB - LB date at Qurayé near Sidon.<sup>3</sup> The "pins" with terminal eyes should, therefore, rightfully be considered as tools.

The art of horsemanship at Byblos and Ras Shamra during the second millennium B.C. has not provided much material evidence. However, there is one significant find from RS, a bit dated to the early LB period (cat. fig. 13:4). It is of the one-piece type like the late MB example from Tell el-Ajjul.<sup>4</sup> This stiff mouthpiece seems to have preceded the later and much more successful two-piece bit to which group the fragment from Byblos may also belong (cat., under animal gear). A one-piece bit may have been perfectly satisfactory in order to control a horse drawing a chariot, but it would soon have been found that the control needed by a rider over his mount could be greatly improved by the more flexible two-piece bit. Thus it can be assumed that

---

<sup>1</sup>Du., II, 2, p. 978, fig. 1093.

<sup>2</sup>Du., II, 1, p. 316.

<sup>3</sup>P. E. Guigues, "Lebe'a, Kafer-Ġarra, Qrayé etc.," BMB, III (1939), pp. 57 (fig. 4) and 58.

<sup>4</sup>W. M. Flinders Petrie, Ancient Gaza (4 vols.; London, 1934), vol. IV, fig. 3.

this innovation was closely related to the general adoption of cavalry as a fighting unit.

A comparison of literary sources with the actual finds of metal implements shows how little can be deduced about Bronze Age tools from the material remains brought to light by excavation. About twenty texts from the S.-W. Archives of RS deal explicitly with bronze weapons and tools.<sup>1</sup> Many 18th century lists of metal objects were found at Alalakh,<sup>2</sup> and two letters from Mari refer to the manufacture of ten thousand nails to be forged in the workshops of the city.<sup>3</sup> How few of these have been unearthed is quite clear from the recorded amount of bronze nails and rivets from both Byblos and Ras Shamra (cf. cat.). The discrepancy between the actual amount of such essential metal commodities used during the Bronze Age in the various industries and the meagre amount retrieved in excavations is enormous.

A comparison of some of the weapons and tools from Ras Shamra with those from other sites has shown that quite a number of types made their earliest appearance in the Near East and were probably exported from there. The MB Byblos rapiers have been found to antedate related rapiers in the Aegean and in Crete. The development of cast-hilted weapons was probably also started in Syrian workshops. The Chalcolithic riveted daggers from Byblos may have been prototypes of the typical Near Eastern

---

<sup>1</sup>AAS, V (1955), p. 41.

<sup>2</sup>D. J. Wiseman, The Alalakh Tablets (London, 1953), cat. nos. 17:daggers; 431:lances; 402:arrows and Cu doors; 407:bronze utensils; 430:weapons and vessels; 400, 406:drinking vessels.

<sup>3</sup>R. J. Forbes, Studies in Ancient Technology (Leiden, 1964), vol. IX, p. 88; after A. Parrot and G. Dossin, edd., Archives Royales de Mari (15 vols.; Paris, 1950), vol. I, 38:4.

dagger with crescent-shaped pommel which appeared towards the end of the third millennium at both Byblos and Ras Shamra, was mass-produced and spread widely from there until the 19th century. Cyprus received weapon types like the flanged dagger from Near Eastern ports. The sickle-sword from Byblos with its gold-and-niello inlay combined an older Mesopotamian form with an original local technique and seems to have forecast later achievements in "metal-painting" in the Mycenaean west. The difficult technique of casting socketed lances was practiced by 2000 B.C. at Ras Shamra and Byblos. At the latter site some extraordinarily fine results were achieved. Another Syrian weapon was the fenestrated axe, the inspiration of which came perhaps from Mesopotamia;<sup>1</sup> the original development into types with closed sockets, however, was clearly Syrian. The distribution of these axes was concentrated at Byblos and Ras Shamra. The fire-tongs used by a metal smith from Ras Shamra attested the existence of a foundry at Ugarit. Since they are earlier than the Cypriote pair of tongs from Enkomi, they indicate the priority of the use of this tool at RS and possibly its diffusion from RS to Cyprus. Personal instruments such as cosmetic tweezers, razor-blades and sewing-needles can rarely provide exact details about the provenance and development of types, since their shapes were mostly plain and did not change substantially. It is likely that such tools were invented independently and used simultaneously at many sites, because they were intended for practical purposes. Nevertheless, their existence at Byblos and RS proved that metal was not considered too precious to be worked into ordinary household goods. In spite of their scarcity in the excavations

---

<sup>1</sup>Ug. II, p. 61.

at Byblos and Ras Shamra, far more metal tools and implements must have existed because great numbers of common metal objects are repeatedly referred to in contemporary written records.

## ARTICLES OF ORNAMENT AND VESSELS

The most instructive metal products from the category of articles of personal adornment are the toggle-pins. How these were used is evident from examples found in their original position on female skeletons. One was discovered in an IP II tomb in RS.<sup>1</sup> The pin had been fastened in the garment at the left shoulder, with its head pointing down. The second example is a bronze pin with a segmented head of rock crystal found fastened in an identical way at the shoulder of a woman in a 17th century burial of Grave Circle B in Mycenae.<sup>2</sup> In addition, some of the pins have the ring or wire preserved for which an eyelet had been cast or pierced in the shaft.<sup>3</sup> This ring served to tie the relatively heavy pin on to the garment. In one eyeless pin from RS the ring passed through the flattened rolled head (cat. fig. 14:2). This instance shows that the heads of the Rollennadeln were not merely decorative but had a practical purpose as well. The similarly rolled ends of torques--often found together with pins and biconical beads in IP II tombs of RS--<sup>4</sup> had a purely ornamental function.<sup>5</sup>

Toggle-pins were very numerous in the early Byblos deposits<sup>6</sup> and in the

---

<sup>1</sup>Tomb LXI. See Ug. II, p. 54, fig. 20.

<sup>2</sup>G. Mylonas, Ancient Mycenae (Princeton, 1957), fig. 57.

<sup>3</sup>Syria, XIX (1938), p. 220.

<sup>4</sup>Ug. II, p. 55.

<sup>5</sup>A LB figurine in the Museum of the American University of Beirut (Inventory no. 2617) is represented wearing a torque with the decorative curled ends in front; see Ug. II, pl. XX.

<sup>6</sup>O. Tufnell and W.A. Ward, "Relations between Byblos, Egypt and Mesopotamia at the end of the Third Millennium B.C." in the press for Syria (1967), fig. 10; examples from the "Montet jar".

IP - MB tombs of Ras Shamra.<sup>1</sup> Pins were already in use in the EB Age. A rare pin from RS (see cat., RS, A, b:4) appears at the same time to have been the local predecessor of the pins with segmented heads (cat., A, b and figs. 5:16 (Byblos) and 14:1 (RS)). The well developed segmented melon-headed pin was particularly frequent in MB tombs.<sup>2</sup> Its origin may perhaps be sought in the north, where an eyeless example in gold was found in a burial treasure from Alaca Hüyük, dated to the middle of the third millennium B.C.<sup>3</sup> This pin is smaller in size and was possibly used to fasten a brooch. There is a similar eyeless specimen in bronze from RS.<sup>4</sup> The melon-headed pins with a disc-like enlargement of the shaft, designed for an eyelet (cat. fig. 14:1), occur but rarely in some Cypriote groups of the 17th century B.C.<sup>5</sup>

An unusual pin from RS has a lozenge-shaped flattened head topped by a flat double spiral (cat. A, g:1). It is dated to the 22nd or 21st century B.C.<sup>6</sup> Similar and contemporary examples are again known from Alaca Hüyük.<sup>7</sup> An identical but

<sup>1</sup>Ug. IV, p. 256; pl. XVII:4.

<sup>2</sup>Ibid., p. 292, pl. XVII:4.

<sup>3</sup>S. Lloyd, The Art of the Ancient Near East (London, 1961), p. 111, fig. 74 and p. 113.

<sup>4</sup>Ug. I, p. 74, fig. 63.

<sup>5</sup>Catling, p. 74 and fig. 6:8.

<sup>6</sup>Ug. IV, p. 331.

<sup>7</sup>Strat. comp., fig. 195:22, 28.

shorter pin was discovered at Tell Ta'yinat (Phase I) and dated to the end of the third millennium B.C.<sup>1</sup> Double spiral-headed pins were worn at Troy during the 23rd century B.C.<sup>2</sup> These pins are of gold and eyeless; in two examples the spirals were turned upwards enclosing between them a small vase-shaped head, which in turn resembles the "poppy-seed" headed pins from Byblos (cat., A, d:1 and fig. 5:18). Toggle-pins apparently went out of use towards the end of the MB period.<sup>3</sup> The same regression was observed in Cyprus, where the earlier, heavy types of pins had disappeared completely from the 16th century on.<sup>4</sup>

The invention and development of fibulae took place rather later in the Bronze Age. They did not become common before the end of the second millennium B.C.<sup>5</sup> The two bow-shaped double hooks from Ras Shamra (see cat., fig. 14:3), dated by their context to IP II and MB II respectively, needed a separate pin for fastening and may have been early prototypes of the later one piece fibula.<sup>6</sup> The fibula from Byblos (cat.

<sup>1</sup>R. J. and L. S. Braidwood, Excavations in the Plain of Antioch (Chicago, 1960), vol. I, no. T3627, pl. 53:14 and p. 521.

<sup>2</sup>Troy Phase IIg. C. W. Blegen, Troy (London, 1964), p. 74, fig. 18; *idem*, "Excavations at Troy, 1937," AJA, XLI(1937), pp. 564, fig. 6, no. 37.709, and 596, fig. 36.

<sup>3</sup>C. L. Woolley, Alalakh. An Account of the Excavations at Tell Atchana in the Hatay, 1937-1949 (Oxford, 1955), p. 280.

<sup>4</sup>Catling, p. 237.

<sup>5</sup>For a treatment of fibulae in the Near East see D. Stronach, "The Development of the Fibula in the Near East," Iraq, XXI (1959), pp. 181-206.

<sup>6</sup>See W. M. Flinders Petrie, Ancient Gaza (4 vols.; London, 1934), vol. IV, p. 9 and pl. XXII:237, 238. An almost identical object from Grave 1750 dated to the 15th dynasty and identified as a brooch. See also W. F. Albright, "The Excavations of Tell Beit Mirsim," vol. II, AASOR, XVII (1936-37), p. 55, pl. 42:15 and pl. 43:d; for a possible mould attesting the local manufacture of these objects in the Near East.

fig. 5:20), which is undated, must fall towards the very end of the second millennium on comparison with a Cypriote counterpart.<sup>1</sup> This type with thickened bow was to become a typical fibula of the Early Geometric period in the Greek west.<sup>2</sup>

Metal vessels at Byblos and Ras Shamra were so diversified in type and destination that it is impossible to deal with them in detail in this context. It can be said, however, that they were manufactured in both cities from the late third millennium onwards. The wide repertory of vessels of the early deposits in both the T.O. and the T.B. of Byblos (see cat., F, a and fig. 6:7-12) implies that these vessels were products of master-craftsmen with long inherited experience in the special skills involved in raising and sinking of sheet metal.<sup>3</sup> The shape and carination of the small bowls found in the collection of offerings from the T.B. (cat. F, a:1 and 2, fig. 6:11, 12) show strong similarity to common MB types of pottery bowls, the carinations of which may actually have been imitations of metal prototypes. RS also produced elaborate bronze bowls during the MB Age (cat., F, c:1, fig. 14:6). Frequent mention of bronze objects, particularly vessels and basins, is made in the Amarna period cuneiform tablets from RS.<sup>4</sup>

---

<sup>1</sup>Catling, p. 242 and pl. 42:f.

<sup>2</sup>P. Jacobsthal, Greek Pins and Their Connections with Europe and Asia (Oxford, 1956), p. 2 and fig. 1:3.

<sup>3</sup>For the technical problems connected with the manufacture of vessels see R. Thomas, Metalsmithing for the Artist-Craftsman (Philadelphia and New York, 1960), chapter 2.

<sup>4</sup>For an example to the point see F. Thureau-Dangin, "Trois contrats de Ras Shamra," Syria, XVIII (1937), p. 249.



Possibly one of the last significant Bronze Age products in the series of bronze vessels and stands from Byblos and Ras Shamra was the cast tripod (cat., F, d:1, fig. 14:7) from the hoard in the House of the High Priest, which is of LB III date.<sup>1</sup> Compared with other achievements of metal casting at RS in the Bronze Age tradition, this tripod is not out of context. The fact that "technically and stylistically, this is much the most advanced cast tripod,"<sup>2</sup> relates it to a sophisticated metal industry. The majority of cast tripods came from Cyprus, but they seem to belong to a period somewhat later than the few examples extant from the Near East.<sup>3</sup>

In conclusion it may be said that toggle-pins were very common at Byblos and Ras Shamra from the end of the third millennium until the end of the MB Age, when they went out of use. The pins with segmented heads may have had Anatolian prototypes in gold. Often gold jewelry seems to have inspired the purely decorative elements used for pin-heads. It is not clear how the toggle-pins were replaced during the LB Age. The idea of the more practical fibula, common during the Iron Age, may

---

<sup>1</sup>Catling gives his typological reasons for placing the whole hoard in the early 12th century within his detailed discussion of Late Cypriote tripods and other stands in op. cit., pp. 202-203. Two things may be said here, namely that (1) the dates of the more or less closely related cast tripods cited by Catling cannot be altogether ascertained, and (2) the RS example is not likely to be an imitation of those technically and artistically inferior western tripods placed in later contexts by Catling.

<sup>2</sup>Catling, p. 202.

<sup>3</sup>Catling concludes that their appearance and manufacture in Cyprus in Late Cypriote III and later times must be "due to some combination of external circumstances," namely western--Aegean--decorative elements and Near Eastern structural features. Op. cit., p. 221.

have had its EB origins in the Near East, although there are no early examples of the one-piece fibula from Ras Shamra, and the Byblos bow-shaped type is not precisely dated. There is archaeological evidence for the production of sophisticated metal vessels at Byblos from the late third millennium on; this evidence, however, is substantially supplemented only by LB textual evidence from RS and other contemporary sites. In general, it can be observed that articles of personal adornment such as toggle-pins have been found in large numbers preserved in burials, whereas household goods such as vessels are comparatively rare discoveries. As in the case of votive weapons and common tools, it seems to follow that metal objects left behind in occupation levels have rarely escaped the foundry.

## FIGURINES

It is the figurative art which constituted the most significant if not the most original products from the workshops at Byblos and Ras Shamra. The votive character of statuettes from Byblos is established by the fact that most came out of the hoards of offerings.

The fact that these figurines were once exhibited standing in a place where they could be seen and possibly worshipped is clear from the discovery of a great number of parallelepipedic socles of fine limestone, painted ochre-red on the four smaller sides. Some were provided with two small pierced holes to receive the tangs under the feet of the figurines, others showed yet a third hole for the shaft of an obviously long weapon, a lance.<sup>1</sup> Several of the more elaborate figurines were, moreover, placed in small niches carved in some of the obelisks in the court of the T.O.<sup>2</sup> There is a complete naiskos preserved in the T.O. It was provided with two tiny sockets for the pivot of a wooden (?) door which could shut the shrine after worship.<sup>3</sup> Furthermore, all twenty-six obelisks in the court of the T.O. rested on or were mortised into even stone slabs much wider than the bases of the obelisks. These slabs were most likely intended to receive the offerings, especially since the larger borders

---

<sup>1</sup> Du., II, 2, pp. 618 and 741, fig. 1028 (from an offering deposit in the S.E.).

<sup>2</sup> Ibid., p. 647 and pl. XXXII:3.

<sup>3</sup> Ibid., pl. XXXIII:1.

of these "offering-tables" were all facing towards the adyton proper.<sup>1</sup>

The general date of most of these offerings proposed by M. Dunand stretches from the mid 19th to the end of the 18th century B.C. The offerings of the T.O. and the S.E. were contemporary, since the two sanctuaries coexisted.<sup>2</sup> The earlier date of the "Montet jar" has already been referred to (see above, p.74). Although this jar contained no statuettes of distinctly local type, it attested the practice of burying hoards of bronzes as early as IP I-II times. In addition, another one of the offering deposits was buried at the sill of the first foundations of the T.O. This door was walled up with a masonry filling in a later phase.<sup>3</sup> The hoard contained two hundred and twenty-six figurines, mostly of the foil or flat types.<sup>4</sup> Hence the custom of burying hoards was already practiced at the time when the first building of the T.O. was erected, on part of the very foundations of the abandoned EB sanctuary.<sup>5</sup> Another hoard, deposited in a flat-based, caliciform jar lying on its side in the forecourt of the T.O., contained an IP lamp with the sides folded over to form four pinched corners.<sup>6</sup> In deposit ε of the S.E. fenestrated axe-heads of the later variety were found together with a type of figurines different from the foil or flat statuettes.<sup>7</sup> It is hence suffi-

---

<sup>1</sup>Du., II, 2, p. 646.

<sup>2</sup>Ibid., p. 951.

<sup>3</sup>Ibid., p. 732.

<sup>4</sup>Du., II, pl. CXXIII.

<sup>5</sup>Du., II, 2, p. 651.

<sup>6</sup>Du., II, 2, p. 862, fig. 969.

<sup>7</sup>Du., II, 1, p. 395.

ciently clear that the custom of burying hoards with hundreds of votive bronzes, mostly statuettes and weapons,<sup>1</sup> was generally practiced at Byblos over a period of several hundred years lasting assuredly from the end of the third millennium to the end of the 18th century B.C. Most of the figurines from Ras Shamra are of late MB or LB date (see cat., pp. 67-69).

The only animal statuettes manufactured in a noteworthy number are those of bulls. Some rudimentary and stylized bovine figures have been found both at Byblos and Ras Shamra (cat. Byblos, figs. 7:1-3 and RS A, a). Except perhaps for the zoomorphic weights from RS (cat. A, c:2 and 3) all representations of bulls must be associated with the worship of a deity. They were intended as either the symbol of or an offering to the god. The RS texts mention fat oxen as the favourite sacrifice to Ba'al, and elsewhere the Canaanite god of metallurgy, Ktr-w-ḥss, is charged to cast silver idols in the shape of bulls.<sup>2</sup> An electrum pendant composed of three statuettes includes one with a bull's head and two priests (?) with high tiaras.<sup>3</sup> Its ritual significance is obvious. A figurine from a hoard in the S.E. at Byblos clearly portrays a male statuette standing on the back of a bull (cat., A, d:1 and fig. 7:2). A similar, though much cruder, mounted figurine--now in Copenhagen--came from Carchemish. According to S. Przeworsky it is not earlier than 1000 B.C. and

---

<sup>1</sup>Du., II, 1, p. 394 and 2, p. 949.

<sup>2</sup>Ug. II, p. 128 (after C. Viroilleaud, *Syria*, XIII (1932), pp. 145; and 117, 143.) Some of these idols in bronze or silver were actually discovered in the Temple of Ba'al.

<sup>3</sup>Ug. III, p. 94.

represents an early prototype of Zeus Dolichenus, a successor of the thunder-god Teshub-Hadad.<sup>1</sup>

There were two principal techniques employed in the manufacture of the Byblos statuettes. The foil figurines (see cat. fig. 7:8-11) were cut out of previously prepared metal sheets--a relatively unsophisticated method. The flat and most other figurines were cast in simple one-piece or bivalve moulds. The lost wax casting technique was mastered as well.<sup>2</sup> A large number of the plain flat figurines were in addition covered with gold-foil or even leaf-gold (fig. 7:15).

Although foil and flat figurines were produced simultaneously (as is explicit from the large deposit in the T.O. court<sup>3</sup>), a definite typological if not chronological development can be observed: a studied progress from flat to rounded figurines and from stiff, rather primitive representations to more naturalistic statuettes portrayed in some kind of action. There are standing figurines with raised arms, walking figurines and finally statuettes in an attitude of attack (cat. Byblos, figs. 7, 9 and RS, 15, 16.) Most figurines from RS belong to the last category and are of LB date. In many respects these later statuettes repeated significant details of dress, position and attributes already present in the earlier flat figurines from Byblos: one may cite the high conical head-dress and short kilt, the uplifted arm and advanced leg and the

---

<sup>1</sup>S. Przeworsky, "Notes d'archéologie syrienne et hittite III," *Syria*, XVII (1936), p. 35 and pl. IX.

<sup>2</sup>On ancient casting processes see H.H. Coghlan, Notes on the Prehistoric Metallurgy of Copper and Bronze in the Old World (Oxford, 1962 repr.), pp. 112-115 and 119-120.

<sup>3</sup>Du., II, 2, pl. CXXIII.

dagger (cat. fig. 7:8, 11, 14-18). In general, those figurines which had their hands pierced had originally been equipped with weapons. Apart from the heavy-armed-- "hoplite"--types (Byblos cat. C, a and fig. 9:1), which have the weapons preserved, a large number of suitably sized bronze rods were discovered loose in the closed hoards together with figurines which had provisions for attributes but had lost them.<sup>1</sup>

Most of the statuettes grouped in the catalogue under "well-modelled" figurines were undoubtedly representations of the gods Ba'al or Reshef as they are known from the cuneiform tablets of RS and from many representations on stelae, such as the Ba'al stele from RS.<sup>2</sup> A later stele of a similar god carrying a fenestrated axe in his left hand is identified as Melqart by a Phoenician inscription.<sup>3</sup> In Egypt Seth or Sutekh had the closest affinities with Ba'al. He is the storm-god who wears the Syrian horned helmet and Asiatic equipment.<sup>4</sup> However, statuettes of the Syrian Ba'al were imported into Egypt as well,<sup>5</sup> and Reshef is known from a limestone stele of the New Kingdom, on which he is portrayed in typical attire carrying a lance and Syrian axe. An inscription to the right identifies him as Reshef.<sup>6</sup> He was the equiva-

---

<sup>1</sup>Du., II, 2, pp. 710 and 820.

<sup>2</sup>Ug. II, pp. 127-29. Cf. also C.F.A. Schaeffer, The Cuneiform Texts of Ras Shamra-Ugarit (London, 1939), p. 8. It is impossible to cite all the literature dealing with the identification of the god Ba'al-Reshef in all his literary and representational forms.

<sup>3</sup>M. Dunand, "A propos de la stèle de Melqart au Musée d'Alep," BMB, VI (1942-43), pp. 41-45.

<sup>4</sup>P. Montet, Everyday Life in Egypt in the Days of Ramesses the Great, transl. from the French; (London, 1958), p. 232.

<sup>5</sup>See G. Roeder, Ägyptische Bronzewecke (Glückstadt, 1937), p. 6, fig. 24 and pp. 223, 237-39.

<sup>6</sup>J.B. Pritchard, The Ancient Near East in Pictures (Princeton, 1954), p. 164, no. 476.

lent in character and representation of the Hittite weather and war-god Teshub.<sup>1</sup> His association with the bull (see above, p. 108-09) is emphasized by his wearing either the horned cap with several superimposed pairs of horns<sup>2</sup> or one distinct pair of horns soldered on to the head-dress (cat. fig. 16). Often he wears a dagger attached to his belt (see fig. 15:5). The heavy-armed warrior statuette from RS (?) (cat. fig. 17:1) carrying a shield is possibly also a representation of the same deity. There are two other warrior figurines from Megiddo of LB II or later date, equipped with a shield.<sup>3</sup> Yet neither of them resembles the statuette said to be from RS.

A Ba'al (?) figurine in the attitude of hurling a weapon but with a long garment was found at Lachish in early LB II context.<sup>4</sup> Although there are no statuettes in the attacking warrior position with long tunics from either Byblos or Ras Shamra, this garment seems to have been worn by the same god when he was enthroned.<sup>5</sup> A seated deity with long garment and horned cap from Hama<sup>6</sup> resembles the bearded god on a

---

<sup>1</sup>E. Cavaignac, *Les Hittites* (Paris, 1950), p. 73. For a typical representation see G. Contenau, *La civilisation des Hittites et des Hurrites du Mitanni* (Paris, 1948), fig. 53.

<sup>2</sup>Cf. the statuette (cat. no. 2617) in the Museum of the American University of Beirut (publ. in *Ug.* II, pl. XX).

<sup>3</sup>H.G. May, *Material Remains of the Megiddo Cult* (Chicago, 1935), pl. XXXIV; and G. Loud (dir.), *Megiddo II (Seasons 1935-39)* (Chicago, 1948), pl. vol., pl. 239:31.

<sup>4</sup>O. Tufnell, C.H. Inge, L. Harding, *Lachish II (Tell ed-Duweir). The Fosse Temple* (London, 1940), pl. XXVI.

<sup>5</sup>*Syria*, XVIII (1937), pl. XVII and fig. 1.

<sup>6</sup>H. Ingholt, *Rapport préliminaire sur les sept campagnes de fouilles à Hama en Syrie* (Copenhagen, 1940), pl. XXXVIII, 2 and 3.



RS stele, identified as the god El.<sup>1</sup> It is immaterial in this context whether these and similar seated figurines, from Byblos (cat., E, b:1, fig. 9:7), RS (cat., E, a:1), Megiddo<sup>2</sup> and 'Ain Shems<sup>3</sup> were worshipped under the name of El or Ba'al or both. The seated god, when represented as a beardless youth, may also have belonged to chariots.<sup>4</sup> There is a group--now lost--of Reshef standing in his usual striking attitude in a chariot, accompanied by a smaller charioteer figure to his right (see cat., fig. 17:5; after Barnett). M.R.D. Barnett says that in Phoenicia, Reshef was apparently conceived of as either enthroned, on foot or in a vehicle.<sup>5</sup>

The war-like character of Ba'al was perhaps equalled or surpassed only by his sister Anat, to judge from the RS texts.<sup>6</sup> Ba'al (?) and a goddess are depicted together on a frit cylinder seal from Bethel.<sup>7</sup> Both figurines are armed with a lance and Ba'al (?) brandishes the sickle-sword. The Egyptians seem to have adopted and

<sup>1</sup>Syria, XVIII (1937), pp. 128-134.

<sup>2</sup>G. Loud (dir.), Megiddo II (Chicago, 1939), pl. 238:30.

<sup>3</sup>E. Grant, Ain Shems Excavations (Pennsylvania, 1932), Part II, pl. XI, no. 1632.

<sup>4</sup>S. Przeworsky, "Les figurines assises et le char divin," Syria, IX (1928), pp. 275-77. The author believes that most of the seated figurines belonged to chariots.

<sup>5</sup>M.R.D. Barnett, "The Gods of Zinjirli," Compte rendu de l'onzième rencontre assyriologique internationale (Leiden, 1962) (Leiden, 1964), pp. 62, 72, fig. 8.

<sup>6</sup>J. Obermann, Ugaritic Mythology (New Haven, 1948); for example, pp. 90-91 (5AB D:65-75 and 5AB E:27-33 = 3D6:7-12).

<sup>7</sup>R. Dussaud, "Les éléments déchainés," Syria, XVI (1935), p. 202.

depicted a Syrian goddess on horseback shooting with bow and arrow.<sup>1</sup> How much she resembled her male counterpart is expressed in a more recent interpretation, according to which these Egyptian representations of a "riding deity" on a number of fragments and stelae are identified as Reshef.<sup>2</sup> Another Egyptian representation shows a deity in the same position as Reshef but seated, holding shield and lance in the right hand and brandishing a mace (?) in the left.<sup>3</sup> The claim that the seated figurine of Ba'al from Ras Shamra (cat., fig. 15:7) actually depicted Anat (see above, p. 70, footnote 1) is strengthened on comparing her garment with the finely pleated narrow tunic worn by yet another statuette of Anat (?) showing her with elaborate crown borne on a pair of horns. It is said to come from Faqra in Lebanon (cat., fig. 17:4).<sup>4</sup>

A purely statistical study of the statuettes depicting deities in the attitude of brandishing a weapon and related representations found at Byblos and Ras Shamra, together with a comparison with those from other sites, would provide a clear indication that this particular deity must have been a god indigenous at these two sites and the coastal area between.

---

<sup>1</sup>R. Dussaud, Les découvertes de Ras Shamra (Ugarit) et L'Ancien Testament (Paris, 1937, 2nd ed.), p. 109 and fig. 34; and J. Leclant, "Astarté à cheval d'après les représentations égyptiennes," Syria, XXXVII (1960), pl. IA and p. 23.

<sup>2</sup>W. Helck, Die Beziehungen Ägyptens zu Vorderasien im 3. und 2. Jahrtausend v. Chr., Ägyptologische Abhandlungen, Band 5; (Wiesbaden, 1962), p. 486.

<sup>3</sup>R. Pietschmann, Geschichte der Phönizier (Berlin, 1889), p. 149. Cf. J. Leclant, "Astarté à cheval d'après les représentations égyptiennes," Syria, XXXVII (1960), pp. 26 and 27, fig. 7.

<sup>4</sup>M.R.D. Barnett, A Catalogue of the Nimrud Ivories (London, 1957), p. 77 and fig. 24.

The importance of this deity is shown by the distribution of this type at many sites abroad. It reached Delos, where a small shield-carrying god was found in the Mycenaean Artemision next to an ivory carving of a typical boar-tusk warrior.<sup>1</sup> It also made its way to the citadels of Mycenae and Tiryns (fig. 17:2, 3),<sup>2</sup> as well as to Sicily (fig. 17:7) where a bronze statuette was fished out of the sea near Sciacca. It is certainly "Phoenician" and has to be dated to the LB II period; it constitutes, hence, "the first certain archaeological proof for the navigation of the Phoenicians along Sicilian coasts starting from the 12th century B.C."<sup>3</sup>

It is not surprising at all that the god should have reached nearby Cyprus. There he appears with his customary attributes and dress on a 7th to 6th century Cypriote vase (fig. 17:6; after Barnett).<sup>4</sup> The 12th century bronze statuette of a horned warrior or god from Enkomi<sup>5</sup> was most likely a local adaptation of a common type known from the trading partner Ugarit on the opposite shore. Although "it must be regarded as the outstanding piece of LC bronzework" in Cyprus,<sup>6</sup> it is not, as

---

<sup>1</sup>G. de Santerre and J. Treheux, "Rapport sur le dépôt égéen et géométrique de l'Artémision à Délos," BCH, 71/2 (1947-48), p. 221, 76, no. B7175, pl. XXXIX:1-4; also pp. 222-28.

<sup>2</sup>A. J. B. Wace, Mycenae (Princeton, 1949), p. 110.

<sup>3</sup>V. Tusa, "Testimonianze fenicio-puniche in Sicilia," Κωκκαλας (Studi pubblicati dall'Istituto di Storia Antica dell'Università di Palermo), p. 9 and pl. IV, fig. 8. (For the date of the figurine cf. D. Harden, The Phoenicians (London, 1962), p. 62. He dates it to LB II).

<sup>4</sup>Barnett, "The Gods of Zinjirli," Compte rendu de l'onzième rencontre assyriologique internationale (Leiden: 1962) (Leiden, 1964), p. 62 and pl. IV B (after V. Karageorghis in BCH, 87 (1963), p. 363.)

<sup>5</sup>P. Dikaios, Illustrated London News, 27/8/1949, pp. 316-17.

<sup>6</sup>Catling, p. 256.

Catling claims, the first or the highest achievement in the attempt to model "bizarre features" of earlier Near Eastern types more naturalistically.<sup>1</sup> This process of acquiring aesthetic sense in addition to metallurgical mastery started at Byblos (cat., D, a:1, fig. 8) in the MB Age and reached its climax in a number of later pieces from Byblos (cat. E, b:1) and Ras Shamra (cat. D, b:5 and 6 for example).

The study of small sculpture in bronze at both Byblos and Ras Shamra is more important because it reveals artistic and religious trends apart from metallurgical techniques. Most figurines of the two sites have been recognized as statuettes representing deities. The custom of burying hoards of these figurines together with weapons and other bronzes was widely practiced at Byblos for several hundred years starting before the end of the third millennium B.C. Apart from the stratigraphical evidence, the Byblos figurines show an artistic development from barely anthropomorphic silhouettes of sheet metal to well-rounded statuettes, in which the representation of naturalistic proportions and features had been partly achieved. The aesthetically more successful attempts to mould human figures and features belonged to the LB Age and were, therefore, more frequent at Ras Shamra. Even though the rudimentary foil and flat figurines from Byblos cannot be definitely identified, details of dress, attitude and typological development indicate that they represented the same deity as the later well-rounded and distinctive so-called Ba'al or Reshef types. Iconographical and textual evidence seem to confirm the identification of the armed bronze god in an attitude of attack with either the weather and sky-god or the war-god and horse tamer. A female deity was also represented. She is preserved in some LB examples from

---

<sup>1</sup>Catling, p. 258.

Ras Shamra and the mountain region south of Byblos. The latter example shows her in the attitude of an attacking warrior. The armed god brandishing a weapon had two known production centres at Byblos and Ras Shamra and was possibly distributed from there, as a number of these figurines at many Syrian and Palestine sites have revealed. The type is very distinctive and isolated examples were exported to the west during the period of active trade relations between the Mycenaean world and the ports of the Levantine littoral.

## CONCLUSIONS

## RAW MATERIALS AND LOCAL PRODUCTION

The basic consideration in the study of any metal industry, regardless of region or period, is the availability of raw materials. Scientific analysis can nowadays improve our knowledge about the provenance and composition of bronze artefacts. To determine the source of a sample of ancient copper or bronze the relatively small percentage of other metals contained in it must be established. These "impurities" were either originally present in the ore or added to it by accident or intention during the extraction, refining or remelting processes. The proportion of these "impurities" varied with the different ores and production methods. Thus, for example, samples of both ore and scoriae from Enkomi were found to be of an identical composition with nuggets and scrap fragments from Ras Shamra. The Enkomi and, hence, the RS samples were by analysis of Cypriote provenance.<sup>1</sup> The chemical or spectographic approach implies very costly and tedious processes. Moreover, additional laboratory investigations as to the manufacturing techniques demand the partial destruction of the objects to be analysed. For these reasons it would be an almost impossible undertaking to subject the bronzes from Byblos and Ras Shamra to such examinations. Finally, it is questionable whether the results would be worth the efforts necessary to obtain them.<sup>2</sup> The few metallurgical analyses which were made have shown that true tin bronzes

---

<sup>1</sup>G. Hill, A History of Cyprus (repr.; Cambridge, 1949), vol. I, pp. 9 and 27.

<sup>2</sup>For the problems involved in scientific analysis see Catling, pp. 9-13, where he discusses them at great length in connection with Cypriote bronzework. The arguments he collected from a number of scientists are equally valid with respect to the material from Byblos and RS.

were in use both at Byblos and Ras Shamra from the late third millennium B.C. down to the end of the LB Age.<sup>1</sup>

Where did the necessary raw materials come from? As early as Eusebius there is mention of Cu mines in the Lebanon range and in Syria as well,<sup>2</sup> and modern geology has shown that there are not only Cu but also Sn deposits in the Kesrwan, the south-eastern hinterland of Byblos.<sup>3</sup> This is a very rare natural phenomenon. The objection has been raised that there is no evidence of ancient mining in that district. It may be disregarded because, on the one hand, ancient tools and techniques permitted only very shallow superficial mining;<sup>4</sup> hence, very little evidence of it can be found in any of the areas which were nevertheless known for their mineral resources. On the other hand, in the Byblos region, both copper and tin ores may have been discovered in an alluvial state, since two major rivers, the Adonis (modern Nahr el-Ibrahim) and the Phaedros (modern Nahr el-Fidar), could have transported fragments

<sup>1</sup>See Ug. II, p. 64 and III, p. 269.

<sup>2</sup>Eusebius The Ecclesiastical History VIII, xiii:5; J.E.L. Oulton, transl. (2 vols.; Loeb Classical Library; Harvard, 1957), vol. II, pp. 294-95. Also idem Sur les martyrs de Palestine IX-X, xiii:1; E. Grapin, transl. (Books I-X in 3 vols.; Paris, 1913), pp. 292-93.

<sup>3</sup>G.A. Wainwright, "The Occurrence of Tin and Copper Near Byblos," JEA, XX (1934), pp. 29-32.

<sup>4</sup>A. Lucas, Ancient Egyptian Materials and Industries (4th ed., rev. and enlarged by J.R. Harris; London, 1962), pp. 210-11.



of both Cu and Sn ore in their waters.<sup>1</sup> In this case, the ores may have been discovered and reduced without leaving any traces of mining activities in the region of the deposits.<sup>2</sup>

The discovery of bronze is most likely to be explained by an accidental smelting of Cu and Sn ores;<sup>3</sup> hence, as G.E. Wainwright concluded, "the conditions postulated as probably necessary for a primitive tin industry, and for the discovery of the art of bronze manufacturing, are both to be found at Byblos."<sup>4</sup> Mineralogical prospection proper may have been prompted by another attested commercial activity. During the third millennium, if not before, Byblos is known to have been the centre of a flourishing timber-trade with Egypt; hence workmen from the city went out to explore the mountain region in search for coniferous wood, and tin and bronze may have been originally introduced into Egypt from the same source as the timber.<sup>5</sup> Long before it reached Egypt, tin was used in Western Asia, which according to all available

---

<sup>1</sup>On an early knowledge of stream-tin see Pline l'Ancien Histoire Naturelle XXXIV, xlvi:16; H. le Bonniec, transl. (Paris, 1953), p. 160.

<sup>2</sup>G.A. Wainwright, "The Occurrence of Tin and Copper Near Byblos," JEA, XX (1934), pp. 29, 31.

<sup>3</sup>A. Lucas, "Notes on the Early History of Tin and Bronze," JEA, XIV (1928), p. 106.

<sup>4</sup>G.E. Wainwright, "The Occurrence of Tin and Copper Near Byblos," JEA, XX (1934), p. 32.

<sup>5</sup>G. Brunton and G. Caton-Thompson, The Badarian Civilisation (London, 1928), p. 62.

evidence appears to be the original home of both Sn and Ae.<sup>1</sup> A rich supply of timber was also an important prerequisite in ancient metallurgy, since it provided the necessary fuel for the smelter.<sup>2</sup>

There are unconfirmed sources of Sn deposits near Aleppo,<sup>3</sup> which could have provided the metal industry of Ras Shamra with Sn ore. It is, however, not absolutely necessary to have a nearby supply of all raw materials for the rise of a centre of metallurgy. An example in question are the highly advanced products of a metal industry of the third millennium B.C. in Mesopotamia, where there existed no local mineral resources.<sup>4</sup> In this case, raw materials were imported into Mesopotamia from the deposits in the south-eastern Arabian peninsula through a port of exchange on modern Bahrein.<sup>5</sup>

After the extraction and smelting processes, the raw material had to be cast into ingots in order to be ready for transport to the metal-working centres,

<sup>1</sup>A. Lucas, Ancient Egyptian Materials and Industries (4th ed., London, 1962), p. 255.

<sup>2</sup>R. J. Forbes, Studies in Ancient Technology, vol. VIII, p. 23.

<sup>3</sup>G. E. Wainwright, "The Occurrence of Tin and Copper Near Byblos," JEA, XX (1934), p. 32.

<sup>4</sup>H. Limet, Le travail du métal au pays de Sumer au temps de la III<sup>e</sup> dynastie d'Ur (Paris, 1960), chapter II, pp. 75-83 and 110.

<sup>5</sup>On this subject see A. L. Oppenheim, "The Seafaring Merchants of Ur," JAOS, 74 (1954), pp. 6-17.

where it could be further refined and eventually manufactured into goods.<sup>1</sup> During the second half of the second millennium, Ugarit imported its unrefined Cu and Ae in the form of ingots, specimens of which have been found on the site.<sup>2</sup> The typical Cypriote "ox-hide" ingots<sup>3</sup> probably reached the store-rooms of the royal palace at Tell el-Amarna<sup>4</sup> from Alasia (Cyprus) through the ports on the Phoenician coast. In one of the Amarna letters copper is being ordered from Byblos.<sup>5</sup> Genuine bronze first known in Egypt during the Middle Kingdom had already been obtained from such trading centres as Byblos.<sup>6</sup> In general, by about 1500 B.C. imports of ingots from the West to the Near Eastern metal-working centres apparently increased, surpassing the earlier Cu trade from Magan through the Persian Gulf. Many references in the tablets of Alalakh attest this.<sup>7</sup> The foreign unrefined metal was used in addition to locally mined raw material,<sup>8</sup> which either started to give out by that time or was not

---

<sup>1</sup>H. Limet, Le travail du métal au pays de Sumer au temps de la III<sup>e</sup> dynastie d'Ur (Paris, 1960), pp. 84-87.

<sup>2</sup>Syria, X (1929), p. 295 f.

<sup>3</sup>H.G. Buchholz, "Keftiubarren und Erzhandel im zweiten vorchristlichen Jahrtausend," Prähistorische Zeitschrift, XXXVII (1959), p. 20.

<sup>4</sup>Ibid., p. 15, fig. 7 and N. de Garis Davies, The Rock Tombs of El Amarna (6 vols.; London and Boston, 1903-1908), vol. III, pls. 7, 8.

<sup>5</sup>J.A. Knudtzon, Die El-Amarna-Tafeln, (2 vols.; Aalen, 1964 repr.), p. 385, no. 77.7.

<sup>6</sup>H. Kees, Ancient Egypt. A Cultural Topography (T.G.H. James, Engl.ed.; London, 1961), p. 137.

<sup>7</sup>R.J. Forbes, Studies in Ancient Technology (Leiden, 1964), vol. IX, p. 89.

<sup>8</sup>A. Parrot and G. Dossin (edd.), Archives Royales de Mari (Paris, 1950), vol. I, nos. 21, 38, 63 and II, p. 91.

sufficient to supply the ever increasing demands of a steadily growing metal industry.

It has previously been seen that at Byblos copper was worked into weapons as early as the fourth millennium (see above, p. 82). Furthermore, it is clear from the excavations that the lithic industry at Byblos degenerated with the beginning of the third millennium.<sup>1</sup> This fact provides indirect evidence for a substitution of the old stone tools and weapons by other, more efficient ones. In addition, the remains of quarried stone architecture of the EB Age at Byblos betray the use of metal tools.<sup>2</sup> It has also been shown that the smelting of Cu ore could only have been invented by people who possessed pottery furnaces, since the temperature in open hearths or ovens was not sufficient to reduce the ore or melt copper.<sup>3</sup> An examination of the well-fired wares produced by the EB Age potters of Byblos clearly shows that the kilns were of a fairly advanced rather than of a primitive type.<sup>4</sup>

Local raw materials were available and possibly exploited at Byblos long before the trade of raw Cu and Ae from other mining centres had reached its LB proportions. But there is more direct proof for the actual bronzeworking industry having been local at both Byblos and Ras Shamra. The excavators discovered nuggets

<sup>1</sup>Du., I, p. 446.

<sup>2</sup>See Du., II, pls. XXXVIII and XL.

<sup>3</sup>H.H. Coghlan, Notes on the Prehistoric Metallurgy of Copper and Bronze in the Old World (Oxford, 1962 repr.), p. 22.

<sup>4</sup>See Du., II, pl. CCVI, for a hoard containing several typical vessels of fine ware, some of almost metallic appearance and texture.

of ore,<sup>1</sup> ingots,<sup>2</sup> and casting debris<sup>3</sup> in both cities. If the ingots could possibly represent foreign imports of unrefined metal,<sup>4</sup> the fragments of mineral certainly point to local mines. The casting debris constituted at the same time foundry residue and further raw material of a metal smith. Besides these small finds, Byblos and Ras Shamra revealed evidence of the workshops of metal-workers and jewellers.<sup>5</sup> A crucible, with metal remains still adhering to its base, and metal-workers' tools were discovered at Byblos.<sup>6</sup> Such tools were even more common finds at Ras Shamra.<sup>7</sup> Both cities had an ample provision of moulds for a wide variety of objects. These moulds range in date from the late third to the end of the second millennium. An example of one of the earliest moulds found at Byblos was one used for casting a semicircular fenestrated axe.<sup>8</sup> One of the latest objects dateable to the Late Bronze

<sup>1</sup>Ug. IV, p. 99.

<sup>2</sup>Du., II, 1, p. 386; Syria, XII (1931), p. 7.

<sup>3</sup>Du., II, 1, pp. 342, 386; (in both cases the fragments were found in jars together with a votive hoard); Ug. III, p. 265, figs. 224:19 and 226.

<sup>4</sup>R. J. Forbes, Studies in Ancient Technology (Leiden, 1964), vol. IX, p. 93.

<sup>5</sup>Du., II, 2, pp. 601 and 898, pl. XXXIV; Ug. IV, p. xvii.

<sup>6</sup>Du., II, 2, p. 847.

<sup>7</sup>AAS, II (1952), pl. III, fig. 1; Ug. III, p. 262.

<sup>8</sup>Du., II, 2, pl. CLXXXIV, no. 7419.

Age III was cast in a mould from RS.<sup>1</sup>

Finally, many of the objects themselves proved beyond any doubt their local manufacture. A number of tools and weapons were left behind in an unfinished state. A deposit from the S.E. at Byblos contained blades of daggers which had not yet been pierced for riveting.<sup>2</sup> The unfinished tools and weapons from the hoard in the House of the High Priest at RS have been referred to already see above, cat. and p. 76). The Byblos deposits of figurines invariably contained either badly cast examples or specimens left without the secondary retouches necessary had they been products imported from elsewhere. The solidified metal drop which formed over the filling hole of the mould was often preserved, and many figurines showed casting webs along the edges corresponding to the joints of bivalve moulds.<sup>3</sup>

The readily available raw materials not only made the discovery of Cu and Ae metallurgy at Byblos possible but served as a continued incentive to an ever growing local production.

---

<sup>1</sup>Syria, XVII 1936), p. 108.

<sup>2</sup>Du., II, 1, p. 341.

<sup>3</sup>Du., II, 2, p. 787; for example.

## TECHNICAL AND ARTISTIC DEVELOPMENT AND THE QUESTION OF FOREIGN INFLUENCE

After the work of mining, smelting, and alloying had been completed, the actual metal-work fell to the artisan-craftsman. Reference has already been made to the Cu worked at Byblos during the fourth millennium B.C. (see above, p. 82). The Chalcolithic daggers were possibly made of native copper,<sup>1</sup> but their manufacture already presupposed a knowledge of several techniques: certainly forging and annealing, perhaps melting and casting, as well as riveting. The operation of melting was almost certainly followed by its "logical and natural outgrowth," the discovery of the more complex smelting process.<sup>2</sup> It also seems certain that a couple of centuries elapsed between the first use of copper in its native form and the gradual experimentation with and discovery of the smelting technique.<sup>3</sup>

Hardly anything can be deduced as to the further development of metal-working techniques at Byblos during the course of the third millennium B.C., since the exact association of metal objects from EB levels is so far difficult to determine from the publications. Towards the close of the third millennium, however, the rich material of the early offering deposits presents one with the fact that by then all major techniques were known and practiced with surprising skill. The casting, annealing and hammering

---

<sup>1</sup>For a Cypriote origin of this Cu see M. Dunand in BMB, XII (1955), p. 14.

<sup>2</sup>H.H. Coghlan, Notes on Prehistoric Metallurgy of Copper and Bronze in the Old World (Oxford, 1962 repr.), p. 22.

<sup>3</sup>Ibid., p. 23.

of sheet metal was brought to perfection (cat., fig. 7:8-11, 15), just as the piece moulding process had reached a point where bivalve and complex moulds could be successfully used.<sup>1</sup> The raising and sinking techniques employed for the manufacture of vessels, too, were mastered (cat., fig. 6:7-9, 11). The whole range of mechanical skills used by the artisan in fine metal-work was also at the command of the Byblos smiths: Repoussé work (tracing, chasing and stamping), as well as the machining technique of engraving (cat., figs. 3:6; 4:3, 7; 5:14, 17; 7:3, 10).<sup>2</sup> The lost wax process, which rendered faultless pieces without a trace of casting webs, was to reach its highest point at Byblos and particularly at Ras Shamra in a number of superb statuettes of the middle and latter half of the second millennium B.C. (cat., figs. 15:6, 7; and 16; also fig. 14:7).<sup>3</sup> Inlaying and granulation work was equally well known (cat., fig. 12:2).<sup>4</sup> Such a complete mastery of the major metal-working techniques may serve as further indirect evidence that a long development must have taken place, in order to allow for progress by trial and error using the available materials of copper and tin.

A number of techniques were even invented at Byblos. The niello-and-gold inlay on the sickle-sword of King Abishemu antedates Amosis' dagger, the first

---

<sup>1</sup>Du., II, 1, p. 352.

<sup>2</sup>For the various techniques see C. Singer, and others, edd., A History of Technology (Oxford, 1955), chapter 23, pp. 626-50.

<sup>3</sup>Du., II, 2, pp. 600-601.

<sup>4</sup>Du., II, pl. CXXXII (for granulation work in gold).



Egyptian weapon decorated in the same fashion, by about two and a half centuries.<sup>1</sup>  
 The fine lines for the wire inlay must have been made in the model before casting.<sup>2</sup>  
 This art was naturally also taken over and adapted to different objects by the artisans of Ras Shamra (cat., fig. 12:2). It is true that metal was incrustated in Mesopotamia in the third millennium,<sup>3</sup> but the particular gold-wire inlay does not seem to have been known there, since no trace of it has been found among the treasures of Mesopotamian metal-work.<sup>4</sup>

Trade between Mesopotamia and Syria was established by the end of the third millennium B.C.<sup>5</sup> Furthermore, commercial relations between Mesopotamia, Ras Shamra and Byblos are evident from the adaptation of such Mesopotamian shapes as the sickle-sword (see above, pp. 84-5) and the C-shaped axe (see above, p. 90). The original and typical development of the "Syrian" semicircular fenestrated axe, however, presupposes again that local metal smiths were sufficiently advanced to throw foreign ideas into the "melting pot" of local experimentation, in order to alter or improve them.

---

<sup>1</sup>See E. Vernier, "La bijouterie et la joaillerie égyptiennes," Mémoires de l'Institut Français d'archéologie orientale, vol. II (Cairo, 1907), pl. XXIV:2.

<sup>2</sup>M.A. Murray, The Splendour that Was Egypt (3rd impr.; London, 1950), p. 276.

<sup>3</sup>G. Contenau, "L'incrustation sur métal et l'orfèvrerie cloisonnée en Mésopotamie," Syria, XXXIII (1956), pp. 58-62.

<sup>4</sup>Cf. C.L. Woolley, Ur Excavations. The Royal Cemetery (2 vols.; London and Philadelphia, 1934).

<sup>5</sup>W.F. Leemans, Foreign Trade in the Old Babylonian Period (Leiden, 1960), pp. 116-17 and 121-24.

The archaeological finds from Byblos and Ras Shamra support the view that man developed metal weapons earlier and in far greater quantities than tools.<sup>1</sup> Nevertheless, all through the second millennium artisans at Byblos and Ras Shamra had the experience and leisure to produce weapon-shaped works of art like the above mentioned sickle-sword and the decorative axe with inlaid socket from Ras Shamra, to cite but two examples. These "weapons" can surely be taken as an indication of peace and prosperity, the prerequisites for any development in art, including the art of metal-working.

A study of the figurative art of Byblos and RS clearly unfolds a picture of technical as well as artistic improvement during the second millennium: a tendency away from primitive anthropomorphic representations and stylization towards naturalism; from mass production for the satisfaction of customary local demands to the modelling of individual masterpieces of metal sculpture. The LB examples from RS prove this point just as much as the crude stilizations of earlier artefacts from the workshops at Byblos.

The establishment and growth of an independent metal industry at Byblos and Ras Shamra is quite obviously supported by the technical and artistic quality of its numerous extant products. It has often been suggested that the Caucasus was one of the earliest centres for the spread of metal objects.<sup>2</sup> Since the objects found in that region are later than the early bronzework from Byblos and Ras Shamra, there is no

---

<sup>1</sup>A. Rosenfeld, The Inorganic Raw Materials of Antiquity (London, 1965), p. 206.

<sup>2</sup>H. Frankfort, "Sumerians, Semites and the Origin of Copper-Working," Antiquaries Journal, VIII (1928).

direct evidence at all to support this suggestion.<sup>1</sup> Again the Hurrians or other "metal working" invaders were credited with the more or less sudden introduction of metallurgy into the Near East, more particularly Ras Shamra.<sup>2</sup> But just as the places of origin of these peoples and, hence, their initial mining centres, are still relatively obscure, their art, in metal or other materials, has not yet been discovered,<sup>3</sup> not even in regions where these invaders are known to have settled.<sup>4</sup>

By contrast, the artefacts from Byblos and Ras Shamra are substantial evidence for original local techniques and art. No intrusion of foreign invaders is needed to explain the existence of the metal industry which produced this bronzework.

---

<sup>1</sup>M.E.L. Mallowan, "Excavations at Brak and Chagar Bazar," Iraq, X (part III), p. 167.

<sup>2</sup>Ug. I, pp. 124, 133-36 and II, chapter II, pp. 49-120.

<sup>3</sup>O.R. Gurney, The Hittites (Harmondsworth, 1961), p. 211.

<sup>4</sup>S. Lloyd, Early Anatolia (Harmondsworth, 1956), p. 166.

## COMMERCIAL DIFFUSION AND CULTURAL SIGNIFICANCE

As has been stated, the rise and development of a metal industry depended first and foremost on abundant local raw materials, with which Byblos was supplied, and on secure commercial relations with foreign mining centres, if the raw material had to be imported, as in the case of LB Ras Shamra. These two conditions would then assure the growth of a well-versed class of metal smiths whose specialized techniques needed lengthy accumulative experience rather than the sudden irruption of foreign technicians from obscure origins.

The figurative art of Byblos and Ras Shamra provides an especially strong case for purely local production and demand. Hardly any elements can be traced to foreign centres of metal-work. Mesopotamian bronze figurines have nothing in common with the Syrian types and were intended for entirely different purposes.<sup>1</sup> It is probably due to the lack of excavations that the wider distribution of this custom of offering statuettes in sanctuaries has not been clearly shown. The early copper figurines from Tell Judaidah in the Amuq region, though different in detail, were possibly intended for just that purpose.<sup>2</sup> A figurine from Tartous at the coast wears a belt like the Judaidah statuettes, but resembles in attitude and foil covering the deities with raised arms and advanced legs from Byblos and Ras Shamra.<sup>3</sup> It there-

---

<sup>1</sup>See A. Parrot, *Sumer* (Paris, 1960), p. 151, fig. 180 (a typical votary statuette from Khafajeh), and p. 155, fig. 183.

<sup>2</sup>M. C. W. McEwan, "Excavations of the University of Chicago in the Plain of Antioch," *AJA*, XLI (1937), pp. 8-13. They were dated to ca. 3100 B. C.

<sup>3</sup>See R. Dussaud, *L'art phénicien du II<sup>e</sup> millénaire* (Paris, 1949), p. 55, figs. 20, 21.

fore forms a link between the two types. A sounding on the important Syrian site of Tell Soukas revealed a steatite mould in MB context for a flat, stylized votive figurine like the MB statuettes from the Obelisk Temple of Byblos.<sup>1</sup> It follows that such figurines were cast also at Tell Soukas.

The habit of mass casting figurines at Byblos indicates local ritual usage. In addition, the mere fact that these figurines were designed as offerings for the sanctuaries further underlines the existence of a more than ample supply of raw materials and an extensive metal-working centre; for otherwise the precious bronze would have had to have been employed exclusively for armament. As elsewhere, the votive figurines could have been shaped out of the much cheaper and more abundant clay. Thus, terracotta figurines were most common with the Mycenaeans who continued to make or even import these same idols even after they had long been in contact with metal producing sites like Ras Shamra. A number of Late Helladic III  $\Psi$  and  $\phi$ -shaped idols were imported into Ras Shamra by Mycenaean traders who had settled there.<sup>2</sup>

The figurative metal art finally attests many religious and artistic facets of the Bronze Age culture of Byblos and Ras Shamra proper, whereas the early export of these statuettes to centres where bronze figurines had not so far been customary proves much beyond metallurgical influence from the Near East: it proves an artistic

---

<sup>1</sup>P. J. Riis, "L'activité de la mission archéologique danoise sur la cote phénicienne en 1961," AAS, XIII (1963), p. 211 and fig. 10.

<sup>2</sup>H. L. Lorimer, Homer and the Monuments (London, 1950), p. 53; and Ug. I, p. 99, fig. 94 (two idols).

and religious impact. Thus during the New Empire period, Asiatic deities in their foreign aspect and attire became increasingly fashionable in Egypt.<sup>1</sup> Their bronze statuettes were imported,<sup>2</sup> and Egyptian representations of the sky-god Ba'al, the warrior and horse tamer Reshef and the fighting Anat or Astarte followed closely the metal originals.<sup>3</sup>

These very same gods progressed further still. Their presence in Mycenaean centres has already been mentioned (see above, p. 114). Other bronze statuettes were found as far afield as Crete and Thessaly.<sup>4</sup> It has been said by others--following Homer--that "Phoenician" seafaring merchants must have taught much of the "alphabet of art" to the west, particularly Greece.<sup>5</sup> The later development of small bronze art in Geometric Greece may well have been inspired by oriental practices. The many bronze votive figurines found in the earliest sanctuaries at Sparta<sup>6</sup>

---

<sup>1</sup>W. Helck, Die Beziehungen Ägyptens zu Vorderasien im 3. und 2. Jahrtausend v. Chr. (Wiesbaden, 1962), p. 482 ff.

<sup>2</sup>Ibid., p. 488.

<sup>3</sup>Ibid., pp. 484-87 and 496-97.

<sup>4</sup>A. Evans, "Mycenaean Tree and Pillar Cult and Its Mediterranean Relations," JHS, XXI (1901), pp. 125, fig. 15 and p. 126, fig. 16; and J. Boardman, The Cretan Collection in Oxford (Oxford, 1961), p. 78, pl. XXV.

<sup>5</sup>E.A. Gardiner, A Handbook of Greek Sculpture (London, 1929), p. 52.

<sup>6</sup>R.M. Dawkins, "The Sanctuary of Artemis Orthia at Sparta," JHS (supplementary vol. 5, 1929), pls. CXLI, LXXVIII-LXXIX.

and Olympia<sup>1</sup> were certainly an innovation in Greek ritual habits and a change from the Mycenaean custom of offering idols in clay.

If the early statuette of a nude youth from Byblos (cat. D, a:1, fig. 8) may have been a distant predecessor of the archaic kouros figures, then the great number of "Ba'al-Reshef" figurines cannot fail to show their relation to the zanes and similar statuettes from Greece.<sup>2</sup> These early representations of Zeus and Poseidon, Artemis and Athena were the Greek equivalents of Ba'al-Reshef and Anat-Astarte. The similarities of the bronze deities in technique and representation may well indicate more than an external likeness. The spiritual relationship between the gods of the Near East as known from the Ras Shamra texts and the Homeric Greek gods is well known from literary sources.<sup>3</sup>

There is evidence then that Aegean and Greek metal-work may have derived important inspiration from the thriving bronze industries at Byblos and Ras Shamra.<sup>4</sup> The exportation of the bronzework, particularly the small statuettes of deities from these centres was not only responsible for spreading the knowledge of metal techniques and artistic representation: it was of wider, if less tangible cultural significance.

<sup>1</sup>P. Demargne, Aegean Art. The Origins of Greek Art, transl. by S. Gilbert and J. Emmons (London, 1964), pp. 312-13, figs. 407-09; and p. 360, figs. 474-76.

<sup>2</sup>G.A. Richter, Archaic Greek Art Against Its Historical Background (New York, 1949), p. 90 and fig. 154.

<sup>3</sup>I. Aistleitner, Die mythologischen und kultischen Texte aus Ras Shamra (Budapest, 1959), p. 8.

<sup>4</sup>V. Gordon Childe, New Light on the Most Ancient East (New York, 1957), p. 224.

SELECT BIBLIOGRAPHY



- Aistleitner, I. Die mythologischen und kultischen Texte aus Ras Shamra. Budapest: Akademiai Kiado, 1959.
- Albright, W. F. "The Excavations of Tell Beit Mirsim. Vol. II: The Bronze Age," Annual of the American Schools of Oriental Research, XVII (1936-1937).
- \_\_\_\_\_. "The Eighteenth-Century Princes of Byblos and the Chronology of Middle Bronze," Bulletin of the American Schools of Oriental Research, no. 176 (December, 1964), pp. 38-46.
- \_\_\_\_\_. "Further Light on the History of Middle Bronze Byblos," loc. cit., no. 179 (October, 1965), pp. 38-43.
- Alexander, W. and Street, A. Metals in the Service of Man. Harmondsworth: Penguin Books, 1964 repr.
- Barnett, R. D. "Ancient Oriental Influences on Archaic Greece," The Aegean and the Near East. Studies Presented to H. Goldman. New York: Augustin, 1956; pp. 212-258.
- \_\_\_\_\_. A Catalogue of the Nimrud Ivories. With other examples of Ancient Near Eastern Ivories in the British Museum. London: British Museum, 1957.
- \_\_\_\_\_. "The Gods of Zinjirli," Compte rendu de l'onzième rencontre assyriologique internationale. Leiden 1962. Leiden: Nederlands Instituut voor het Nabije Oosten, 1964.
- Blegen, C. W. "Excavations at Troy," AJA, XLI (1937), pp. 553-97.
- \_\_\_\_\_. Troy and the Trojans. London: Thames and Hudson, 1964, 2nd impr.
- Bliss, F. J. A Mound of Many Cities or Tell el Hesya Excavated. London: Palestine Exploration Fund, 1894.
- Boardman, J. The Cretan Collection in Oxford. Oxford: Clarendon Press, 1961.
- Bonnet, H. Die Waffen der Völker des Alten Orients. Leipzig: Hinrichs, 1926.
- Bossert, H. T. Altanatolien. Kunst und Handwerk in Kleinasien von den Anfängen bis zum völligen Aufgehen in der griechischen Kultur. Berlin: E. Wasmuth, 1942.
- Boyd Hawes, H. Gournia, Vasiliki and Other Prehistoric Sites on the Isthmus of Hierapetra (Crete). Philadelphia, University Press, 1908.

- Braidwood, R. J., Burke, J. E. and Nachtrieb, N. H. "Ancient Syrian Copper and Bronzes," Journal of Chemical Education, XXVIII (1951), pp. 87-96.
- \_\_\_\_\_, and Braidwood, L. S. Excavations in the Plain of Antioch. Chicago: University Press, 1960.
- \_\_\_\_\_. "Report on Two Sondages on the Coast of Syria, South of Tartous," Syria, XXI (1940), pp. 183-221.
- Brunton, G. and Caton-Thompson, G. The Badarian Civilisation. London, 1928.
- Buchholz, H.-G. "Der Kupferhandel des zweiten vorchristlichen Jahrtausends im Spiegel der Schriftforschung," Minoica, Festschrift Sundwall. Berlin, 1958, pp. 92-115.
- \_\_\_\_\_. "Keftiubarren und Erzhandel im zweiten vorchristlichen Jahrtausend," Prähistorische Zeitschrift, XXXVII (1959), pp. 1-40.
- Castellino, G., and others. Missione archeologica italiana in Siria. Rapporto preliminare della campagna 1965 (Tell Mardikh). Rome: University of Rome, 1966.
- Catling, H. W. "Bronze Cut-and-Thrust Swords in the Eastern Mediterranean," Proceedings of the Prehistoric Society, XXII (1956), pp. 102 ff.
- \_\_\_\_\_. "A Bronze Greave from a 13th Century B.C. Tomb at Enkomi," Opuscula Athenensia (4e, III), II (1955), pp. 21-36.
- \_\_\_\_\_. Cypriot Bronzework in the Mycenaean World. Oxford: Clarendon, 1964.
- \_\_\_\_\_. "Cyprus in the Neolithic and Bronze Age Periods," CAH, fascicle 43. Cambridge; University Press, 1965.
- \_\_\_\_\_. "A New Bronze Sword from Cyprus," Antiquity, XXXV (1961), pp. 115-22.
- Cavaignac, E. Les Hittites. (L'Orient Illustré, publié sous la direction de C. Viroilleaud). Paris: Maisonneuve, 1950.
- Childe, V. G. New Light on the Most Ancient Near East. New York: Praeger, 1957.
- \_\_\_\_\_. "The Technique of Prehistoric Metal Work," Antiquity, XXII (1948), pp. 29-32.

- \_\_\_\_\_ . What Happened in History. Harmondworth: Penguin Book, 1960.
- Coghlan, H.H. "The Evolution of the Axe from Prehistoric to Roman Times," JAI ?, LXXIII (1943), pp. 27 ff.
- \_\_\_\_\_ . Notes on the Prehistoric Metallurgy of Copper and Bronze in the Old World. (Occasional Paper on Technology, 4). Oxford: Pitt Rivers Museum, 1962 repr.
- \_\_\_\_\_ . "Some Fresh Aspects of Prehistoric Metallurgy of Copper," Antiquaries' Journal, XXII (1942), pp. 22-38.
- \_\_\_\_\_ . "Some Problems Concerning the Manufacture of Copper Shaft-hole Axes," Archeologia Austriaca, XXIX (1961), pp. 57-75.
- Contenau, G. La Civilisation des Hittites et des Hurrites du Mitanni. Paris: Payot, 1948.
- \_\_\_\_\_ . La civilisation phénicienne. Paris: Payot, 1949.
- \_\_\_\_\_ . "L'incrustation sur métal et l'orfèvrerie cloisonné en Mésopotamie," Syria, XXXIII (1956), pp. 58-62.
- Cullis, C.G. and Edge, A.B. Report on the Cupriferous Deposits of Cyprus. London: Crown Agents, 1927.
- Davies, N. de Garis. The Rock Tombs of El Amarna. London and Boston: E.E. Fund, 1903-1908, 6 vols.
- Davies, O. "Bronze Age Mining Round the Aegean," Nature, CXXX (1932), pp. 985 ff.
- \_\_\_\_\_ . "The Copper Mines of Cyprus," Annual of the British School at Athens, XXX (1932), pp. 74-85.
- Dawkins, R.M. "The Sanctuary of Artemis Orthia at Sparta," JHS, Supplementary vol. 5 (1929).
- Demargne, P. Aegean Art. The Origins of Greek Art. (Translated by S. Gilbert and J. Emmons). London: Thames and Hudson, 1964.
- Deshayes, J. Les outils de bronze de l'Indus au Danube. Paris: Geuthner, 1960.
- Dikaios, P. "The Oldest Known Representation of Apollo: a Bronze Statue of a Horned God Newly Discovered in Cyprus," Illustrated London News, 27/8/1949, pp. 316-17.

- Dossin, G. "Le nom du cuivre en Sumerien," Bulletin Classique des Lettres de l'Académie Royale de Belgique (5e serie), XXXVIII (1932), pp.433-38.
- Dunand, M. "A-propos de la stèle de Melqart du Musée d'Alep," BMB, VI (1942-1943), pp. 41-45.
- \_\_\_\_\_. Byblia Grammata. Beirut: Imprimerie Catholique, 1945.
- \_\_\_\_\_. Fouilles de Byblos. Paris: Maisonneuve, 1939-1958, vols. I, II, parts 1 and 2; 2 vols. of pls.
- \_\_\_\_\_, Pillet, M. and Dussaud, R. "5e campagne de fouilles de Byblos," Syria, XVIII (1927), pp. 93-125.
- \_\_\_\_\_. "6e campagne de fouilles de Byblos," Syria, IX (1928), pp. 1-5.
- \_\_\_\_\_. "Une nouvelle version des inscriptions phéniciennes de Karatepe," BMB, VIII (1946-48), pp. 27-34.
- \_\_\_\_\_. "Rapport préliminaire sur les fouilles de Byblos en 1948," BMB, IX (1949-1950), pp. 53-63.
- \_\_\_\_\_. "Rapports préliminaires sur les fouilles de Byblos en 1950, 1951, 1952," BMB, XII (1955), pp. 7-23.
- \_\_\_\_\_. "Rapport préliminaire sur les fouilles de Byblos en 1962," BMB, XVII (1964), pp. 29-35.
- Dussaud, R. "L'art syrien du deuxième millénaire avant notre ère," Syria, VII (1926), pp. 336-46.
- \_\_\_\_\_. "Byblos et les Gublites," Syria, IV, V and VI (1923-1925).
- \_\_\_\_\_. Les civilisations préhelléniques dans le bassin de la mer Egée. Paris: Geuthner, 1914.
- \_\_\_\_\_. Les découvertes de Ras Shamra (Ugarit) et l'Ancien Testament. Paris: Geuthner, 1937, 2nd ed.
- \_\_\_\_\_. "Les éléments déchaînés," Syria, XVI (1935), pp. 196-204.
- \_\_\_\_\_. "Etude sur Bâtiments II, XVIII, XL de Byblos," Congrès de sciences anthropologiques et ethnologiques de Bruxelles. Brussels, 1948.

- \_\_\_\_\_. "Haches à douille de type asiatique," Syria, XI (1930), pp. 245 ff.
- \_\_\_\_\_. Prétydiens, Hittites et Achéens. Paris: Geuthner, 1953.
- \_\_\_\_\_. "Les quatre campagnes de fouilles de M. P. Montet à Byblos," Syria, XI (1930), pp. 164-87.
- \_\_\_\_\_. "Le sanctuaire phénicien de Byblos," Syria, VII (1926), pp. 247-56.
- Edwards, I. E. S. The Pyramids of Egypt. Harmondsworth: Penguin Books, 1952 repr.
- Emery, W. Archaic Egypt. Harmondsworth: Penguin Books, 1961.
- Eusebius. The Ecclesiastical History. (Transl. by J. E. L. Oulton). Harvard: Loeb Classical Library, 1957, 2 vols.
- Evans, A. J. "Mycenaean Tree and Pillar Cult and Its Mediterranean Relations," JHS, XXI (1901), pp. 99-204.
- Forbes, R. J. Bibliographia Antiqua, Philosophia Naturalis. II. Metallurgy. Leiden: Nederlands Instituut voor het Nabije Oosten, 1940-1950.
- \_\_\_\_\_. Metallurgy in Antiquity. A Notebook for Archaeologists and Technologists. Leiden: Brill, 1950.
- \_\_\_\_\_. "New Evidence on Late Bronze Age Metallurgy," Sibirium, III (1956-57), pp. 113-21.
- \_\_\_\_\_. Studies in Ancient Technology. Leiden: Brill, 1964, vols. VII, VIII, IX.
- Frankfort, H. "Sumerians, Semites, and the Origin of Copperworking," Antiquaries' Journal, VIII (1928), pp. 217-35.
- Gardner, E. A. A Handbook of Greek Sculpture. London: Macmillan, 1929.
- Garstang, J. Prehistoric Mersin. (Oxford, Clarendon Press, 1953.
- Gelb, I. J. Hurrians and Subarians. Chicago: Studies in Ancient Oriental Civilization, no. 22, 1944.
- Glötz, G. Civilisation Egéenne. Paris: Albin Michel, 1952 repr.

- Grant, E. Ain Shems Excavations (Palestine). (Biblical and Kindred Studies No. 3). Pennsylvania: Haverford College, 1932, part II: Cat. and Pls.
- Gray, D.H.F. "Metal-working in Homer," JHS, LXXIV (1954), pp. 1-15.
- Guigues, P.E. "Lébé'a, Kafer-Garra, Qrayé, nécropoles de la région sidonienne," BMB, I, II, III (1937, 1938, 1939), pp. 35-76, 27-72, 53-63.
- Gurney, D.R. The Hittites. Harmondsworth: Penguin Books, 1961.
- Guy, P.L.O. Megiddo Tombs. (Oriental Institute Publications vol. XXXIII.) Chicago: University Press, 1938.
- Hall, E.H. Excavations in Eastern Crete. Vrokastro. Philadelphia: University of Pennsylvania, Museum Publication, 1914.
- Hanfmann, G.M.A. "A Near Eastern Horseman," Syria, XXXVIII (1961), pp. 243-55.
- Harden, D. The Phoenicians. London: Thames and Hudson, 1962.
- Harris, J.R. Lexicographical Studies in Ancient Egyptian Minerals. Berlin: Akademie-Verlag, 1961.
- Haynes, D.E.L. "Some Observations on Early Greek Bronze Castings," Archaeologischer Anzeiger, IV (1962), pp. 803-807.
- Head, H.H. Rutley's Elements of Mineralogy. London: Thomas Murby, 1946, 23rd ed.
- Helck, W. Die Beziehungen Ägyptens zu Vorderasien im 3. und 2. Jahrtausend v. Chr. Wiesbaden: Harrassowitz, 1962.
- Hestrin, R. and Tadmor, M. "A Hoard of Tools and Weapons from Kfar Monash," Israel Exploration Journal, XIII (1963), no. 4, pp. 265-88.
- Hill, G. A History of Cyprus. Cambridge: University Press, 1949 repr., vol. I.
- Hood, M.S.F. and Jong, P. de. "Late Minoan Warrior-Graves," Annual of the British School at Athens, XLVII (1952), pp. 243 ff.
- Hubert, H. "De quelques objets de bronze trouvés à Byblos," Syria, VI (1925), pp. 16-29.

- Hutchinson, R.W. Prehistoric Crete. Harmondsworth: Penguin Books, 1963 repr.
- \_\_\_\_\_. "Two Mesopotamian Daggers and Their Relatives," Iraq, I (1934), pp. 163-70.
- Ingholt, H. Rapport préliminaire sur les sept campagnes de fouilles à Hama en Syrie (1932-38). Copenhagen: Munksgaard, 1940.
- Jacobsthal, P. Greek Pins and Their Connections with Europe and Asia. Oxford: Clarendon Press, 1956.
- Jarry, M. "Sur une blessure mortelle causée par une flèche de bronze à Ugarit," Syria, XX (1939).
- Jones, W.R. Minerals in Industry. Harmondsworth: Penguin Books, 1943.
- Kantor, H. "The Aegean and the Orient in the Second Millennium B.C.," American Journal of Archaeology, LI (1947), pp. 1-103.
- Kees, H. Ancient Egypt. A Cultural Topography. (English ed., T.G.H. James). London: Faber and Faber, 1961.
- Kelso, J.L. "Ancient Copper Refining," Bulletin of the American Schools of Oriental Research, no. 122 (1951), pp. 26-28.
- Kenyon, K.M. "A Crescentic Axe-head, and a Group of Weapons from Tell el Hesi," 11th Annual Report of the Institute of Archaeology. London: University, 19?.
- Knudtzon, J.A. Die el-Amarna-Tafeln. Aalen; Zeller, 1964 repr., 2 vols.
- Koşay, H.Z. Ausgrabungen von Alaca Höyük (1936). Ankara: Veröffentlichungen der Türkischen Geschichtskommission V. Serie, 1944.
- \_\_\_\_\_. Les Fouilles d'Alaca Höyük. (1937-39). Ankara: 1951.
- Leclant, J. "Astarté à cheval d'après les représentations égyptiennes," Syria, XXXVII (1960), pp. 1-67.
- Leemans, W.F. Foreign Trade in the Old Babylonian Period. (Leiden: Brill, 1960.
- Limet, H. Le travail du métal au pays de Sumer au temps de la IIIe dynastie d'Ur. Paris: Société d'édition "Les Belles Lettres," 1960.
- Lloyd, S. The Art of the Ancient Near East. London: Thames and Hudson, 1961.

- \_\_\_\_\_. Early Anatolia. Harmondsworth: Penguin Books, 1956.
- Lorimer, H. L. Homer and the Monuments. London: Macmillan, 1950.
- Loud, G. (dir.) Megiddo II (Seasons 1935-39). Oriental Institute Publications vol. LXII. Chicago: University Press, 1948, pl. vol.
- Lucas, A. Ancient Egyptian Materials and Industries. (Rev. and enlarged by J. R. Harris). London: Arnold, 1962, 4th ed.
- \_\_\_\_\_. "Notes on the Early History of Tin and Bronze," JEA, XIV (1928), pp. 97-108.
- Macalister, R. A. S. The Excavations of Gezer (1902-1905 and 1907-1909). London: Murray, 1912, 3 vols.
- Mallowan, M. E. L. "Excavations at Brak and Chagar Bazar," Iraq, IX (1947), part III, pp. 89 ff.
- \_\_\_\_\_. Twenty-five Years of Mesopotamian Discovery (1932-56). London: The British School of Archaeology in Iraq, 1956.
- Maryon, H. Metal Work and Enamelling. London: Chapman and Hall, 1959, 3rd ed.
- \_\_\_\_\_. "Metal Working in the Ancient World," AJA, LIII (1949), pp. 93-125.
- \_\_\_\_\_. "Some Prehistoric Metalworkers' Tools," Antiquaries' Journal, XVIII (1938), pp. 243-50.
- Matthiae, P. Ars Syra, contributi alla storia dell'arte figurativa siriana nelle età del medio e tardo bronzo. Rome: Università, Centro di Studi Semitici, Istituto di Studi del Vicino Oriente, 1962.
- Matz, F. Crete and Early Greece. London: Methuen, 1962.
- Maxwell-Hyslop, R. "Bronze, lugged axe- or adze-blades from Asia," Iraq, XV (1953), pp. 69 ff.
- \_\_\_\_\_. "Daggers and Swords in Western Asia," Iraq, VIII (1946), pp. 1-65.
- \_\_\_\_\_. "Western Asiatic Shaft-hole Axes," Iraq, XI (1949), pp. 90 ff.



- May, H.G. Material Remains of the Megiddo Cult. (Oriental Institute Publications, vol. XXVI). Chicago: University Press, 1935.
- Meek, T.J. "Bronze Swords from Luristan," Bulletin of the American Schools of Oriental Research, no. 74 (1939), pp. 7-11.
- Mellaart, J. The Chalcolithic and Early Bronze Ages in the Near East and Anatolia. Beirut: Khayats, 1966.
- Mesnil du Buisson, Comte du. "Les ruines d'el-Mishrifé," Syria, VIII (1927), pp. 12-33.
- \_\_\_\_\_. Le site archéologique de Mishrifé-Qatna. Paris: Boccard, 1935.
- Montet, P. "L'art phénicien au XVIIIe siècle," Monuments et mémoires Piot, XXVII (1924), pp. 1-29.
- \_\_\_\_\_. Byblos et l'Egypte. Quatre campagnes de fouilles à Gebeil (1921-24). Paris: Geuthner, 1928.
- \_\_\_\_\_. Everyday Life in Egypt in the Days of Ramesses the Great. Transl. by R. Maxwell-Hyslop and M. S. Drower. London: Arnold, 1958.
- Murray, G.W. "A New Empire Cu Mine in the Wadi Arabah," Annuaire du Service des Antiquités de l'Egypte, LI (1951), pp. 217-18.
- Murray, M.A. The Splendour That Was Egypt. (A General Survey of Egyptian Culture and Civilisation). London: Sidgwick and Jackson, 1950, 3rd impr.
- Myres, J. L. Handbook of the Cesnola Collection of Antiquities from Cyprus. New York: Metropolitan Museum, 1914.
- Naue, J. Die vorrömischen Schwerter aus Kupfer, Bronze und Eisen. Munich, 1903.
- Newberry, P.E. Beni Hasan. London, 1893-94, vol. I.
- Nougayrol, J. Cylindres-sceaux et empreintes de cylindres (trouvés en Palestine au cours de fouilles régulières. Paris: Geuthner, 1939.
- Obermann, J. Ugaritic Mythology. A Study of its Leading Motifs. New Haven: Yale University Press, 1948.

- Oppenheim, A.L. "The Seafaring Merchants of Ur," JAOS, LXXIV (1954), pp. 6-17.
- Palmer, L.R. Mycenaeans and Minoans. Aegean Prehistory in the Light of the Linear B Tablets. London: Faber and Faber, 1961.
- Parrot, A. "Acquisitions inédits du Musée du Louvre," Syria, XXXV (1958), pp. 169-71.
- \_\_\_\_\_, Dossin G. (edd.) Archives Royales de Mari. Paris: 1950.
- \_\_\_\_\_. Le Musée du Louvre et la Bible. Paris et Neuchâtel: Delachaux and Niestlé, 1957.
- \_\_\_\_\_. Sumer. Paris: Gallimard, 1960.
- \_\_\_\_\_. Tello. Vingt campagnes de fouilles (1877-1933). Paris: Albin Michel, 1948.
- Pendlebury, J.D.S. The Archaeology of Crete. London: Methuen, 1939.
- \_\_\_\_\_. The City of Akhenaten. London: Egyptian Exploration Society, 1923-51, 4 vols.
- Perrot, G. and Chipier, C. History of Art in Phoenicia and Its Dependencies. London: Chapman, 1885, 2 vols.
- Petrie, W.M. Flinders. Ancient Gaza. London: British School of Archaeology in Egypt and Quaritch, 1931-52, 4 vols.
- \_\_\_\_\_. Objects of Daily Use. London: British School of Archaeology in Egypt, 1917.
- \_\_\_\_\_. Tools and Weapons. London: British School of Archaeology in Egypt, 1917.
- \_\_\_\_\_. Wisdom of the Egyptians. London: British School of Archaeology in Egypt and Quaritch, 1940.
- Pietschmann, R. Geschichte der Phönizier. Berlin: Grote, 1889.
- Plenderleith, H.J. and Maryon, H. "Fine Metal-work," A History of Technology, (ed. by C Singer and others), ch 23, pp. 623-61.

- Oppenheim, A.L. "The Seafaring Merchants of Ur," JAOS, LXXIV (1954), pp. 6-17.
- Palmer, L.R. Mycenaeans and Minoans. Aegean Prehistory in the Light of the Linear B Tablets. London: Faber and Faber, 1961.
- Parrot, A. "Acquisitions inédits du Musée du Louvre," Syria, XXXV (1958), pp. 169-71.
- \_\_\_\_\_, Dossin G. (edd.) Archives Royales de Mari. Paris: 1950.
- \_\_\_\_\_. Le Musée du Louvre et la Bible. Paris et Neuchâtel: Delachaux and Niestlé, 1957.
- \_\_\_\_\_. Sumer. Paris: Gallimard, 1960.
- \_\_\_\_\_. Tello. Vingt campagnes de fouilles (1877-1933). Paris: Albin Michel, 1948.
- Pendlebury, J.D.S. The Archaeology of Crete. London: Methuen, 1939.
- \_\_\_\_\_. The City of Akhenaten. London: Egyptian Exploration Society, 1923-51, 4 vols.
- Perrot, G. and Chipier, C. History of Art in Phoenicia and Its Dependencies. London: Chapman, 1885, 2 vols.
- Petrie, W.M. Flinders. Ancient Gaza. London: British School of Archaeology in Egypt and Quaritch, 1931-52, 4 vols.
- \_\_\_\_\_. Objects of Daily Use. London: British School of Archaeology in Egypt, 1917.
- \_\_\_\_\_. Tools and Weapons. London: British School of Archaeology in Egypt, 1917.
- \_\_\_\_\_. Wisdom of the Egyptians. London: British School of Archaeology in Egypt and Quaritch, 1940.
- Pietschmann, R. Geschichte der Phönizier. Berlin: Grote, 1889.
- Plenderleith, H.J. and Maryon, H. "Fine Metal-work," A History of Technology, (ed. by C Singer and others), ch 23, pp. 623-61.

- \_\_\_\_\_. "Metals and Metal Technique," in Woolley, Ur Excavations, II, pp. 284-98.
- Plinius Histoire Naturelle, XXXIV. (Translated by H. le Bonniec). Paris: Société d'édition "les Belles Lettres," 1953.
- Pritchard, J.B. The Ancient Near East in Pictures (Relating to the Old Testament). Princeton: University Press, 1954.
- \_\_\_\_\_. "Excavating a Biblical Site in Jordan: Joshua's and Solomon's Zarethan Identified," Illustrated London News, 28/3/1964, pp. 487-90.
- Przeworski, S. "Die Metallindustrie Anatoliens in der Zeit von 1500-700 v. Chr.," Internationales Archiv für Ethnographie, XXXVI (supplement, 1939).
- \_\_\_\_\_. "Notes d'archéologie syrienne et hittite. Les figurines assises et le char divin," Syria, IX (1928), pp. 273-77.
- \_\_\_\_\_. "Notes d'archéologie syrienne et hittite. III. Quelques nouveaux monuments de Marash," Syria, XVII (1936), pp. 32-44.
- Remouchamps, A.E. Griechische Dolch- und Schwertformen. Leiden: Brill, 1926.
- Richter, G.M.A. Archaic Greek Art Against its Historical Background. New York: Oxford University Press, 1949.
- Riis, P. J. "L'activité de la mission archéologique danoise sur la cote phénicienne en 1961," AAS, XIII (1963), pp. 211-24.
- Roeder, G. "Ägypten und Hethiter," Alter Orient, XX (1919), pp. 62 ff.
- \_\_\_\_\_. Ägyptische Bronzewecke. Glückstadt: Augustin, 1937.
- Ronzevalle, P. "Haches syriennes," Mélanges de la Faculté orientale de l'Université St. Joseph, VII (1914), pp. 178-80.
- Rosenfeld, A. The Inorganic Raw Materials of Antiquity. London: Weidenfeld and Nicolson, 1965.
- Rostovtzeff, M. "Dieux et chevaux," Syria, XII (1931), pp. 48-57.

- Saliby, N. "Fouilles de Tell Kazel. Rapport préliminaire," AAS, XIV (1964), pp. 3-14.
- Sandars, N.K. "The First Aegean Swords and Their Ancestry," AJA, LXV (1961), pp. 17-29.
- Santerre, G. de and Treheux, J. "Rapport sur le dépôt égéen et géométrique de l'Artémision à Délos," BCH, LXXI/LXXII (1947/48), pp. 148-247.
- Schachermeyr, F. Die minoische Kultur des Alten Kreta. Stuttgart: Kohlhammer, 1964.
- Schaeffer, C.F.A. "La contribution de la Syrie Ancienne à l'invention du bronze," JEA, XXXI (1945), pp. 92-95.
- \_\_\_\_\_. The Cuneiform Texts of Ras Shamra-Ugarit. London: Oxford University Press, 1939.
- \_\_\_\_\_. Enkomi-Alasia. Paris: Klincksieck, 1952.
- \_\_\_\_\_. "Les fouilles de Minet el-Beida et de Ras Shamra," (Preliminary reports, 1st-4th campaign), Syria, X (1929), XII (1931), XIII (1932), XIV (1933).
- \_\_\_\_\_. "Les fouilles de Ras Shamra," (Preliminary reports, 5th-11th campaign), Syria, XV (1934), XVI (1935), XVII (1936), XVIII (1937), XIX (1938), XX (1939).
- \_\_\_\_\_. "Nouvelles fouilles et découvertes de la Mission archéologique de Ras Shamra," (Subsequent preliminary reports), AAS, II-XII (1952-1962).
- \_\_\_\_\_. Stratigraphie comparée et chronologie de l'Asie Occidentale, IIIe et IIe millénaire. London: Oxford University Press, 1948.
- \_\_\_\_\_. Ugaritica I - IV. Paris: Geuthner, 1939-1962. Tomes III, V, VIII, XII de la Mission de Ras Shamra.
- Schliemann, H. Ilios, the City and Country of the Trojans. London: Murray, 1880.
- Schumacher, G. Tell el-Mutesellim. Leipzig: Haupt, 1908, Text und Tafeln.
- Severyns, A. Grèce et Proche-Orient avant Homère. Brussels: Office de Publicité, S.A., 1960.
- Seyrig, H. "Statuettes trouvées dans les montagnes du Liban," Syria, XXX, 1953, pp. 24-50.

- Simpson, W.K. "An Egyptian Statuette of a Phoenician God," Bulletin of the Metropolitan Museum, New York, February, 1952.
- Singer, C., Holmyard, E.J., Hall, A.R. (edd.). A History of Technology. Oxford: University Press, 1955, vol. I.
- Speiser, W. Vorderasiatische Kunst. Berlin: Safari-Verlag, 1952.
- Speleers, L. "Deux figurines syro-hittites," Syria, III (1922), pp. 135-40.
- Starr, R.F.S. Nuzi. Report on the Excavations at Yorgan Tepe near Kirkuk, Iraq, 1927-1931. Cambridge, Mass.: Harvard University Press, 1937-39, 2 vols.
- Stronach, D.B. "The Development of the Fibula in the Near East," Iraq, XXI (1959), pp. 181-206.
- \_\_\_\_\_. "The Development and Diffusion of Metal Types in Early Bronze Age Anatolia," Anatolian Studies, VII (1957), pp. 89-126 (1st part).
- Stubbings, F.H. "Mycenae 1939-1953. Part VII: A Bronze Founder's Hoard," Annual of the British School at Athens, XLIX (1954), pp. 292-96.
- Thomas, R. Metalsmithing for the Artist-Craftsman. Philadelphia and N.Y.: Chilton, 1960.
- Thureau-Dangin, F. "Trois contrats de Ras Shamra," Syria, XVIII (1937), pp. 245 ff.
- Tufnell, O., Inge, C.H. and Lankester Harding, G. Lachish II (Tell ed-Duweir). The Fosse Temple. London: Oxford University Press, 1940.
- \_\_\_\_\_. Lachish IV (Tell ed-Duweir). The Bronze Age. London: Oxford University Press, 1958.
- \_\_\_\_\_, Ward, W.A. "Relations Between Byblos, Egypt and Mesopotamia at the End of the Third Millennium B.C. (A Study of the Montet Jar)," Syria, 1967 (in the press).
- Tusa, V. "Testimonianze fenicio-puniche in Sicilia," (Atti del I Congresso Internazionale di Studi sulla Sicilia Antica), Κωκκαλας, studi pubblicati dall'Istituto di Storia Antica dell'Università di Palermo.
- Vercoutter, J. L'Egypte et le monde préhellénique. Cairo: Institut Français d'archéologie orientale, Bibliothèque d'études, 22, 1956.

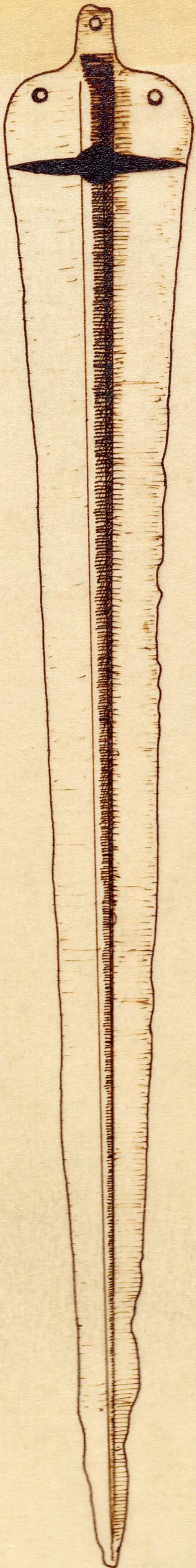
- Virolleaud, C. "Découverte à Byblos d'un hypogée de la douzième dynastie égyptienne," Syria, III (1922), pp. 273-90.
- \_\_\_\_\_. La déesse Anat. Paris: Geuthner, 1938.
- Wace, A. J. B. Mycenae. An Archaeological History and Guide. Princeton: University Press, 1949.
- Wainwright, G. A. "Early Tin in the Aegean," Antiquity, XVIII (1944), pp. 57-64.
- \_\_\_\_\_. "Egyptian Bronze-making," Antiquity, XVII (1943), pp. 96-98.
- \_\_\_\_\_. "The Occurrence of Tin and Copper near Byblos," JEA, XX (1934), pp. 29-32.
- Webster, T. B. L. From Mycenae to Homer. London: Methuen, 1958.
- Weisz, H. "Studies of Egyptian Bronzes," Journal of Chemical Education, XXXII (1955), pp. 70-72.
- Wilson, J. A. The Culture of Ancient Egypt. Chicago and London: University of Chicago Press, 1963, 9th impr.
- Wiseman, D. J. The Alalakh Tablets. (Occasional Publications of the British Institute of Archaeology at Ankara, No. 2). London: British Institute of Archaeology at Ankara, 1953.
- Witter, W. Die Kenntnisse von Bronze und Kupfer in der alten Welt. Leipzig: Kabitsch, 1938.
- Woldering, I. Egypt. The Art of the Pharaohs. London: Methuen, 1963.
- Wolf, W. Die Bewaffnung des altägyptischen Heeres. Leipzig: Hinrichs, 1926.
- Woolley, C. L. Alalakh, an Account of the Excavations at Tell Atchana in the Hatay, 1937-1949. Oxford: University Press, 1955.
- \_\_\_\_\_. Mesopotamia and the Middle East. London: Methuen, 1961.
- \_\_\_\_\_. Ur of the Chaldees. Harmondsworth: Penguin Books, 1952.

- \_\_\_\_\_. Ur Excavations, II. The Royal Cemetery. A Report on the Predynastic and Sargonic Graves Excavated Between 1927-1931. London and Philadelphia: British Museum and Pennsylvania University Museum, 1934, 2 vols.
- Yadin, Y. The Art of Warfare in Biblical Lands. New York, Toronto, London: McGraw-Hill Book Co., 1963.
- \_\_\_\_\_. Hazor (Tell el-Qedah). Jerusalem: Hebrew University, Magnes Press, 1958-63, vols. I, II, III and IV. 7

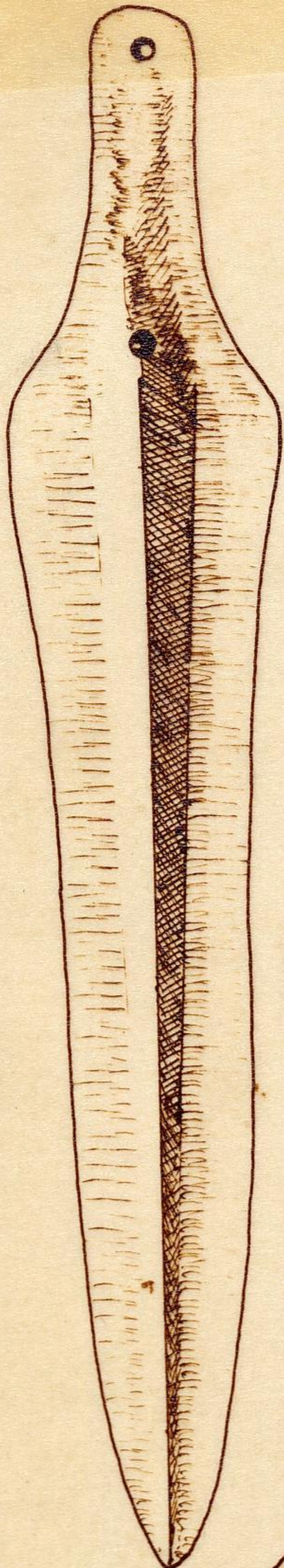


**FIGURES**

FIG. 1



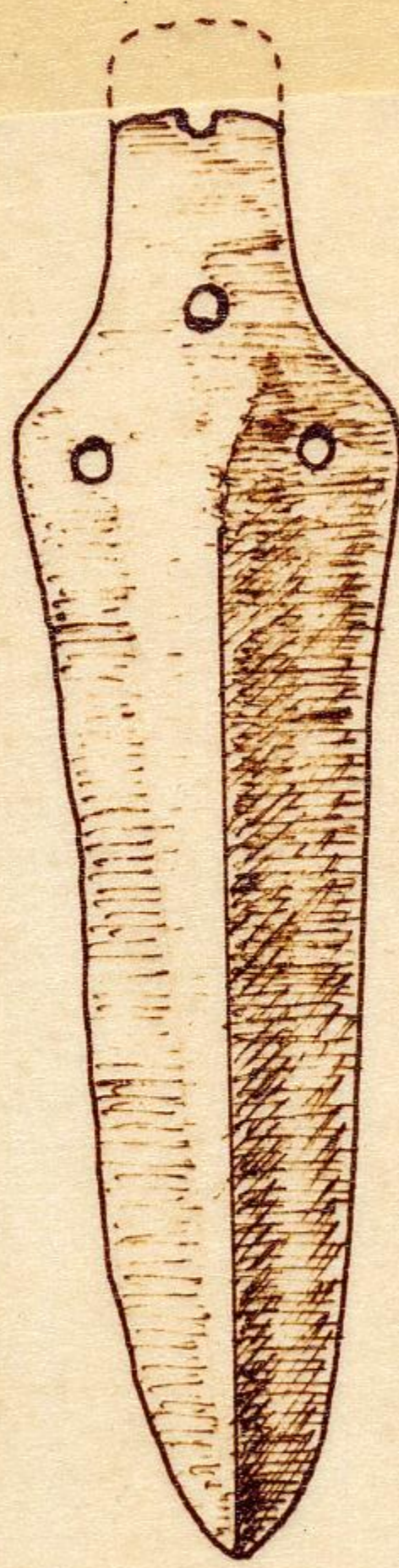
2178  
57↑  
1



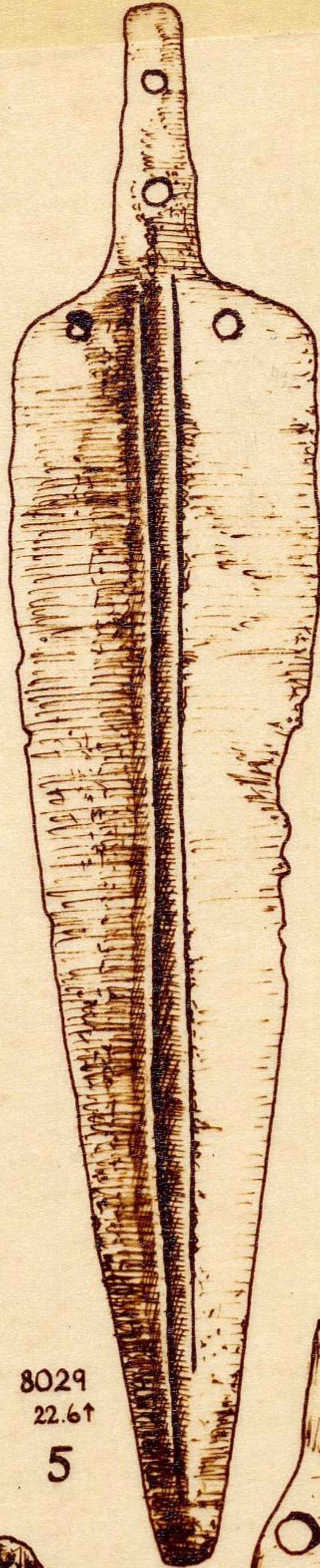
8323  
ca.25↑  
2



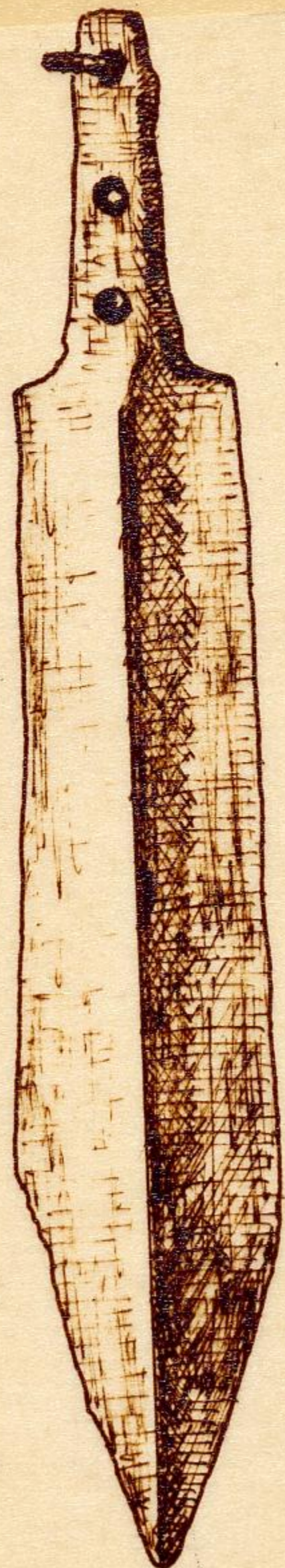
349  
3



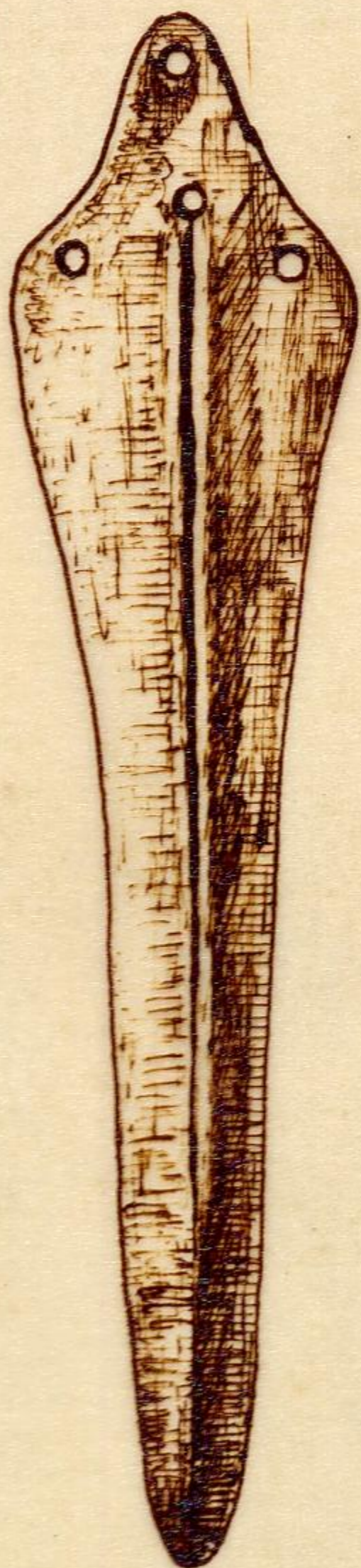
8381  
13.1↑  
4



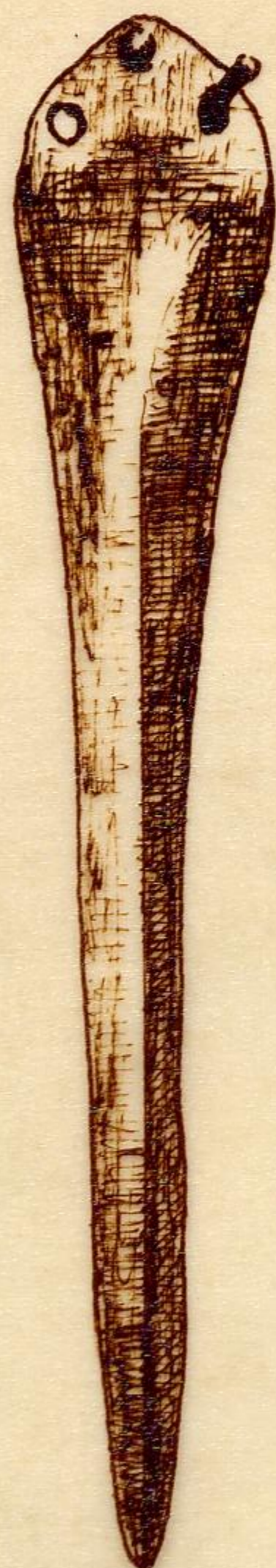
8029  
22.6↑  
5



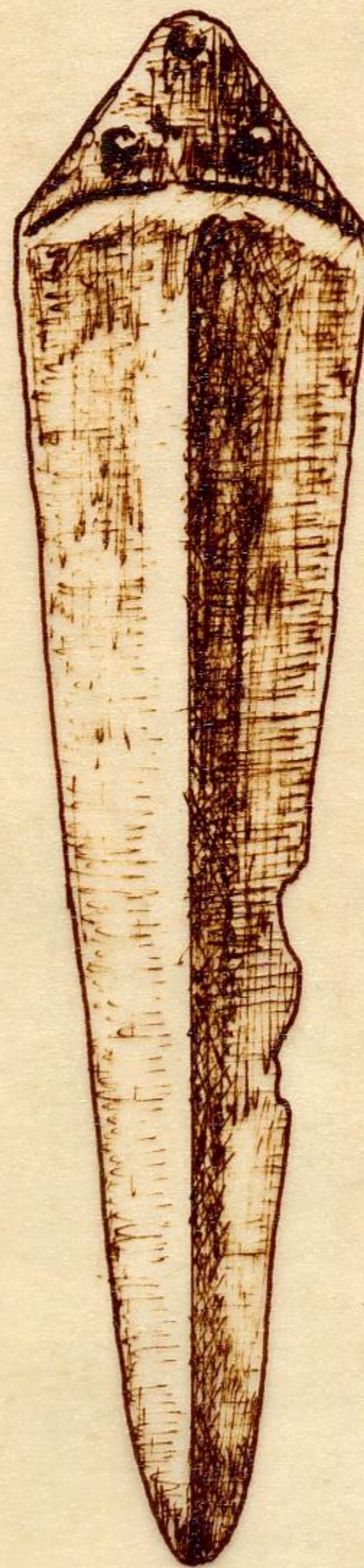
2179  
24.5↑  
6



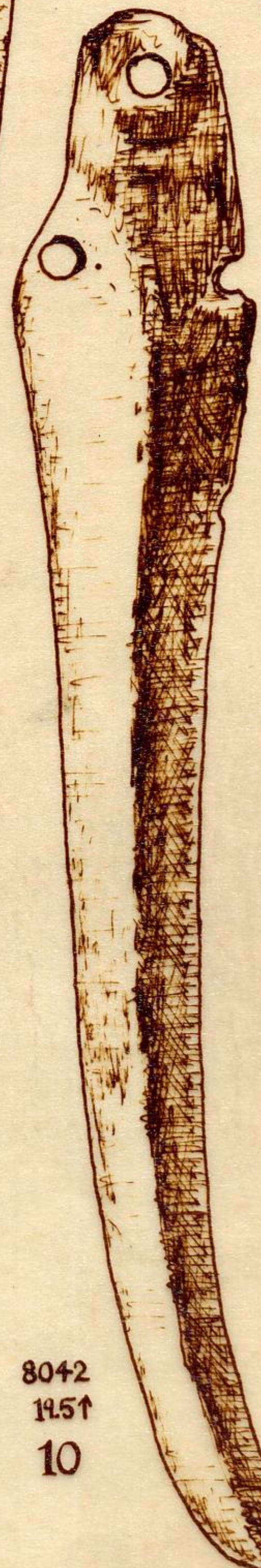
9171  
13.5↑  
7



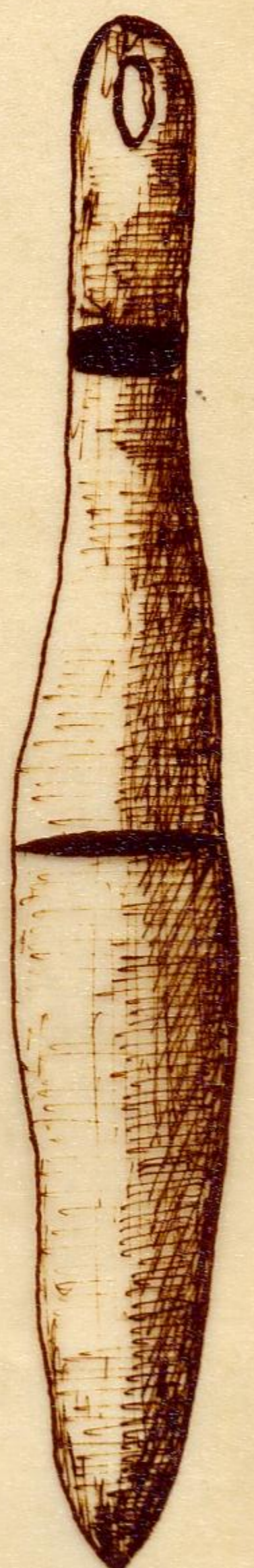
9535  
20.2↑  
9



9532  
20.7↑  
8



8042  
19.5↑  
10



18684  
28.5↑  
11

FIG. 2

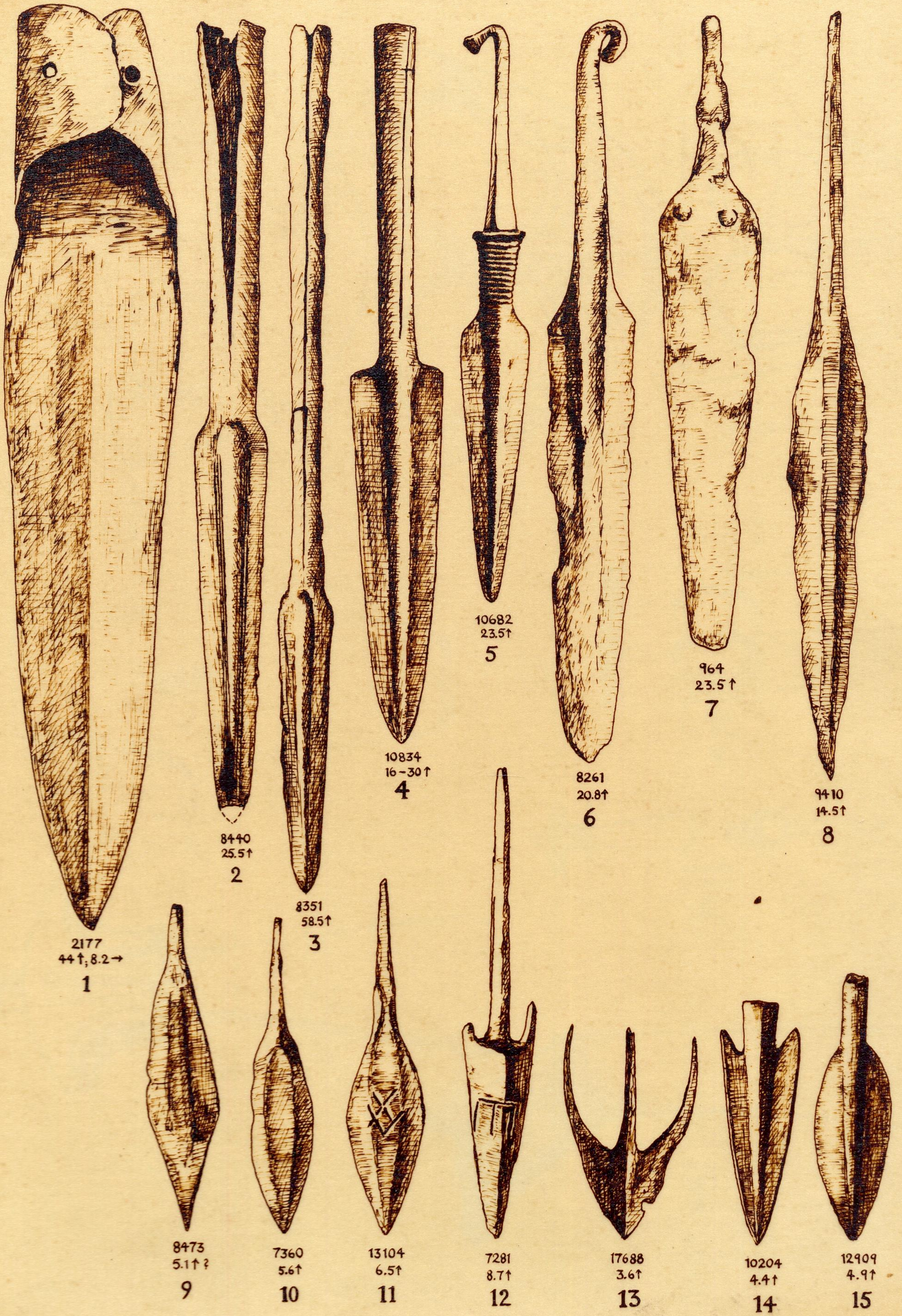
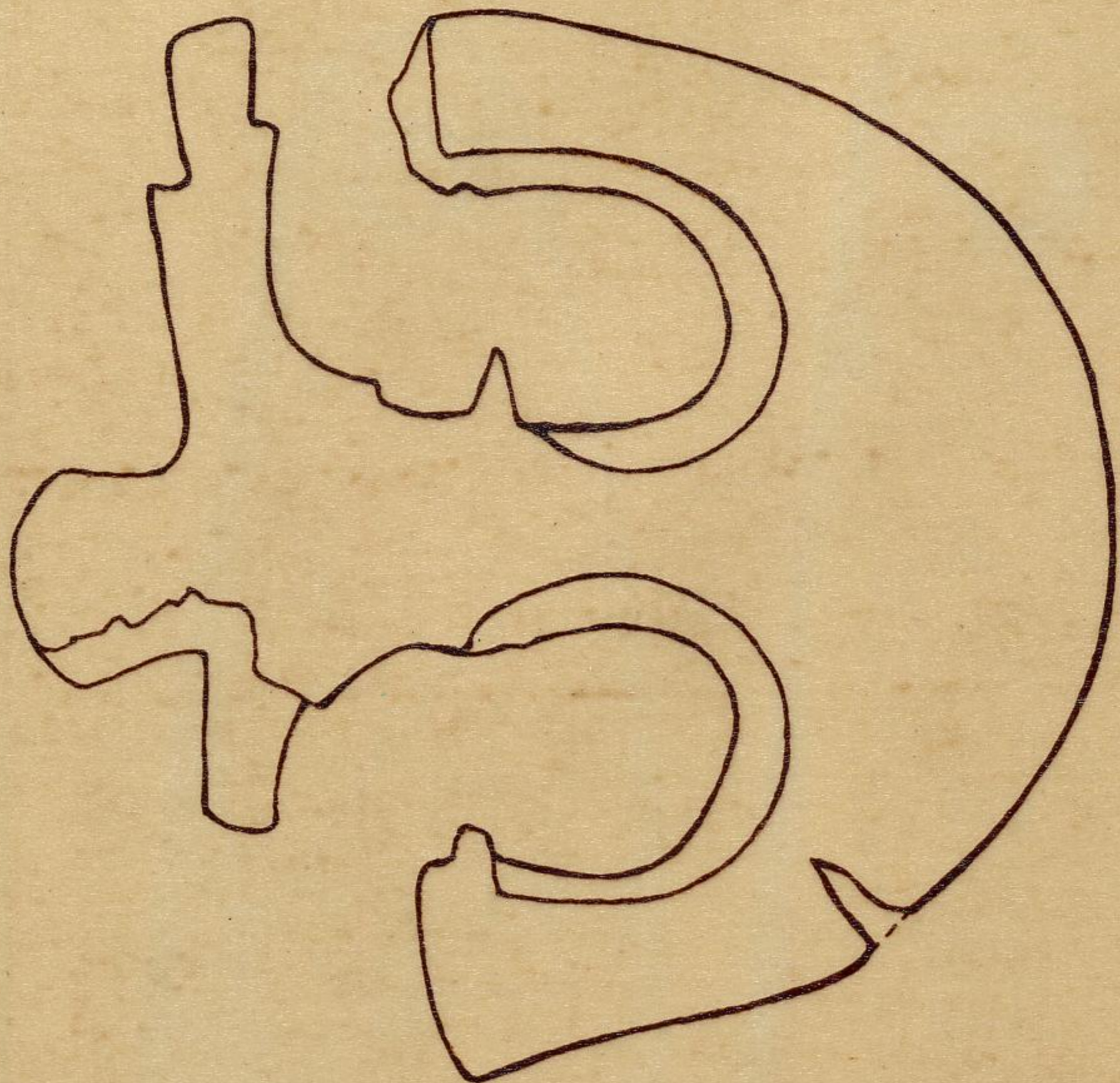
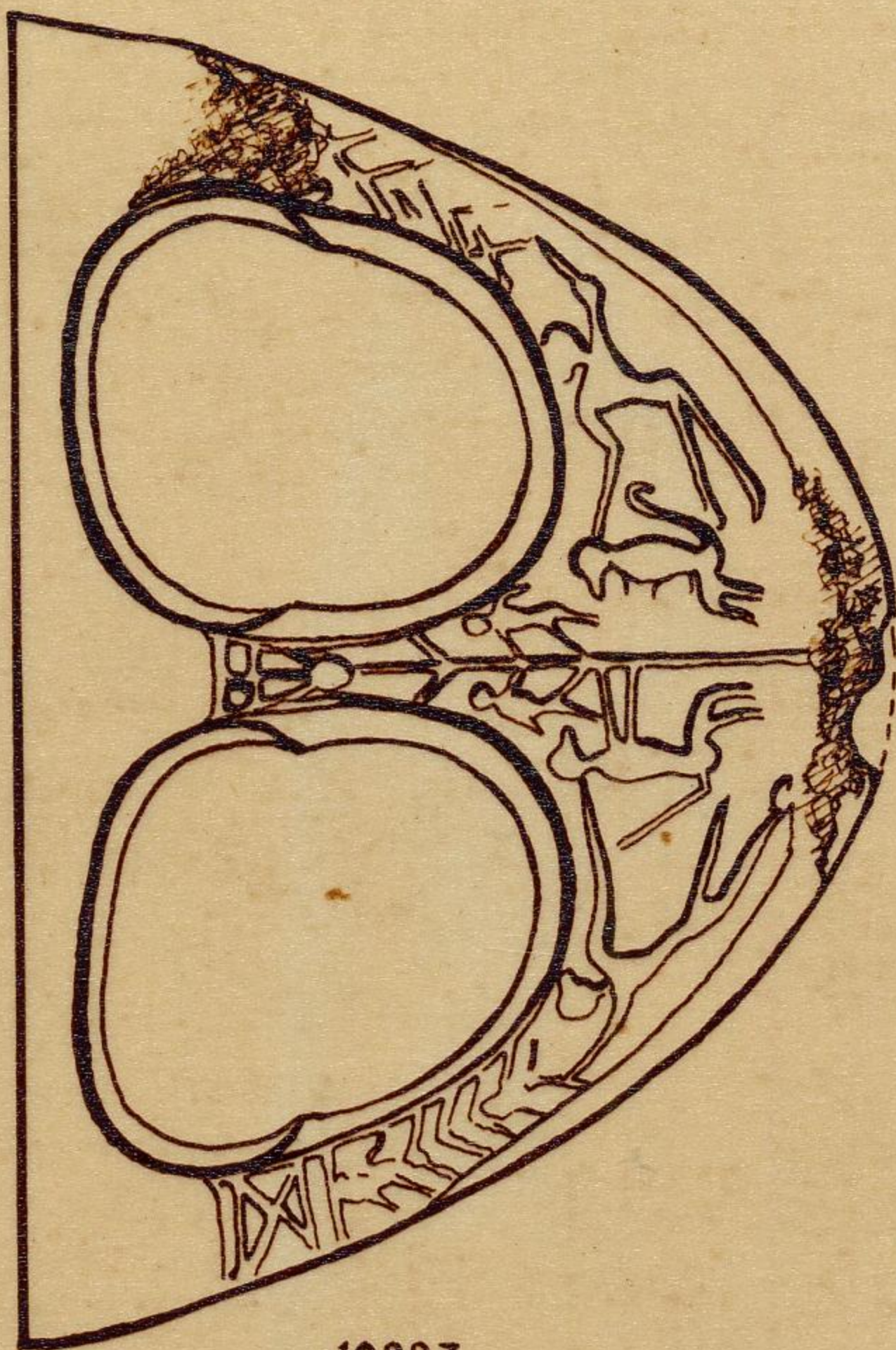


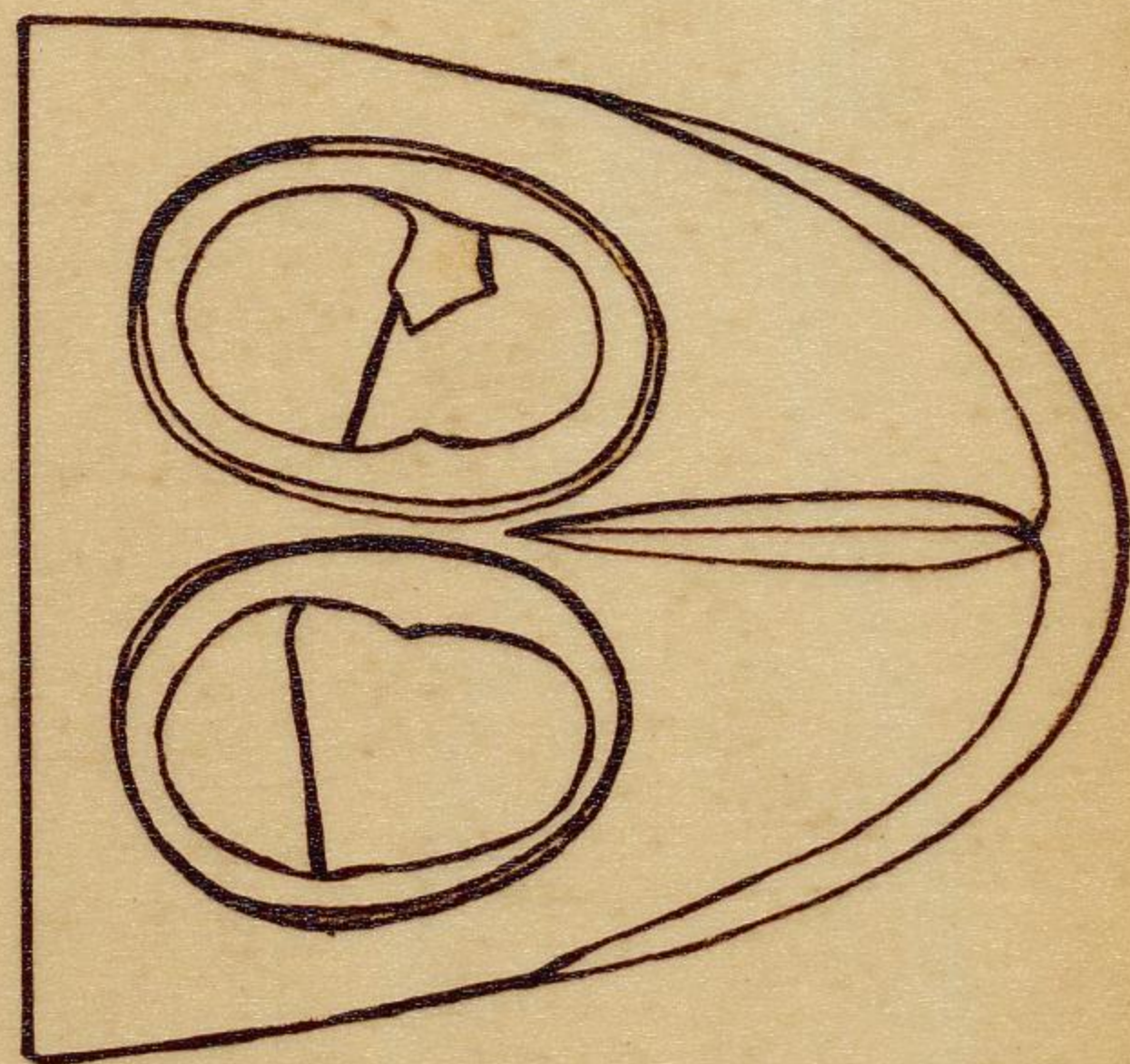
FIG. 3



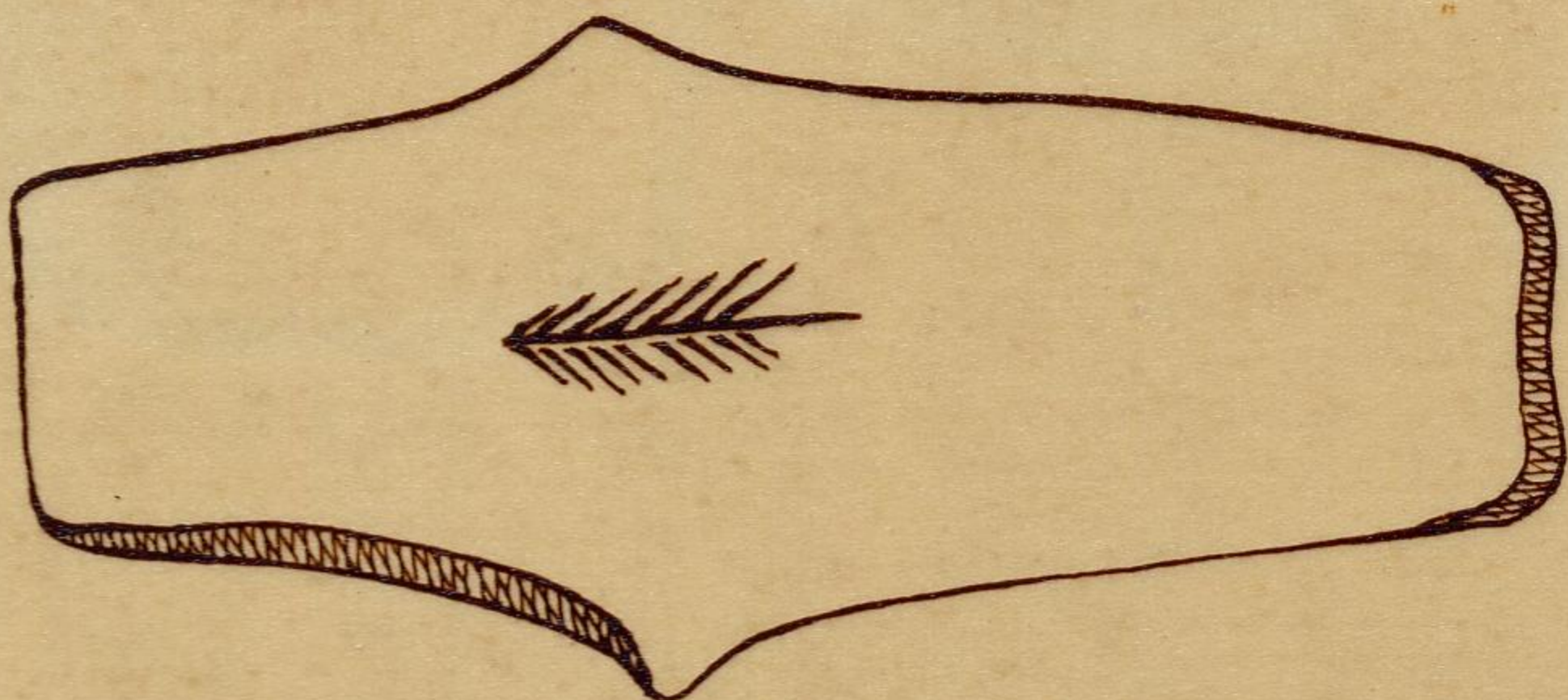
3070  
11↑  
1



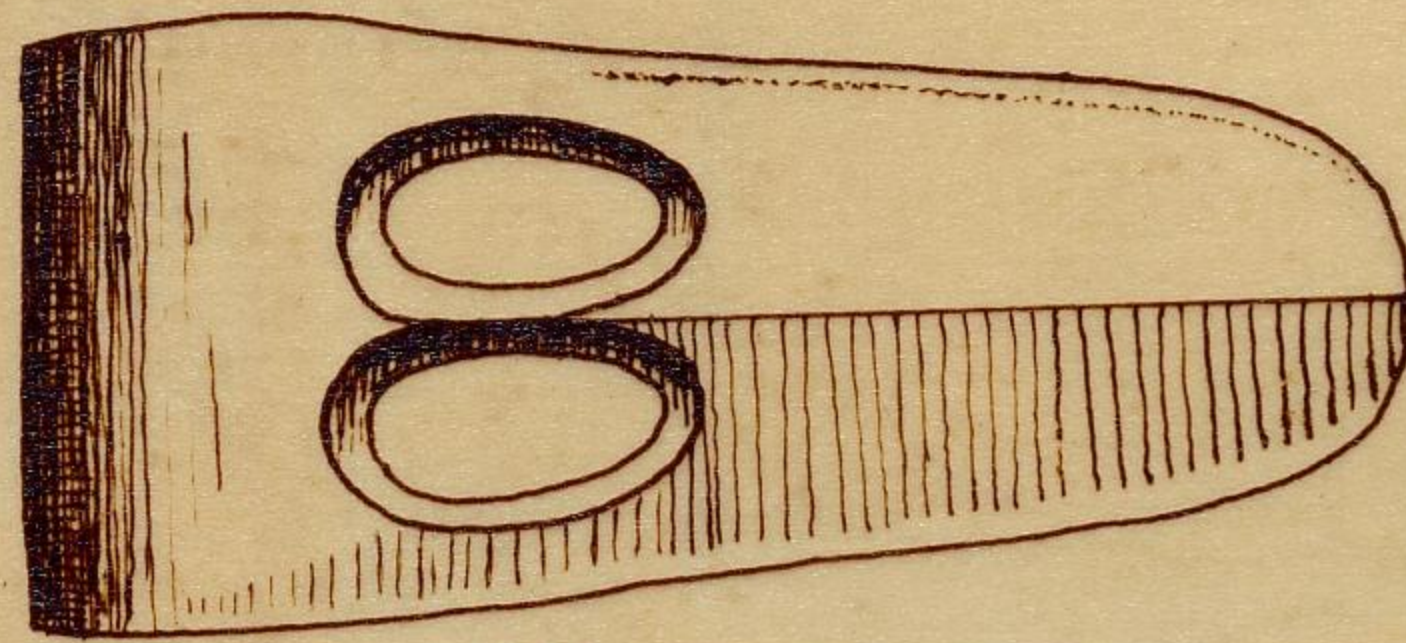
10823  
11.1↑; 7.2→  
2



AV  
16714  
7.2↑; 7.5→  
3



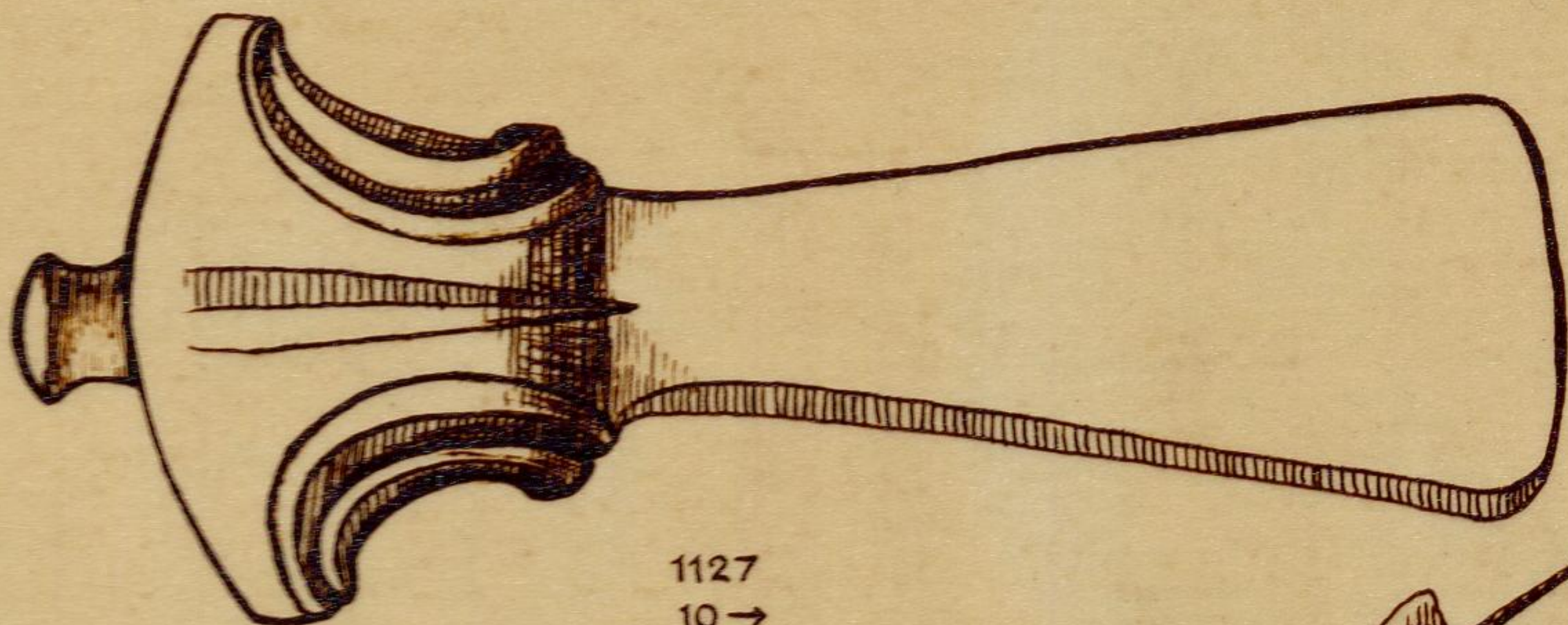
6571  
6.2↑; 13.7→  
6



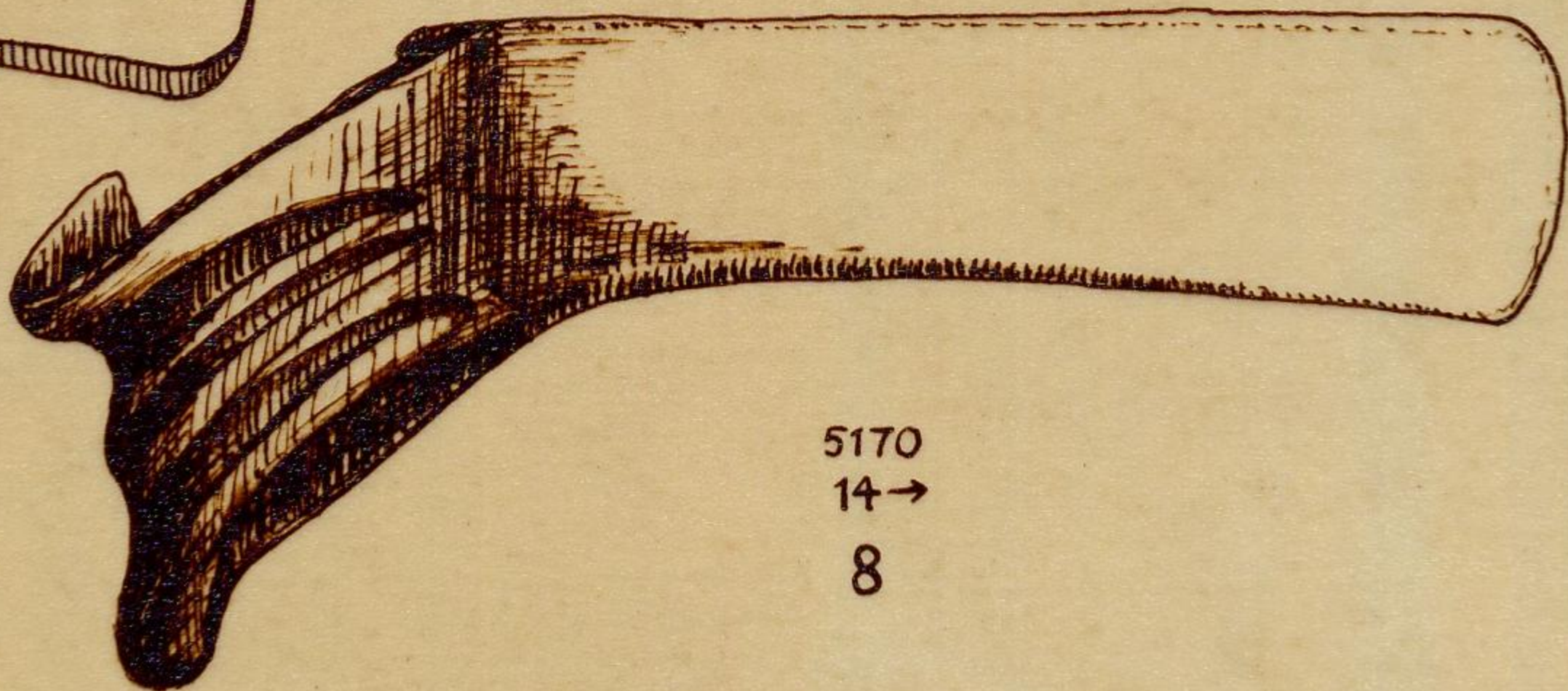
940  
12→  
4



RS 5052  
c. 14→  
5

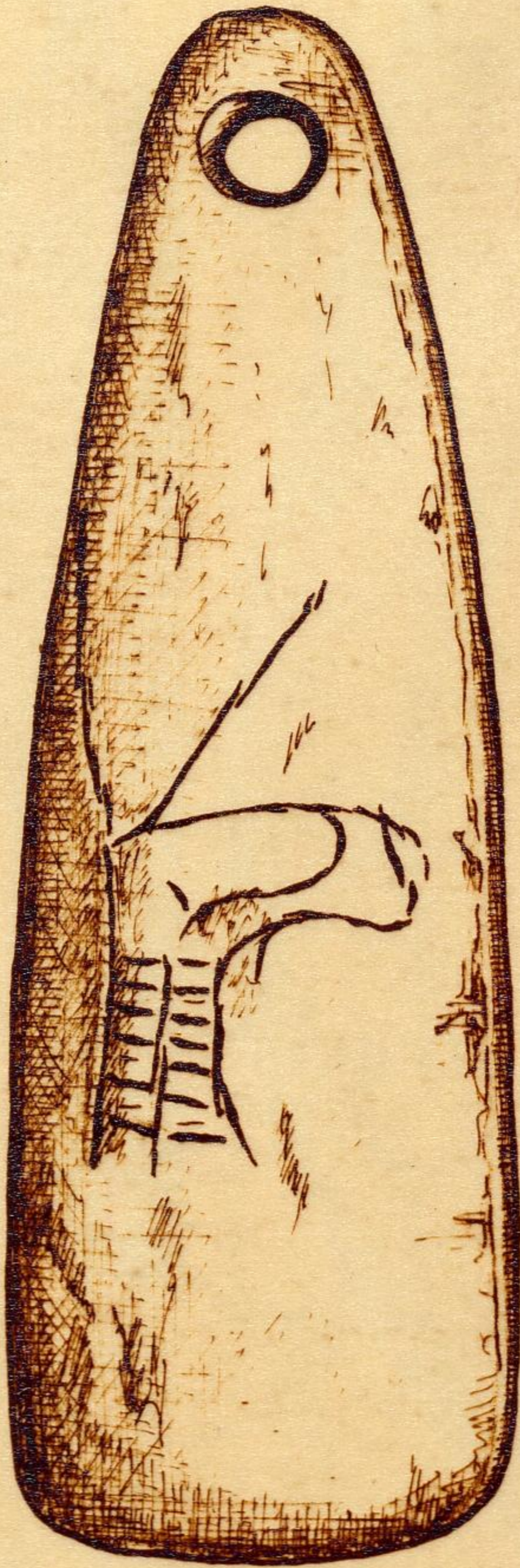


1127  
10→  
7



5170  
14→  
8

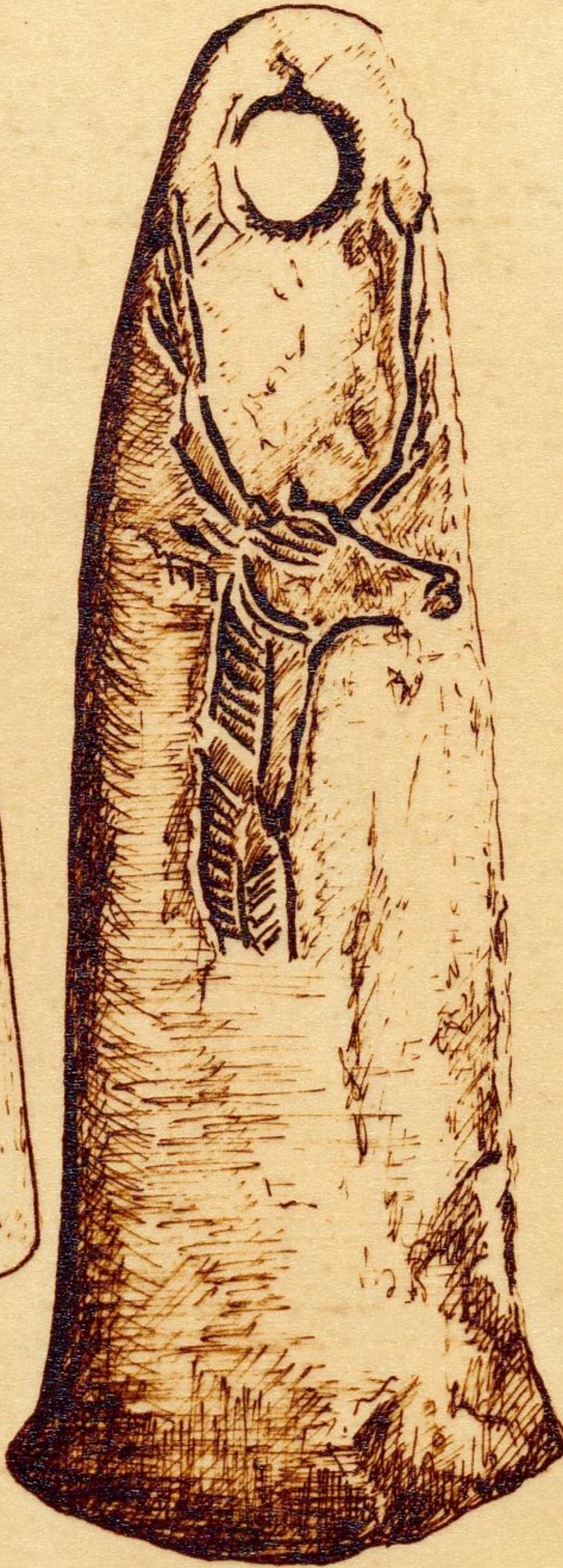
FIG. 4



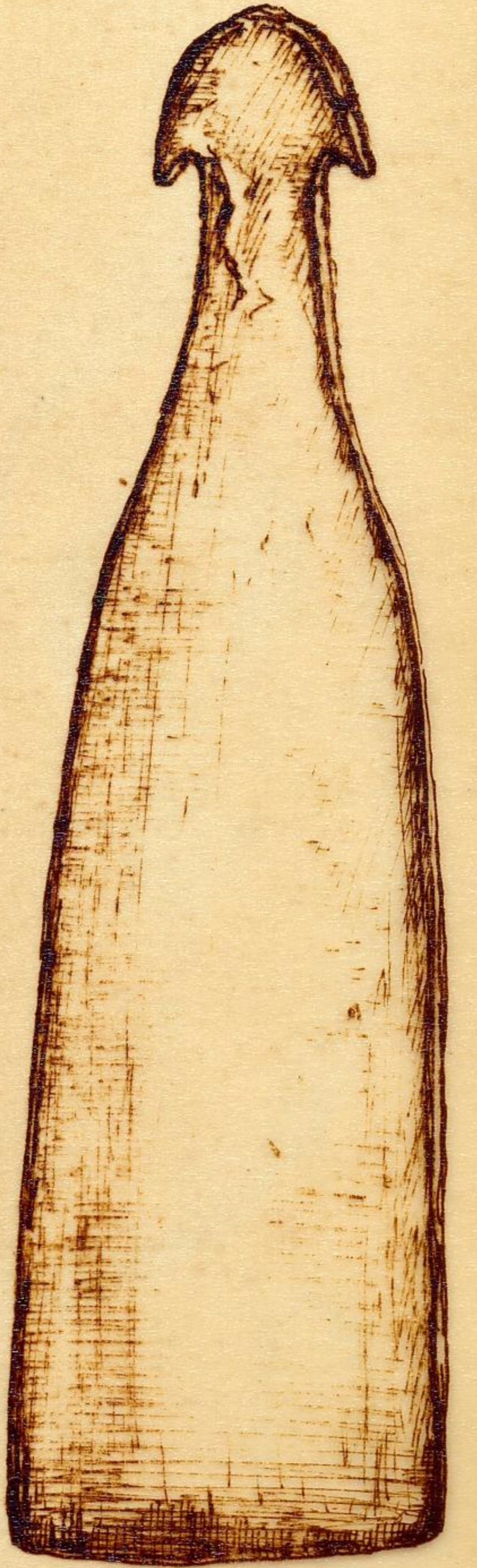
4374  
15.2↑  
1



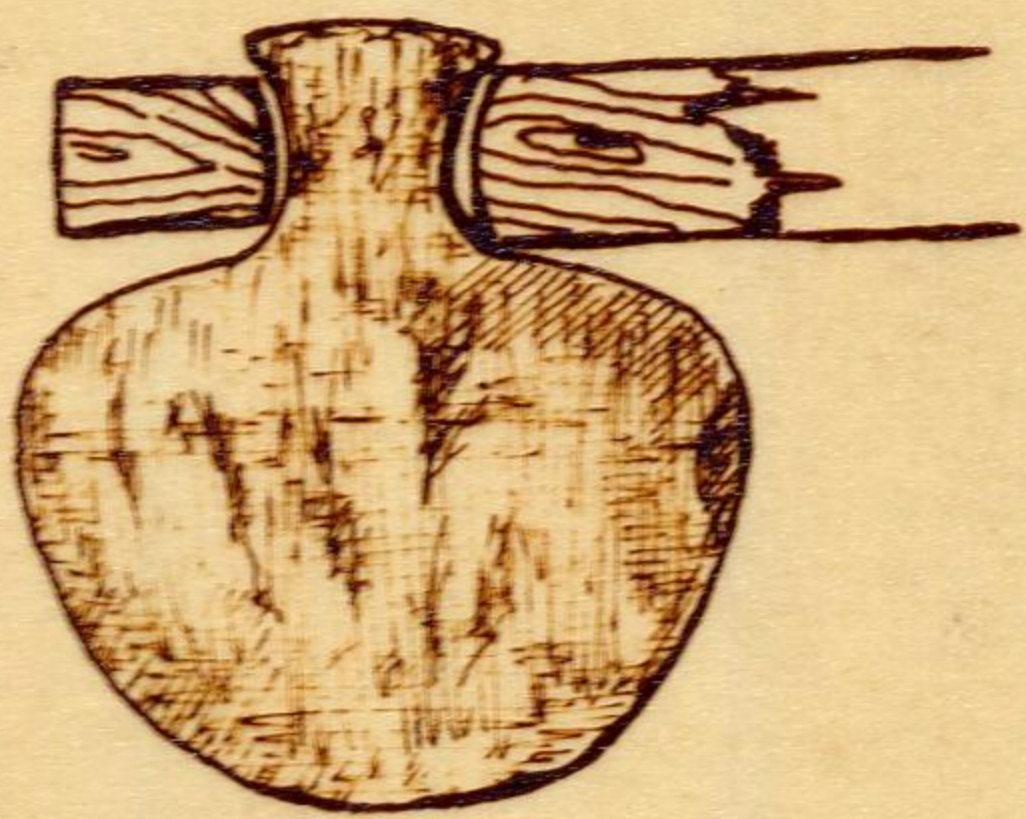
4375  
15.2↑  
2



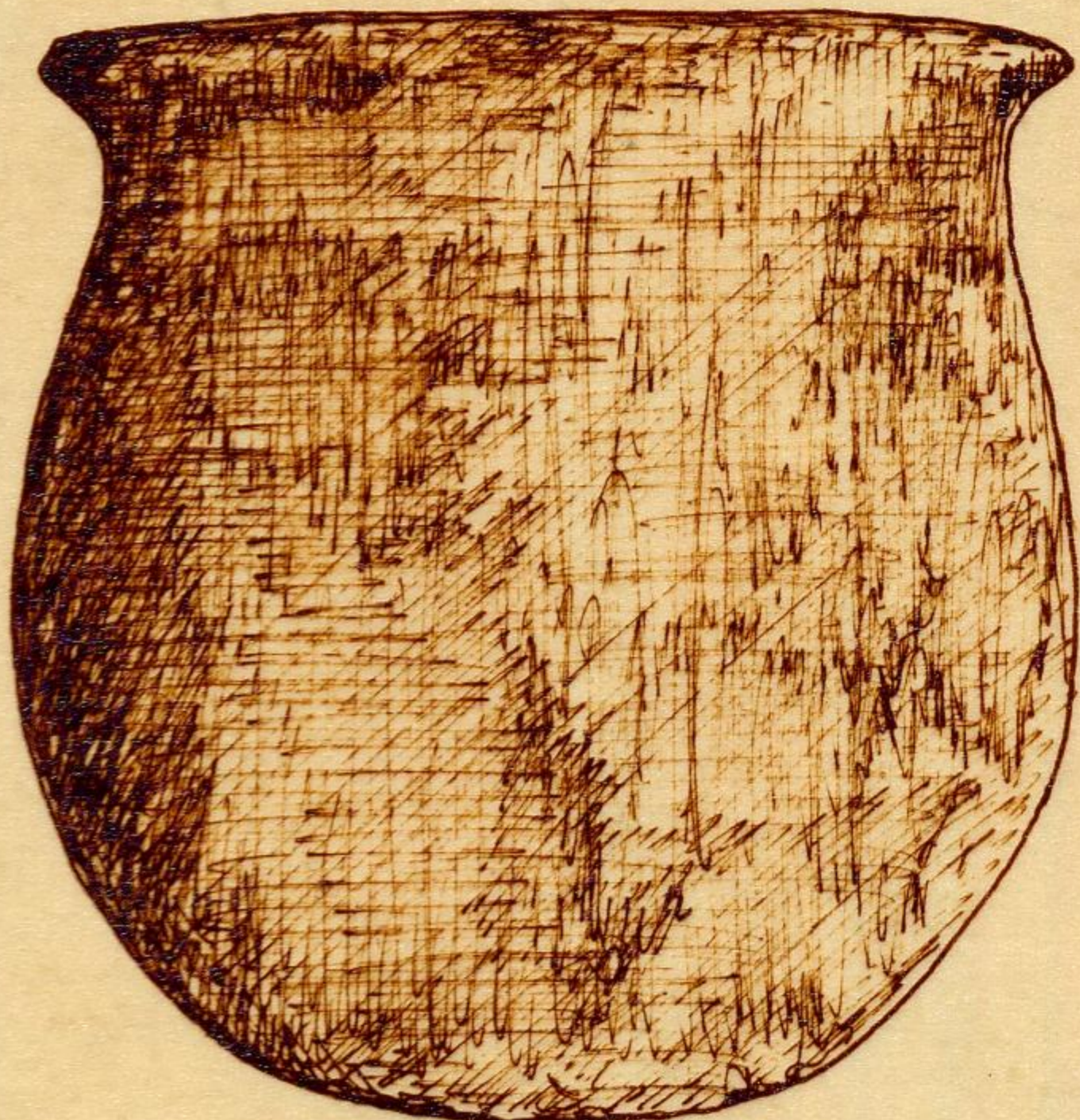
3680  
14.7↑  
3



3550  
19.8↑  
4



2134  
17↑, 19→  
5



1916  
13.5↑, 12.5→  
6



11598  
19↑  
7



6900  
15.6↑  
8



2193  
30.5↑  
9



2192  
31.5↑  
10

FIG. 5



FIG. 6

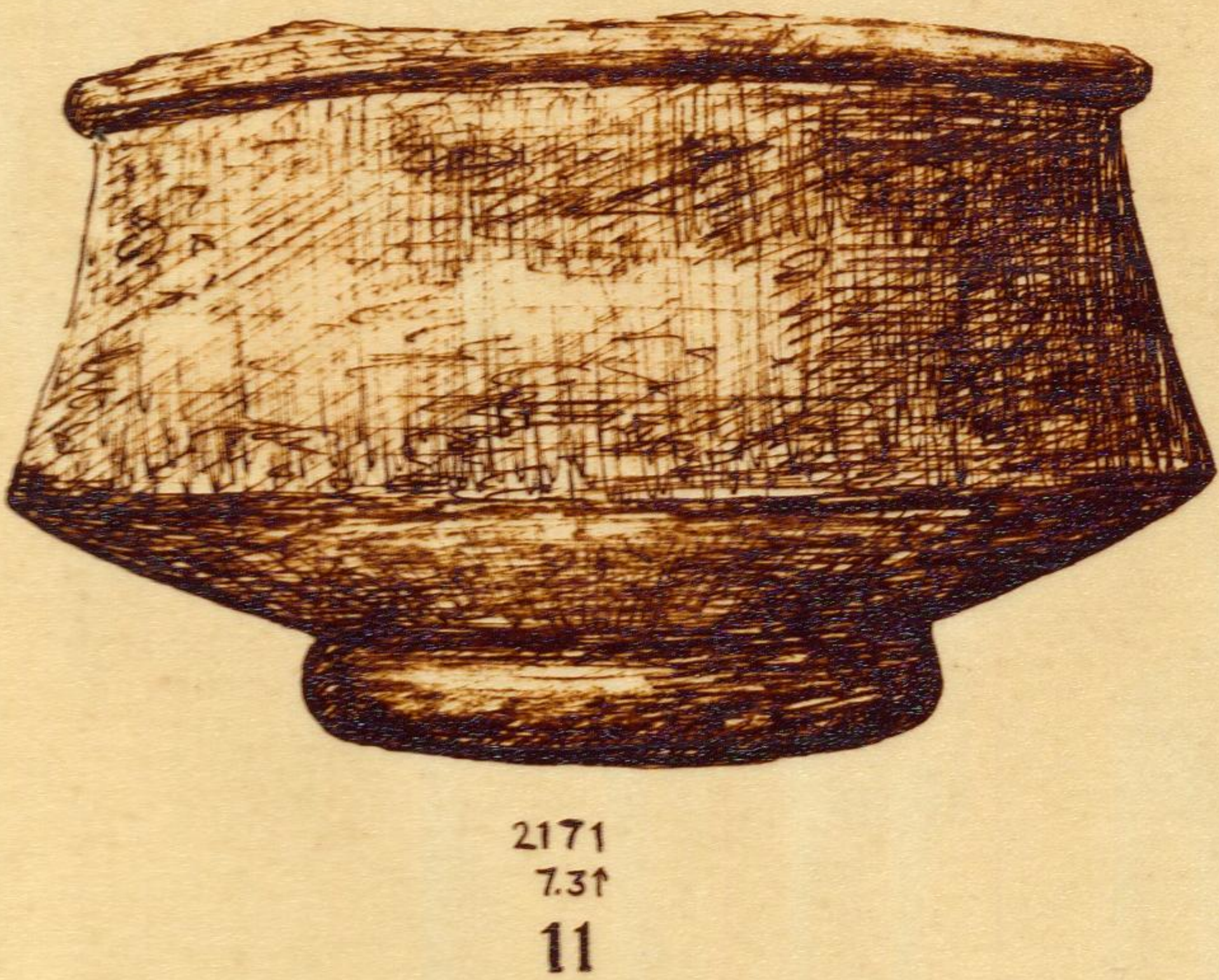
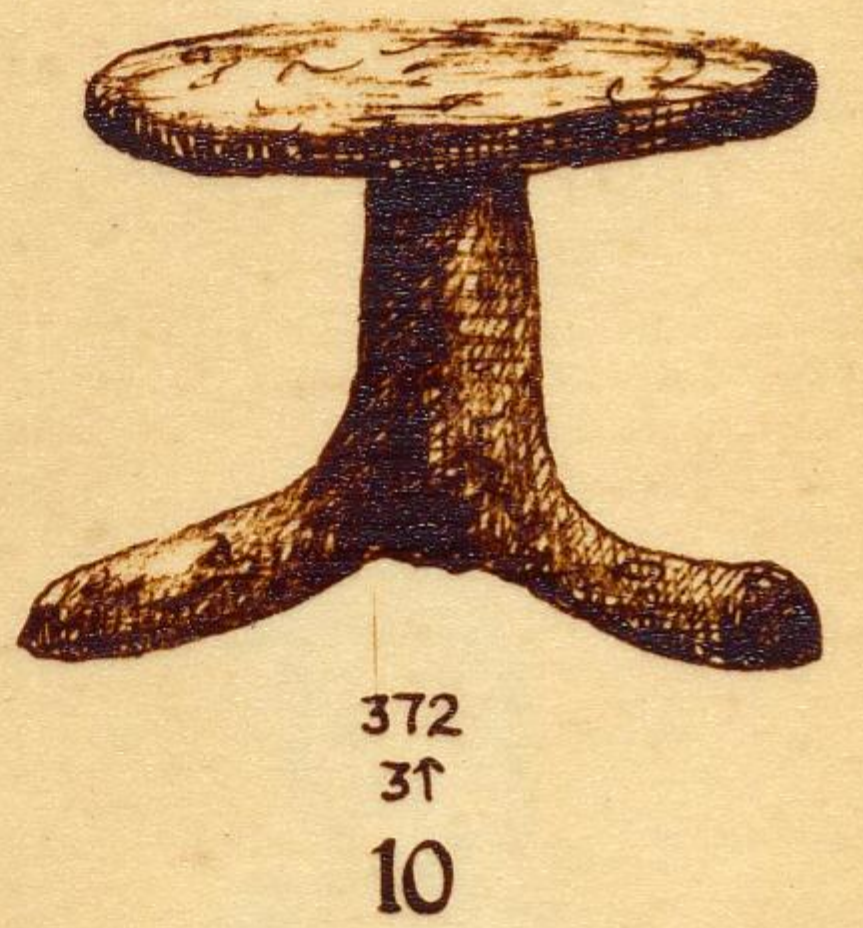
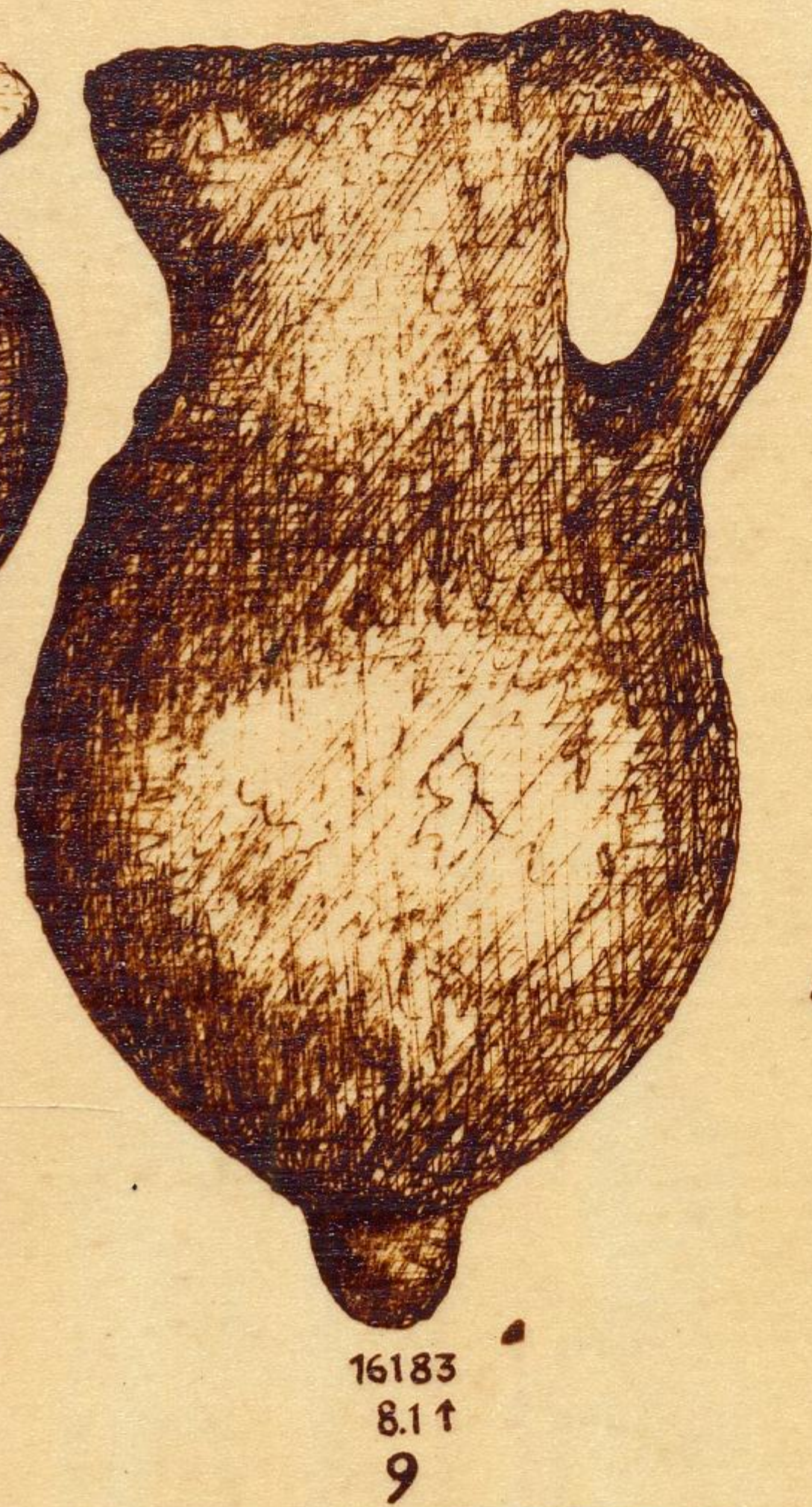
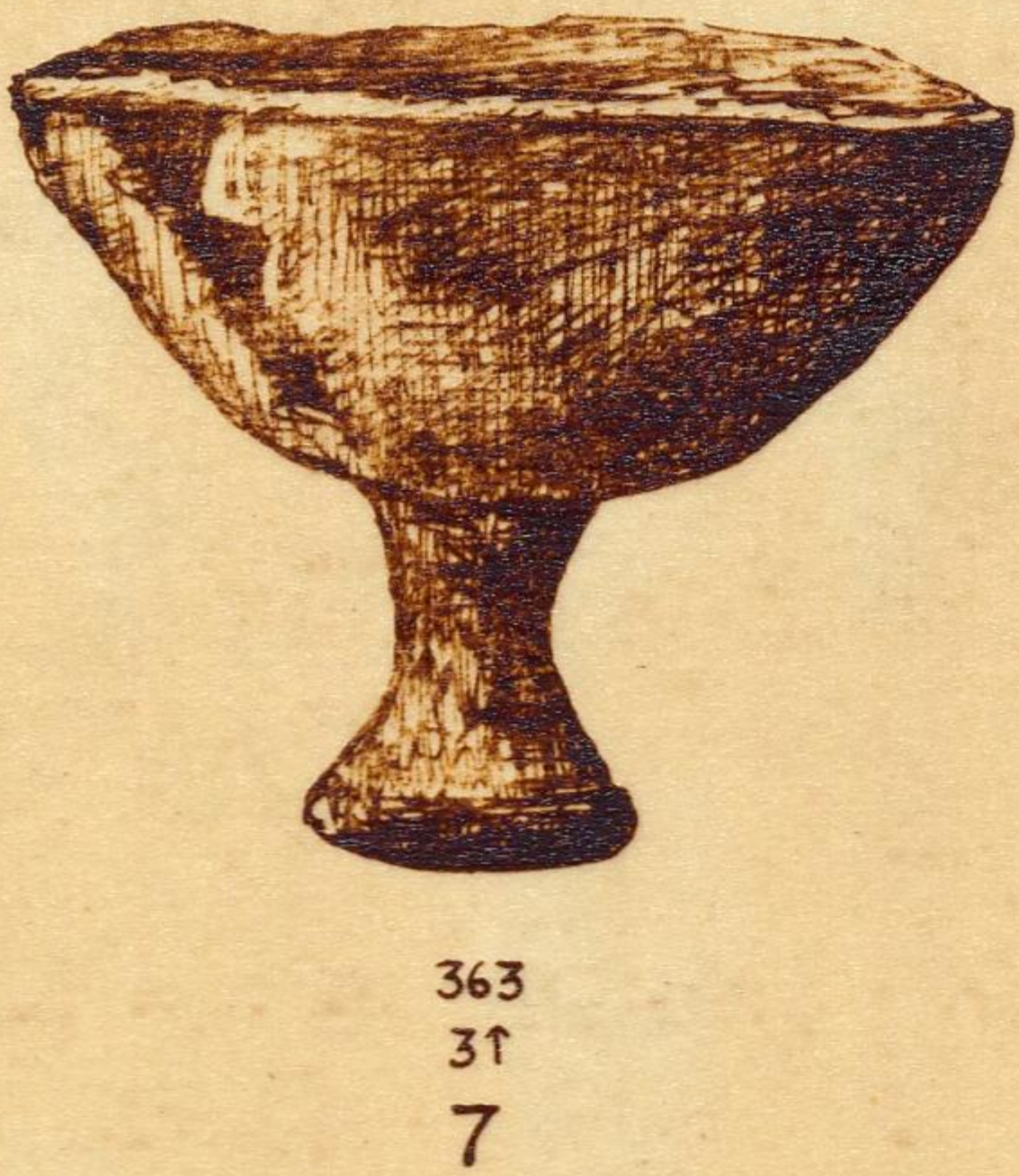
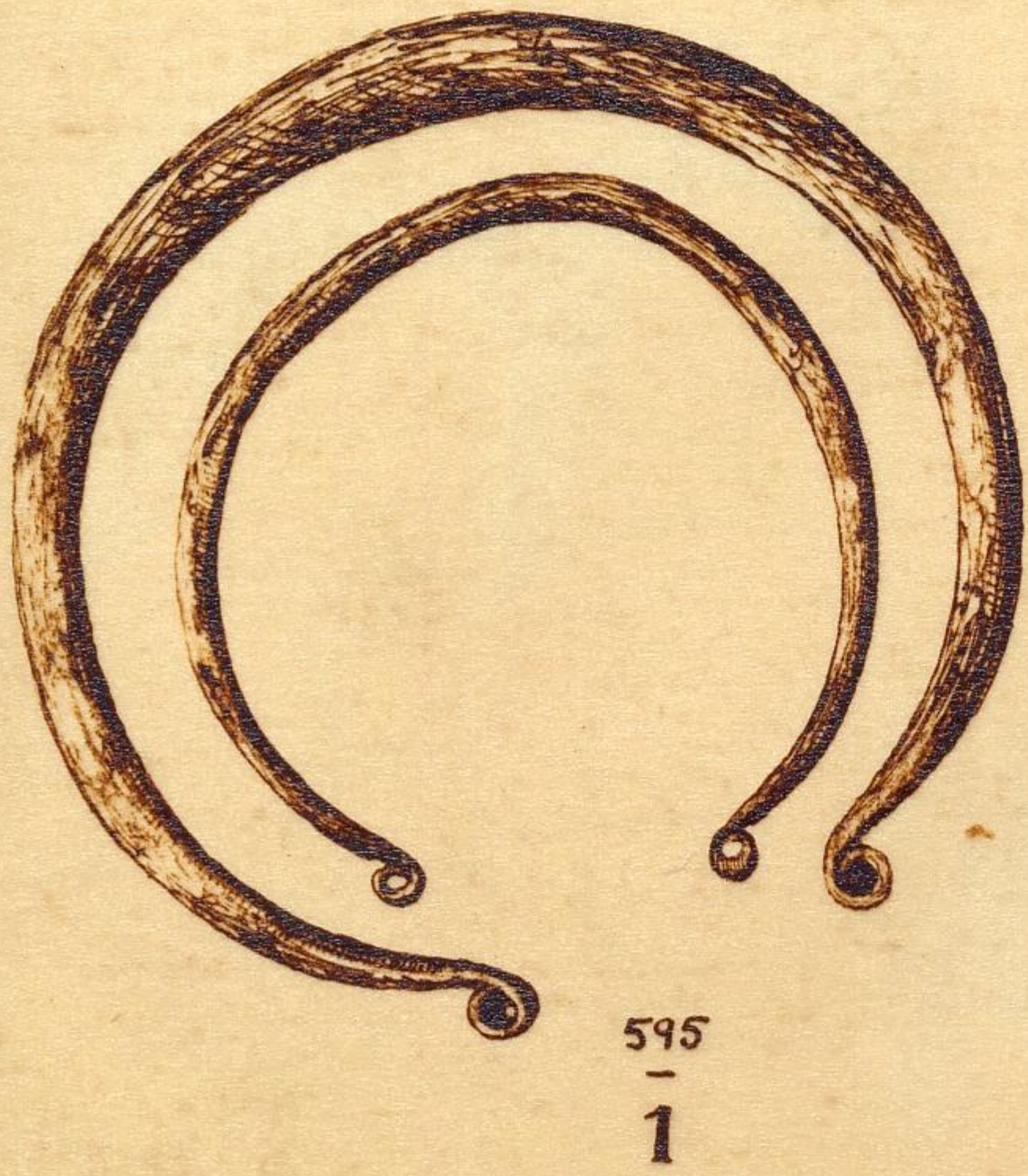


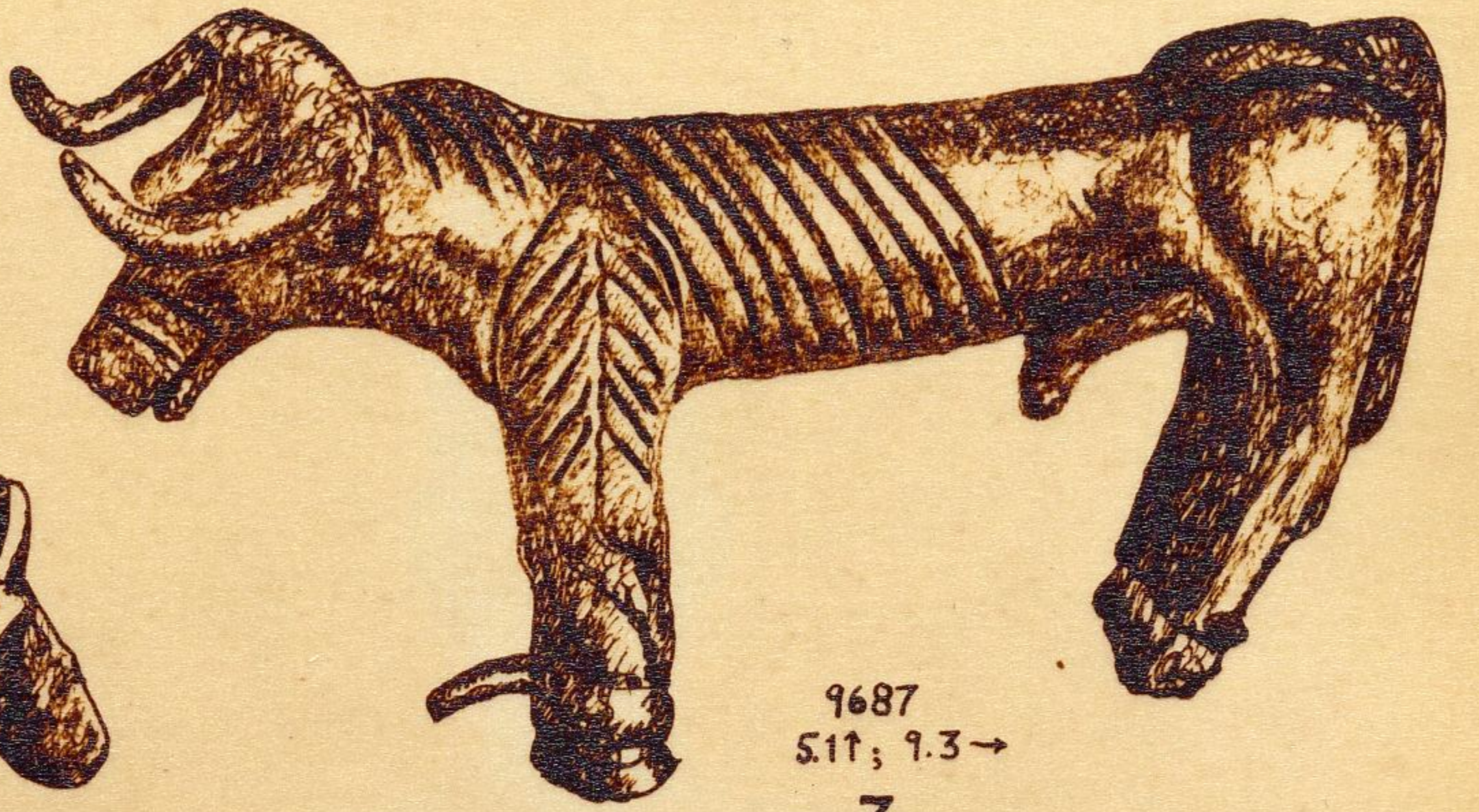
FIG. 7



7857  
3.1↑  
1



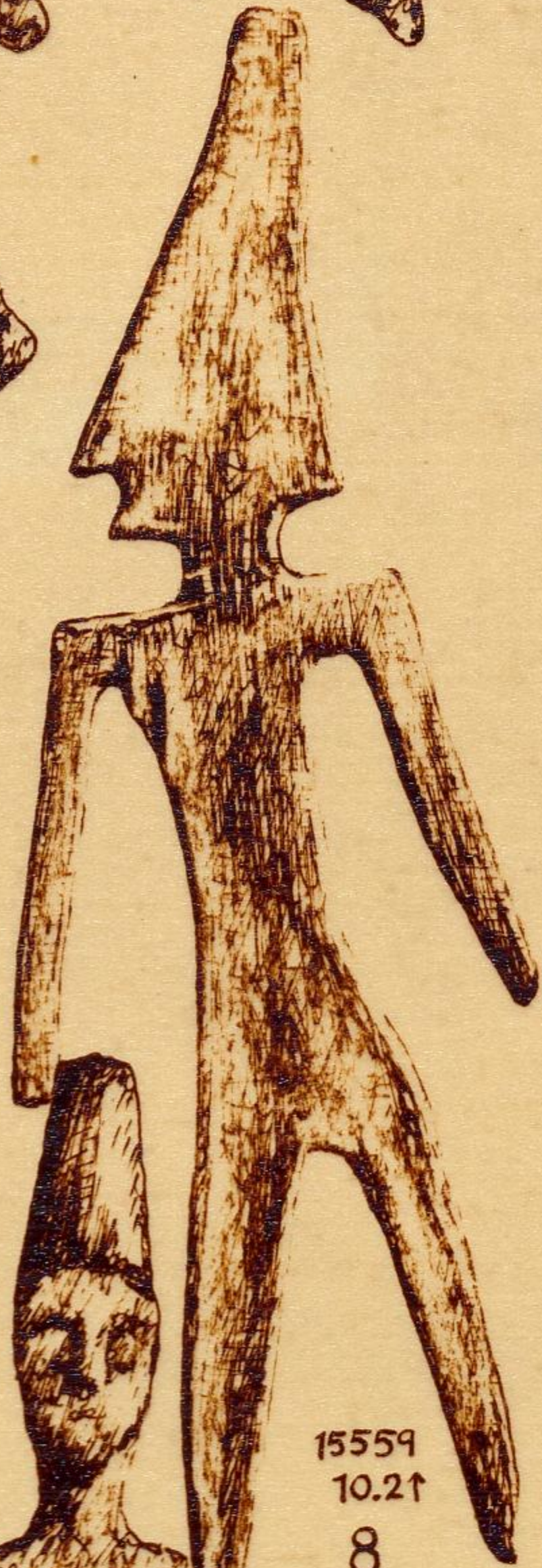
9144  
7.3↑; 4.5→  
2



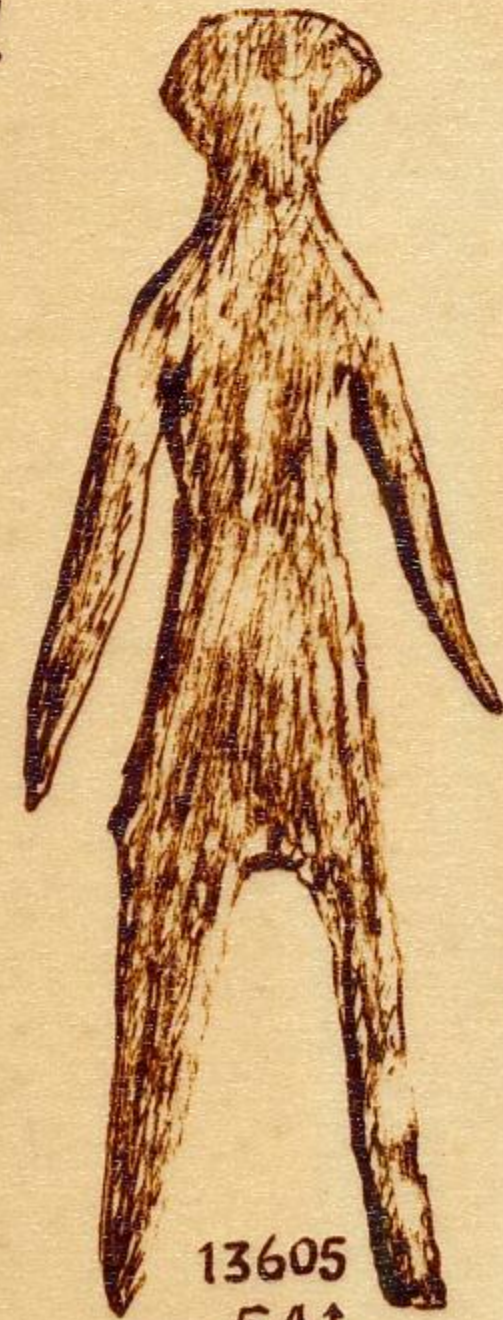
9687  
5.1↑; 9.3→  
3



9156  
4.1↑; 6.7→  
7



15559  
10.2↑  
8



13605  
5.4↑  
9



15557  
7.4↑  
10



10625  
6.2  
11



163  
6.1↑  
12



10013  
11.6↑  
13



14905  
16.5↑  
14



14873  
16.5↑  
15



15982  
10↑  
16



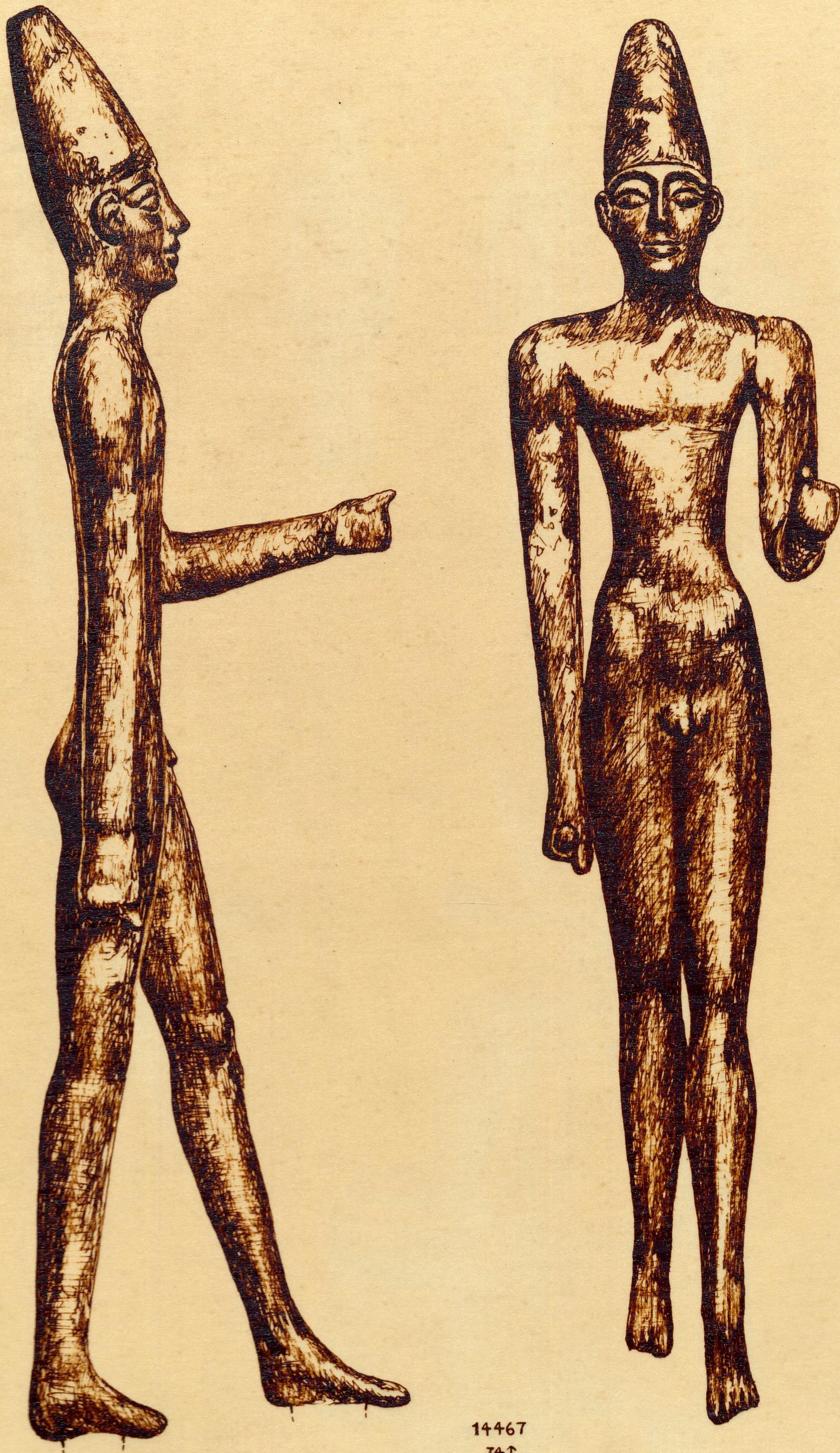
9691  
9.8↑  
17



15897  
8.5↑  
18



FIG. 8



14467  
34↑

FIG. 9



9145  
10↑  
1



152  
6.4↑  
3



15895  
7.9↑  
4



1163  
6.3↑  
5



2018  
8↑  
6

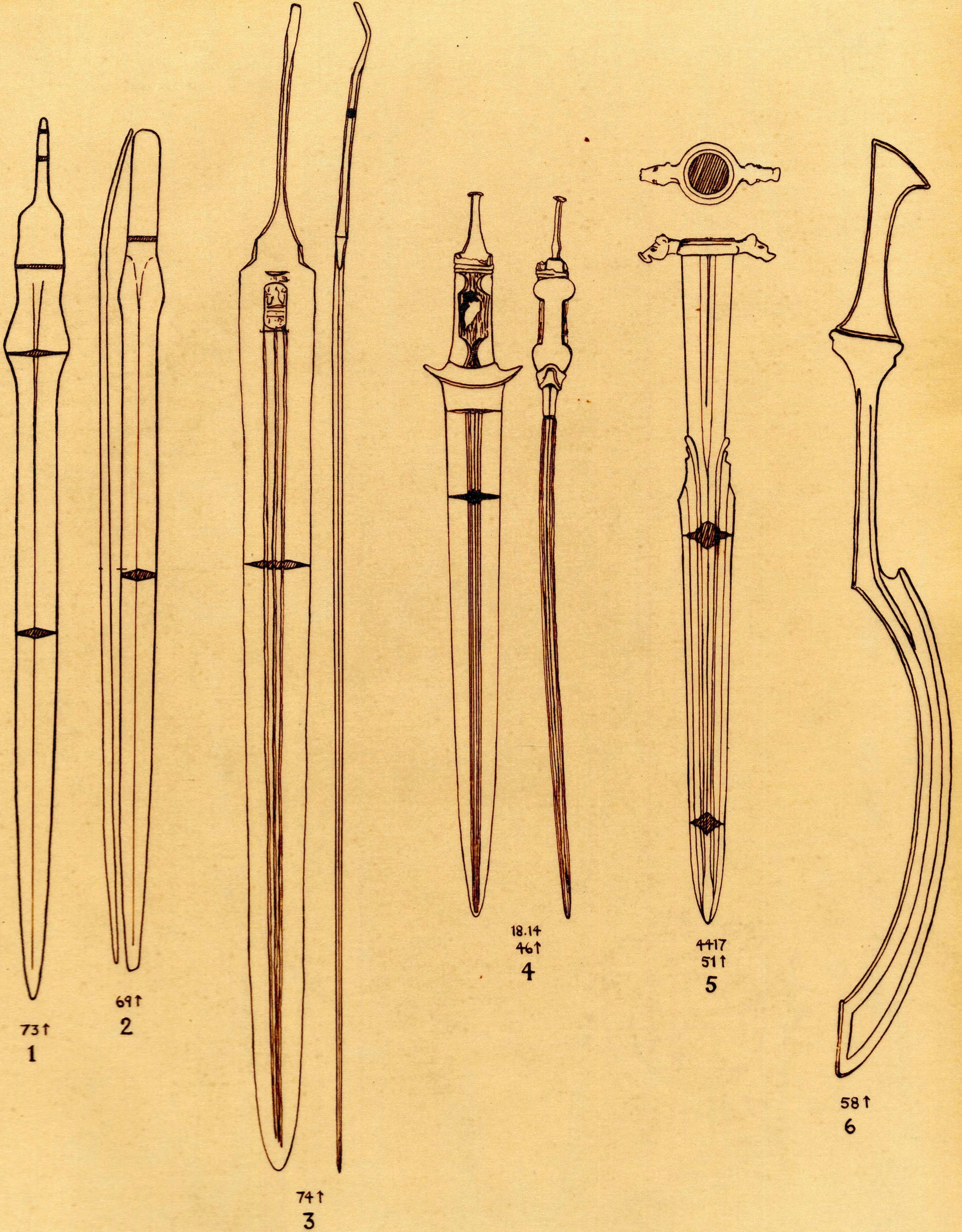


1819  
7↑  
2



7190  
16.4↑  
7

FIG. 10



73↑  
1

69↑  
2

74↑  
3

18.14  
46↑  
4

4417  
51↑  
5

58↑  
6

FIG. 11

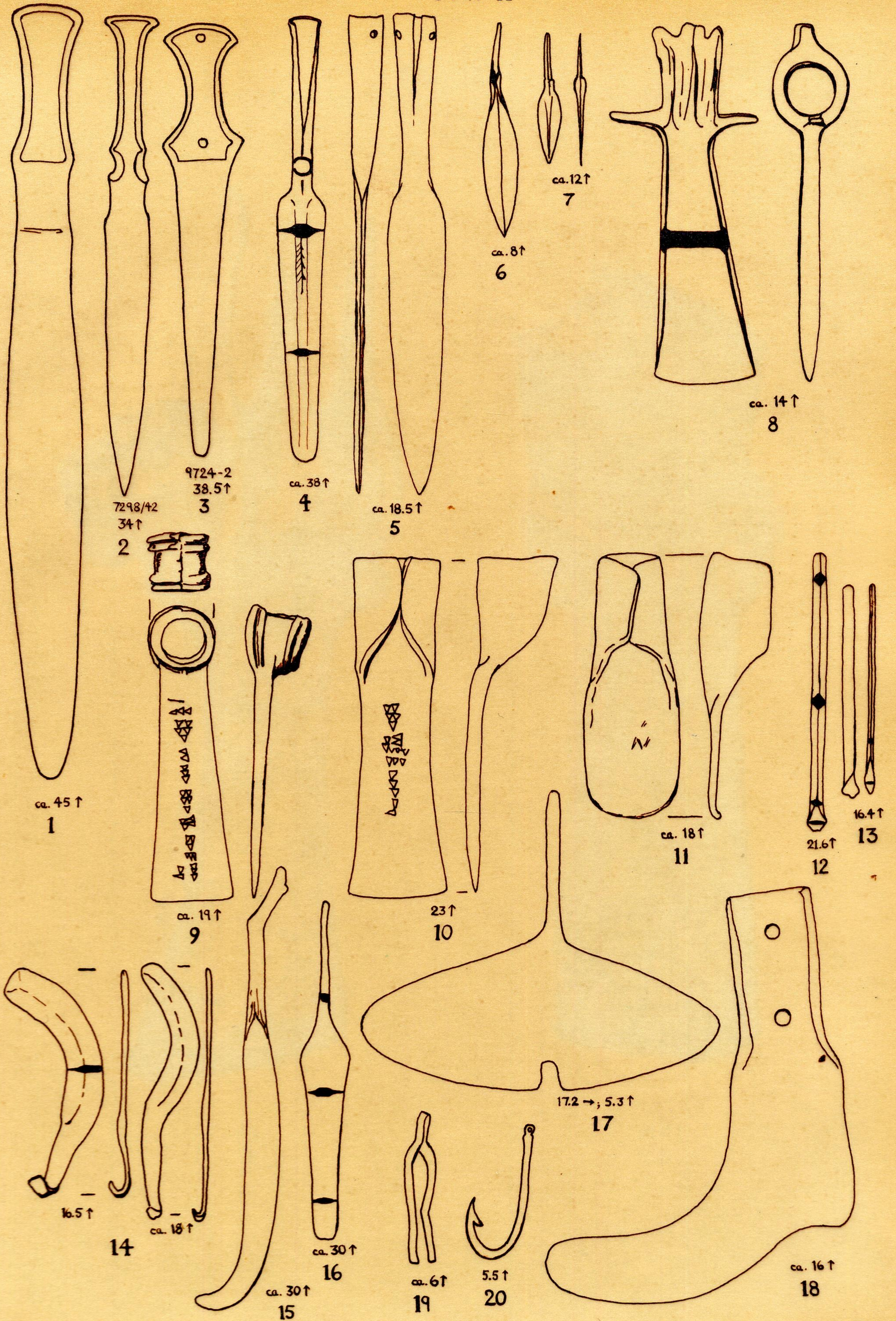
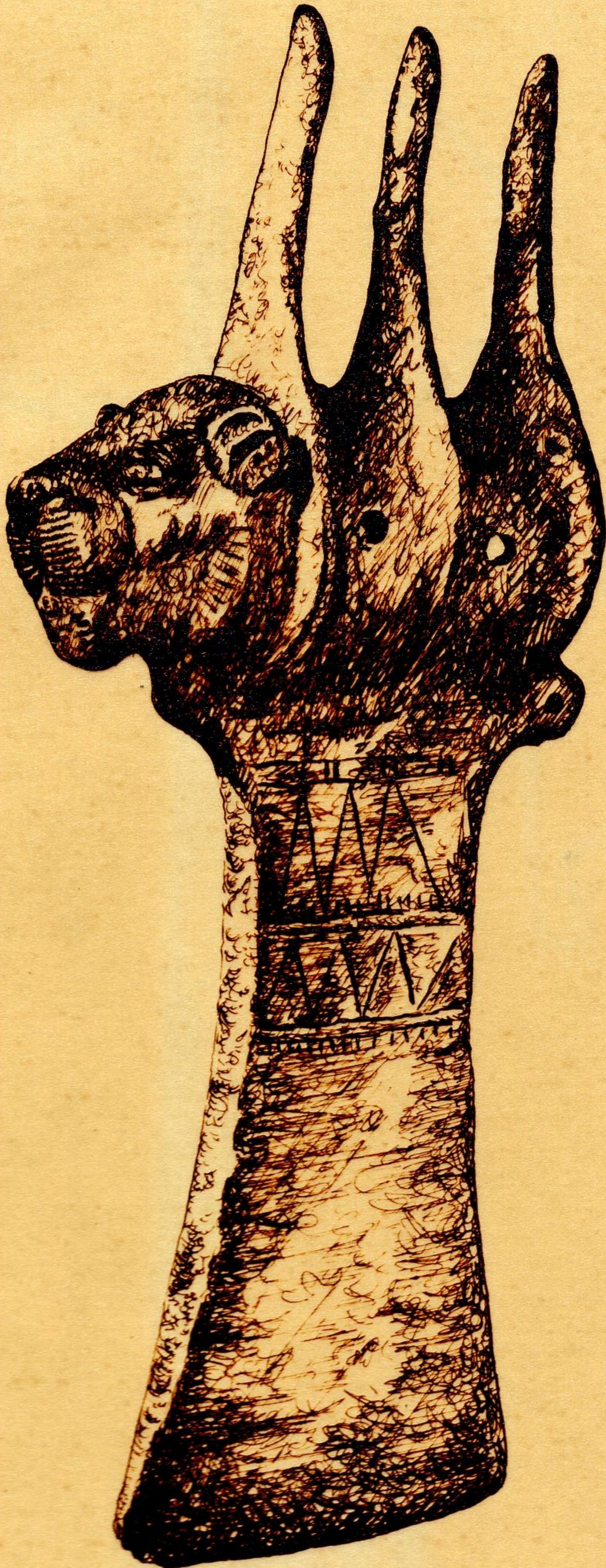
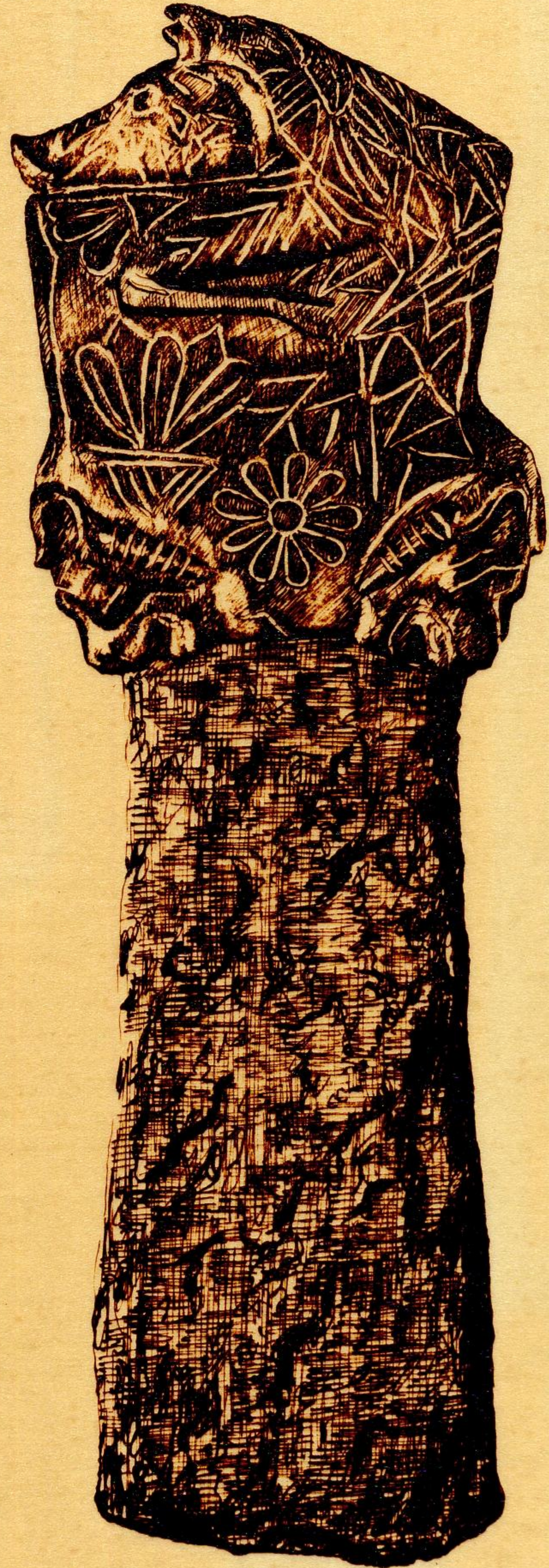


FIG. 12

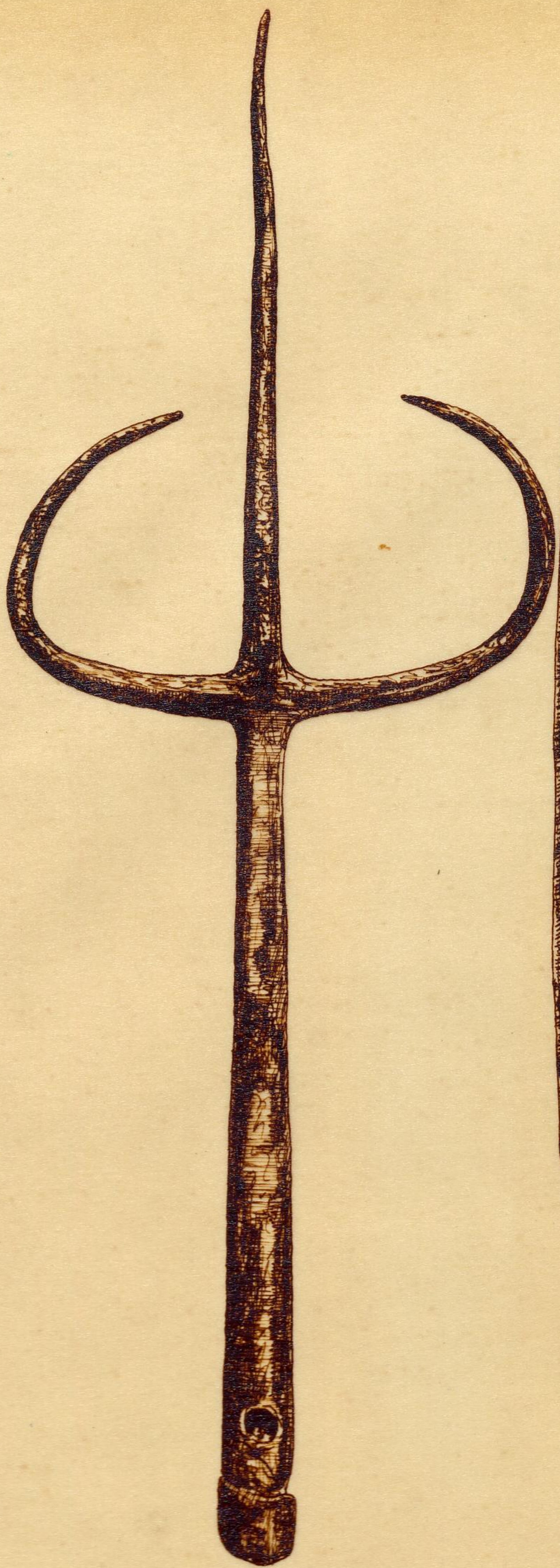


18.4 ↑  
1



19.5 ↑  
2

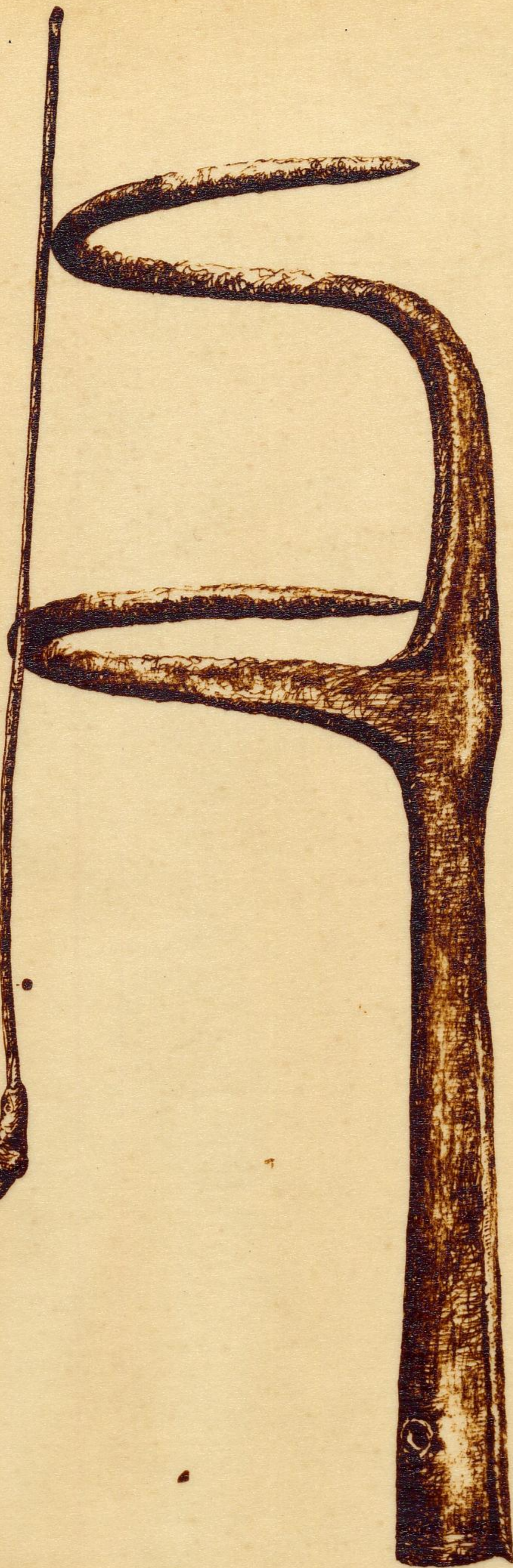
FIG. 13



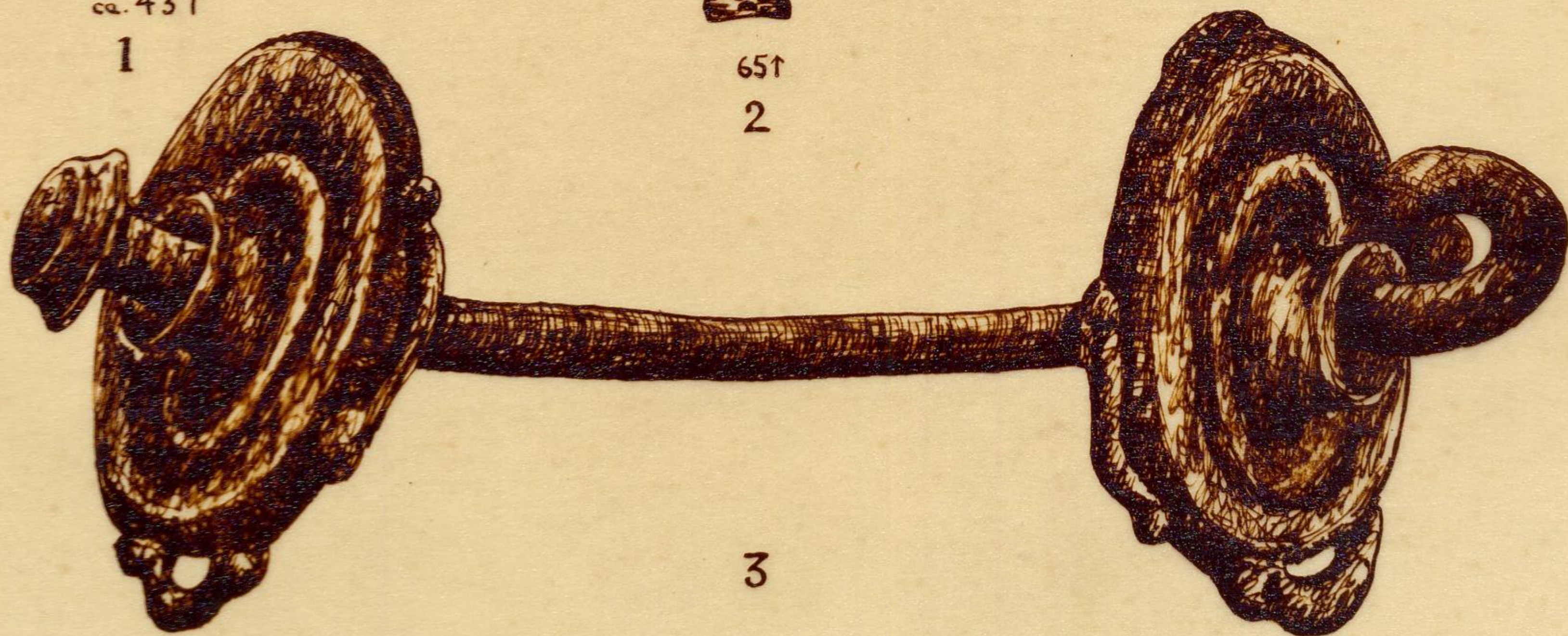
666  
ca. 43 ↑  
1



65 ↑  
2



23 ↑  
3



3

FIG. 14

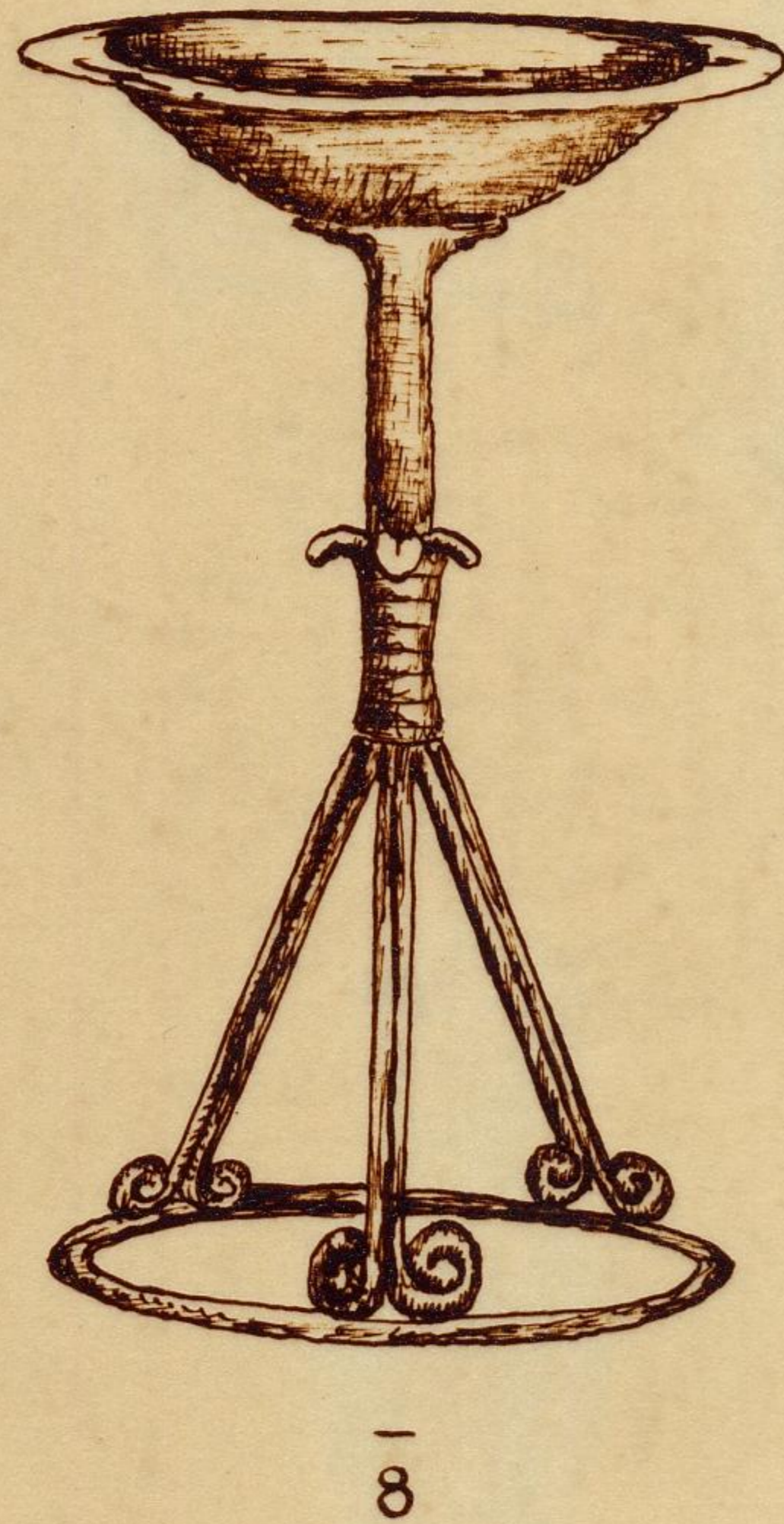
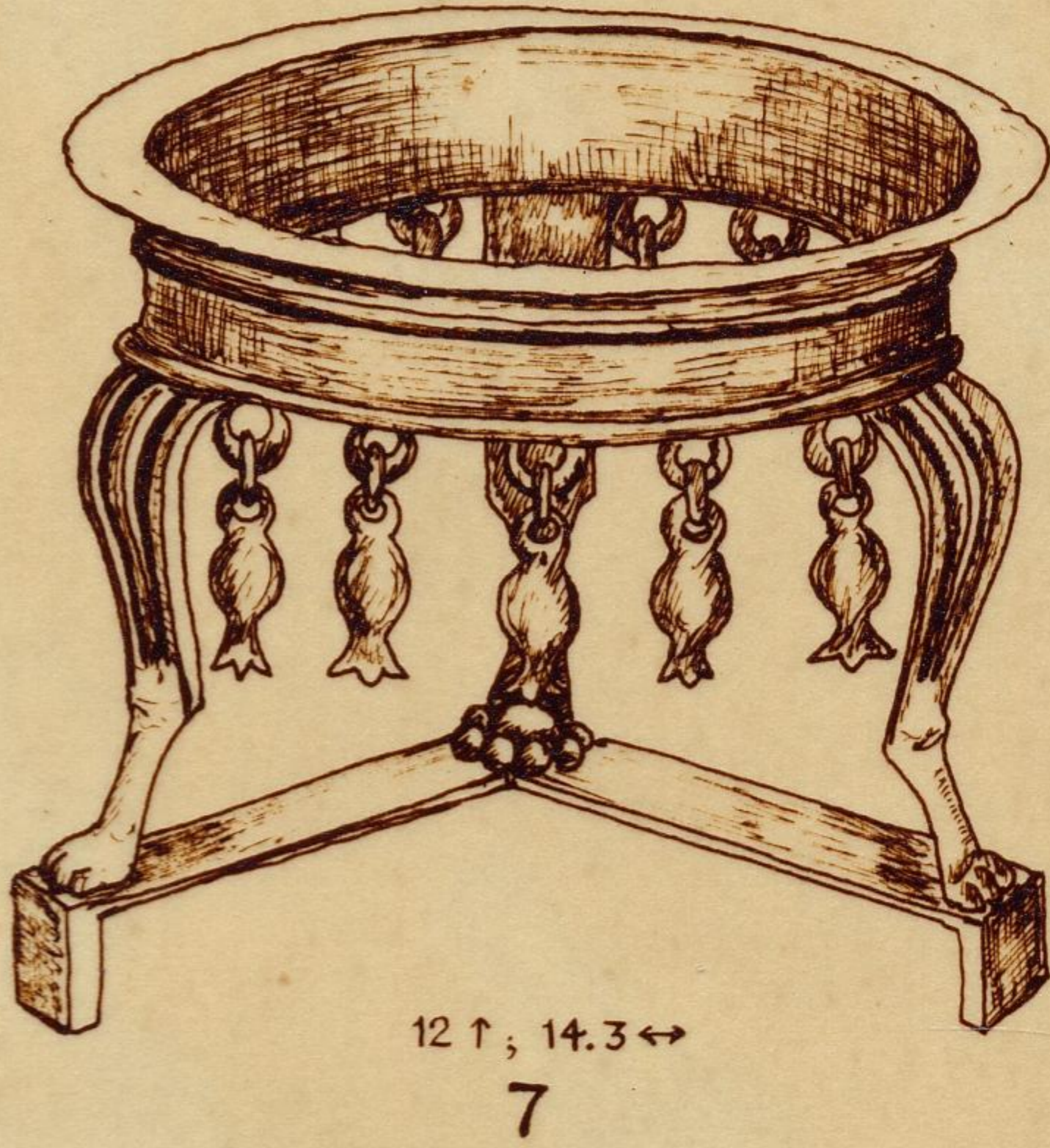
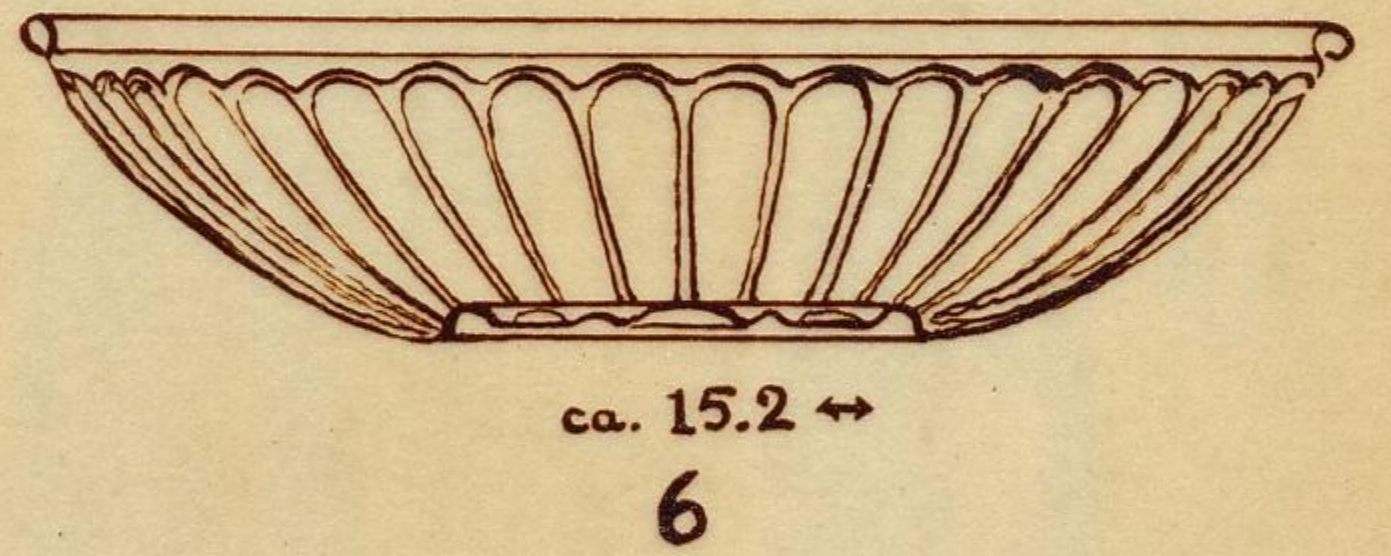
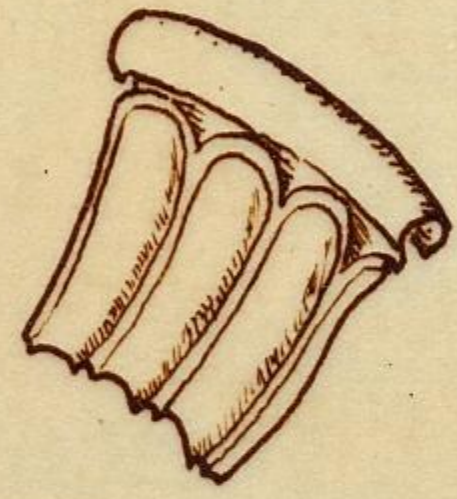
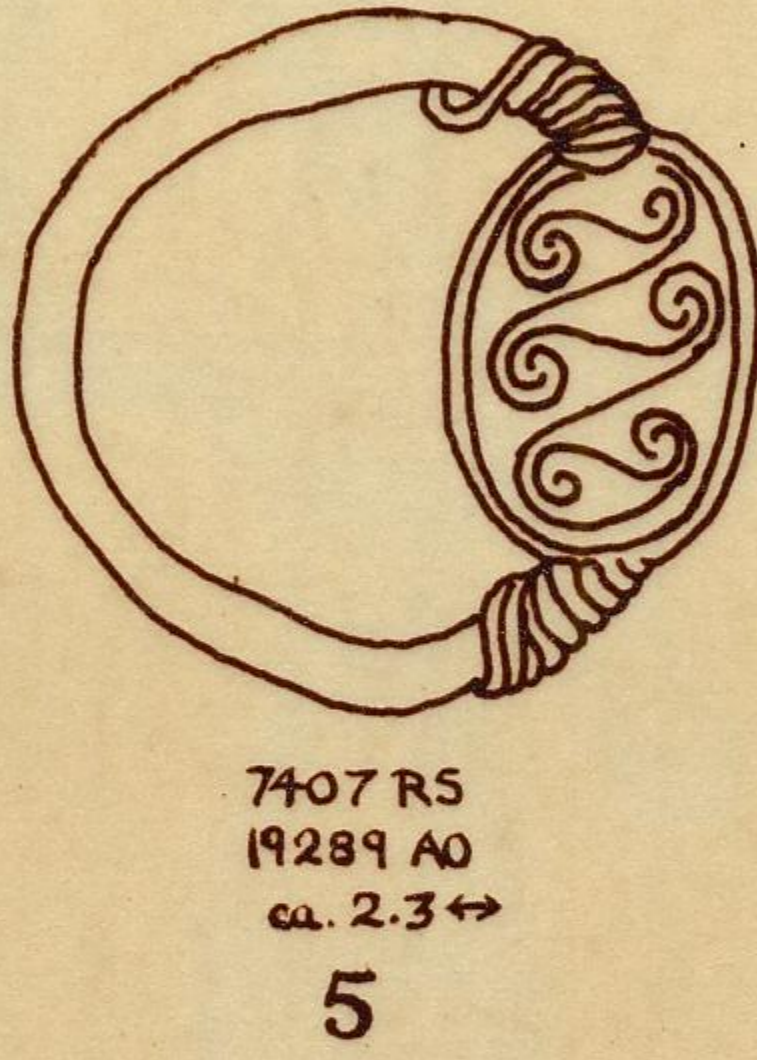
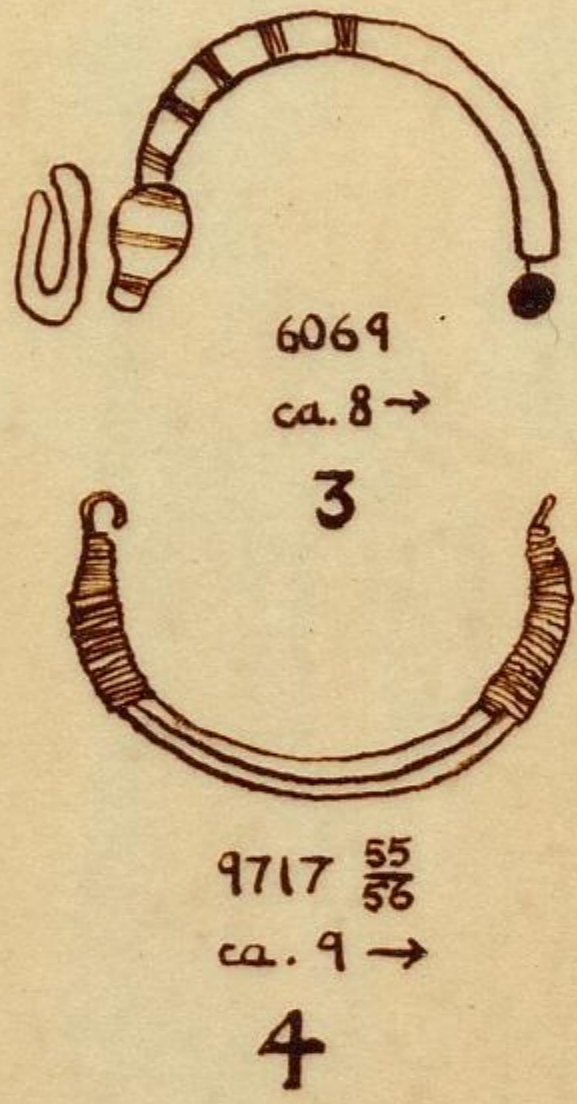
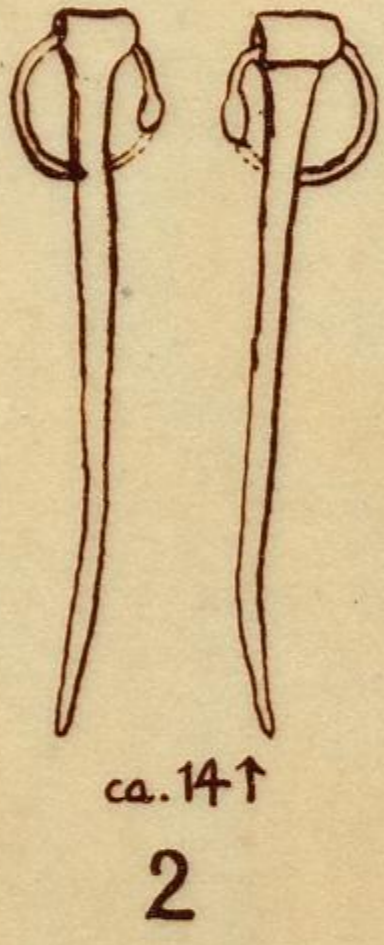


FIG. 15



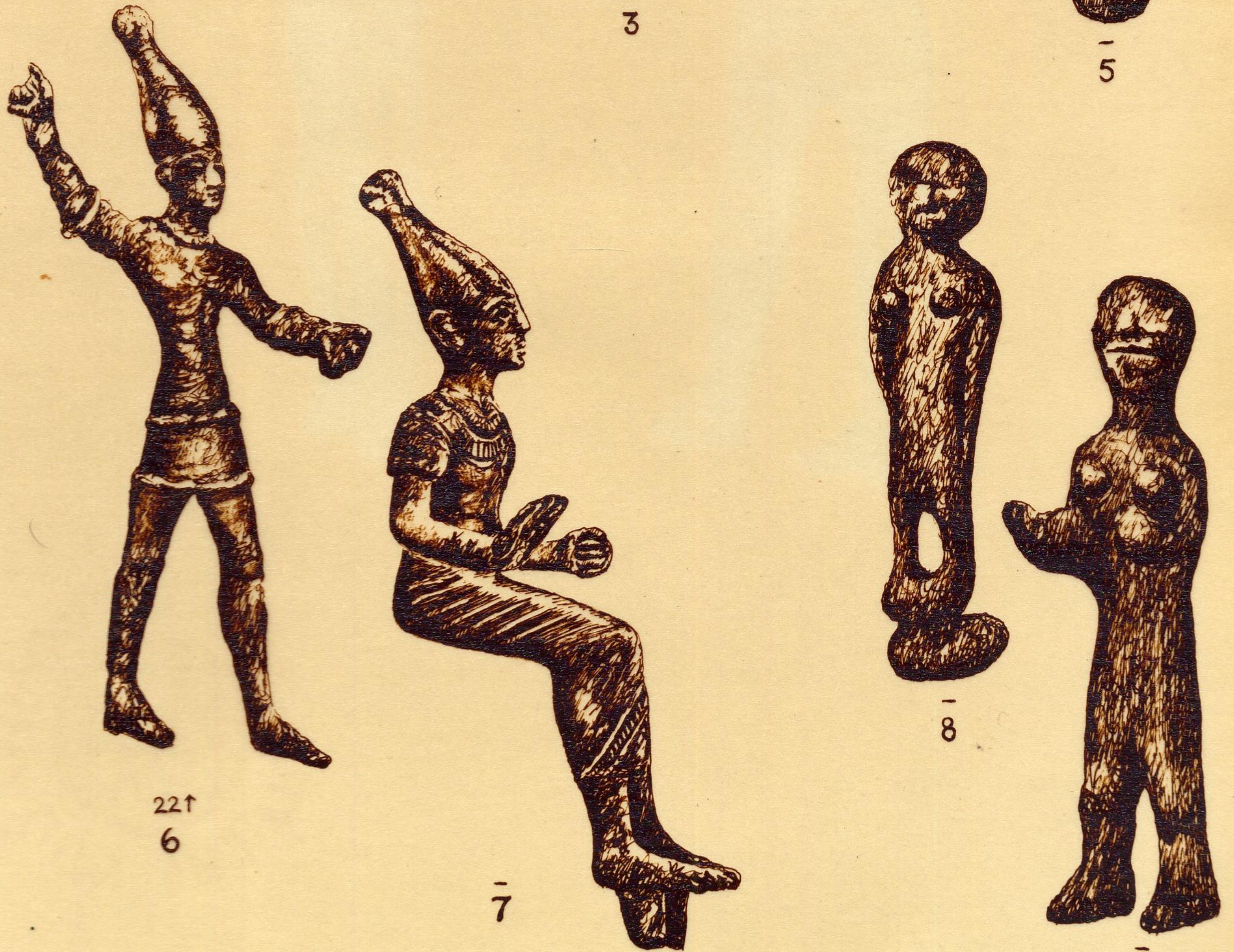
9.5 ↑  
1

2

18.204  
11 ↑  
3

11 ↑  
4

5



22 ↑  
6

7

8

9



FIG. 16



FIG. 17

