

STEPHEN FOLTINY

The Ivory Horse Bits of Homer and the Bone Horse Bits of Reality

Dedicated to Professor János Banner

The epic poetry of the Greeks was a literary problem for the scholars of Alexandria. In the same way, when in the eighteenth century classical scholarship began to analyze the Homeric poems, its approach was mainly aesthetic and literary. It was a dream world of fairy tales that those critics enjoyed in these poems, – the reflection of real history lay outside their consideration.

Thus the interpretation of Homer was based on literary and grammatical considerations until 1870 when Heinrich Schliemann started his excavations at Troy¹. He and his successors have thrown much new light on the Homeric problem. From the results of the actual excavations, and the discussions of the excavated objects in connection with Homer, archaeologists were able to recreate for us the cultural history of the pre-Homeric Aegean. On the whole the archaeological evidence shows that Homer's world was a reality.

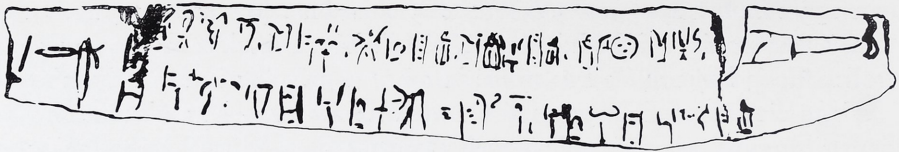
Naturally we cannot expect the civilization described by Homer to agree in every respect, or in most of its aspects, with the Mycenaean culture. It is, however, undeniable that there is in Homer much of the Mycenaean civilization and there is much that is post-Mycenaean.

If we follow the development of Homeric criticism during the last century, we can distinguish two main aspects²: a literary which continues the ancient tradition, and an archaeological which has grown since the time of Schliemann. Homeric archaeology must base itself on Homer's text and on the objects found in excavations. On the other hand, literary criticism cannot afford to neglect the results of archaeological research.

A major contribution to Homeric studies has been the archaeological discovery that the first immigration of a Greek-speaking people into Hellas took place at the beginning of the Middle Bronze Age. A consequence of this thesis that the Mycenaean were Greeks has recently received positive proof by the decipherment of the Linear B script, which is Greek. This fact brings Homer and Mycenae even closer together. The contents of the Mycenaean clay tablets increase the number of things which can be recognized

¹ For some of the more recent publications on the Homeric question see: Roland Hampe, *Die Homerische Welt im Lichte der neuesten Ausgrabungen*. *Gymnasium* 63, 1956, 1–57. – Allan J. B. Wace and Frank H. Stubbings, *A Companion to Homer* (London 1962) (quoted below as Wace – Stubbings 1962). – G. S. Kirk, *The Homeric Poems as History*. *The Cambridge Ancient History*, Revised Edition of Volumes I and II, Vol. 2, Chapter 39 b (Cambridge 1964) (quoted below as Kirk 1964). – Gerald F. Else, *Homer and the Homeric Problem* (Cincinnati 1965) Cf. H. L. Lorimer, *Homer and the Monuments* (London 1950).

² Cf. Wace – Stubbings 1962, 325–329.



1 Linear B clay tablet, Knossos Sd 0405 (after *Archaeology* 13, 1960).

as Mycenaean and the reality of a long poetic tradition before Homer becomes more and more evident (Fig. 1).

The trouble with such traditions is that the poetic imagination obscures the boundaries of historical facts and legend, folk-tale and myth³. In the Homeric poems old and new, historical reminiscences and dramatic fiction stand side by side. There emerges from them a wonderful, but indistinct picture of a distant heroic age. This is not completely without historical value, but it often becomes misleading.

Archaeology offers many opportunities of checking Homer's text by providing actual evidence. We wish to give a new example for this⁴. The Homeric quotation under discussion is a famous simile in which the poet compares the blood on a wounded hero's thigh to the red-purple dye with which a woman of Maeonia or Caria stains an ivory cheek-piece of a horse⁵:

*Ὄς δ' ὅτε τις τ' ἐλέφαντα γυνή Φοίνικι μίγρη
Μηρονίς ἢ ἐ Κάειρα, παρήϊον ἔμμεναι ἵππων
κεῖται δ' ἐν Θαλάμῳ, πολέες τέ μιν ἠρόσαντο
ἵππῆες φορέειν.*

The ivory cheek-piece is meant here to be a part of the king's treasure and an ornament for his horse.

The archaeological research reveals that ivory was in fact a favorite decorative material of the Mycenaeans⁶. Mycenae itself was a major center for ivory carving from the middle fourteenth century onwards. The city imported raw tusks and finished articles from Syria, Palestina and Egypt.

During the second millennium B. C. large herds of elephants lived in Syria⁷. We have records of a hunting expedition of Thothmes III, the Egyptian conqueror of Syria. In the course of this great elephant drive near Nia one hundred and twenty elephants were captured. The Assyrian king Tiglathpilesar I slew ten bull elephants and caught four alive in the country of Harran and in the district of the Habur river around

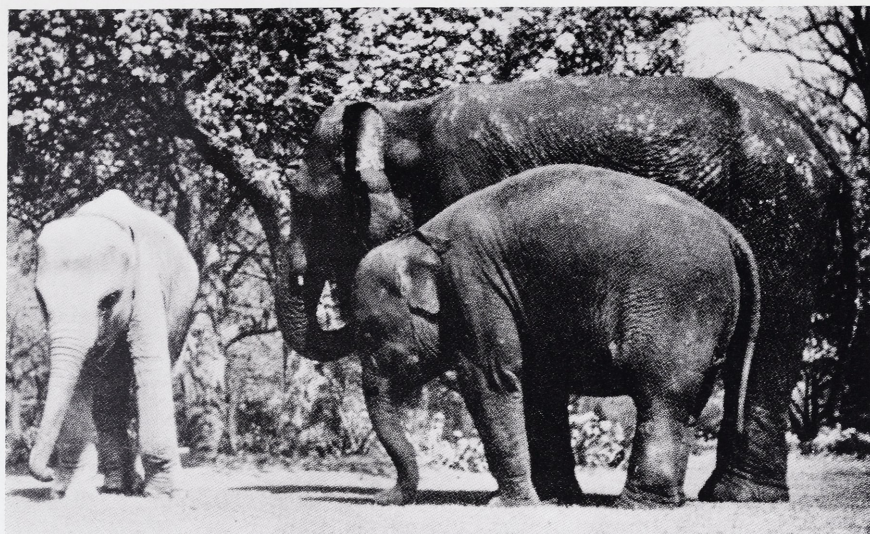
³ For details see Kirk 1964, 3 and 16–25.

⁴ The author is indebted to Prof. A. Alföldi who called his attention to this quotation.

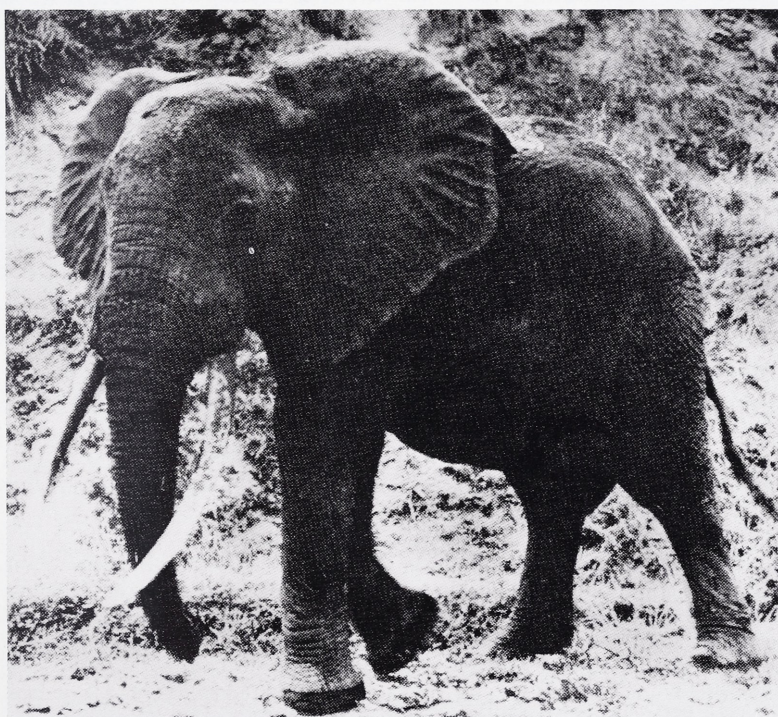
⁵ The *Iliad*, IV 141–144. Translation according to A. T. Murray (*The Loeb Classical Library*), (Cambridge, Mass. 1946) Vol. 1, p. 163: 'As when a woman staineth ivory with scarlet, some woman of Maeonia or Caria, to make a cheek-piece for horses, and it lieth in a treasure-chamber, though many horsemen pray to wear it;' (even in such a way Menelaus' thighs were stained with blood).

⁶ Helene J. Kantor, *Ivory Carving in the Mycenaean Period*. *Archaeology* 13, 1960, 14–25. – E. Vermeule, *Greece in the Bronze Age* (Chicago 1964) 218–221 and 375. – Cf. R. D. Barnett, *Early Greek and Oriental Ivories*. *Journal of Hellenic Studies* 68, 1948, 1–25. – R. D. Barnett, *Fine Ivory Work*. In: Ch. Singer – E. J. Holmyard and A. R. Hall, *A History of Technology* 1 (Oxford 1954) (quoted below as Singer – Holmyard – Hall 1954), 663–683. – F. E. Zeuner, *A History of Domesticated Animals* (London 1963) (quoted below as Zeuner 1963), 275–98. – Wace – Stubbings 1962, 460 and 533.

⁷ R. D. Barnett, *Phoenician and Syrian Ivory Carving*. *Palestine Exploration Quarterly* 1939, 4–19, see esp. 5–6. – Zeuner 1963, 276–79.



a



b

2 a) Indian elephant. – b) African elephant.
(After F. E. Zeuner, *A History of Domesticated Animals*.)

1100 B. C. That these elephants belonged to the Indian species is suggested by a picture in a grave of Rekhmire at Thebes in Egypt of the fifteenth century B. C. which shows Syrians bringing an elephant, tusks of ivory and other royal gifts⁸. The humps on the forehead, the rounded back and the small ears are characteristic of the Indian elephant (Fig. 2 a).

Of fossil remains only two lower jaws are known. These were excavated by L. Woolley in Level II (1575 B. C.?) and Level IV (c. 1475 B. C.) at Atchana-Alalakh in Syria⁹.

We know from Ashurnazirpal II of the ninth century B. C. that he was able to collect live elephants for his zoological garden and to slay thirty from ambush, when he arrived on the Syrian scene¹⁰. But soon afterwards the Syrian elephant must have become extinct in this area, since all accounts of it cease.

Around 800 B. C. the art of ivory carving was still going on in the Near East. However, the new source of raw material was Africa¹¹. The African elephant is different from the Indian species in several respects (Fig. 2 b): the ears are larger, the forehead lacks the frontal bulges of the Indian, and the outline of the back culminates near the pelvis. In Egypt and the eastern Sudan these elephants were known from prehistoric times onwards.

It may be that at the beginning ivory was a royal monopoly in Egypt, reserved for the master craftsmen of the court, since most of the Old Kingdom ivories represent Pharaohs¹².

In Archaic Greece, where elephants had not been seen before Aristotle, an atmosphere of mystery surrounded this strange substance which was brought in by oriental middlemen, and strange tales came with it¹³. Such a tale was that of Pygmalion, king of Cyprus, a Phoenician who fashioned of ivory a statue so lifelike that it actually came to life.

A careful examination of several thousand ivory finds from the Near East and Greece indicates that horse-bits of ivory were very rare. I was unable to find any ivory object which could be considered without doubt to be a horse-bit. But there is one piece which must be mentioned in this connection. In the »ivory palace« of Megiddo, among 382 ivory objects (which may be dated around 1200 B. C.), an interesting find was unearthed¹⁴ (Fig. 3). It is a horn-shaped object. The section of one side is cut out.

⁸ Palestine Exploration Quarterly 1939, Plate 1. – Cf. Singer – Holmyard – Hall 1954, 664, Fig. 455.

⁹ Zeuner 1963, 277.

¹⁰ Palestine Exploration Quarterly 1939, 6. – Zeuner 1963, 277–78.

¹¹ Zeuner 1963, 278. – J. W. Crowfoot and Grace M. Crowfoot, *Early Ivories from Samaria* (London 1938) 55 cite the opinion of R. Garbe who maintains that the African ivory can be distinguished from the Indian. This view is based upon the grain of the African ivory which is very different from the grain of the Indian ivory. But we need more evidence, before we can settle this problem.

¹² Singer – Holmyard – Hall 1954, 668.

¹³ *Journal of Hellenic Studies* 68, 1948, 2. – Cf. Hugo Blümner, *Technologie und Terminologie der Gewerbe und Künste bei Griechen und Römern* 2 (Leipzig 1879) 361–75. – W. Helbig, *Das homerische Epos aus den Denkmälern erläutert* (Leipzig 1884) 13 and 110. – O. Keller, *Die antike Tierwelt* 1 (Leipzig 1909) 382–383. – H. L. Lorimer, *Homer and the Monuments* (London 1950) 507–08. – M. Treu, *Homer und das Elfenbein*. *Philologus* 99, 1955, 149–158. – L. R. Palmer, *The Interpretation of Mycenaean Greek Texts* (Oxford 1963) 315–16 (Miss Wanda Holtzinger called my attention to this work).

¹⁴ G. Loud, *The Megiddo Ivories*. *The University of Chicago Oriental Institute Publications* 52 (Chicago 1939) 3–4 and 16, and Plate 24, Fig. 129 a–b. – C. W. Mc Ewan et al., *Soundings at Tell Fakhariyah*, *ibid.* 79 (Chicago 1957) 63–65 (H. J. Kantor).



3 Cheek-piece of ivory from Megiddo, Israel.
 Courtesy of the Oriental Institute, University of Chicago. – Scale 3 : 4.

The inside is hollowed from the large end. The shell is 3 mm thick. The shape, the decoration and the holes on one side suggest close connections between this ornamental object and contemporary horse-bits¹⁵. It is very probable that our piece from Megiddo was an unfinished horse-bit. Then Homer's description is correct. The object was kept in the treasury of the palace at Megiddo, as an ornament of the king's horse. At this point another problem arises. Homer refers to the staining of ivory as practiced

¹⁵ See the horse-bits of Beycesultan (Fig. 5) and of Alaca Höyük (Fig. 6).

in Maeonia and Caria. The technique of coloring ivory does not seem to have been invented before the ninth century B. C.¹⁶. Consequently the reference cannot be earlier: it points to a post-Mycenaean date.

Already in the Mycenaean period, but much more in later epochs, ivory was used more often on horse-trappings and on chariots. In the present context a few examples should suffice. Thus for instance a gold-plated harness element from the tomb of Tutankhamen at Thebes (ca. 1353 B. C.) has been published recently¹⁷.

Among the most remarkable ivories found at Nimrud was a pair of oval objects with elongated handles¹⁸ (Fig. 4): a variety of evidence shows that they were ornamental horse-trappings, and that they rested on the front of the horse's head and hung down the crown¹⁹. Our ivory plaque was decorated with a panel in relief of a seated sphinx, the head surmounted by a sun-disk. Trailing from the front of the Phoenician-style apron-skirt was a winged uraeus. On the handle there is a lotus surmounted by a car-touche and a pair of ostrich feathers. This piece was discovered in a well in the palace built by Assurnasirpal. It was originally stained with dark pigment recalling the passage from the Iliad which we quoted above²⁰. Its date and Phoenician style relate it to the time and region of the Iliad reference²¹.

It is not certain that these rather fragile ivory objects had ever been used on a living horse. But, as M. E. L. Mallowan rightly suggests, there may once have been in the palace representations of a horse, perhaps a ritual horse²². We may assume that in the temples themselves there were models of ritual horses, and that some of these ivory ornaments belonged to them. A. Alföldi has demonstrated the significance of the horse in religious rites of certain Indo-Iranian and Indo-European peoples²³.

Since ivory seems to have been the monopoly of kings, princes and of people close to them, a cheaper and more easily available material had to be employed by those who were less rich, for the same purpose as was genuine ivory. Many ornamental objects were therefore made of bone. This was the case also with the horse-bits as we shall see immediately.

The British Institute of Archaeology at Ankara conducted excavations²⁴ at Beycesultan between 1954 and 1960. This site is situated near the upper Maeander, not very far from the Carian mountains. Somewhere in this area Homer may have seen women employed in staining ivory cheek-pieces for horses. During these excavations two horse-bits of antler were unearthed (Fig. 5) in Level III (which is dated between 1450 and 1300 B. C.)²⁵. The findings are not yet published and we do not know anything

¹⁶ Wace – Stubbings 1962, 260 and 533.

¹⁷ *Archaeology* 13, 1960, Fig. 14 and p. 22.

¹⁸ M. E. L. Mallowan, *The Excavations at Nimrud (Kalhu) 1952*. *Iraq* 15, 1953, 1–42, esp. 22 and Plate II. – R. D. Barnett, *A Catalogue of the Nimrud Ivories in the British Museum* (London 1957) 28.

¹⁹ *Iraq* 15, 1953, 22–23.

²⁰ See our note 5. – Cf. Joan Lines, *Ivories from Nimrud*, *The Metropolitan Art Bulletin*, New York 13, 1955 (quoted below as Lines 1955), 233–243, esp. 236.

²¹ Lines 1955, 236 sq.

²² *Iraq* 15, 1953, 23.

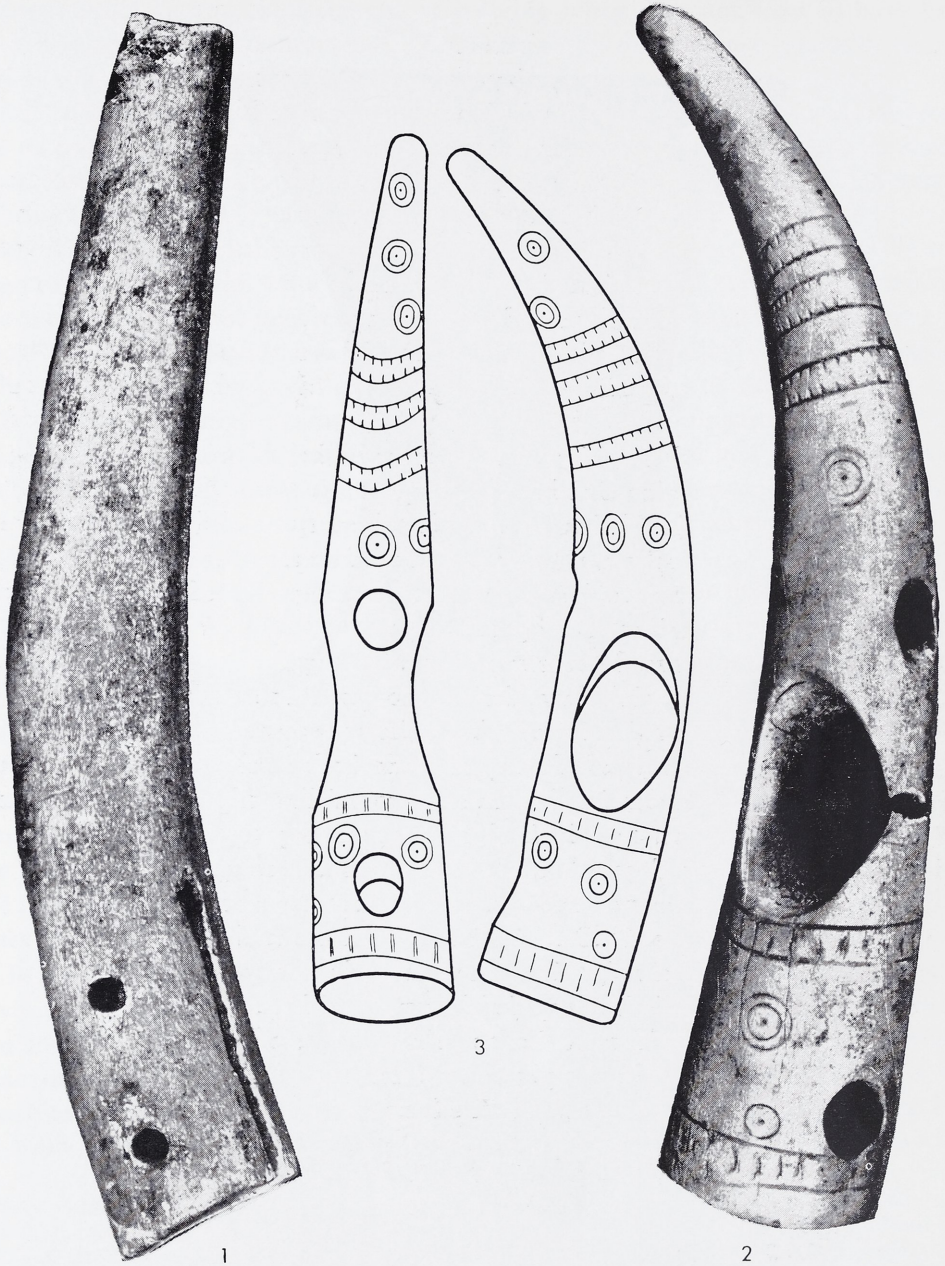
²³ A. Alföldi, *Der iranische Weltriase auf archäologischen Denkmälern*. *Jahrb. Schweiz. Ges. f. Urgesch.* 40, 1949/50, 17–34.

²⁴ S. Lloyd and J. Mellaart, *Beycesultan Excavations*. *Anatolian Studies* 6, 1956, 101–135, esp. 125: chronological table (level III: 1450–1300). – S. Lloyd and J. Mellaart, *Beycesultan*, Vol. 1: Occasional Publications of the British Institute of Archaeology at Ankara No. 6 (1962). Vol. 2: *ibid.* No. 8 (London 1965).

²⁵ Sincere thanks are due to Prof. Dr. Tahsin Özgüç and Dr. Aykut Çinaroglu, University of Ankara,



4 Ivory plaque, one of a pair. Ornament of a horse's head. From Nimrud (Northwest Palace, Assurnasirpal well). The Metropolitan Museum of Art, Rogers Fund 1954. - Scale 1 : 1.



5 1-2 Cheek-pieces of antler from Beycesultan (Archaeological Museum, Ankara, Turkey).
 3 Decoration of the cheek-piece 2 from Beycesultan (after A. Mozsolics 1960).

and to the Archaeological Museum of Ankara, for the photographs of the two bits. The author wishes to express his indebtedness to the German Archaeological Institute at Ankara, and above all to Prof. Dr. Hans G. Güterbock, for kind help and hospitality. The financial assistance of the National Science Foundation, Washington, D. C., made possible my research trip to Turkey during 1964. A drawing of our decorated horse-bit of Beycesultan (Fig. 5,3) was published by A. Mozsolics in an article 'Die Herkunftsfrage der ältesten Hirschgeweihtrensen' (*Acta Arch. Acad. Scient. Hung.* 12, 1960 [quoted below as Mozsolics 1960], 125-135, esp. 127-128 and Fig. 1 on p. 128).



6 Horse bits of antler (1–2 and 4) and of bone (3) from Alaca Höyük (Archaeological Museum, Ankara, Turkey).

about them, except their stratigraphical position. These cheek-pieces belong to a group of the oldest horse-bits in Anatolia. Characteristic is the big, oval-shaped, hole in the middle which was clearly intended for the mouth-piece, as we shall see later. The cheek-pieces are made either of deer-horn having a round or oval cross-section, or of bone, and in this case they are flat. Some specimens are decorated, others are not.

We find the nearest parallels to the Beycesultan bits in the Hittite levels at Alaca Höyük (Fig. 6)²⁶. The famous royal graves at this site²⁷ are dated between 2400 and 2200 B. C.²⁸. Because of the fall of the ruling dynasty the cemetery was soon deserted and it seems that the old royal city was only intermittently inhabited between 2200 and 1850. During the Hittite period the city became an important political and religious center. From the third level (approximately between 1450 and 1300) we have several horse-bits. It is important that these are of the same type as those of Beycesultan.

The specimens of Alaca Höyük lead us to the discussion of another problem: that is the role of the nomads in the prehistory of Anatolia. Alaca Höyük in Northern Cappadocia lies quite close to the Pontic area, and the destruction of the royal graves can be associated with the intrusion of some Indo-European-speaking peoples into Southern Anatolia²⁹.

The plateau of Asia Minor is in a sense a continuation of the Eurasian steppe³⁰. The Central Plateau is a wind-swept steppe-land, and it is only in the river-valleys that enough water and shelter can be found for human habitation. Rivalry between the peoples of the Pontic steppes and the Halys region has a long history. Some prehistorians believe that the ruling clan of the Alaca-tomb was a temporary extension of Pontic domination in the western Halys country³¹. Close links with the steppe region north of the Caucasus are suggested by the presence of several East Anatolian metal vessels in the royal tomb at Maikop on the Kuban which is dated around 2300 B. C.³². The use of burial mounds was a practice at this time foreign to Anatolia and was in all probability introduced from the Pontic steppe. The appearance of tumuli at Trialeti around 2100 B. C. might well indicate the arrival in Eastern Anatolia of Indo-European-speaking pastoral people from the north. And the termination of the East Anatolian Early Bronze Age at about 2000 to 1950 B. C. may have the same reason. These events could suggest the movement of Indo-European elements during the second period of Kültepe which falls between 2000 and 1900 B. C. 'The trail of burnt or deserted settlements from the eastern borders to the Kayseri region is suggestive³³. The destruction at the end of this period is not paralleled by the similar upheaval at the end of the Late Bronze Age. Whole areas, such as the Konya Plain in Southwest Anatolia, reverted then to nomadism after several thousand years of settled agricultural life. This event had some repercussions on the Balkans, too. The catastrophic destruction

²⁶ Prof. Tahsin Özgüç, Ankara, provided the photographs. Dr. Hâmit Zübeyr Koşay, Ankara, gave me useful information about these pieces when I visited his excavations at Alaca Höyük.

²⁷ H. Z. Koşay, *Les fouilles d'Alaca Höyük*. Türk Tarih Kurumu Yayınlarından V. Seri, No. 5 (Ankara 1951) 129–131 (bone objects) and Plate 84, Fig. 1 and 3. – Cf. Machteld J. Mellink, *The Royal Tombs at Alaca Höyük and the Aegean World*. In: *The Aegean and the Near East*, (Locust Valley, N. Y. 1956) 39–58.

²⁸ J. Mellaart, *Anatolian Chronology in the Early and Middle Bronze Age*. *Anatolian Studies* 7, 1957, 55–88, esp. 65–66.

²⁹ J. Mellaart, *Anatolia and the Balkans*. *Antiquity* 34, 1960, 270–278, esp. 276.

³⁰ O. R. Gurney, *The Hittites* (A Pelican Book: A 259 – 1954) 80.

³¹ J. Mellaart, *Anatolia before 4000 B. C. and c. 2300–1750 B. C.* Cambridge Ancient History, Revised Edition of Vols. I and II: Vol. I Chapt. 7 §§ XI–XIV; Chapt. 24 §§ I–VI (Cambridge 1964) 32–33.

³² *ibid.* 36–37.

³³ *ibid.* 37.

is clearly documented at Lerna with the burning of the House of the Tiles³⁴. There was a disaster at Tiryns, at nearby Asine and at Zygouries. The wave of violence also left its mark on Attica. John Caskey hints at the possibility of a northern invasion, and Saul Weinberg firmly believes that the first waves of Indo-Europeans reached the Peloponnesos at this time, between 2300 and 2200 B. C.³⁵.

If we now return to Alaca Höyük and Eastern Anatolia, we see that nothing is known of events for the next half millennium. Our horse-bits discussed above come from the period between 1450 and 1300 when Alaca Höyük was in the hands of the Hittites, long recognized as Indo-Europeans and as horse-breeding nomads at the beginning of their history³⁶.

The evidence of archaeology and linguistics seems to show that the Indo-European languages arose on the steppes around the Black Sea and the Caucasus, not far from Anatolia where Hittite and related languages of the Hittite Empire have left written traces beginning early in the second millennium B. C.³⁷ Though the route by which the Hittites came into Anatolia cannot yet be traced archaeologically, it is a reasonable assumption that they arrived by way of the Caucasus about 2000 B. C. It is a plausible suggestion that the Indo-Europeans brought the horse to the south of the Caucasus around 2000 B. C. or perhaps even before.

The western half of the Eurasian steppe begins with Hungary and extends across Roumania and South Russia between the Caucasus and the southern end of the Urals. The open grasslands, like the prairies of North America afforded natural pasture for the local herds of wild game. 'The true pastoral nomad technology includes a complex of animals rather than a single species, balanced in terms of grazing characteristics to utilize all the grass cover of each locality. Cattle, horses and camels graze well on long grass; sheep and goats crop close'³⁸. But the horse was the most significant animal in this part of Eurasia. A search in that area for parallels to our horse-bits will prove useful.

³⁴ J. L. Caskey, *Greece, Crete and the Aegean Islands in the Early Bronze Age*. Cambridge Ancient History, Rev. Ed. of Vols. I and II: Vol. I Chapter 26(a) (Cambridge 1964) 15–19. – Cf. J. L. Caskey, *The Early Helladic Period in the Argolid*. *Hesperia* 29, 1960, 285–303 (with previous literature), esp. see 298–99 and 301.

³⁵ Saul S. Weinberg, *The Relative Chronology of the Aegean in the Stone and Early Bronze Ages*. In: *Chronologies in Old World Archaeology*, edited by Robert W. Ehrich (Chicago 1965) 285–320, esp. 305.

³⁶ In addition to the publications mentioned in our notes 27–29 and 31, cf. Henri de Genouillac, *Céramique Capadocienne* (Paris 1926) 1,41. – M. E. L. Mallowan, *Excavations at Brak and Chagar Bazar*. Iraq 9, 1947, 215–28 and Plates 54, 11 and 55, 11. – E. Delebecque, *Le cheval dans l'Iliade* (Paris 1951). – F. Schachermeyr, *Streitwagen und Streitwagenbild im Alten Orient und bei den mykenischen Griechen*. *Anthropos* 46, 1951, 705–753. – H. Otten, *Pirva – der Gott auf dem Pferde*. *Jahrb. für Kleinasiat. Forschung* 2, 1951, 62–73. – N. Özgüç, *Vorbericht über die Siegel und Siegelabdrücke*. *Belleten (Türk Tarih Kurumu)* 17, 1953, 123–127. – Füzruzan Kinal, *Zur Geschichte der Zähmung des Pferdes im alten Vorderasien*, *ibid.* 193–207. – F. Hančar, *Das Pferd in prähistorischer und früher historischer Zeit* (Wien–München 1955) (quoted below as Hančar 1955) 399–535. – James F. Downs, *The Origin and Spread of Riding in the Near East and Central Asia*. *American Anthropologist* 63, 1961, 1193–1203. – Zeuner 1963 (above, note 6), 318–321.

³⁷ E. D. Phillips, *The Royal Hordes. Nomad Peoples of the Steppes* (London 1965) (quoted below as Phillips 1965), 7 and 39 (bibliography: 132–135). – Cf. *Idem*, *New Light on the Ancient History of the Eurasian Steppe*. *American Journal of Arch.* 61, 1957, 269–280. – J. K. Anderson, *Ancient Greek Horsemanship* (Berkeley and Los Angeles 1961) (quoted below as Anderson 1961), 6–7 (good bibliography: 221–231).

³⁸ Phillips 1965, 7 (S. Piggott).

A thorough survey of the Bronze Age material in the Carpathian Basin and Southeast Europe reveals that this type of bone bits – the so-called Füzesabony type³⁹ – was very popular there. We know some parallels from Transsylvania (such sites as Pécska-Pecica⁴⁰, Székudvar-Socodor⁴¹ and Gyulavarsánd-Vársánd⁴²), Hungary (Füzesabony⁴³, Szob⁴⁴, Pákozdvár⁴⁵, Palotás-Homokos⁴⁶ and Tiszafüred⁴⁷), Czechoslovakia (Malé Kosihy: Fig. 7,5 and 8⁴⁸, Nitrianski Hradok⁴⁹ and Veselé⁵⁰) and Austria (Böheimkirchen⁵¹: Fig. 7,9 and Grafenberg⁵²). A surprisingly good counterpart of the Beycesultan piece (Fig. 5,3) is a specimen from Pákozdvár (Fig. 7,1). Not only the shape, but also the decoration is quite similar. Important pieces come from Füzesabony (Fig. 7,2–4) where they were found in association with a bone disc with 'Mycenaean' spirals (Fig. 7,6) which may be compared with the bone disc of Kakovatos⁵³ (Fig. 7,7). Several other sites with this kind of bone bits have some Mycenaean or Anatolian connections, or both⁵⁴.

Before we deal with another contemporary type of the steppe area, we must discuss briefly the question of how our bits were used for controlling horses.

Horses can be managed in many different ways⁵⁵. Most nations managed their horses through direct control of the head. This can be achieved by pressure upon the outside of the nose, or by pressure on the sensitive parts inside the mouth, or by a combination of both. Pressure upon the outside may be applied by a halter which is a rope or a leather strap passing around the horse's nose. If the halter is fitted low down, it will

³⁹ A. Mozsolics, Mors en bois de cerf sur le territoire du Bassin des Carpathes. *Acta Archaeologica Academiae Scientiarum Hungaricae* 3, 1953 (quoted below as Mozsolics 1953), 69–109, esp. 70–74. – Cf. Mozsolics 1960, 126–129.

⁴⁰ Mozsolics 1960, 127.

⁴¹ Mozsolics 1953, 72. – M. Roska, Koravaskori lószerszámok az Erdélyi Nemzeti Múzeum Történeti Tárában. *Közlemények (Publications)* 4, Kolozsvár 1944, 43–52, esp. see Fig. 4 on p. 46.

⁴² Mozsolics 1953, 72. – M. Roska, A gyulavarsándi (Arad vm.) Laposhalom rétegtani viszonyai. La stratigraphie de la colline 'Laposhalom' de Gyulavarsánd (dép. Arad.). *Abrégé. Folia Arch.* 3–4, 1941, 45–56 (in Hungarian), 56–61 (French summary); Fig. 19,3.

⁴³ See Fig. 7,2–4. – Mozsolics 1953, 70–72 and Fig. 1–2. – Mozsolics 1960, 128–129.

⁴⁴ Mozsolics 1953, 73–74. – Mozsolics 1960, 73 and Fig. 6.

⁴⁵ See Fig. 7,1. – Mozsolics 1953, 73 Fig. 4–5. – Mozsolics 1960, 128 Fig. 1. The similarity between Pákozdvár and Beycesultan was emphasized here for the first time.

⁴⁶ Mozsolics 1960, 125 and Plate 74,1 a–b.

⁴⁷ Mozsolics 1953, 72 and Fig. 3.

⁴⁸ A. Točík, Knochen- und Geweihindustrie der Madarovec-Kultur in der Südwestslowakei. *Študiijné zvesti AÚSAV č. 3*, Nitra 1959 (quoted below as Točík 1959), 42–53, esp. see 48, Plate 2, Fig. 1.

⁴⁹ Mozsolics 1960, 128 note 16. Unfortunately, I was not able to identify this piece.

⁵⁰ Točík 1959, 53, Plate 7, Fig. 10. – Cf. A. Točík, Opevnena osada z doby bronzovej vo Veselom. Befestigte bronzezeitliche Ansiedlung in Veselé. *Archaeologia Slovaca, Fontes, Tomus 5 (Bratislava 1964)* 162.

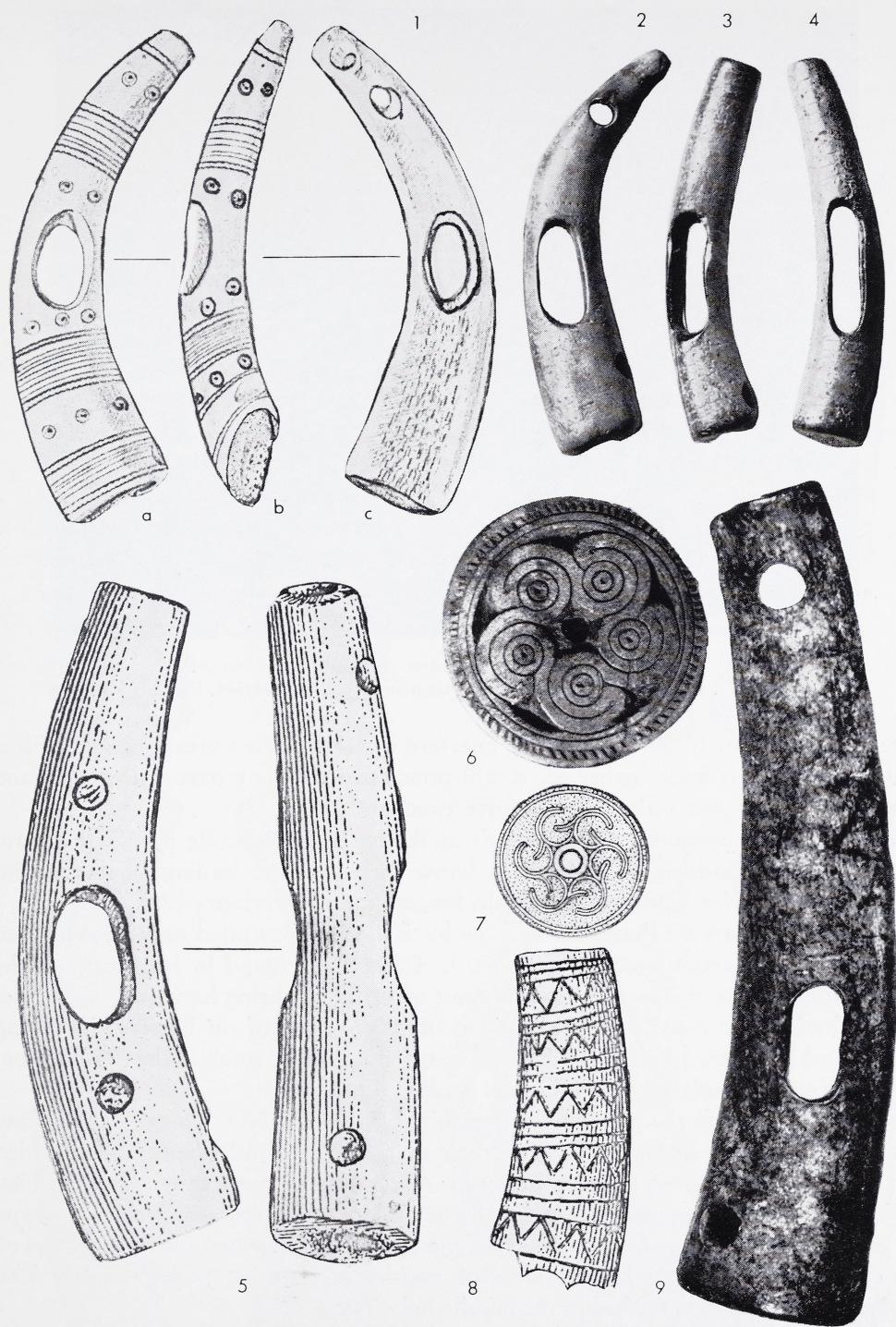
⁵¹ St. Foltiny, Bronze- und urnenfelderzeitliche Hirschhorn- und Knochenrensen aus Niederösterreich. *Mitt. der Anthr. Ges. in Wien* 95, 1965 (quoted below as Foltiny 1965), 243–249, esp. 244–45.

⁵² *ibid.*

⁵³ R. Hachmann, Die frühe Bronzezeit im westlichen Ostseegebiet und ihre mittel- und südosteuropäischen Beziehungen (Hamburg 1957) 174–175 and 215, esp. Plate 70, Fig. 7 and 10–12.

⁵⁴ Mozsolics 1960, 133–135. – A. Mozsolics, Die Steinaxt von Dad. *Acta Arch. Acad. Scient. Hung.* 16, 1964, 217–225. – Cf. St. Foltiny, Ein neuer Beitrag zur Frage der Handelsbeziehungen zwischen Siebenbürgen, dem Ostalpengebiet und Nordostitalien während der mittleren Bronzezeit. *Archaeologia Austriaca* 29, 1961, 76–95, esp. see 87. – *Idem*, Mycenae and Transylvania. *Hungarian Quarterly* 3, No. 3–4, New York 1962, 133–140. – For spiral decoration on ivories cf. Barnett 1957 (see note 18), Plate 12, A 15 and F 5; Plate 18, S 1; Plate 19, S 13; Plate 20, S 14–17; Plate 34, S 50–51; Plate 35; Plate 39, S 56 and S 65; Plate 45, S 69; Plate 67, S 158 b; Plate 68 S 157 and 164 a; Plate 113, 12 e–f.

⁵⁵ Here we follow J. K. Anderson 1961, 40–43.



7 Horse bits of antler (1-5 and 8-9) and discs of bone (6-7).

1 Pákozdvár (after A. Mozsolics 1953). - 2-4 and 6 Füzesabony (Hungarian National Museum, Budapest). - 7 Kakovatos (after R. Hachmann 1957). - 5 and 8 Malé Kosihy (after A. Točík 1959). - 9 Böheimkirchen (Niederösterreichisches Landesmuseum, Wien).



8 Hunting scene from the palace of Assurbanipal at Nineveh
(after J. H. A. Potratz, *Archiv für Orientforschung* 14, 1941/44, Fig. 48).

bear upon the nostrils, but here it may interfere with the horse's breathing, and this is undesirable. If it is fitted higher up, it will press upon the bony part of the head, and it will indicate wishes rather than enforce commands.

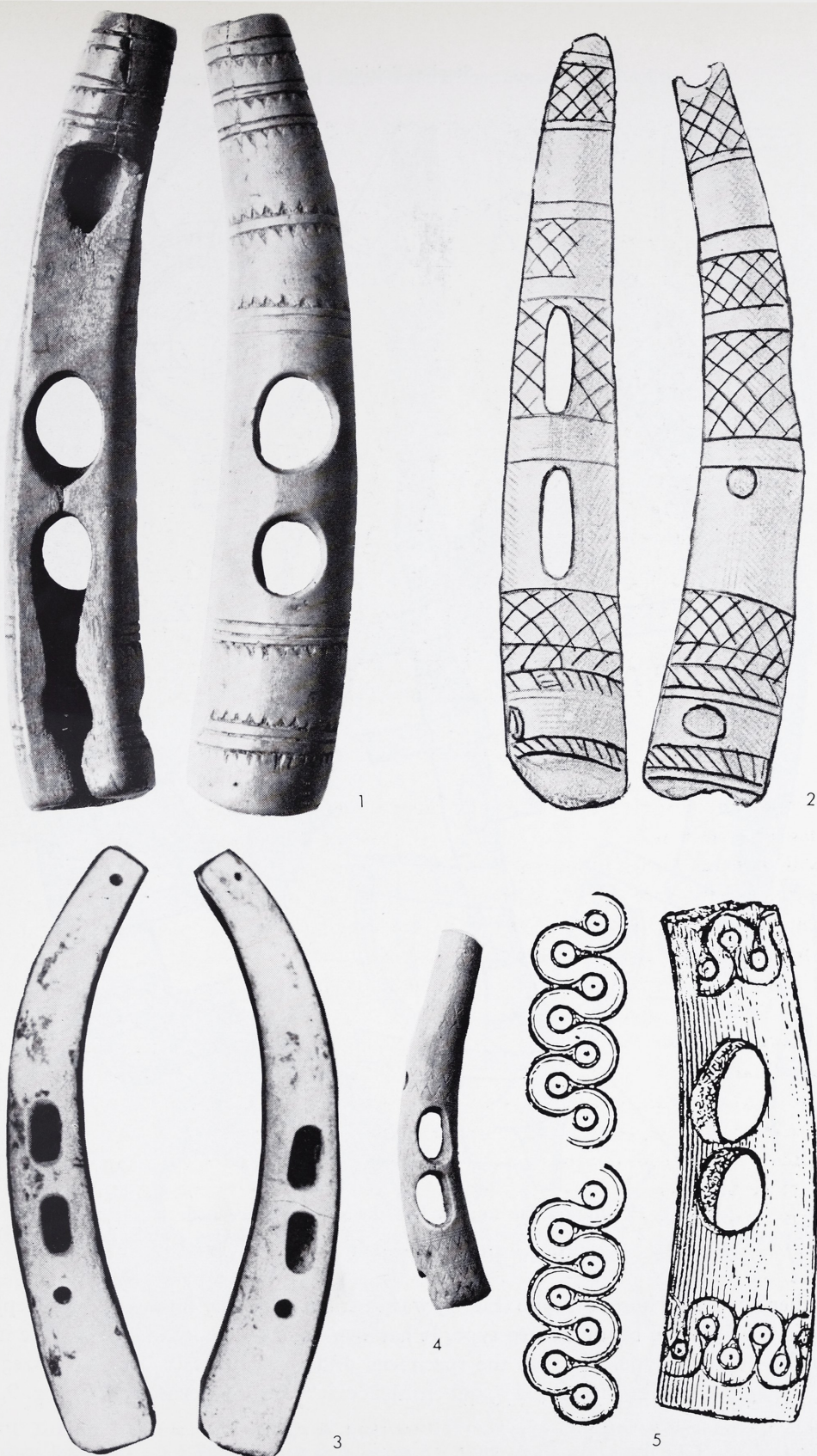
The bit, exerting pressure upon the inside of the mouth, is a strong means of control when the horse is ridden or driven. It is, however, unsuited to leading a horse around the paddock, or tying him up in the stable, because it will interfere with his eating.

The distinction between the halter and the bit is clearly illustrated on a vase painted by the Athenian artist Nearchos (ca. 540 B. C.). It was found in fragments on the Acropolis of Athens⁵⁶. The four-horse chariot of Achilles is being harnessed; the horses already harnessed have their bits in their mouths, while one of the horses is just being led up, and he wears a halter in which he was tied up in the stable. When in position, the halter will be replaced by the bit and bridle.

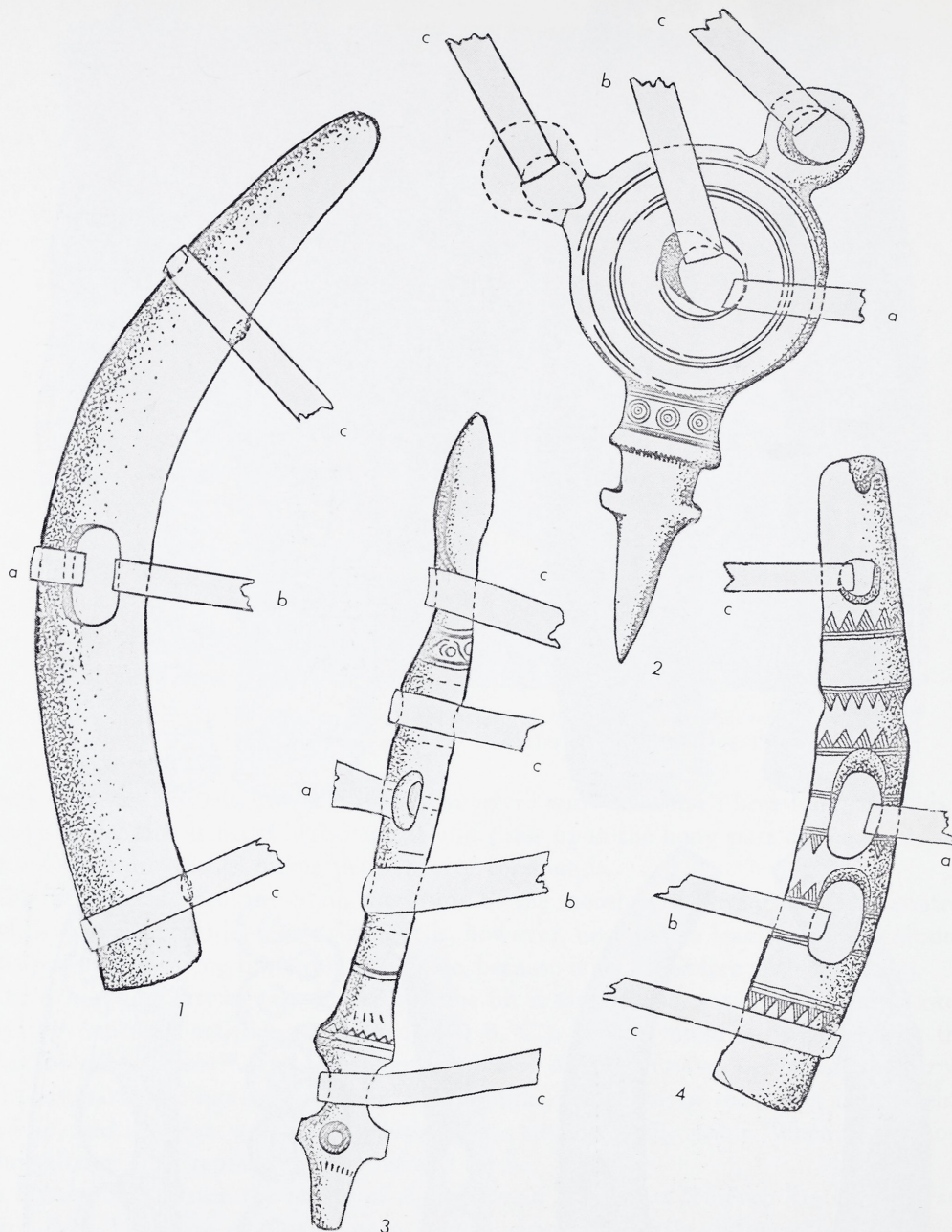
A hunting scene from the palace of Assurbanipal (Fig. 8) at Nineveh can demonstrate how these bits were employed, even if their shape is slightly different⁵⁷. The ridden and the chariot horses were guided by means of reins which were fastened to the bits. On the specimens of Beycesultan, Alaca Höyük and on other pieces of Füzesabony type the middle hole was intended for the mouthpiece, and the other two for the branches of the cheek-strap. The mouthpieces were of perishable material, perhaps of cord or rawhide. The rein was attached to the middle hole (Fig. 10,1).

⁵⁶ *ibid.* 42–43 and Plate 14 a.

⁵⁷ *Archiv für Orientforschung* 14, 1941/44, 28 and Fig. 48. – Cf. S. Bökönyi, *Reconstruction des mors en bois de cerf et en os*. *Acta Arch. Acad. Scient. Hung.* 3, 1953 (quoted below as Bökönyi 1953), 113–121, see esp. 118 and Fig. 4. – Anderson 1961, 69.



9 Horse bits of antler. 1 Köröstarcsa (Hungarian National Museum, Budapest). - 2 Tószeg (after A. Mozsolics 1953). - 3 Roggendorf, Niederösterreich (Krahuletz Museum, Eggenburg). - 4 Tószeg (Hungarian National Museum). - 5 Malé Kosihy (after A. Točík 1959).



10 Illustrations to show how the bone bits were used.

1 Füzesabony type. – 2 Vattina type. – 3 Borjas type. – 4 Tószeg type (1–4 after S. Bökönyi 1953).
 a = Mouth-piece, b = Rein, c = Cheek-strap.

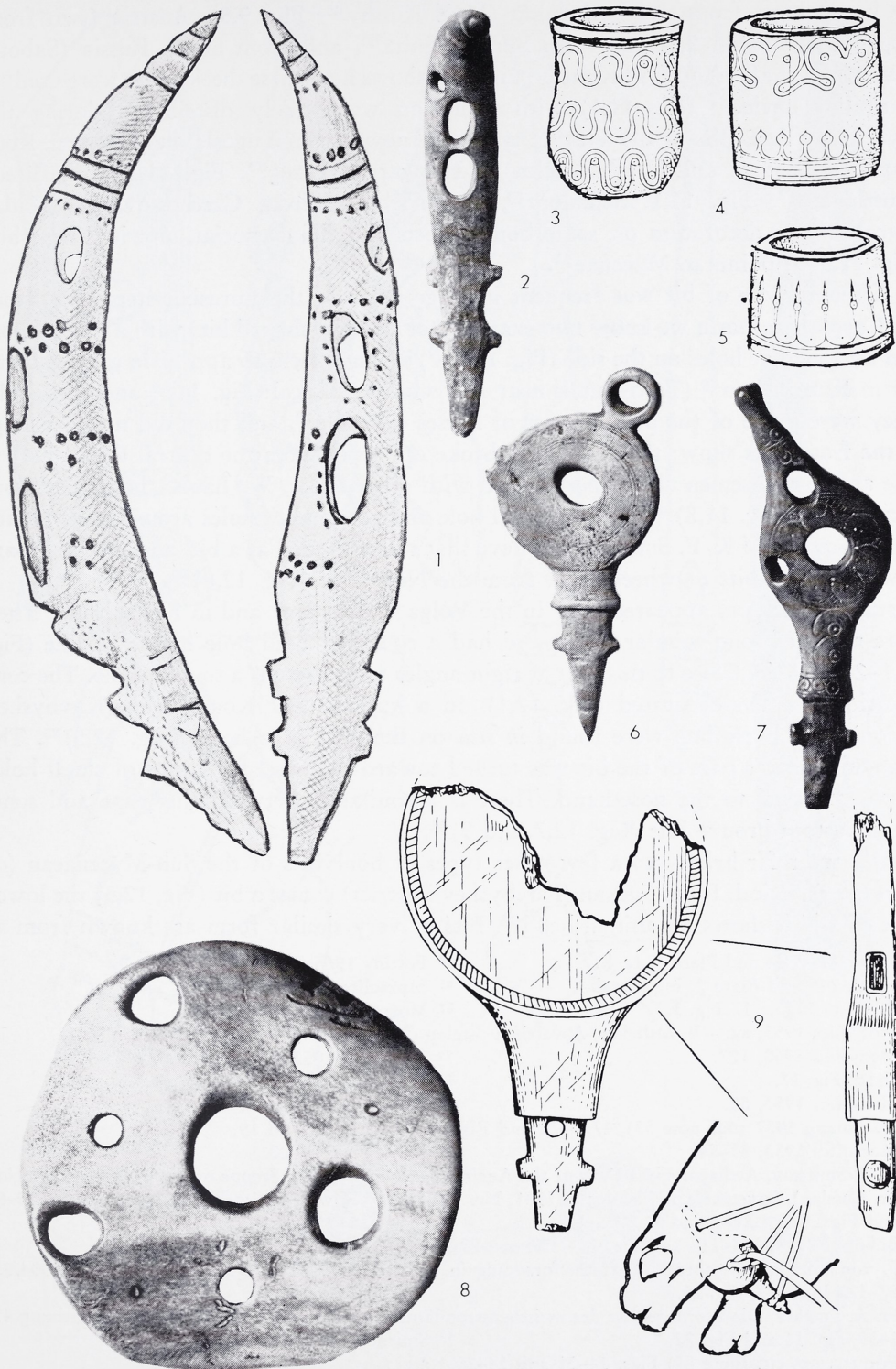
Another important horse bit type (Fig. 9) was distributed mainly on the western steppe. This is the so-called bit of Tószeg type. It has two holes in the middle, otherwise it is like the previous type. Most of the specimens occur in Hungary (five in Tószeg⁵⁸: Fig. 9,2 and 4, two in Tiszafüred⁵⁹, one in Mezőcsát⁶⁰ and in Köröstarcsa⁶¹: Fig. 9,1),

⁵⁸ Mozsolics 1953, 74–76 and Figs. 9–13.

⁶⁰ *ibid.* 79 Fig. 14.

⁵⁹ *ibid.* 75 Fig. 7–8.

⁶¹ *ibid.* 79 Fig. 15.



11 1 Tiszafüred-Ásotthalom (after A. Mozsolics 1953). – 2 and 6–7 Tószeg (Hungarian National Museum, Budapest). – 3–5 Vattina (after B. Milleker, A vattinai őstelep, Temesvár 1905). – 8 Füzesabony (Hungarian National Museum). – 9 Alakul (after K. F. Smirnov 1961).

we know some from Czechoslovakia (Malé Kosihy⁶²: Fig. 9,5), Austria (two from Roggendorf⁶³: Fig. 9,3, one from Burgschleinitz⁶⁴, and from South Russia (Sabotinovka⁶⁵ on the Bug). Our illustration Fig. 10,4 shows how these cheekpieces were used⁶⁶. A similar device⁶⁷ (Fig. 11,1) with dentation was widely distributed during the Mycenaean Age. Bits of the Vattina type are known from Yugoslavia (Vatin⁶⁸), Roumania (Monteoru and Pécska-Pecica)⁶⁹, Hungary (Tószeg⁷⁰: Fig. 11,2, Tiszafüred-Ásotthalom⁷¹: Fig. 11,1, Szihalom⁷², Gerjen⁷³) and from Czechoslovakia (Madarovce)⁷⁴. The decoration on some bone objects found in association with these bits (Fig. 11,3–5) points to Mycenae⁷⁵.

A different type of bit was frequent in large areas of the Eurasian steppes⁷⁶. From the Carpathian Basin we know two examples of the disc-shaped bits with a central hole and two smaller holes on the side (Fig. 11,6–7)⁷⁷. They seem to appear in greater number in Kazakhstan⁷⁸ (Tasti-Butak near Aktyubinsk, Alakul: Fig. 11,9, and Aydabul). They were made of the pelvic bones of horses or cattle⁷⁹, and they did not last long, as the fragments show; the bone rings broke off easily from the central disc.

The ancient horsemen also experimented with other types. We have a bone disc from Füzesabony (Fig. 11,8)⁸⁰ with a central hole and six smaller holes around this. Hanns A. Potratz⁸¹ and K. F. Smirnov⁸² believe that this was used as a bit, and they compare it with bronze bits of wheel shape from the Near East (Fig. 12,8)⁸³.

Certain local types appeared only in the Volga – Ural area and in Kazakhstan. They were made of long tubular bones and had a round or oval hole in the middle (Fig. 12,1–2 and 5)⁸⁴. Close to this, but at right angles to it, there is a smaller hole. The convex side is often decorated (Fig. 12,1). In a kurgan near Komarovka (Kuybyshev region), two horse bits were found *in situ* on the jaws of a horse (Fig. 12,5)⁸⁵. The triangular upper part of the bit was turned toward the nose. By means of small holes it was attached to the nose-band. There is a similarity between this type and some Near Eastern bronze bits (Fig. 12,7 and 9)⁸⁶.

Finally we refer briefly to a few other types of bone bits of the Sub-Mycenaean (or even later) period. From Suskan (Kuybyshev District) comes a bit (Fig. 12,3) the lower part of which shows an animal head⁸⁷. Bits of very similar form are known from at

⁶² Točík 1959, 44 and Plate 3, 1a–b.

⁶⁴ *ibid.* 245 and Plate 2, Fig. 5 a–b.

⁶⁶ Bökönyi 1953, 117 Fig. 3.

⁶⁸ Mozsolics 1953, 82. – B. Milleker, A vattinai őstelep (Temesvár 1905) 21 and Plate 9, Fig. 1.

⁶⁹ Mozsolics 1960, 127.

⁷¹ *ibid.* Fig. 17.

⁷³ Mozsolics 1953, 82.

⁷⁵ Hachmann 1957 (our note 53), 174–176 and Plate 70, Figs. 13–15 and 19.

⁷⁶ Mozsolics 1953, 83–84.

⁶³ Foltiny 1965, 245.

⁶⁵ Mozsolics 1960, 129.

⁶⁷ Mozsolics 1953, 80–83.

⁷⁰ Mozsolics 1953, 81 Fig. 16.

⁷² Mozsolics 1960, 127.

⁷⁴ Mozsolics 1960, 127.

⁷⁷ *ibid.* Figs. 19–20.

⁷⁸ K. F. Smirnov, Archaeological Data of the Ancient Horsemen on the Steppe of the Volga-Ural Region (in Russian). Sovetskaja Arkheologija 1961, Nr. 1 (quoted below as Smirnov 1961). 46–72, esp. 60–62 and Figs. 9,1; 10,1–2 and 11,1.

⁷⁹ Bökönyi 1953, 114–116 and Fig. 2. – Cf. our Fig. 10,2.

⁸⁰ F. von Tompa, 25 Jahre Urgeschichtsforschung in Ungarn 1912–1936, 24./25. Bericht RGK 1934/35, 27–127 Plate 42, Fig. 20.

⁸¹ H. A. Potratz, Die Pferdegebisse des zwischenstromländischen Raumes. Archiv für Orientforschung 41, 1–39, esp. 14 and Fig. 22.

⁸² Smirnov 1961, 63 and Fig. 6.

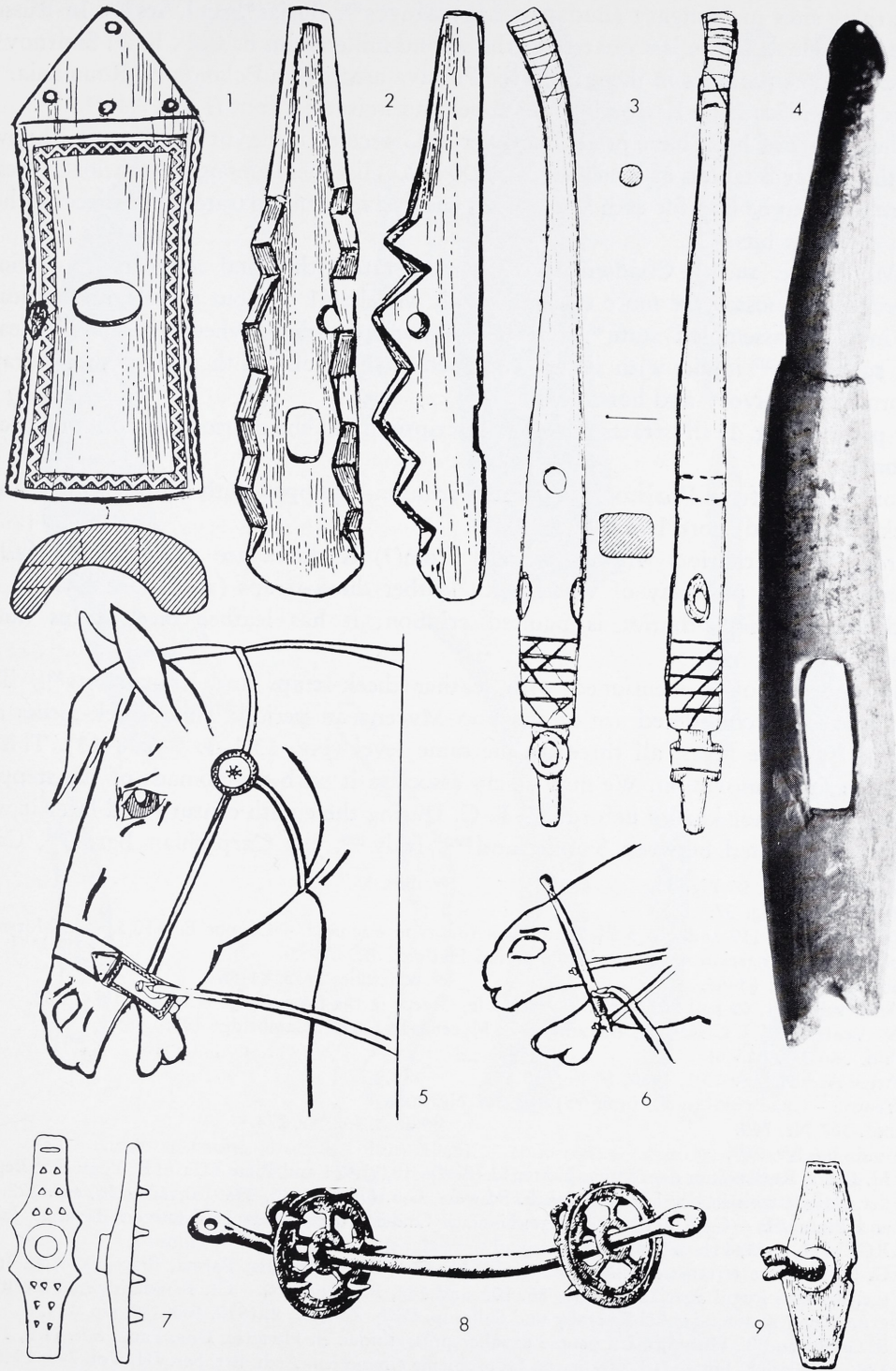
⁸³ Potratz, *op. cit.* (note 81) Figs. 14–21 and 24–28.

⁸⁴ Smirnov 1961, 48–49 Figs. 1–2.

⁸⁵ *ibid.* 47.

⁸⁶ Potratz (note 81) Figs. 8–9 (Gaza). – Cf. Smirnov 1961, Fig. 6,1 and 6,5.

⁸⁷ Smirnov 1961, Fig. 9,2.



12 1 and 5 Komarovka. - 2 Chelkar. - 3 and 6 Suskan (1-3 and 5-6 after Smirnov 1961). - 4 Kiszombor (Hungarian National Museum, Budapest). - 7-9 Gaza (after H. A. Potratz, Archiv für Orientforschung 14, 1941/44).

least three sites in Hungary (Budapest-Lágymányos⁸⁸, Borjas⁸⁹ and Ács⁹⁰). In Russia these bits belong to the last quarter of the second millennium B. C.⁹¹. K. F. Smirnov⁹² mentions some parallels to them from the Poltava area, from Poland and Roumania.

On a cheek-piece from Kiszombor the upper end imitates a foot (Fig. 12,4)⁹³.

No horse-bits of horn have been found yet in Greece or in Egypt⁹⁴, as far as I know. But the Linear B tablets of Knossos (ca. 1400 B. C.) list them among the chariot harness. There seems to be two for each horse. They may have been separate cheek-pieces rather than complete bits.

As M. Ventris and J. Chadwick have demonstrated, the total numbers of chariots recorded at Knossos are more than 120 with wheels, 41 without wheels, and at least 237 in a 'not assembled' state⁹⁵. Among the chariots without wheels there are at least five specimens⁹⁶ inlaid with ivory, equipped with bridles with leather cheek-straps decorated with ivory and horn bits.

Our picture (Fig. 1) illustrates a similar inscription, but the chariot has no ivory decoration⁹⁷.

A horse-chariot from Phaistos⁹⁸ is painted crimson, equipped with bridles with leather cheek-straps (and) horn bits.

(Three?) horse-(chariots without wheels) from(?) Kydonia are painted red, (fully) assembled, their pole-stay of wood, with leather cheek-straps (and) horn bits⁹⁹.

A dismantled horse-chariot is painted crimson; it has leather cheek-straps (and) horn bits¹⁰⁰.

Only one chariot is mentioned with leather cheek-straps and bronze bits¹⁰¹. The next bits to be considered are of the post-Mycenaean period. Their cheek-pieces are pierced by three holes, all three on the same level (Fig. 13,1-3. 5-6. 8-13). This is an important innovation. We may fairly associate it with the nomads of the steppes. This type was not known before 800 B. C. During the eighth century and later it was widely distributed between Switzerland¹⁰², Italy¹⁰³, the Carpathian Basin¹⁰⁴, Cau-

⁸⁸ Mozsolics 1953, 96 Fig. 36.

⁸⁹ *ibid.* 95.

⁹⁰ *ibid.* 97 and Fig. 37.

⁹¹ Bökönyi 1953, 119 and Fig. 5 illustrates how this type was used. - Cf. our Fig. 10,3. - A. Mozsolics placed the Hungarian specimens in the period Hallstatt B.

⁹² Smirnov 1961, 63-64.

⁹³ Mozsolics 1953, 84-86.

⁹⁴ Anderson 1961, 69 and 201. - Cf. E. Vermeule, *Greece in the Bronze Age* (Chicago 1964) 262.

⁹⁵ M. Ventris and J. Chadwick, *Documents in Mycenaean Greek* (Cambridge 1956) 365.

⁹⁶ *ibid.* 366 Nr. 265-66.

⁹⁷ *After Archaeology* 13,1, 1960, 29 Fig. 10.

⁹⁸ Ventris - Chadwick *op. cit.* (note 95) 366-367 Nr. 268.

⁹⁹ *ibid.* 367 Nr. 269.

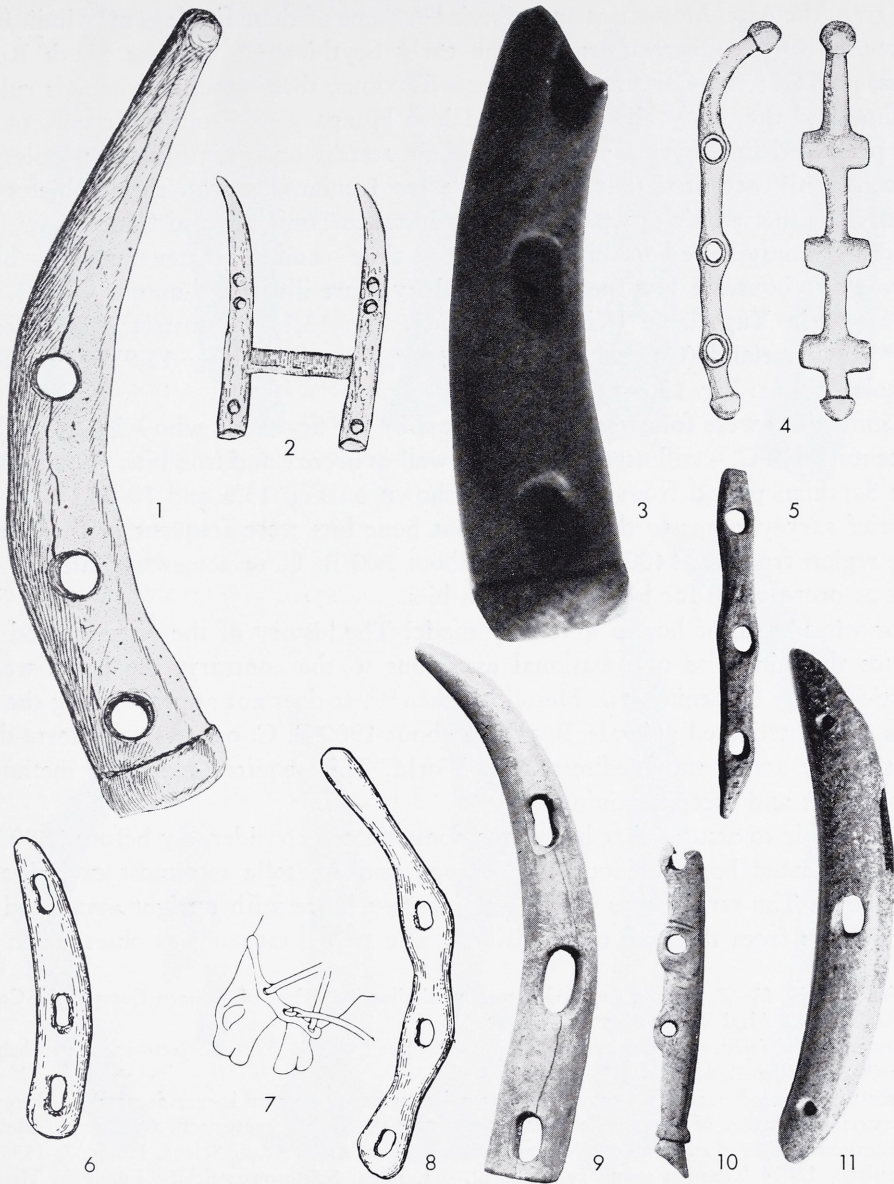
¹⁰⁰ *ibid.* 368 Nr. 274.

¹⁰¹ *ibid.* 366 Nr. 267.

¹⁰² M. Ebert, *Reallexikon der Vorgeschichte*, 13 (Berlin 1929) 424 and Plate 61 a. - E. Vogt, *Der Beginn der Hallstattzeit in der Schweiz. Jahrb. Schweiz. Ges. Urgesch.* 40, 1949/50, 209-231, esp. 222-224 and Plate 26. - G. Kossack, *Pferdegeschirr aus Gräbern der älteren Hallstattzeit Bayerns. Jahrb. RGZM.* 1, 1954, 111-178, esp. 131.

¹⁰³ G. Säflund, *Le terremare delle provincie di Modena, Reggio Emilia, Parma, Piacenza. Acta Instituti Romani Regni Sueciae* 7, 1939, 86. 103 and 187, Plate 66,1-4. - Cf. B. Schnittger, *Feuerstein-gruben und Kulturlager bei Kvarnby und Sallerup. Präh. Zeitschr.* 2, 1910, 163-187, esp. 174.

¹⁰⁴ S. Gallus and T. Horváth, *Un peuple cavalier préscythique en Hongrie. Diss. Pann. Ser. II* 9, 1939, 188 and Plate 8, Fig. 4. - J. Harmatta, *Le problème cimmérien. Arch. Ért. Ser. III, Vol. 7-9, 1946/48* (quoted below as Harmatta 1948), 79-132, esp. 115. - F. Hančar, *Hallstatt-Kaukasus, Mitt. Österr. Ges. Anthr., Ethn. u. Präh.* 73/77, 1947, 152-167. - Mozsolics 1953, 90-93. - H. Kothe, *Die Herkunft der kimmerischen Reiter. Klio* 41, 1963, 5-37. - J. A. H. Potratz, *Die Pferdetransporte des Alten Orient* (Rome 1966) is not yet available for me.



13 1 Kiskőszeg-Batina (after S. Foltiny 1965). – 2 Corcelette (after M. Ebert, *Reallex. d. Vorg.* Bd. 13, Taf. 61, a). – 3 Prigglitz (Niederösterr. Landesmuseum, Wien). – 4 Dalj (after Arch. Értesítő 1903): horse bit of bronze. – 5 Sághegy (Hungarian National Museum, Budapest). – 6–8 Zhirnokleevskoe (after K. F. Smirnov 1961). – 9 'Hungary' (Hungarian National Museum). – 10–11 Sághegy (Hungarian National Museum).

casus, Iran, the Altai Mountains and Siberia¹⁰⁵. Some of these findings may indicate the movements of the Cimmerians and the early Scythians¹⁰⁶. On the South Russian steppes, north of the Caucasus and Pontus Euxinus, these mounted nomads ruled at that time and they may have penetrated into Hungary¹⁰⁷. From the names of their chiefs preserved in Assyrian accounts of their attacks on Near Eastern peoples, it is now commonly accepted that the rulers were Iranians, though their subjects were probably of other ethnic groups also, as for instance Thracians and Caucasians.

They did not only have bone bits. At the same time – and in greater numbers – bronze bits were also in use. A few specimens of this type are illustrated on our Fig. 13. They were found in Yugoslavia (Kiskőszeg-Batina: Fig. 13,1)¹⁰⁸, Austria (Priggwitz: Fig. 13,3)¹⁰⁹, Switzerland (Corcelette: Fig. 13,2)¹¹⁰, 'Hungary' (Fig. 13,9)¹¹¹ and Russia (Zhirkoleevskoe: Fig. 13,6–8)¹¹².

The Cimmerians were followed on the steppes by the Scythians who – in the sixth and fifth centuries B. C. – still used bone bits as well as bronze and iron bits. Some bone bits of the Scythian period from Sághegy are shown on Fig. 13,5 and 10–11¹¹³.

Our brief survey seems to demonstrate that bone bits were frequent in the Eurasian steppe region from ca. 1400 B. C. until about 500 B. C. or somewhat later¹¹⁴. They served as proto-types for bronze and iron bits.

But for what breed of horses were they made? The history of the domesticated horse indicates that, in spite of occasional assertions to the contrary, the horse was not domesticated by Palaeolithic or Mesolithic man¹¹⁵. It does not appear among the early groups of domesticated animals. But from about 1900 B. C. onwards the horse-drawn chariot swept across the Mediterranean World. This required elaborate methods of domestication and special training.

It is reasonable to assume that horse was domesticated considerably before 2000 B. C. The domesticated horse in Southeast Europe and Anatolia is almost exclusively of tarpan stock. The tarpan was a small mouse-grey horse with upright mane and with a 'dark stripe from the neck to the tail'¹¹⁶. The steppe tarpan was observed in 1769

¹⁰⁵ Smirnov 1961, 65–67, gives a detailed report on similar horse bits of Eastern Europe, the Caucasus region and the Altai Mountains.

¹⁰⁶ Harmatta 1948 (with previous bibliography). – Phillips 1965, 50–52. – K. Jettmar, *Die frühen Steppenvölker* (Baden-Baden 1964) 16–17.

¹⁰⁷ It must be pointed out that a group of Hungarian archaeologists no longer accepts the theory of a Cimmerian invasion of Southeastern Europe during the eighth century B. C. See: A. Mozsolics, *Spätbronzezeitliche durchbrochene Wagenbeschläge*. *Acta Arch. Acad. Scient. Hung.* 7, 1956, 1–12 (Russian), 12–14 (German summary), esp. 12. – I. Bóna, *Spätbronzezeitliche Funde in Tiszakeszi*. *A Herman Ottó Múzeum Évkönyve* 3, 1963, 31–35.

¹⁰⁸ Foltiny 1965, Plate 2, Fig. 1.

¹⁰⁹ *ibid.* Plate 2, Fig. 3.

¹¹⁰ M. Ebert, *op. cit.* (note 102), Plate 61 a.

¹¹¹ Mozsolics 1953, 91 and Fig. 29.

¹¹² Smirnov 1961, 65 Fig. 12,1–2. – Cf. M. Gimbutas, *Bronze Age Cultures in Central and Eastern Europe* (The Hague 1965), 539–541 Fig. 363,6.

¹¹³ Mozsolics 1953, 93 and Figs. 33–35; cf. Plate 15, Figs. 6–8. – M. Párducz, *Graves from the Scythian Age at Ártánd*. *Acta Arch. Acad. Scient. Hung.* 17, 1965, 137–231, esp. 155 sq. – For further details see J. A. H. Potratz, *Die Skythen in Südrußland* (Basel 1963) 39–84, esp. 44–57.

¹¹⁴ Besides the publications quoted above see G. Bándi, *Pferdegeschirre mit Knochenbestandteilen aus der mittleren Bronzezeit im Karpatenbecken*. *Acta Ant. et Arch.* 8, 1965, 87–95.

¹¹⁵ For a good summary see: Zeuner 1963, 299–337. – Hančar 1955, 536 sq. – S. Bökönyi, *Angaben zur Kenntnis der eiszeitlichen Pferde in Mittel- und Osteuropa*. *Acta Archaeologica* 16, 1964, 227–239, esp. see 227–231.

¹¹⁶ Zeuner 1963, 303 sq. – The other race which survived into the 20. century is Przewalski's horse.



14 1-6 Castione dei Marchesi, Comune di Borgo S. Donnino, Prov. di Parma. –
 7 Provincia di Parma, provenance unknown. – 8-11 Castione dei Marchesi (1-2. 6. 8-11
 Museo Nazionale Preistorico Etnografico 'Luigi Pigorini', Roma). –
 3-5 and 7 Museo d'Antichità, Parma.

by Gmelin. The last survivors were killed in the Ukraine in 1851. Its probable area of domestication is restricted to the Ukraine, the east Russian steppes, Kazakhstan, the steppes of Western Asia around the Lake Aral and Turan. The western part of this zone was still a center of horse domestication in Scythian times¹¹⁷.

The Ancient civilizations of Mesopotamia may have become acquainted with the horse around the end of the third millennium, but even in the days of Hammurabi (around

¹¹⁷ *ibid.* 314.

1750 B. C.) it was of little economic significance¹¹⁸. About 1700 B. C. it was known in the entire area of the Middle and Near East. At that time it was used to draw the two-wheeled chariot.

The picture on the silver cup of Maikop in the Caucasus shows the direction from which the domesticated horse came¹¹⁹. In Greece and Troy horse bones appear in quantity only during the middle Bronze Age¹²⁰. At that time the Greek mainland was controlled by an invading people who spoke an early form of Greek, the ancestors of Homer's Achaeans.

The earliest pictures of a domesticated horse were found in the Shaft Graves at Mycenae, in the tombs of a dynasty that reigned until about 1550 B. C.¹²¹.

In Marathon, Attica, the skeletons of two horses of the Mycenaean period were found¹²². They brought the corpse of their master, probably a prince, to a tholos grave. After the royal burial they were killed and buried. Similar horse burials are known from Salamis¹²³ and Palaepaphos¹²⁴. As K. F. Smirnov has emphasized a characteristic feature of the cultures of the Volga-Ural area is the double burial of horses¹²⁵.

Far from Marathon and the Black Sea region an interesting grave was discovered at Föllik near Eisenstadt, in the Austrian Burgenland¹²⁶. It contained the remains of four horses (one with foal), a cow with calf, an ewe with lamb, and a goat with kid, in addition to two human skeletons. This context suggests horse domestication around 1800 in Central Europe. Double or triple burials, burials of animals together with human skeletons are characteristic of the Pontic area¹²⁷. The horses of the Föllik belong to the group of *Equus caballus Linné orientalis* which is closely related with the tarpan.

The same breed of horses was present in the Carpathian Basin 1400 years later, as the graves of the Scythian Age of Szentes-Vekerzug demonstrate¹²⁸.

On the eastern steppes, in Central Asia and China, Przewalski's horse supplied some of the domesticated breeds, but that area is of no interest for the context discussed in this paper.

On the whole, riding was less popular than the use of the chariot, and it was adopted later. It was the invention of the chariot that enabled the horse owners to intrude in the

¹¹⁸ *ibid.* 318.

¹¹⁹ Phillips 1965, 33. – Hančar 1955, 123–31.

¹²⁰ Zeuner 1963, 322. – Anderson 1961, 2. – John L. Caskey, Greece and the Aegean Islands in the Middle Bronze Age. The Cambridge Ancient History (Revised Edition of Vols. 1–2 [Cambridge 1966]), Vol. 2 Chapter 4 a, 11.

¹²¹ G. E. Mylonas, The Figured Mycenaean Stelai. American Journal of Arch. 55, 1951, 134–147. – Anderson 1961, 2. – Zeuner 1963, 322. – E. Vermeule *op. cit.* (note 6), 90–94.

¹²² M. Jameson, Mycenaean Religion. Archaeology 13, 1960, 33–39, esp. 33 and Fig. 2.

¹²³ P. Dikaios, A 'Royal' Tomb at Salamis, Cyprus. Arch. Anz. 1963, 126–198, esp. 152–164.

¹²⁴ V. Karageorghis, Une tombe de guerrier à Palaepaphos. Bull. de Corresp. Hell. 87, 1963, 265–300, esp. 282–88.

¹²⁵ Smirnov 1961, 46.

¹²⁶ F. Tömördy, Ein schnurkeramisches Grab vom Föllik, Gemeinde Grosshöflein. Unsere Heimat, N. S. 12, 1939, 101–104. – R. Pittioni, Urgeschichte des österreichischen Raumes (Wien 1954) 246 and Fig. 172. – Hančar 1955, 39. – S. Foltiny, Zur frühesten Pferdezucht in Österreich. Mitt. Österr. Arbeitsgemeinschaft für Ur- und Frühgesch. 16, 1965, 48–53, esp. 49.

¹²⁷ M. Gimbutas, The Prehistory of Eastern Europe, Part I. Bull. 20, American School of Prehistoric Research (Cambridge, Mass. 1956) 168. – Cf. American Journal of Arch. 63, 1959, 57.

¹²⁸ M. Párducz, Le cimetière hallstattien de Szentes-Vekerzug. Acta Arch. Acad. Scient. Hung. 2, 1952, 1–3 and 143–169; 4, 1954, 25–91; 6, 1955, 1–18.

settled lands of the Near and Middle East. Afterwards chariots dominated the battlefields. The heroes of the early epics used small chariots drawn normally by two horses on either side of a single pole.

If we now summarize our results, we may say that the Homeric poems¹²⁹ preserve elements of the Bronze Age background of their formal account as well as those of the Ionian environment of the rhapsodes who recited the poems in their more developed form, and also of the intervening period. The broad picture of the Trojan war is taken from the Bronze Age, but the similes belong primarily to the Ionian period. The Iliad and Odyssey may reflect accordingly events, objects, customs, and techniques from any and every period within a five hundred year range between the late thirteenth and the eighth centuries B. C. They provide a wonderful, if confused picture of the Greek Heroic Age. However imprecise their evidence in itself is, they help us in determining historical events and singling out precise dates.

Small objects, such as the bone horse bits are not insignificant at all; they often indicate important events or even a migration of peoples.

Gradually it becomes clearer that beyond the boundaries of the Mycenaean and Near Eastern civilizations there was a nomadic world of mounted shepherds. The nomads of antiquity were a powerful factor in their contacts with the South and West to be reckoned with by the historian, and not to be relegated to a marginal obscurity¹³⁰.

A d d e n d u m

While this article was in press, the author received valuable information about the bone horse bits of the terramara-region of North Italy¹³¹. Since the horse played a significant part in the every-day-life of the North Italian population¹³² during the Late Bronze and Early Iron Ages, we publish here 15 horse bits of antler which were found on five or more sites of Northeast Italy. In this context only the most important data (locality, inventory data) are given.

Castione dei Marchesi¹³³, Comune di Borgo S. Donnino, Prov. di Parma.

1. Inv.-no. 17850: Horse bit of antler, pierced by three holes (Fig. 14,1). Length 11,5 cm. Museo Nazionale Preistorico Etnografico 'Luigi Pigorini' at Rome (quoted below as Museo Pigorini)

¹²⁹ Kirk 1964, 32–33.

¹³⁰ This article is based on a comparative study of the archaeological material in wide areas of Central and Southeastern Europe. The assistance of the American Philosophical Society, the American Council of Learned Societies, and the National Science Foundation made possible my yearly European research travels between 1960 and 1965. The financial support of the Wenner-Gren Foundation, and a grant of the Smithsonian Foreign Currency Program in 1966, enabled me to make this study more complete.

¹³¹ Thanks are due to Prof. Dr. Renato Peroni, University of Rome, who kindly sent the photographs and inventory data of all horse bits of horn from the terramara-region in the Pigorini Museum at Rome. We are also indebted to Dr. Giovanna Bermond Montanari, Soprintendenza alle Antichità in Bologna, for the photos of the antler bits in the Museo d'Antichità at Parma.

¹³² G. A. Mansuelli, *Struttura ed economia di Bologna villanoviana, Civiltà del Ferro* (Bologna 1960) 99–116. – St. Foltiny, *Zum Problem der Kulturbeziehungen zwischen den mittel- und südeuropäischen Reitervölkern und der Bevölkerung Nordostitaliens am Beginn der Früheisenzeit*. *Mitt. Anthr. Ges.* Wien 92, 1962, 112–123.

¹³³ For this locality see Säflund op. cit. (note 103), 95–105, esp. 103.



15 1 Colombare di Bersano, Comune di Besenzone, Provincia di Piacenza. – 2 Casaroldo di Samboseto, Comune di Busseto, Provincia di Parma. – 3 Parma. – 4 Castellaro di Gottolengo, Provincia di Brescia (1–2 and 4 Museo Nazionale Preistorico Etnografico 'Luigi Pigorini', Roma. – 3 Museo d'Antichità, Parma).

2. Inv.-no. 42702: Fragment of a horse bit (Fig. 14,2). Length 9,8 cm. Museo Pigorini.
3. No inv.-no.: Awl-shaped horse bit of antler (Fig. 14,3). Museo d'Antichità di Parma.
4. No inv.-no.: Awl-shaped horse bit of horn (Fig. 14,4). Museo d'Antichità, Parma.
5. No inv.-no.: Horse bit with three round holes on the one side (Fig. 14,5)¹³⁴ and with a square hole on the other. Length 12,5 cm. Museo d'Antichità, Parma.
6. Inv.-no.:48963: Horse bit of antler (Fig. 14,6). Length 9,4 cm. Museo Pigorini.
7. Inv.-no. 17849: Horse bit of antler with two round and one square holes (Fig. 14,8). Length 11,8 cm. Museo Pigorini.
8. Inv.-no.: 55906: Awl-shaped horse bit of antler (Fig. 14,9). Length 12 cm. Museo Pigorini.
9. Inv.-no.: 42701: Awl-shaped horse bit (Fig. 14,10). Length 14,3. Museo Pigorini.
10. Inv.-no.: 17848: Long horse bit with three round holes (Fig. 14,11). Length 17 cm. Museo Pigorini.

Casaroldo di Samboseto¹³⁵, Comune di Busseto, Prov. di Parma

11. Inv.-no. 49013: Horse bit with three holes (Fig. 15,2). Length 10,5 cm. Museo Pigorini.

Castellaro di Gottolengo, Comune di Gottolengo, Prov. di Brescia

12. Inv.-no.: 67485: Horse bit of antler (Fig. 15,4). Length 12 cm. Museo Pigorini.

¹³⁴ *ibid.* 103.

¹³⁵ *ibid.* 106–107.

Colombare di Bersano¹³⁶, Comune di Besenzone, Prov. di Piacenza

13. Inv.-no.: 49367: Horse bit with three holes (Fig. 15,1). Length 12,4 cm. Museo Pignorini.

Parma¹³⁷, Prov. di Parma

Provincia di Parma, Locality unknown

14. No inv.-no. Horse bit of antler (Fig. 14,3). Length 10 cm. Museo d'Antichità, Parma.

15. No inv.-no. Fragment of a horse bit of antler (Fig. 14,7). Museo d'Antichità, Parma.

Future excavations and museum research will add many new samples to this incomplete list. But on the basis of the finds available now it is clear that the two most frequent types of the bone horse bits of the terramara area are the awl-shaped ones (Fig. 14,3–4. 9–10) and those with three round holes (Fig. 14,5 and 11; Fig. 15,1–2). The latter ones are related to the so-called 'Thraco-Cimmerian' types. Most bone bits of the Northeast Italian territory belong to the Urnfield Period and to the later part of the Hallstatt Age. We hope to discuss their typology and chronology in greater details elsewhere.

¹³⁶ *ibid.* 112–113.

¹³⁷ *ibid.* 83–86.