

# The Horse and the Proto-Greeks

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## Abstract

The domestication of the horse took place in the Pontic-Caspian region around 4350 B.C. and as antler cheek pieces and scanning electron microscope analysis indicate, the horse at Dereivka was ridden about 4000 B.C. in the Ukrainian steppe region. Because of its mobility and power, horse riding radically changed societies in this region. By the horse domestication and horse riding, the horse became one of the most important animals among the early Indo-Europeans. This concept was strongly maintained in Greece; the horse frequently appears in Greek mythology and the horse is also preserved in the names of Greek mythological heroes. The Indic *asvamedha* and the Roman October Equus strongly suggest that the horse was closely associated with the early Indo-European sacrificial ritual. The remains of the horse found at Marathon, Dendra and Lerna show that the horse was brought into Greece by the invading proto-Greeks in the Middle Helladic period. Although the number of the invaders was not so numerous, the early Indo-European horse ritual, which originated in the Pontic-Caspian region around 4000 B.C., was firmly maintained in Greece.

## Introduction

The horse appears frequently in Greek mythology; for instance, Poseidon is regarded as the horse god and the winged horse Pegasus plays an important role as an assistant of the adventures of Bellerophon. The mythological horse Areion is also seen in the *Iliad*. Furthermore, the horse is frequently seen in the personal names of mythological figures as Hippodameia, Hippolytos and Hipparkhos. The horse appears in the vasepaintings and in terracotta figurines. The Mycenaean figured stelae from the grave circle of Mycenae show the horse and the chariot. These facts are considered to show that the horse was deeply concerned with the early Greeks, which also implies that the introduction of the horse and the coming of the proto-Greeks were closely related. In addition, the bones of sacrificed horses were discovered from the burial tumuli in Greece. The horse sacrifice is widely known in the Pontic-Caspian region where the first domestication of the horse took place. As the etymology \**equo*-("the swift one") indicates<sup>1)</sup>, the mobility of the horse must have radically changed the early Indo-European societies in this region. Various Indo-European myths tell the sacrificed horse, which implies that the horse was ritually very important among the early Indo-European peoples. When the proto-Greeks entered Greece, it is highly possible that they brought the horse with them. Though the number of the intruders may not have been numerous, the impact was strong. The ideology of the horse-riding warriors appears to have been strongly maintained in Greece.

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# 1. The Horse in the Pontic-Caspian Region

The earliest domesticated horse is considered to have occurred in the Pontic steppe region around 4350 B.C.<sup>2)</sup>, which seems rather late compared with other animals; for instance, sheep was domesticated in the eighth millennium B.C.<sup>3)</sup>. Sheep and other animals (goat, pig, cattle) were mainly domesticated for the purpose of meat supplies. On the other hand, in addition to its meat, the purpose of horse domestication was the so-called secondary use of the horse, namely, horse riding. This was attested by the fact that the domestication of the horse and horse riding almost took place simultaneously<sup>4)</sup>. The impact of horse breeding was revolutionary; the domestication of the horse radically transformed the whole societies in the Pontic-Caspian region introducing new ideology and new social organization<sup>5)</sup>. Because of its mobility, horse riding also appears to have played a prominent role in the origins of the Dnieper-Volga steppe pastoralism and in the development of Bronze Age societies in Europe<sup>6)</sup>.

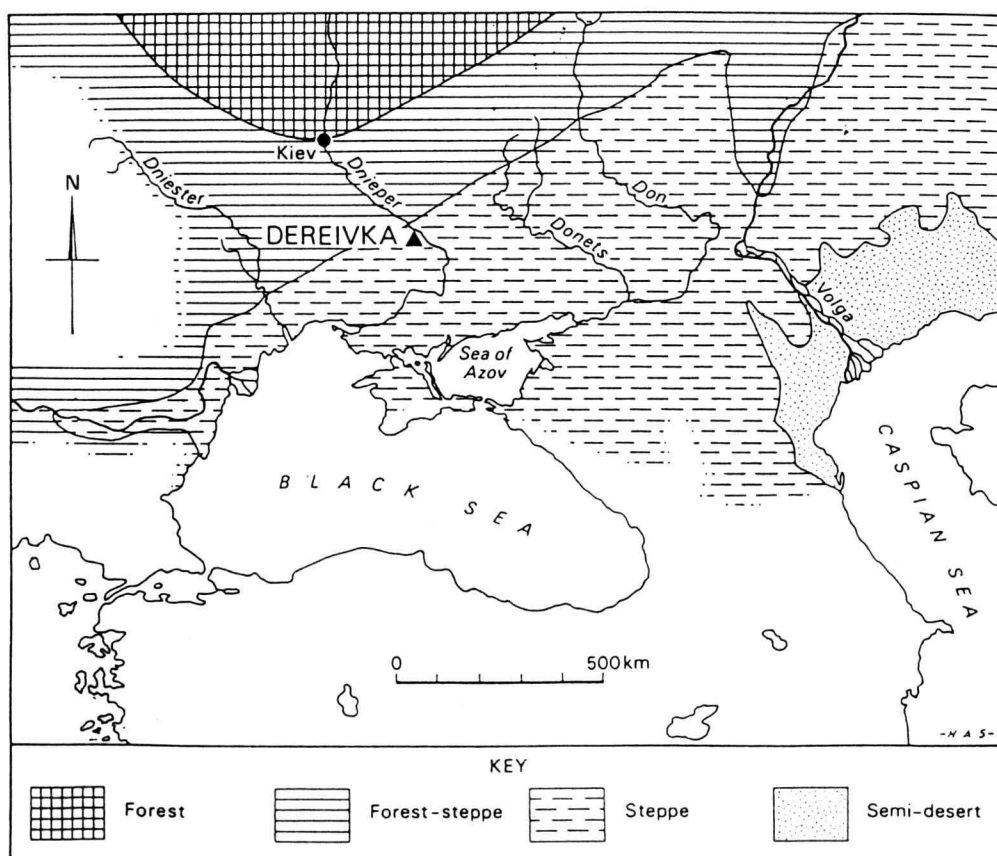


Fig. 1. Map of the Pontic-Caspian region (after Levine, 1990)

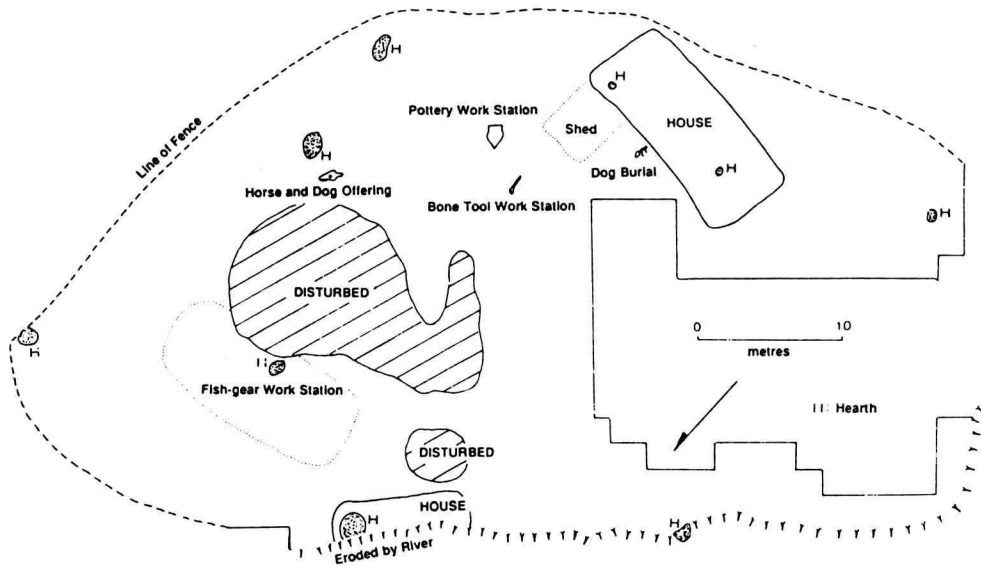


Fig. 2. Plan of Dereivka (after Mallory, 1989)

The earliest domestic horses so far known are from the Chalcolithic settlement (Sredny Stog culture, Phase IIa) of Dereivka located on the west bank of the Dnieper River, 200 km south of Kiev in the Ukraine (Fig. 1)<sup>7)</sup>. The site is over 2,000 m<sup>2</sup> and bordered by fence which enclosed houses, work stations and cult places (Fig. 2)<sup>8)</sup>. The whole deposit is considered to belong to a single cultural layer between 4570 and 3380 B.C. The Sredny Stog culture, flourished about 4500–3500 B.C. in the Pontic-Caspian, was the first Chalcolithic culture to consume the horse as a meat source<sup>9)</sup>. This fact is closely interrelated with the domestication of the horse in this region as a low-maintenance food source<sup>10)</sup>. According to Anthony and Brown, scanning electron microscope (SEM) analysis revealed that the bevelling measurements of the Dereivka horse teeth found in the ritual deposit showed  $-3.0$  and  $-4.0$  mm<sup>11)</sup>, which is considered to be beyond the range of any wild horse so far examined. This clearly indicates that the “cult horse” at Dereivka was bitted. Since a bit is used only on ridden or driven animals, it is evident that the “cult horse” was ridden<sup>12)</sup>. Thus Dereivka cult horse, dated to 4000 B.C., shows the earliest evidence for riding. And the increased mobility by horse riding must have allowed the early Indo-Europeans to exploit the steppe region more effectively. At Dereivka, some evidence of horse ritual is known. A well-preserved horse skull and mandible accompanied by the articulated bones of a left foreleg were discovered in association with the skulls and other remains of two dogs near a hearth and a reuse pit; moreover, fragments of animal and human figurines together with two perforated antler cheek pieces were found near the horse skull (Fig. 3)<sup>13)</sup>. This whole gathering is understood as a kind of ritual deposit. From the cemetery at Sezzhee, the major site of the Samara culture on the Samara River, a ritual area was discovered, which included the skulls and legs

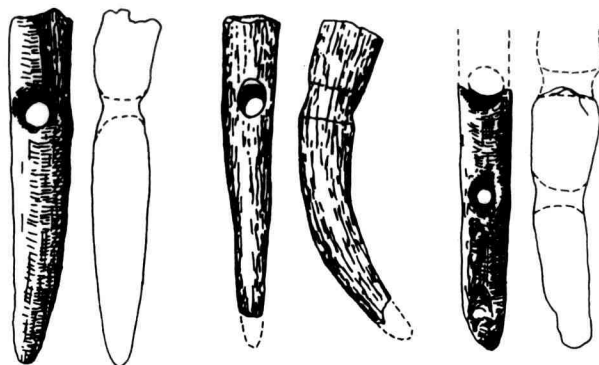


Fig. 3. Antler cheek pieces from Dereivka (after Mallory, 1989)

of two horses together with two pots, shell beads, etc.; all sprinkled with red ochre. In addition, a two-headed horse figurine 7 cm in length was found from the site, and the perforation of the figurine implies that it must have been worn as a pendant<sup>14)</sup>. A skeleton of a one-year-old child was discovered between two horse skulls from the Yamnaya burial at Novoalekseevka, and it is also reported that two horses were depicted on a stela from Kernosovka<sup>15)</sup>.

At Sintashta by the Sintashta River in the south Trans-Ural steppe, a kurgan cemetery dated to the middle of the second millennium B.C. shows clear evidence of animal sacrifice; bones of horses, sheep and dogs were discovered from the graves of Sintashta, and 85% of the graves contained animal bones, and the remains of chariots were found in Grave 28, and a pair of cheek pieces were laid in a row with the horse skulls<sup>16)</sup>. Horse skeletons were discovered along with other animal bones in individual burials; for instance, the remains of seven horses were excavated on the burial chamber cover, and five horses were placed in Grave 5<sup>17)</sup>. Two sacrificial complexes were found showing no association with burials in the cemetery site, and both pits were stuffed with animal bones. In Pit 1, five horse skulls were set on their mandibles in a row along the east wall, and on the west wall, a horse skull and four skulls of bulls were placed likewise<sup>18)</sup>. The remains of sacrificed horses are exceptionally numerous at Sintashta. This fact indicates that for the inhabitants of Sintashta, who were supposed to be Indo-Iranians, the horse was one of the most important animals. The rich ritual horse sacrifice along with the slaughter of domestic animals and the chariot recovered from the Sintashta site clearly represent the early Indo-European tradition. The ancient Indic asvamedha is known as the most spectacular sacrificial ritual associated with the horse, and originally this ritual appeared to be related with "great conquests whose success was secured by the presence of the horse and the war chariot."<sup>19)</sup> The asvamedha and the sacrificed ritual horses at Sintashta show close similarities. Rome has also preserved the ritual horse sacrifice known as the October Equus which is summarized as follows:

"After a horse race on the Campus Martius on the Ides of October, the

right-side horse of the victorius chariot was sacrificed to Mars by being killed with a spear. The people of Suburra and of the Sacra Via fought over the horse's head; if the former caught it, they fixed it on the wall of the Turris Mamilia; if the latter, on that of the Regia. The tail was raced to the Regia, and drops of blood from it were sprinkled on its hearth."<sup>20)</sup>

The Indic asvamedha and the Roman October Equus show the remarkable similarities<sup>21)</sup>; in both societies, a two-horse chariot race was held annually, and the horse on the right side of the winning chariot team was sacrificed to the war god. It is obvious that the horse played a prominent role in both cases. In the medieval Ireland (twelfth century, A.D.), in the auguration of a tribal king of Ulster, a white mare was sacrificed; subsequently the horse was dismembered and boiled in order to make a broth in which the king bathed<sup>22)</sup>. In this story, the horse sacrifice is also the main ritual. As we have seen in the asvamedha and in the medieval Ireland, the horse appears to be closely connected with the royal or warrior class among the Indo-Europeans, which indicates that the horse was regarded as sacred and precious. Also as seen in the October Equus, the sprinkling of blood from the sacrificed horse may be associated with red ochre sprinkled in a ritual area at Sezzhee and in burials of the Pontic-Caspian region.

## 2. The Horse and the Coming of the Greeks

The horse is deeply concerned with Greek mythology. For instance, Poseidon is famous for his horses as his standing epithet *hippios* and his worship throughout Greece indicate. The Arcadian legend tells that Poseidon pursues Demeter in the form of a stallion. Pausanias tells (Paus. 8. 14. 4, 5) that at Pheneos in Arcadia, a bronze statue of Poseidon Hippios stood on the Acropolis near the temple of Athena Tritonia. A horse ritual was held in Poseidon's grove at Onchestos in Boeotia as appeared in the *Homeric Hymn to Apollo* (229-238). In this ritual, horses were set free to race with a chariot without charioteer<sup>23)</sup>. This horse ritual represents the close similarity with the Indic asvamedha and the Roman October Equus. Pausanias also mentions (Paus. 8. 7. 2) that at Dine in Arcadia, the Argives used to send down bridled horses to the sea in honor of Poseidon, which clearly indicates that the horse ritual was maintained in Arcadia. Poseidon is also associated with the mythological horses Areion and Pegasus. In the *Iliad* (23. 346), Areion is described that its birth is from the immortals, namely, from Poseidon and Demeter; the same story is told by Pausanias (Paus. 8.25.4-8). The winged-horse Pegasus is also related with Poseidon. When Perseus killed Medusa, Pegasus sprang from the body of dying Medusa, and Pegasus was considered to be begot by Poseidon (Apollod. 2.4.2; Hesiodos, *Theog.* 280). The Corinthian version tells that Poseidon produced Pegasus by stamping on the rock with his hoof<sup>24)</sup>. These traditions clearly represent the original attribute of Poseidon as the horse god, though Poseidon was allotted the sea as seen in the *Iliad* (15. 190-193). The horseman Bellerophon and Pegasus are also associated. He is said to have invented the bridle, and tamed the winged horse

Pegasos which was begotten by the horse god Poseidon. Pegasos helped Bellerophon to fight Chimaira, the Amazons, etc. The story of Phaethon, son of Helios and Clymene, is also related with the horse and the chariot. When Phaethon was allowed to drive the sun chariot, he was unable to manage the immortal horses and the horses bolted with him. As a result, the world was in danger of being burned up. Seeing this, Zeus killed him with a thunderbolt, and he fell into the Eridanos. Mourning his death, his sisters turned into amberdropping trees (Ovid, 1.750ff.). Moreover we know the horse-shaped Centaurs and the Trojan Horse. The names of Greek heroes frequently include the horse in them such as Hippolytos, Hippodameia, and Leucippos. As we have seen, many mythological figures in Greece are closely related with the horse. This fact indicates that the horse was regarded as a sacred and prominent animal<sup>25)</sup>, and this concept, deeply embedded in the early Indo-Europeans, must have been brought into Greece by the proto-Greeks who entered Greece with the horse.

Compared with the literary evidence, the archaeological evidence on the horse in Greece may not be so abundant, though several examples are known. At Marathon in Attica, four tumuli, dated to the Late Helladic period and the end of the Middle Helladic period, were excavated, and one of the tumuli contained the well-preserved skeleton of a horse (the Przewalski type) about eight years old<sup>26)</sup>. The burial shows that the hind legs and some other parts of the remains are lost. This indicates that evidently the horse was ritually sacrificed, and this horse-centered ritual, shared by many Indo-European peoples, is observed from the Dnieper region to the southern Urals from 4000 B.C. onwards. Thus the early Indo-European ritual tradition is known which was firmly maintained in the Middle Helladic period onwards in Greece. At Dendra in the Argolid, four horse skeletons were discovered in 1978, and the horses are considered to be dated to the early Middle Helladic period; a horse molar found at Argissa-Magoula in Thessaly is also dated to the Middle Helladic period, and at Marathon in Messenia, it is reported that remains of the equid were discovered in the Middle Helladic strata<sup>27)</sup>. At Lerna five miles south of Argos, bones of horses (*equus caballus*) were excavated from Lerna V, the settlement of the Middle Helladic period Lerna was destroyed by fire at the end of E.H.II, and settled again in E.H.III (ca. 2200 B.C.), and inhabited continuously in the Middle Bronze Age<sup>28)</sup>. The mound heaped over the House of Tiles (E.H.II) after its destruction seems to show close similarities with the Middle Helladic tumuli and the grave circles at Leucas, Mycenae and Pylos along with the tumuli of Albania (i.e. Vodhinë, Pazhok and Vajžë)<sup>29)</sup>. This clearly indicates that the people who destroyed the E.H.II Lerna were the early Indo-Europeans. Consequently, the destruction of Lerna in the end of E.H.II is considered to mark the end of the "Old European civilization" on the Greek mainland, which means the coming of the Greek-speaking people<sup>30)</sup>. Obviously the horse was brought into Greece with them at least in the Middle Helladic period as we have seen at Marathon, Dendra, Argissa-Magoula, and Lerna. From the Sixth Settlement of Troy (ca. 1900 B.C.), the bones of the horse were discovered, and no trace of the horse was known from the earliest settlement in Troy I to the end of Troy V<sup>31)</sup>. Therefore, the considerable quantity of the bones from Troy VI indicates that the horse was introduced by the invading people who built Troy VI, and it is highly possible that the reputation of Troy for the

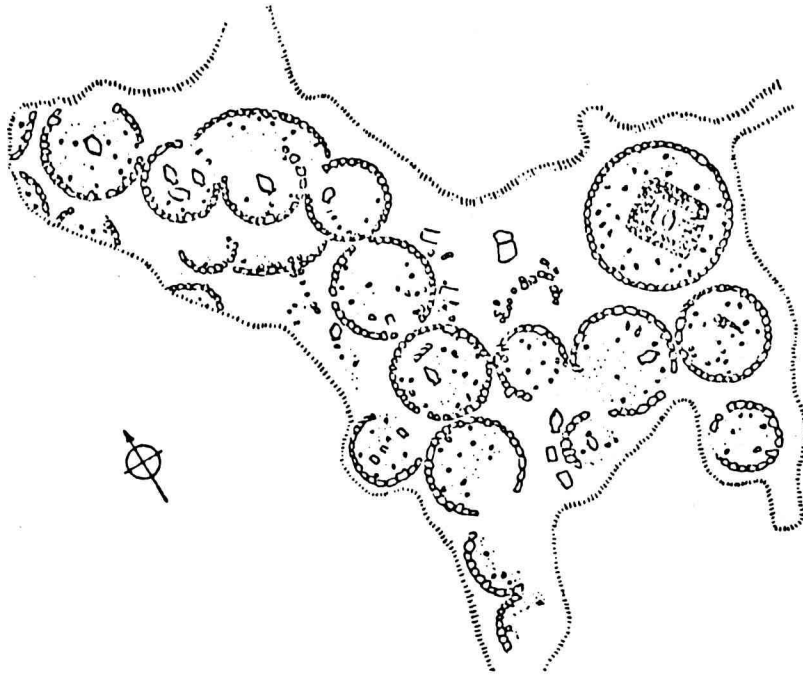


Fig. 4. Plan of the tumulus cemetery, Leucas (after Gimbutas, 1973)

breeding of good horses was known over the Aegean region. This is attested by the epithets of the Trojans frequently appeared in the *Iliad* as *ἵπποδαμος* and *εἵπωλος*. The horse appears frequently in terracotta figurines and in vasepaintings in the Mycenaean Age<sup>32</sup>. The horse and chariot are also represented on the figured Mycenaean stelae discovered within the grave circle of Mycenae<sup>33</sup>. Interestingly, it is suggested that the Greek words of the major parts of the chariot (i.e. the chariot, the wheels, the axle, the yoke, the reins) are Indo-European in origin<sup>34</sup>. This fact clearly indicates that the Greek-speaking invaders already knew the chariot when they were in Greece, and it is also highly possible that they entered Greece with the chariot together with the horse. A seal impression found in the Little Palace at Knossos dated to Late Minoan III represents a standing horse superimposed on the ship<sup>35</sup>. Presumably this arrangement shows a Mycenaean warrior ship sailing under the shield of the horse<sup>36</sup>. The magical attribute of the horse, which was widely known among the early Indo-European peoples, is clearly represented in this seal impression.

The earliest tumulus burial in Greece is known at Steno in the plain of Nidri, on the island of Leucas off the western coast of Greece (Fig. 4)<sup>37</sup>. Of the thirty three round Royal Graves, two fragmentary sauceboats in R 1, and a complete sauceboat in R 16 were discovered. Since the sauce-boat is considered to be typical of the Early Helladic II period, these royal tumuli can be dated to E.H. II; the other tumuli are generally dated to E.H. III and M.H. Bronze blades, flint points and obsidian blades were discovered from the tumuli along



with gold and silver ornaments ; for example, Grave R 17A yielded bronze daggers and a gold sheath for the dagger hilt. These grave goods must represent the typical Indo-European warrior consciousness because these offerings were unknown to the indigenous population of Leucas<sup>38)</sup>. As we have seen, a group of the proto-Greeks are considered to have arrived in the island of Leucas about the middle of the third millennium B.C., and from Leucas they seem to have entered Greece by sea and by land mainly in the Middle Helladic period<sup>39)</sup>. As mentioned, four tumuli were discovered at Marathon, and Tumulus I, supposedly dated to the Middle Helladic period, is regarded as the earliest tumulus burial on the Greek mainland. Since the Marathon tumuli show the same type as the Leucas tumuli (i.e. the sea-borne group), it is reasonable to say that a small body of proto-Greeks invaded the Peloponnesos by sea, and the tumuli at Marathon were built to commemorate their dominion in Attica. The Marathon tumuli also show the close similarity with the kurgan tumulus in the Caucasus. Together with the characteristic burial tumulus, the horse must have reached Attica with the seafaring invaders<sup>40)</sup>. The skeleton of the horse discovered from the Marathon tumulus clearly attests this fact, and it is reported that the placement of the sacrificed horse on the roof in the covering mound is seen in the Timber Graves in the Caspian region<sup>41)</sup>. Similarly, according to Tacitus (*Germania*, 27) horses were occasionally sacrificed at the funerals of Germanic warriors and a barrow was heaped over the warrior and the horse. Therefore, as we have seen, the horse sacrifice seems to be a traditional ritual among the early Indo-Europeans, and obviously the Marathon horse maintained this primitive Indo-European practice.

### Conclusion

The earliest horse domestication began in the Pontic steppe region around 4350 B.C. The horse was consumed as food source along with other domestic animals such as sheep and cattle. However, the so-called secondary use of the horse (i.e. horse riding) was decisively important, which is attested by antler cheek pieces found at Dereivka and the bevelling measurements of the Dereivka horse teeth. These facts indicate that the Dereivka horse was bitted, on other words, the Dereivka horse was ridden in the Pontic-Caspian region around 4000 B.C. Because of its mobility (50-60 km a day), horse riding drastically transformed the Pontic-Caspian steppe pastoralism and the development of the Bronze Age societies in Europe. The sacrificed horse ritual seen at Dereivka and at Sintashta in the Trans-Ural steppe clearly indicates that the horse was regarded as sacred and important among the early Indo-Europeans. The Indic asvamedha and the Roman October Equus along with the Irish horse ritual also indicate that the horse was closely related with the early Indo-European ritual, and in Greek mythology the horse appears as an important animal. Poseidon is closely associated with the horse as the horse god, and the horse ritual held at Onchestos and at Dine also suggests the equine attribute of Poseidon. Many mythological figures in Greece have "horse" in their names like Hippodameia ; in addition, the horse is the



only animal name used frequently in the personal names and gods among the early Indo-Europeans. The horse skeleton found at the Marathon tumulus, dated to the Middle Helladic periods suggests that the horse was ritually sacrificed and the same ritual is known in the Pontic steppe region. A warrior consciousness previously unknown in Greece emerged; bronze blades, flint points and obsidian blades excavated from the royal tumuli of Leucas clearly represent the arrival of the Indo-Europeans. Since the Marathon tumuli are considered to be the same type as the Leucas tumuli (i.e. the sea-borne type), a group of proto-Greeks invaded the Peloponnesos by sea from Leucas, and they built the same type of tumuli as seen in the Pontic-Caspian region to commemorate their arrival in Attica. At the same time, the horse must have reached the Greek mainland with the invading proto-Greeks. Since the horse was considered to be a precious and sacred animal, the horse frequently appeared in vasepaintings, on stelae as at Mycenae and in Greek mythology. All these horse-centered rituals in Greece clearly reflect the early Indo-European traits which originated in the Pontic-Caspian region, and in this region the horse was first domesticated and ridden about 4000 B.C.

### Notes

- 1) Eric Hamp, "The Indo-European Horse," in *When Worlds Collide*, ed. T.L. Markey and John A.C. Greppin (Ann Arbor: Karoma Publishers, 1990), p. 213. See also Edgar C. Polomé, "Indo-European Culture," in *The Indo-Europeans in the Fourth and Third Millennia*, ed. E.C. Polomé (Ann Arbor: Karoma Publishers, 1982), p. 158.
- 2) Sandor Bökönyi, "The Earliest Waves of Domestic Horses in East Europe," *JIES*, 6 (1978), p. 23.
- 3) Sandor Bökönyi, "Horses and Sheep in East Europe in the Copper and Bronze Ages," in *Proto-Indo-Europeans: The Archaeology of a Linguistic Problem*, ed. Susan N. Skomal and Edgar C. Polomé (Washington, D.C.: Institute for the Study of Man, 1987), p. 136.
- 4) Bökönyi, *JIES*, 6 (1978), pp. 22, 23.
- 5) David W. Anthony, "The Kurgan Culture, Indo-European Origins, and the Domestication of the Horse: A Reconsideration," *Current Anthropology* 27 (1986), p. 295. See also M. Gimbutas, "The First Wave of Eurasian Steppe Pastoralists into Copper Age Europe," *JIES*, 5 (1977), p. 284.
- 6) D.W. Anthony and Dorcas R. Brown, "The Origins of horseback riding," *Antiquity*, 65 (1991), p. 22. According to Stuart Piggott, a horse can cover 50 to 60 km a day alternately using a walking pace and a trot. While, the walking speed of the ox under a load is 1.8 to 2.5 km an hour, and the walking pace of a horse is 3.2 to 4.3 km an hour. See S. Piggott, *The Earliest Wheeled Transport* (London: Thames and Hudson, 1983), pp. 89, 90. See also Robert Drews, *The Coming of the Greeks* (Princeton: Princeton Univ. Press, 1988), p. 84.
- 7) Marsha A. Levine, "Dereivka and the problem of horse domestication," *Antiquity*, 64 (1990), p. 730, Fig. 1. See also M.A. Levine, *Ibid.*, p. 731; Anthony and Brown *Ibid.*, p. 32.
- 8) J.P. Mallory, *In Search of the Indo-Europeans* (London: Thames and Hudson, 1989), p. 199, Fig. 94; p. 198.
- 9) Anthony and Brown, *Ibid.*, p. 32.
- 10) Mallory (*Ibid.*, p. 199) mentions that the horse as a food source is proved by "the slaughter patterns which reflect the butchering the young males." See also Levine, *Ibid.*, p. 737, Fig. 11;

p. 738.

- 11) Anthony and Brown, *Ibid.*, p. 34.
- 12) Anthony and Brown (*Ibid.*, p. 25) indicate that the earliest horse riders may have used rope or leather bits.
- 13) Mallory, *Ibid.*, p. 200, Fig. 95 ; p. 198 ; Anthony and Brown, *Ibid.*, p. 33.
- 14) Mallory, *Ibid.*, p. 221, Fig. 122. Gimbutas postulates that the figurine had "symbolic meaning". See Comments on Anthony's article. *Current Anthropology*, 27 (1986), p. 306.
- 15) Mallory, *Ibid.*, pp. 220, 221. Mallory mentions (*Ibid.*, p. 220) that the two sacrificed horses and the two-headed figurine found in the burials of the Pontic steppe region are associated with the divine twins frequently appeared in Indo-European mythology. C. Grottanelli thinks that the hippomorphic twins in Indo-European mythology are connected with the standard unit of Bronze Age horse domestication. See Cristiano Grottanelli, "Yoked Horses, Twins, and the Powerful Lady : India, Greece, Ireland and Elsewhere," *JIES*, 14 (1986), p. 125. See also Mallory, *Ibid.*, p. 140.
- 16) V.F. Gening, "The Cemetery at Sintashta and the Early Indo-Iranian Peoples," *JIES*, 7 (1979), p. 10, Fig. 3 ; p. 15, Fig. 6.1.
- 17) *Ibid.*, p. 18, Fig. 7, 1, 2.
- 18) *Ibid.*, pp. 20, 21 ; p. 22, Fig. 8.
- 19) *Ibid.*, p. 23.
- 20) Jaan Puhvel, *Comparative Mythology* (Baltimore and London : Johns Hopkins Univ. Press, 1987), p. 272.
- 21) Drews, *Ibid.*, p. 151 ; p. 151, n. 25.
- 22) Puhvel, *Ibid.*, p. 272 ; Mallory, *Ibid.*, p. 136.
- 23) W. Burkert mentions that "there was a ceremony involving the unharnessing of horses in a sacrificial context in honor of Poseidon at Troezen, a tradition handed down from the Bronze Age when, as we know, Poseidon was so prominent." See Walter Burkert, *Structure and History in Greek Mythology and Ritual* (Berkeley, Los Angeles and London : Univ of California Press, 1979), p. 113.
- 24) L.R. Farnell, *The Cult of the Greek States* (New Rochell : Caratzas Brothers, 1977), Vol. 4. p. 17.
- 25) Gimbutas, "Primary and Secondary Homeland of the Indo-Europeans," *JIES*, 13 (1985), p. 193. Drews points out (Drews, *Ibid.*, p. 163) the importance of horses to the heroes appeared in the *Iliad*. Mallory observes (Mallory, *Ibid.*, p. 119) that "the horse is not only widely attested in the Indo-European languages but it is about the only animal to figure prominently in the personal names of the earliest Indo-Europeans, for example, the Indic *Asva*-cakra, Old Persian *Vist-aspa*, Greek *Hipp*-arkhos and Phil-*ippos*, Gaulish *Epo*-pennus and Old English *Eo*-maer. Moreover, the word is also extended to deities such as the devine twins of Indic religion, the Asvins, and the Gaulish goddess Epona."
- 26) Sp. Marinatos, "The first Mycenaeans in Greece," in *Bronze Age Migrations in the Aegean*, ed. R.A. Crossland and Ann Birchall (London : Duckworth, 1973), pp. 111, 112 ; pl. 14. Vermeule and Drews mention that in the dromos of the Marathon tholos tomb dated to about 1425 B.C., a pair of horse skeletons were discovered. See Emily Vermeule, *Greece in the Bronze Age* (Chicago and London : Univ. of Chicago Press, 1972), pp. 298, 299 ; pl. XLVII-B. Drews, *Ibid.*, pp. 162, 163.
- 27) Drews, *Ibid.*, p. 82, n. 22, n. 23.
- 28) John L. Caskey, "Greece and the Aegean Islands in the Middle Bronze Age," in *CAH* Vol. 1-2 (1971), p. 125 ; J.L. Caskey, "The Early Helladic Period in the Argolid," *Hesperia*, 29 (1960), pp. 301, 302, 303. Gimbutas maintains that the beginning of the Bronze Age Greece is synchronous with the coming of the Indo-Europeans, which indicates the Early Helladic II period. See Gimbutas,

- "The Beginning of the Bronze Age in Europe and the Indo-Europeans, 3500-2500 B.C.," *JIES*, 1 (1973), p. 207.
- 29) N.G.L. Hammond, "Tumulus-burial in Albania, the Grave Circles of Mycenae, and the Indo-Europeans," *BSA*, 62 (1967), pp. 90, 91; Gimbutas, "The destruction of Aegean and East Mediterranean urban civilization around 2300 B.C.," in *Bronze Age Migrations in the Aegean*, p. 133.
- 30) Gimbutas, *JIES*, 1 (1973), p. 207; R.A. Crossland, "Immigrants from the North," *CAH* Vol. 1-2 (1971), p. 846.
- 31) Denys L. Page, *History and the Homeric Iliad* (Berkeley, Los Angeles and London: Univ. of California Press, 1972), pp. 57, 58; J. Mellaart, "Anatolia c. 2300-1750 B.C.," *CAH*, Vol. 1-2 (1971), p. 700. See also Drews, *Ibid.*, pp. 81, 82.
- 32) Roland Hampe and Erika Simon, *Tausend Jahre Frühgriechische Kunst* (München: Hirmer, 1980), s. 176, Taf. 266; Sp. Marinatos and M. Hirmer, *Kreta, Thera und das Mykenische Hellas* (München: Hirmer, 1986), Taf. 234, 258.
- 33) Marinatos and Hirmer, *Ibid.*, Taf. 168, 169; G. Mylonas, "The Figured Mycenaean Stelai," *AJA*, 55 (1951), p. 136, Fig. 2; p. 137, Fig. 3; p. 141, Fig. 6.
- 34) Drews, *Ibid.*, p. 173, n. 45; William F. Wyatt, Jr., "The Indo-Europeanization of Greece," in *Indo-European and Indo-Europeans*, ed. G. Cardona, H.M. Hoeningwald and A. Senn (Philadelphia: Univ. of Pennsylvania Press, 1970), pp. 102, 104, 105, 106.
- 35) Leonard R. Palmer, *Mycenaeans and Minoans* (New York: Alfred A. Knopf, 1963), p. 175, Fig. 25.
- 36) Palmer (*Ibid.*, p. 175) observes that the horse may represent the horse god Hippios, and he also suggests that a more ancient god Hippios must have existed before Poseidon (*Ibid.*, pp. 130, 131). Palmer's Hippios is considered to have its root in the early Indo-European horse god that was brought into Greece by the proto-Greeks. Later Hippios seems to have been assimilated into Poseidon.
- 37) Gimbutas, *JIES*, 1 (1973), p. 203, Fig. 33.
- 38) Gimbutas, "An Archaeological View of PIE in 1975," *JIES*, 2 (1974), p. 303. Gimbutas also mentions that the sacredness of the weapon is well attested in all Indo-European religions. See Gimbutas, *JIES*, 1 (1973), p. 203.
- 39) N.G.L. Hammond, "Grave circles in Albania and Macedonia," in *Bronze Migrations in the Aegean*, p. 193; Gimbutas postulates that the Indo-Europeans entered Greece in E.H. II between 2900 and 2600 B.C. See Gimbutas, *JIES*, 13(1985), p. 200; Homer Thomas asserts that the coming of the Greeks is dated to the beginning of E.H. III around 2300 B.C. See H. Thomas, "Archaeological Evidence for the Migration of the Indo-Europeans," in *The Indo-Europeans in the Fourth and Third Millennia*, p. 69. See also H. Thomas, "New Evidence for Dating the Indo-European Dispersal in Europe," in *Indo-European and Indo-Europeans*, p. 212.
- 40) Bökönyi observed that the horse reached in Greece in the Middle Helladic period (ca. 1900-1570 B.C.). See Bökönyi, "Horses and Sheep in East Europe in the Copper and Bronze Ages," in *Proto-Indo European: The Archaeology of a Linguistic Problem*, p. 137.
- 41) Drews, *Ibid.*, p. 190.

## References

- Anthony, David W. "The Kurgan Culture, Indo-European Origins, and the Domestication of the Horse: A Reconsideration." *Current Anthropology*, 27 (1986), pp. 291-314.
- Anthony, D.W. and Dorcas R. Brown, "The Origins of horseback riding" *Antiquity*, 65 (1991), pp. 22-38.

- Bökönyi, Sándor. "The Earliest Waves of Domestic Horses in East Europe." *JIES*, 6 (1978), pp. 17-76.
- . "Horses and Sheep in East Europe in the Copper and Bronze Ages." in *Proto-Indo-Europeans: The Archaeology of a Linguistic Problem*, ed. Susan N. Skomal and Edgar C. Polomé, Washington, D.C.: Institute for the Study of Man, 1987, pp. 136-144.
- Burkert, Walter. *Structure and History in Greek Mythology and Ritual*. Berkeley, Los Angeles and London: Univ. of California Press, 1979.
- Caskey, John. "The Early Helladic Period in the Argolid." *Hesperia*, 29 (1960), pp. 285-303.
- . "Greece and the Aegean Islands in the Middle Bronze Age." *CAH*. Vol. 1-2, 1971, pp. 771-807.
- Crossland, R.A. "Immigrants from the North." *CAH*. Vol. 1-2, 1971, pp. 824-876.
- Drews, Robert. *The Coming of the Greeks*. Princeton: Princeton Univ. Press, 1988.
- Farnell, Lewis Richard. *The Cults of the Greek States*. 5 vols. New Rochelle: Caratzas Brothers, 1977.
- Gening, V.F. "The Cemetery at Sintashta and the Early Indo-Iranian Peoples." *JIES*, 7 (1979), pp. 1-29.
- Gimbutas, Marija. "The Beginning of the Bronze Age in Europe and the Indo-Europeans: 3500-2500 B.C." *JIES*, 1 (1973), pp. 163-214.
- . "The destruction of Aegean and East Mediterranean urban civilization around 2300 B.C." in *Bronze Age Migrations in the Aegean*, ed. R.A. Crossland and Ann Birchall, London: Duckworth, 1973, pp. 129-139.
- . "An Archaeologist's View of PIE in 1975." *JIES*, 2 (1974), pp. 289-307.
- . "The First Wave of Eurasian Steppe Pastoralists into Copper Age Europe." *JIES*, 5 (1977), pp. 277-338.
- . "Primary and Secondary Homeland of the Indo-Europeans" *JIES*, 13 (1985), pp. 185-202.
- . Comments on Anthony's "The Kurgan Culture." *Current Anthropology* 27 (1986), pp. 305-307.
- Grottanelli, Cristiano. "Yoked Horses, Twins, and the Powerful Lady: India, Greece, Ireland and Elsewhere." *JIES*, 14 (1986), pp. 125-152.
- Hammond, N.G.L. "Tumulus-burial in Albania, the Grave Circles of Mycenae, and the Indo-Europeans." *BSA*, 62 (1967), pp. 77-105.
- . "Grave Circles in Albania and Macedonia. in *Bronze Age Migrations in the Aegean*. London: Duckworth, 1973, pp. 189-197.
- Hamp, Eric P. "The Indo-European Horse." in *When Worlds Collide*, ed. Markey and J.A.C. Greppin, Ann Arbor: Karoma Publishers, 1990, pp. 211-226.
- Hampe, Roland and Erika Simon. *Tausend Jahre Frühgriechische Kunst*. München: Hirmer, 1980.
- Levine, Marsha A. "Dereivka and the problem of horse domestication." *Antiquity*, 64 (1990), pp. 727-740.
- Mallory, J.P. *In Search of the Indo-Europeans*. London: Thames and Hudson, 1989.
- Marinatos, Sp. "The first Mycenaeans in Greece." in *Bronze Age Migrations in the Aegean*, London: Duckworth, 1973, pp. 107-113.
- Marinatos, Sp. and M. Hirmer. *Kreta, Thera und das Mykenische Hellas*. München: Hirmer, 1986.
- Mellaart, J. "Anatolia, c. 2300-1750 B.C." *CAH*. Vol. 1-2, 1971, pp. 681-706.
- Mylonas, George. "The Figured Mycenaean Stelai." *AJA*, 55 (1951), pp. 134-147.
- Page, Denys L. *History and the Homeric Iliad*. Berkeley, Los Angeles and London: Univ. of California Press, 1972.
- Palmer, Leonard R. *Mycenaeans and Minoans*. New York: Alfred A. Knopf, 1963.
- Piggott, Stuart. *The Earliest Wheeled Transport*. London: Thames and Hudson, 1983.
- Polomé, Edgar C. "Indo-European Culture." in *The Indo-Europeans in the Fourth and Third Millennia*, Ann Arbor: Karoma Publishers, 1982, pp. 156-172.
- Puhvel, Jaan. *Comparative Mythology*. Baltimore and London: Johns Hopkins Univ. Press, 1987.

- Thomas, Homer. "New Evidence for Dating the Indo-European Dispersal in Europe." in *Indo-European and Indo-Europeans*, ed. Cardona et al. Philadelphia : Univ. of Pennsylvania Press, 1970, pp. 199-215.
- . "Archaeological Evidence for the Migration of the Indo-Europeans." in *The Indo-Europeans in the Fourth and Third Millennia*, Ann Arbor : Karoma Publishers, 1982, pp. 61-85.
- Vermeule, Emily. *Greece in the Bronze Age*. Chicago : Univ. of Chicago Press, 1972.
- Wyatt, William F. Jr. "The Indo-Europeanization of Greece." in *Indo-European and Indo-Europeans*, Philadelphia : Univ. of Pennsylvania Press, 1970, pp. 89-111.