

Horses and Prehistoric Chronology of Eastern Europe and Western/Central Asia

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The speaker prefaced his lecture by saying that the research he was presenting was the result of collaborative work between himself and his wife Dorcas Brown, and their Soviet colleagues, particularly Natalia Belan of the Ukrainian Institute of Zoology and Dimitri Telegin of the Institute of Archaeology of the Ukraine. The goal of the research is to determine the chronological and geographical origin of horseback riding. The study indicates conclusively that horseback riding began in the southern grasslands of the Soviet Union around 4000 B.C.E., predating the firm evidence for wheeled vehicles. The importance of this conclusion goes beyond establishing a human first. In his dissertation on the effects of riding on the native North and South Americans, Anthony demonstrated its revolutionary effects on land transport, food production, and population densities. Those groups in South America who had acquired horseback riding became a dominant, almost aristocratic society who exploited the sedentary agriculturalists. Anthony argues that as the technology and environment are similar in the grasslands of the Ukraine to that in South America, that the effects might well have been analogous.

Conventional wisdom places the acquisition of riding in central Asia at c. 2000 B.C.E. This early date is corroborated by representations of riding that appear in South Central Asia, in the form of figurines and seal impressions, around 1800–1600 B.C.E. This condenses the elapsed time between the barbarian development of the mount and the more sophisticated, military use of horses after 1000 B.C.E. into a few centuries. By establishing the adoption of the mount in Eastern Europe in 4000 B.C.E., we can posit a longer, more credible period of development.

The period which we will be examining is the East European Copper Age. The region around the Dnieper River forms a junction between the Eurasian grasslands that stretch eastwards across the entire continent to Mongolia, with its indigenous peoples, and the forested temperate European zone. The Tripolye culture which existed on the west side of the Dnieper in the more forested area, had a dense population. The settlements consist of large houses often arranged in concentric circles, and there is some evidence for craft specialization and specialized shrines. The metal hoards and technological advancement that characterize this society suggest that it was socially stratified. As the period progresses, some settlements become enormous, several over 300 hectares. This concentration of populations can now be interpreted as a response to the acquisition of riding on the other side of the Dnieper.

The indigenous cultures of the east side of the Dnieper, the Dnieper-Donets and Sredni-Stog cultures, lived in the forested river valley bottomlands that wound through the dry steppes. Unlike the Tripolye peoples, the early phases of these cultures yield only a few domestic buildings, and their pottery demonstrates less technological development. Our knowledge of these peoples is derived primarily from both their settlements and their cemeteries, where the few examples of metalwork were clearly acquired from the Tripolye people. Aside from these pieces, before the introduction of riding there is only sporadic evidence for interaction between the more advanced Tripolye and the simpler Dnieper Donets and Sredni-Stog people.

The type of horse in question is probably similar to today's Przewalski horse. Wild horses were the primary grazing animal of the Dnieper region. At a Sredni Stog site called Dereivka, over 2,255 horse bones are recorded. Although it is rather difficult to determine the sex of the horses from these remains, it is essential to do so in order to determine if the horse population was domesticated or wild. When hunting horses in the wild, it is easier and thus more likely to kill primarily female horses. In a domesticated context, however, females as milk producers and breeding stock are more valuable; thus males would be more likely be culled for food. At Dereivka, of all the remains there are only five sexable (using canine teeth) mandibles, and all five are male, suggesting that these horses were already domesticated. More importantly, at the same site a deposit was discovered containing the skull and left foreleg of a seven-to-eight year old stallion, buried with two dogs and several human figurines. This horse is in a context that is not only domestic, but cultic as well. So beginning at 4200 B.C.E., the horse became more important for the societies on the eastern side of the Dnieper River. Associated with this change is the beginning of the use of cord impressed ware, and a new tumulus type of burial, which are often associated with the spread of the Indo-European speaking peoples. More weapons appear, and more Tripolye prestige items such as spiral bracelets and shaft hole axeheads. More important, an ornament typical of the Sredni Stog people, an *Unio* shell, was found rendered in copper. As the Sredni Stog peoples did not possess the technology for metallurgy, this demonstrates that the Tripolye craftsmen were creating objects specifically for the culture on the other side of the river, a relationship between the two peoples that is significantly altered.

The above evidence for the introduction of horseback riding is purely circumstantial. Based on the assumption that these early riders would have controlled their animals in the same manner as the native Americans and modern riders, that is, with a bit, Anthony decided to examine the faunal remains for bit-wear as a form of direct evidence for riding. A controlled study of wild and domesticated horses from North America defined the physical characteristics of bit wear. A bitted horse's premolar teeth are beveled at the front by an average of 3.5 mm, and they show center origin spalls (fractures that begin in the center of the occlusal ridge and can form deep trenches). Neither of these phenomena occur in a wild horse.

Having established these criteria, Anthony made casts of the horses' teeth found at the Kiev Institute of Zoology. The mandible from the cult stallion at Dereivka shows evidence of extreme bit wear, including both bevelling and center origin spalls. Dating to c. 4000 B.C.E., this is the earliest known horse to have

been ridden anywhere in the world, and as such is one of the first significant innovations in human land transport.

The phrase following Sredni Stog, around 3500 B.C.E., is characterized by the invention of wheeled vehicles and their use in cart burials in the Pontic Steppes and in the grasslands around the Black and Caspian Seas. Three things are necessary for life on the grasslands. First, grazing stock is needed, and the Dnieper Donets people had this by the Neolithic period. Second, horses are needed for long distance land transport, and these were used by the Sredni Stog people by 4000 B.C.E. Third, wheeled vehicles, probably ox-drawn, were needed for heavy transport, and these appear in the Yamna horizon, around 3500 B.C.E. Only after this time are the grasslands exploited in a productive way.

At the same time as the changes taking place in the interior of the continent during the Yamna period, a second pattern of change emerges along the coastline, which may be related to the introduction of high prowed rowing vessels. There are material parallels between the Black Sea settlements, the disintegrating Tripolye culture, and the origins of Aegean civilizations in the Troad and Lemnos. This is clearly a period of contact between the Black Sea and the Aegean, and it would be interesting for those who work in the Aegean civilizations to examine these connections as a means of understanding why it is that these cultures appear first in the Northwest. Likewise, those who study Bactria and Iran are not looking to the western end of their ecological world, the Eurasian Grasslands.