Horse Breeds and Breeding in the Greco-Persian World

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By

Thomas Donaghy

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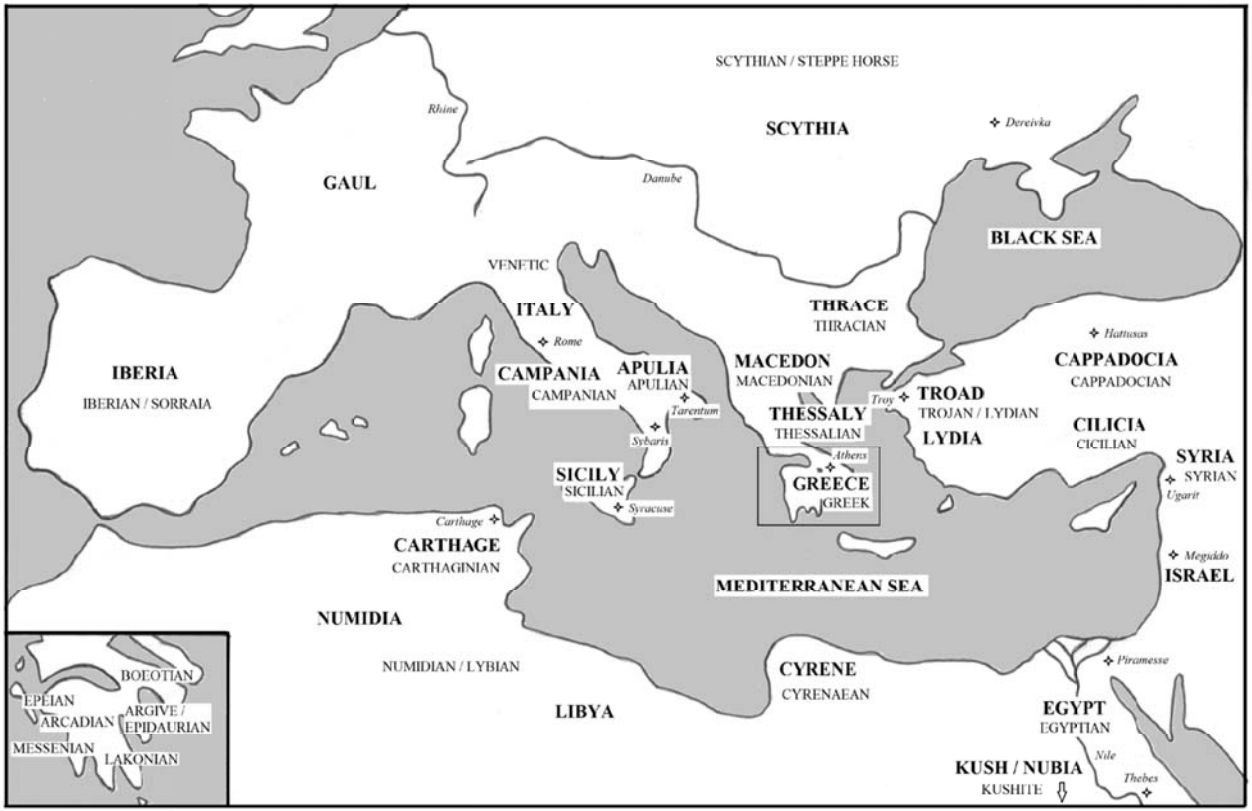

THE GREEK WORLD | **LANDS / REGIONS** | HORSE BREEDS | ✧ *Cities / Sites of Interest*

THE PERSIAN WORLD
LANDS / REGIONS
HORSE BREEDS
Cities / Sites of Interest
SCYTHIAN / STEPPE
Dereivka
EURASIAN STEPPE
Botai
ALTAI MTS.
Pazyryk
SCYTHIAN / PAZYRYK / STEPPE
BLACK SEA
CASPIAN SEA
FERGHANA
HEAVENLY HORSES OF FERGHANA
Hattusas
TROAD
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CILICIA
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URARTU / ARMENIA
ARMENIAN
SOGDIANA
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SYRIA
SYRIAN
Ugarit
ASSYRIA
ASSYRIAN
Nineveh
Megiddo
ISRAEL
Euphrates
Tigris
BABYLONIA
BABYLONIAN
Susa
Babylon
CASPIAN
PARTHIA
MEDIA
Ecbatana
MEDIAN / PARTHIAN / PERSIAN
NISAEAN
Hydaspes
Indus
INDIA
Piramesse
ARABIA
PERSIA
Persepolis
CARMANIA
PERSIAN GULF
GEDROSIA
EGYPT
EGYPTIAN
Thebes
Nile
RED SEA
KUSH / NUBIA
KUSHITE

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INTRODUCTION

After creating the heavens and the earth, the birds of the air and the fishes of the sea, God found it good to bestow on man a supreme mark of his favour: he created the horse. In the magnificent sequence of creation the last phase, that of perfection, was reserved for this beautiful creature. The horse was swifter than anything on the face of the earth; he could outrun the deer, leap higher than the goat, endure longer than the wolf. Man, encompassed by the elements which conspired to destroy him, by beasts faster and stronger than himself, would have been a slave had not the horse made him king. In the Garden of Eden the horse was of no service to man, but the fall of man revealed to the horse his noble mission.[1]

The association between human and horse is one which has existed for tens of thousands of years. From as early as thirty-five to forty thousand years ago humans were hunting horses in large numbers for both food and hides and, not long after this, horses began to appear quite frequently in cave paintings or as figurines carved from bone and mammoth tusk. As the post-glacial climate warmed and forests overtook steppe-lands wild horses were gradually pushed eastwards and their habitat restricted to the Eurasian steppe. Budiansky suggests that, had it not been for their domestication, the remaining herds would have gradually disappeared and the horse would be extinct today.[2] That this may indeed have come to pass is suggested by the fact that the last surviving herd of true wild horses, the Przewalskii horse of Mongolia, disappeared late in the last century. The last wild specimen of this breed was spotted in 1969.[3]

So it seems only fair that the horse, when it was saved from probable extinction through domestication, repaid the favour by contributing so much to the history of humankind. The domestication of the horse and the subsequent development of chariotry and cavalry greatly changed human lifestyle. Not only were horses available for food and hides they could also be used for transportation and warfare.

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[1] Eighteenth century French explanation of man's partnership with the horse. [Chenevix-Trench, (1970), 7].
[2] Budiansky, (1997), 35.
[3] Przewalski horses bred from captive specimens have since been successfully reintroduced into the wild.

It was for the peoples of the Eurasian Steppe that horses seem to have facilitated the most radical change. Possession of horses permitted these peoples to abandon their sedentary ways on the fringes of the great plains and to embrace a fully nomadic lifestyle. Throughout history such nomadic cultures regularly came into conflict with the settled cultures of non-steppe lands and the former played an important role in the development and evolution of the latter. From the steppes of the Far East the nomadic Hsiung-Nu proved a constant menace to the Chinese kingdoms throughout the second half of the first millennium BC while in Western Europe the nomadic Huns played a large role in the troubles faced by the Roman Empire during the fourth and fifth centuries AD. The largest land empire which the world has ever known was created in the late twelfth and early thirteenth century AD by the nomadic Mongols. When horses were introduced into the Americas by European explorers and conquistadors during the fifteenth and sixteenth centuries AD they swiftly affected cultural lifestyles and within two centuries the Plains Indians of North America had embraced a fully nomadic lifestyle similar to that of their Eurasian counterparts.

Horses also greatly influenced the history and development of sedentary civilisations. Indo-European peoples (possibly originating from the border-lands of the steppes), with their newly developed chariot technology, spread their culture through a wide swathe of the ancient world through a series of invasions and/or migrations. By the middle of the second millennium BC chariot-using Indo-European cultures had established themselves as Hittites in Asia Minor, Mitannians in Armenia, Kassites in Babylonia, and Aryans in northwest India to name but a few. Chariot forces were to play a vital role in the military might of many kingdoms in the eastern Mediterranean and Near East until they were supplanted by cavalry in the first millennium BC. Chariotry was to play an even greater role in China and India where it continued in military use down to the latter centuries of the first millennium BC.

The development of cavalry forces continued the horse's contribution to history and the rise of great empires, such as those of the Assyrians, Medes, and Persians, owed much to their ability to breed and raise large forces of cavalry. When Alexander the Great invaded the Persian Empire it was cavalry which played a vital role in his success. The great importance of cavalry continued throughout medieval times and well into the modern era. As late as the Second World War horses played a vital military role. Although by WWII they had mostly been replaced by mechanised forces many hundreds of thousands of horses were still used for transporting troops to the front and for the transport of provisions and heavy artillery.

Although cavalry forces do not generally form part of modern armies (with the exception of some ceremonial units) they are still occasionally used. Most notable is their use by the Janjaweed militiamen in Darfur. Probably less well known is the fact that cavalry forces were recently in use in America's war against the Taliban in Afghanistan. When a Special Forces Operational Detachment was air-dropped into Afghanistan in the fall of 2001 they were surprised to discover that the Northern Alliance force of their ally General Dostum consisted of a mounted unit of two thousand horsemen armed with modern small arms. Since the Taliban possessed relatively modern tanks and artillery the Americans used GPS, laser range finders, and digital satellite radios to destroy the Taliban's bunkers and military hardware after which the Afghan horsemen would charge the enemy positions.[4]

Due to the vital role which the horse has played in human history there have been many publications over the years detailing the history of the association between human and horse. The majority of such works, however, concentrate mostly on the horse's military contribution without making any real attempt to examine the origin of the horse itself. That is to say that, although much has been written on the construction and manufacture of chariots, the origin and development of cavalry equipment, and the tactics and manoeuvres used by chariots and cavalry in battle, there has been much less written concerning the origin and development of the various breeds of horse and how they spread across the ancient world.

In order to address this imbalance this book takes as its topic an examination of the origins and development of the variously attested horse breeds of the Greco-Persian World of the second and first millennia BC. This particular time period has been selected for examination because it was during these two millennia that the vital role which the horse was to play in human history became fully apparent. The second millennium BC saw the development of the chariot and the subsequent creation of vast chariot forces which were to form an important part of the armed forces of numerous lands from Mycenaean Greece in the west as far as India and China in the east. The first millennium BC saw the gradual replacement of these chariots with cavalry forces which continued to play a vital role in military warfare right up until the beginnings of the twentieth century AD.

This book will focus its examination upon the region of the Greco-Persian world because of the great interaction which these lands experienced during this period. For the purposes of this book the Greek World is taken to encompass those main regions of the ancient Mediterranean that were either settled by Greeks or had close contact with

[4] DiMarco, (2008), 352 - 354.

(or influence from) Greek lands. The Persian World encompasses all those lands which were later to fall under the sway of the Persian Empire when it was at the height of its power (ca. 480 BC).

The interaction between these two regions during the second and first millennia BC was constant and extensive. There was continual trade between the many nations of the eastern Mediterranean and the Near East throughout this period as well as cultural and military interaction. The Mycenaean Greeks had strong connections with both Egypt and western Anatolia and often were engaged in military actions against Hittite dependencies. There was close contact between the major powers of the Near East at this time - Hatti, Mitanni, Assyria, Babylon, and Egypt. From the mid-fifth century BC the Persian Empire was regularly engaged in military conflict with the Greek World while the late-fourth century BC witnessed the conquest of the Persian Empire by the Macedonian and Greek armies of Alexander the Great.

Existing publications on the topic of ancient horses can be broadly divided into two main categories. The first category consists of works whose focus is to provide a general account of the history of the horse over a very large period of time - such as from its evolution, domestication, or from a particular time (e.g. Classical Greece or the Roman Republic) up until the present day. Due to the lengthy time span covered any examination of horses during the second and first millennia BC tends to form but a small portion of the whole with the greater part focusing on the period from late medieval times to the present. Examples of such publications include C. Chenevix-Trench, (1970), *A History of Horsemanship*, New York; A. Dent, (1974), *The Horse Through Fifty Centuries of Civilisation*, London; D. M. Goodall, (1977), *A History of Horse Breeding*, London; H. B. Barclay, (1980), *The Role of the Horse in Man's Culture*, London; and J. Clutton-Brock, (1992), *Horse Power: A History of the Horse and Donkey in Human Societies*, London.

The second category of publications focus more closely on the horses of the ancient world and, therefore, tend to contain more detailed information regarding the period in question. While some of these works may indeed contain information and discussions in regard to ancient breeds, in the majority of cases the focus is more on an analysis of harnessing and tack (saddles / saddle-cloths, bits, bridles, harnessing equipment for chariot horses) and the role horses played in military matters (tactics, manoeuvres, cavalry armour and weaponry). Such works can also be divided into two main categories - those concerned with the ancient world in general and those in which specific regions or nations are examined. Examples of the former include A. Hyland, (2003), *The Horse*

in the Ancient World, Surry; A. Cotterell, (2005), *Chariot: The Astounding Rise and Fall of the World's First War Machine*, London; and P. Sidnell, (2006), *Warhorse: Cavalry in Ancient Warfare*, London. Examples of the latter include A. Hyland, (1990), *Equus: The Horse in the Roman World*, London; J. H. Crouwel, (1992), *Chariots and other wheeled vehicles in Iron Age Greece*, Amsterdam; R. E. Gaebel, (2002), *Cavalry Operations in the Ancient Greek World*, Norman, Oklahoma.

Although the categories of publications mentioned above constitute the larger portion of works dealing with the history of the horse, there are a small number of publications covering the period dealt with by this book which do attempt to examine the origin and development of particular breeds. Works which include an analysis of ancient breeds include C. Rommelaere, (1991), *Les Chevaux du Nouvel Empire Egyptien: Origines, Races, Harnachement*, Bruxelles and P. G. Gonzaga, (2004), *A History of the Horse Volume I: The Iberian Horse from Ice Age to Antiquity*, London. The former contains an excellent analysis of Egyptian horse paintings from the New Kingdom Period which indicate that two separate breeds of horse may have entered Egypt during this period. The author attempts to identify and trace the origins of both these breeds. The latter consists of a detailed investigation into the possible origins and development of Iberian horses through an examination of paintings, sculptures, archaeological remains, and the movement of horses throughout the ancient world through trade, migration, and warfare.

Such being the current state of this field of research, this book will examine humankind's influence on the origin and development of the various breeds of ancient horse which are known from the Greco-Persian World of the second and first millennia BC. Such an examination will help provide a better understanding of the history of humankind's association with the horse. Our understanding of the huge role which the horse played in human history can only be improved by our gaining an understanding of the equally huge role which humans played when they took horses from the wild and, through many hundreds of years of daily interaction, cross-breeding, and training, facilitated the development and spread of many different breeds throughout the ancient world. The examination of breeds will attempt, through an analysis of surviving archaeological, iconographical, and literary evidence, to determine what those described physical characteristics and given attributes of the various breeds may reveal about their possible geographical and racial origins.

This book is divided into three main parts. Part One provides an historical overview of the origin and spread of the horse including an overview of its evolution, domestication, spread, and the origins and

development of horse riding and chariotry.

Part Two entails a detailed overview of the main regions of the Greek World which were famed for producing high-quality horse breeds during the second and first millennia BC. For the purposes of this thesis the term 'Greek World' encompasses the main regions of the ancient Mediterranean world that were either settled by Greeks or else had close contacts with (or influence from) Greek lands. Drawing upon a wide range of source material (including archaeology, iconography, literary sources, geographical and agricultural surveys) this section aims to gather together information which explains why these particular regions were capable of breeding high-quality horses, the number of horses that each region was capable of breeding, and what the physical appearance of these breeds (as well as the particular attributes associated with them) can tell us about their possible origins.

Part Three takes the same approach as Part Two but applies it to the horse-breeding lands of the Eurasian steppe and the Persian World. The analysis of the Eurasian Steppe covers those breeds used by nomadic horsemen from the plains of Eastern Europe right the way across to the plains of Mongolia. This was a region which, despite its enormous extent, possessed a relatively uniform culture as well as relatively uniform breeds of horse. For the purposes of this thesis the term 'Persian World' is used to encompass all those lands which were later to fall under the sway of the Persian Empire when it was at the height of its power (ca. 480 BC). The majority of the narrative, however, is based around ancient texts detailing the Assyrian rise to power in the early centuries of the first millennium BC (supplemented by a similar range of source material as used in Part Two). The section has been structured this way because it was the Assyrians who were the first to join under one rule the all the major horse-breeding lands of the Near East which lay between the eastern Mediterranean and the Zagros Mountains. It was the control of these core breeding-grounds upon which the basis of the Assyrian Empire's military might depended as well as that of the subsequent Median and Persian Empires.

PART I:

EVOLUTION, DOMESTICATION, AND SPREAD

CHAPTER ONE

EVOLUTION OF THE HORSE[1]

The horse (*Equus Caballus*) is just one member of the larger family of *equus* that also includes the ass (*Equus Asinus*), the onager (*Equus Hemionus*), and the three species of zebra (*Equus Zebra*, *Equus Burchelli*, and *Equus Grevyi*). For the origins of the *Equus* genera one must go back to the Eocene Period (ca. 54 – 38 million years ago) in America.[2] It was here that the first equids originated and, over the next fifty-four million years, evolved and spread across the world.

The first equid to be found in the fossil record is aptly named *Eohippus* (Greek for 'Dawn Horse').[3] *Eohippus* was a small, forest-dwelling animal which stood between 10 and 20 inches (25 and 50 cm) at the shoulder and weighed approximately 5.4 kg (12 lbs). It had a flexible, arched back (in contrast to the rigid spine of today's horse), a short neck, snout, and legs, and a long tail.

Unlike modern horses *Eohippus* was toed rather than hoofed. It had four toes on its front feet and three on its hind (with visible traces of two more). Each toe terminated in a small hoof-like nail. Its under-foot was protected by a dog-like pad. In the forest environment of Eocene North

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[1] This overview of horse evolution draws much from the following works: Hulbert, (1996), 11 - 34; MacFadden, (1988), 131 - 158; Edwards, (1987), 17 - 25; Clabby, (1976), 6 - 12.

[2] The following geological periods cover the evolution of the horse. Eocene (ca. 54 - 38 million years ago), Oligocene (ca. 38 - 26 million years ago), Miocene (ca. 26 - 7 million years ago), Pliocene (ca. 7 - 3 million years ago), Pleistocene (ca. 3 million years ago - recent). [Clabby, (1976), 1].

[3] *Eohippus* is also commonly referred to as *Hyracotherium* due to a mistake made in the early identification of its fossil finds. When partial remains of a skull were discovered in Kent, England in the early 1800's they were identified as belonging to a cony or hyrax and therefore the find was given the scientific name *Hyracotherium*. In 1867 a more complete skeleton was discovered in Eocene rock structures in the southern part of the United States and named *Eohippus*. It was not until 1932, however, that the connection between the two finds was made. [Edwards, (1987), 17 - 18].

America *Eohippus* would have browsed on fruit and soft foliage and so its teeth were not adapted for rough grazing. They were low-crowned and consisted of three sets of incisors, one set of canines, four sets of premolars and three sets of 'grinding' molars. The modern horse, due to its grazing orientation, has six sets of 'grinding' molars.

Having evolved in North America *Eohippus* soon spread across the existing land-bridges into Eurasia. At the end of the early Eocene continental drift led to the connection between North America and Europe being severed while that between North America and Asia was periodically cut off by shallow seas. Although *Eohippus* diversified into a number of different species in Europe only a few of them survived into the middle Oligocene (ca. 30 million years ago) when they finally died out. Those species in Asia died out shortly before their counterparts in Europe. In North America, however, the evolution of the horse continued apace.

Within the Eocene the immediate descendants of *Eohippus* were *Orohippus* and *Epihippus*. Both equids retained the same foot structure as their predecessor and were of similar size. Their teeth, however, had developed further. *Orohippus* now had four sets of 'grinding' cheek teeth while *Epihippus* had five.

The beginning of the Oligocene (38 – 26 million years ago) saw the appearance of the larger *Mesohippus* and *Miohippus* some specimens of which were up to 30 inches (75 cm) tall and weighed about 55 kg (121 lbs). Both species were three-toed on all limbs although most of their body-weight rested on the middle toe. Their feet still retained the same 'dog-like' pad behind the toes. Both equids also sported larger incisors and had the recognisably 'horse-like' six sets of 'grinding' molars.

Although different species of *Mesohippus* and *Miohippus* coexisted at various times during the mid to late Oligocene it seems to have been from *Miohippus* that the later Miocene equids (ca. 26 - 7 million years ago) descended. There appears to have been two main lines of descent.

1. Three-toed browsers called *Anchitheres*. These retained the same dental and foot structure of *Miohippus* but grew to much larger sizes. Their body weights are estimated to have ranged between 200 to 400 kg (441 to 882 lbs). This branch was very successful spreading to all corners of North America and across the, by then re-established, land-bridges into Eurasia. They became extinct in both places, however, by the late Miocene / early Pliocene (ca. 9 - 7 million years ago).

2. A line of equids, which began to specialise in eating grasses. These equids developed teeth more suitable for chewing grass (small crests on their teeth enlarged and joined together into a series of ridges for grinding). They also began to develop into specialised runners. The fleshy pads

behind the toes were lost and during normal movement on hard ground their entire body-weight was supported by the middle toe. The side toes were only used on soft ground and at maximum speeds.

Parahippus arose from this second branch early in the Miocene and seems to have been a transitional form between browsers and grazers. It was larger than *Miohippus* and still three-toed but was beginning to develop springy ligaments under the foot. By about seventeen million years ago, however, *Parahippus* had greatly declined in numbers and another equid *Merychippus* began to take centre-stage. *Merychippus* was still three-toed but was fully spring-footed and stood on its tiptoes with most of its weight borne on the middle toe. The side toes now began to be of varying sizes (some were fully formed while others barely touched the ground) while the nail of the central toe began to develop into a hoof.

By the end of the Miocene there were at least six distinct groups of equids existing in the Americas. The two main groups were the three-toed grazers called *Hipparions* and a line of equids in which the side toes gradually began to reduce in size and disappear. *Hipparions* dominated the fauna of North America for millions of years and also spread throughout Eurasia and into Africa. They seem to have been the first equids to penetrate the latter continent. They survived in Eurasia and Africa into the Pleistocene (3 million years ago - present) when they died out.

Back in North America close ancestors of today's horse were beginning to emerge (ca. 17 million years ago) from the line of equids in which the side toes began to disappear. While the earliest of these equines were all three-toed the side toes were eventually lost in some branches by the late Miocene. This condition of having one digit per foot (monodactyly) seems to have evolved only twice in equids - in *Pliohippus* and in the branch of equids that included *Dinohippus* and *Equus*. Due to dental similarities it was originally thought that *Equus* may have descended from *Pliohippus*, however, more recent analysis of the development of facial fossae has shown that *Dinohippus* is a more likely candidate. *Dinohippus* was the most common equid in North America in the late Pliocene.

Equus finally developed in North America about four million years ago. It stood approximately 13.2 hands (54 inches) at the shoulder and possessed a recognisably 'horse-like' body with a rigid spine, long neck, legs, and nose. The earliest known specimens had zebra-like bodies with short, narrow, donkey-like skulls. *Equus* was soon to evolve into many new and varied species.

During the first major glaciations of the late Pliocene (ca. 3 million years ago) certain *equus* species spread across the world and, up until a

million years ago, were to be found in Africa, Asia, Europe, and North and South America. The Pleistocene (3 million years ago - present) saw a number of extinctions that killed off most of the large mammals in North and South America including all equids.[4] It is not known why these extinctions took place. They may have been due to climate changes in the post-glacial period, over-hunting by humans (who had just then arrived in the Americas), sickness, or a combination of all three. Budiansky believes that *equus* would also have eventually died out in Eurasia had it not been for its domestication by humankind.

> As the climate warmed and forests overtook the open grasslands, the herds fled ever eastward, vanishing from the British Isles and from France and Spain … until all that remained were remnant herds in the still-open grassland steppes of Ukraine and Central Asia … But for domestication, the Eurasian wild horse would likely have shared the fate of its New World cousins. This rescue of the horse follows a pattern that has been repeated time and again in domestic species. The aurochs, the wild progenitor of the domestic cow, is gone: wild sheep and goats teeter on the brink of extinction throughout the world: the last remnant of the Asian wild horse, Przewalskii's horse, survives only in captive and artificially managed populations rescued from oblivion at the end of the last century.[5]

By the time the ice caps had retreated some ten thousand years ago only eight species of *equus* had survived:

1. Horses (*Equus Caballus*) in Europe and Asia.
2. The onager (*Equus Hemionius*) in the Near East.
3. The Tibetan wild ass (*Equus Kiang*) – now extinct.
4. The African wild ass (*Equus Asinus*) in North Africa.
5. The Mountain zebra (*Equus Zebra*) in South Africa.
6. The Plains zebra / Burchell's zebra (*Equus Burchelli*) in South Africa.
7. Grevy's zebra (*Equus Grevyi*) in Kenya / Ethiopia.
8. The quagga (*Equus Quagga*) in South Africa – now extinct.

[4] Horses were to become unknown in the Americas until their re-introduction by Europeans in the late fifteenth century A.D.
[5] Budiansky, (1997), 35.

CHAPTER TWO

DOMESTICATION

Of the eight species of *equus* in existence after the last ice age it was *Equus Caballus* that was to have the greatest impact on human history. In the post-glacial period it appears that a number of distinct breeds of *Equus Caballus* roamed a wide range of territory across northern Europe and Asia.

> Because of the wide variation in size and conformation of modern domestic horses, with small stocky ponies in northern Europe and slender-limbed Arabian horses in the south, it has often been suggested that at the end of the Pleistocene there were several different species of wild equids that were domesticated.[1]

It is generally believed that *Equus Caballus* had developed into three distinct breeds by the post-glacial period.

> 1. The Takhi or Asiatic Wild Horse (*Equus Caballus Przewalskii*).[2] The Przewalskii was the last truly wild horse in existence. Its range was generally located east of the 40th degree of longitude across the Russian and Mongolian steppes.[3] It was last seen free in 1969 and died out in the wild sometime after this. It continued to be bred in captivity, however, and in the early 1990s was successfully reintroduced into the national parks of Mongolia. The Przewalskii is a pony-sized horse of about 13 hands with a large head, short and fleshy neck, and narrow legs. Its general body colour is a light bay with the lower part a smooth white. It has dark stripes on its chest, its mane and tail are black or dark brown (the mane is stiff and upright without a forelock), and the lower parts of its legs have dark stripes. There is also a dark dorsal stripe visible running from mane to tail.

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[1] Here the author uses 'species' to denote various 'breeds' of horse rather than an actual separate species like the ass or onager. [Clutton-Brock, (1981), 82].
[2] Named after the famous Russian geographer and explorer Nikolaj Michaljovitch Przewalskii who rediscovered this wild horse while travelling in Mongolia in 1879.
[3] Hilzheimer, (1935), 136.

2. The Tarpan (*Equus Caballus Gmelini*). The Tarpan ranged across northern Europe and the western steppe as far east as the 40th degree of longitude. It is not known for certain how far to the west its range extended.[4] It existed in a wild state until the mid 1800s when it became extinct due to over-hunting. As their natural forest and steppe habitat was destroyed by the encroaching human population Tarpans came into increasing conflict with farmers and were often shot in order to prevent them eating crops and enticing away domesticated mares. The last true Tarpan died out in a Russian game preserve at Askania Nova in 1876. It has since been genetically recreated from domesticated descendants and this recreated breed is sometimes referred to as the Polish Primitive Horse. The Tarpan is mousy dun / light grey in colour with face and legs being darker than the body. Its mane and tail are flaxen but dark in the centre where the dorsal stripe passes through.[5] It stands at about 13 – 13.2 hands and, like the Przewalskii, has a large head and thick neck.

3. A heavy 'forest' horse from northwest / west Europe (*Equus Caballus Silvaticus*) that perhaps was the ancestor of today's 'heavy' breeds of horse.

Chenevix-Trench mentions a possible fourth breed, that of a white horse, inhabiting the northern tundra of Eurasia. It was contemporary with the mammoth (carcases have been found together in the same ice) and native hunters spoke of sightings as late as 1926.[6] Possibly these were similar to the wild white horses Herodotus described as grazing in the region of the Hypanis river.[7] Chenevix-Trench believes, however, that this breed of white horse, along with that of the European 'forest' horse, may have been a variety of the more familiar Przewalskii or Tarpan rather than separate breeds.[8] Bokonyi suggests that Herodotus' wild white horses were Tarpans in their winter coats.

> In the autumn, [the Tarpan] grew quantities of white downy hair and in winter its body was nearly grey, although the head, legs, mane and tail remained dark. In this way the animal's colour shaded into the snow-covered landscape. Owing to this quality, the *tarpan* may be identified as the wild white horse portrayed by Herodotus (IV: 52) as living beside the

[4] ibid 135 - 136.
[5] Originally the wild Tarpan would have had a stiff upright mane like the Przewalskii. This trait, however, does not often pass on to its genetically recreated descendants.
[6] Chenevix-Trench, (1970), 8.
[7] Hdt. 4.52.
[8] Chenevix-Trench, (1970), 8.

marshes of the Hypanis (Bug) River.[9]

Although the oldest possible evidence for the domestication of the horse appears to be from the late fifth and early fourth millennia BC the association between human and horse stretches back much further. For many thousands of years previous to domestication herds of wild horses roaming across northern Europe and Asia served as a food source for primitive humans and were hunted in great numbers.

At Solutre in France the bones of many thousands of horses, dating from a period beginning about thirty-five thousand years ago, were found in an area just a few hundred yards wide in the lee of a limestone ridge.[10] This find likely results from hundreds, if not thousands, of years of humans hunting horses by driving them over the cliff and onto the rocks below. The finds of large deposits of horse bones at ancient sites also confirms that the horse played a role as a major source of food for early humans.

As has already been mentioned, the possibility that horses could have become extinct, were it not for their domestication, is very real. While fossil finds and cave paintings tell us that the horse was a regular feature of Palaeolithic Western Europe later fossil records show a notable absence of horse remains in many regions. With the growth of forests in the post-glacial period, along with increased predation by man, the horse was gradually driven eastwards towards the western steppes of Russia, the later range of the Tarpan, and further east towards Mongolia, home of the Przewalskii horse. Neither of these breeds managed to survive wild to today. If humans had not domesticated the horse it may have become as unfamiliar to us today as it was to the American Indians when Europeans arrived in the fifteenth century A.D.

The wild horse had apparently become extinct throughout Western Europe by the post-glacial age with the possible exception of the extreme west where, increasingly, many scholars believe a substantial population of horses survived south of the Pyrenees in Iberia.[11] Traditionally the horses of the Iberian Peninsula have been divided into two groups - Celtic ponies and Iberian horses. The Celtic group is generally located in the northern regions of Iberia corresponding roughly to those areas where Indo-European Celtic peoples settled during the second millennium BC.

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[9] Bokonyi, (1978), 19 - 20.

[10] The estimation of the numbers of horse range from ten thousand [Richardson, (1998), 2] to one hundred thousand [Chamberlin, (2006), 35].

[11] Hilzheimer, (1935); D'Andrade, (1954); Goodall, (1977); Uerpmann, (1990); Gonzaga, (2004); Royo et al, (2005).

Today this group includes such breeds as the Garrano in Portugal and the Asturcon and Pottoka in Spain.[12] Genetically this group displays closer links with Northern European ponies than with the more southern Iberian group and so indicates that a strong influence in their development came from the north. This is not to say that they evolved completely from horses introduced from outside Iberia. A more likely scenario is that a small number of foreign stallions were selectively bred, over many generations, with the pick of the native Iberian mares. "This male-mediated selection could have been led by dominant human populations migrating from Central Europe to the Iberian Peninsula".[13] The Iberian group, located in the south of the peninsula, today includes the two lines of Spanish purebred horse, the Andalusian and Carthusian, along with the Lusitano and the wild (or semi-feral) Sorraia of Portugal.[14]

The Sorraia was rediscovered by the Portuguese hippologist Dr. Ruy d'Andrade in 1920 while hunting in the Coruche area of Portugal. He came across a group of about thirty horses "more than half of them light dun, some of a mouse colour, many striped and with an absolutely wild and primitive look as if they were a zebra or *hemione* [wild ass] species".[15]

Later, after exploring the Tagus valley region, the Alto Alentejo, and the Guadalquivir Valley, d'Andrade counted more than three hundred of these horses.

Whether the Sorraia rediscovered by d'Andrade is a true surviving wild horse population representative of the original Iberian horses or simply a feral population is still debated. Cordiero, however, points out that during the Middle Ages the Sorraia was known as the 'Zebro' and that a number of references from the thirteenth to the fifteenth centuries seem to depict the Zebro as a breed distinct from domestic horses. He also notes that

> Curiously, many places called 'Zebro Valley' still exist today in Portugal, between the rivers Tagus and Guadiana, always corresponding to wild and sparsely populated areas. In this same region, places known as 'the Valley of the Mares or 'the Valley of the Horses' are also found, clearly establishing the difference between the wild horse, the Zebro, and the already domesticated Lusitano horse, which descended from him.[16]

[12] Royo et al, (2005), 663.
[13] ibid 668.
[14] ibid 663.
[15] Cordeiro, (1989), 72. Cited from Gonzaga, (2004), 41.
[16] Cordeiro, (1989), 65. Cited from Gonzaga, (2004), 46.

The horse was the last of the five most common livestock to be domesticated. Sheep were first domesticated ca. nine thousand BC while goats, pigs and, cattle were first domesticated ca. seven thousand BC.[17] It appears that it was not until around four thousand BC that the horse was domesticated.

Until quite recently it was generally believed that the horse was first domesticated by the sedentary cattle-keeping peoples of the middle Dnieper region (to the north of the Black sea in modern day Ukraine). As early as the mid-eighth millennium BC the inhabitants of this region were keepers of cattle, pigs, and sheep.

> The immigrants from the lower Danube valley who introduced these animals into the region … had an even older tradition of herding. The first domesticated livestock animals, the sheep and the goat, had entered into full domestication as many as 9,000 years ago. Thus, the people who were destined to become the first horse herders were already well versed in the skills needed to handle animals.[18]

The late sixth and early fifth millennia BC saw the peoples of this forest-steppe region subsisting on a wide variety of game including wild boar, deer and aurochs. The rich soil of the region also supported fertile crops. With an increasing population and the clearance of forests, however, game became scarce and people were forced to look north for alternative sources. This region was inhabited by vast numbers of wild horses and, as a result, we see that "from 6,600 to 6,100 years ago, bones of boar, deer and aurochs become much scarcer. And in their place begin to appear vast numbers of bones of horses".[19] It was only a matter of time before man applied to the horse those methods that had already proven successful with sheep, goats, pigs, and cattle. At Dereivka on the Dnieper upwards of sixty percent of all animal bones found were identified as horse bones. Bokonyi believed that this figure could possibly suggest the beginnings of domestication.

> According to observations made in Neolithic sites in Hungry, the domestication of cattle had always been linked with large-scale hunts of the aurochs. But a complete skull, which surely originated from a domestic horse, was also found, and certain bones of the extremities too pointed to domestication.[20]

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[17] Edwards, (2002), 12.
[18] Budiansky, (1997), 37.
[19] ibid 38 - 39.
[20] Bokonyi, (1974), 82.

Not all scholars, however, accept Dereivka as a definitive example of early horse domestication. Levine claims that an analysis of the bones shows that the remains are more suited to wild rather than domestic horses.

> The vast majority, if not the totality, of the horses from Dereivka were wild and, because of the relatively high proportion dying during their most productive years, the mortality distribution that they best fit is the stalking model or a mixture of the stalking and random individual or family group models … The fact that 9 out of 10 sexable tooth rows come from males might indicate that bachelor groups were hunted or that somewhat inexperienced stallions with family groups were relatively easy to kill. Studies of equid behaviour have shown that when a family group is attacked, the stallion will turn and fight to protect his mares and young.[21]

Another region which has recently come to the fore as a possible site of early horse domestication is that of the Botai culture which dates to between 3500 and 3000 BC. At the site of Botai itself (located east of the Ishim River in Northern Kazakhstan) horses accounted for 99.9% of 300,000 identified animal bones.[22] Once again, however, it is not universally accepted that these were the bones of domesticated horses with Levine claiming that it cannot be determined either way whether they were the bones of wild or domestic horses.[23] More recent excavations in the region, however, seem to have tilted the balance in favour of their being the latter.

Excavations in 2006 uncovered evidence of a circular array of postholes in the nearby village of Krasnyi Yar, the soil within which contained ten times the level of phosphates as the soil without. Since high phosphate levels are often associated with animal manure researchers concluded that the circular array was the remains of a corral. That the animals corralled within were horses was inferred from the above mentioned discovery of the almost three hundred thousand horse bones. The presence of both skulls and backbones suggested that the horses were butchered on-site and thus were most likely domesticated rather than wild.[24]

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[21] Levine, (1999), 36 - 37.
[22] Anthony & Brown, (2000), 83.
[23] Levine, (1999), 37 - 46.
[24] For more on this recent discovery see Lovett, (2006).

CHAPTER THREE

EARLY HORSE-RIDING

The debate over where, and more importantly when, it was that horses first began to be used for 'military riding' has been on-going for many decades and does not show any sign of being conclusively settled in the near future. 'Military riding' denotes the large-scale skilled riding of horses for the purposes of war or raiding. There are two main theories within this debate. The first is that attempts at horse riding occurred from the very beginnings of domestication and that within a short space of time (a century or two) large scale 'military riding' was established. This theory thus extends the origins of military riding back as far as the fifth or fourth millennium BC. The second theory is that, while instances of riding may very well have occurred with domestication, riding did not begin to become common until the second millennium BC and that it was not until the first millennium BC, with the development of cavalry forces, that large-scale riding began to be used for military purposes.

Due to the large body of literature this debate had engendered over the years a detailed examination of all the arguments is not feasible within the bounds of this book and, therefore, the main points will have to suffice. The following account draws much upon Drews' excellent overview of the subject.[1]

Marija Gimbutas was a strong supporter of the earlier date for 'military riding'. In a series of publications from the 1960s up until her death in 1994 she put forward her theory that Indo-European languages and culture had arrived in Europe during a series of invasions by Proto-Indo-European horse warriors who swept westward from the steppe and southern Russia in a series of waves between ca. 5000 and 3000 BC.[2] Her theory, which initially drew much criticism, seemed to have gained great support when Telegin's excavations at Dereivka on the Dnieper (between 1960 and 1967) uncovered two finds which seemed to indicate that by ca. 4000 BC

[1] Drews, (2004), 1 - 48.
[2] Gimbutas, (1991), 352.