secretaries rather than emperors’ reigns (p. 188). This shows us that even if Julian indeed spent a lot of time
at his desk writing letters, had he relaxed the empire’s fate would not have been that different.


**Reviewed by Benjamin Arbuckle, University of North Carolina, Chapel Hill**

The equids, including horses (*Equus ferus/caballus*), donkeys (*Equus africanus/asinus*), hemiones (*Equus hemionus*) and their hybrids, represent one of the most important groups of animals in the ancient world. In Southwest Asia hemiones were widely hunted and domestic equids revolutionized (although perhaps not immediately) systems of mobility, transport, trade, and warfare. Despite more than century of research on the origins of these animals (especially horses) we still know relatively little about the history and domestication of the equids in Southwest Asia. This is the result of a ‘perfect storm’ of variables, including the paucity of equid remains from archaeological sites, the lack of stratigraphic integrity of many finds, and the presence of three different equid taxa in the region and the resulting difficulties in the identification of fragmentary dental and skeletal remains to the species level. Add to this the additional complication of hybrids, and equids present one of the most difficult, yet important, groups of animals in Near East faunal assemblages.

Because of the importance of this topic to students of the prehistoric and ancient Near East and the difficulties accessing the widely dispersed literature on equids in the Near East, this book by Juris Zarins with the assistance of Rick Hauser is the single most important volume on equids in southwest Asia since the publication of Meadow and Uerpmann’s two volumes of _Equids in the Ancient World_ (Wiesbaden, 1986 and 1991). Despite the fact that the core of this book represents a dissertation written by Zarins at the University of Chicago in 1974, in 2015 the book is still the best synthesis of evidence for the use of domestic and wild equids in Mesopotamia in the Bronze Age. At its core it is a uniquely integrative volume that brings together and critically analyzes zooarchaeological, iconographic and epigraphic datasets relevant to the question of equids in third millennium BCE Mesopotamia (and also adjacent regions).

It would be impressive for a scholar to present a detailed analysis of any one of these datasets, and it is truly astounding to see all three addressed at the high level of detail and competence evident in this volume. As a zooarchaeologist, I am particularly impressed with the completeness of the literature review and the high degree of critical analysis applied to the faunal literature, and to the details of technical and contentious topics relating to equid skeletal and dental morphology, from an individual whose formal training is focused on archaeology and epigraphy rather than zooarchaeology.

The book is dense and it is sometimes difficult to follow the vast amount of information that is presented. The lack of a clear chronological framework in some of the chapters (especially III) makes it challenging to follow developments through time. In this respect it still maintains many features of an encyclopedic dissertation or technical monograph rather than a more highly synthesized and streamlined book for a wide audience. Perhaps due to this, the authors have included detailed indices of both places and subjects covered in the book (pp. 367–409) which aid the reader in locating important information.

In addition to a brief introduction and conclusion, the book is divided into three main chapters, each focusing on a different type of evidence for the use of equids. In the introduction, Zarins clearly sets out the purpose of the volume, defines the members of Equidae that form the focus of the book, and provides a valuable history of research on equids in the ancient Near East. The level of detail represented in this review, especially of the archaeozoological work, is admirable and often missing in recent work on equids—especially in regards to acknowledging significant contributions of nineteenth- and early-twentieth-century scholars such as Hancar, Duerst, Hilzheimer, etc.

Although the initial draft was written some forty years ago, the book has been recently revised and updated, although the revisions are not even throughout the text. This creates a somewhat uncomfortable
situation where publications referred to as “recent” are sometimes from the 1960s (e.g., p. 4) whereas other times they may be from the 2010s (e.g., p. 3). In addition, some of the biological background of Near Eastern equids suffers from being out of date, most notably discussion of equid taxonomy and the distribution of wild horses and hemiones across western Eurasia (Figs. 0.2 and 0.3), while the recent explosion of genetic evidence is largely, although not entirely, absent.

In chapter I (pp. 11–91), Zarins presents a critical summary of the “paleozoological” (an unusual term) evidence for equids in Mesopotamia and adjacent areas. He tackles the difficult topic of the taxonomic identification of horses, donkeys and hemiones and, to a lesser extent, hybrids, based on skeletal and dental remains. He is to be commended for presenting detailed lists of traits as well as his critical evaluation of the literature, which is shown to be full of contradictions and patently incorrect identifications of equid remains. The level of engagement with the biometric data, in particular, is impressive.

Zarins presents an extremely detailed summary of the equid material recovered from sites in Mesopotamia and adjacent areas. Since the amount of work in (especially southern) Mesopotamia has been limited in the past forty years, this review is extremely relevant today, with detailed descriptions of equid remains from more than thirty sites including valuable biometric data from Kish. However, outside of southern Mesopotamia research on equids has changed more dramatically in recent years, and summaries of equids in northern Mesopotamia, the southern Levant, Anatolian and Iran must be read with caution. For example, despite the cited literature that places the wild ass (Equus africanus) in Israel and Syria in the early Holocene, there is still quite a bit of uncertainty surrounding the presence of the wild ass in this region (e.g., B. Kimura, F. Marshall, A. Beja-Pereira, and C. Mulligan, “Donkey Domestication,” *African Archaeological Review* 30/1 [2013]: 83–95). In addition, the discussion of equids from Çatalhöyük (p. 37) fails to incorporate Martin and Russell’s analysis of the equid remains from this important site (“The Equid Remains from Neolithic Çatalhöyük, Central Anatolia: A Preliminary Report,” in *Horses and Humans: The Evolution of Human-Equine Relationships*, ed. S. L. Olsen et al. [Oxford, 2006], 115–26). Recent work on the enigmatic European wild ass (Equus hydruntinus) has also clarified its taxonomic position as a hemione rather than with the donkeys or zebras, as presented in the text (e.g., E.-M. Geigl and T. Grange, “Eurasian wild asses in time and space: morphological versus genetic diversity,” *Annals of Anatomy* 194/1 [2012]: 88–102). In addition, zooarchaeological work has also clarified important details concerning the ancient geographic distribution of wild horses in southwest Asia, showing that they were present in Anatolia, Iran, northern Syria, and the southern Levant (e.g., C. Grigson, “Size Matters: Donkeys and Horses in the Prehistory of the Southernmost Levant,” *Paléorient* 38/1–2 [2012]: 194–233; L. Gourichon and D. Helmer, “Étude archéozoologique de Mureybet,” in *Tell Mureybet, un site néolithique dans le Moyen Euphrate syrien*, ed. J. J. Ibáñez [Oxford, 2008], 115–228; E. Tchernov and O. Bar-Yosef, “Animal Exploitation in the Pre-Pottery Neolithic B Period at Wadi Tbeik, Southern Sinai,” *Paléorient* 8/2 [1982]: 17–37; M. Maskhour, “Chasse et élevage au nord du plateau central Iranien entre le Néolithique et l’âge du fer,” *Paléorient* 28/1 [2002]: 27–42). Based on this work, statements such as, “It does not appear that the true horse survived the Pleistocene in Southwest Asia (only two references in the early Holocene from the Levant are known)” (p. 41) are no longer accurate.

The second half of chapter I addresses the question of equid domestication, including an interesting critical summary of the literature on the purported domestication of hemiones, the native wild ass of the Mesopotamian steppe. Zarins also describes, in great detail, evidence for the appearance of domestic horses and donkeys, providing detailed, although not always completely updated (e.g., missing Stine Rossel et al., “Domestication of the Donkey: Timing, Processes, and Indicators,” *Proceedings of the National Academy of Sciences* 105/10 [2008]: 3715–20), assessments of arguments for the origins of these animals in central Asia and northeast Africa respectively. Importantly, hybrids, including mules as well as hemione-donkey hybrids, are also discussed, and Jill Weber’s significant recent work on the hybrid equid burials from Umm El-Marra, Syria is discussed in detail.

Chapter II provides a critical review of artistic representations of equids, including wall paintings, stone and clay figurines, and stamp seals and impressions. The introduction to this chapter represents a major shift in tone and approach from the previous section on faunal remains, to one with a somewhat more vague, art historical perspective—presumably
the influence of Hauser on the text. However, the prose shifts back to Zarin’s voice in section 2.1, where he states that artistic representations are the “least reliable” (p. 97) line of evidence concerning equid identification and domestication. He then begins a critical evaluation of the interpretation of representations of equids in prehistoric and early historic periods, including recent controversial arguments for early Holocene horses in the Arabian peninsula (p. 97).

Equid depictions in the fourth millennium BC and later are approached in a less critical manner. Despite the conservative statement by Zarins at the beginning of this chapter concerning the reliability of artistic representations, he regularly attempts to identify the species represented by figurines and in seal impressions based on the morphology of the head, mane, ears, and tail of the image in question. In some cases these identifications are conservative (many are identified as hemione/donkey or simply “equid”), although there are several overly optimistic identifications of horses (e.g., Fig. 2.52; p. 123), and in one case the author reaches well beyond the evidence, stating “quite definitely . . . that a hybrid is depicted” (p. 126). Although there is good circumstantial evidence that the equids represented in images pulling elite vehicles are hybrids (probably donkey x hemione hybrids), it is important to emphasize that the actual morphologies represented in artistic representations are not sufficient to make this type of identification and the use of hybrids in the third millennium BC is something that is only just beginning to be proven with biological data.

This chapter ends with a very useful and detailed summary of glyptic evidence for equids pulling two- and four-wheeled vehicles in the fourth through the early second millennia BC in Mesopotamia, Anatolia and Iran, and also provides a thoughtful discussion of the harnessing systems represented in these images. By reviewing a large corpus of visual evidence for the representation of equids, Zarins argues that most prehistoric representations of equids likely represent the locally available wild hemione, while images with horse-like features generally become more common in the late third millennium BC in Mesopotamia (when the first clumsy images of riding equids appear) and are either absent, very rare, or limited to adjacent regions in earlier periods.

Overall, I find this the weakest and least convincing section of the book, primarily because I am skeptical of our ability to correctly identify the species represented in many (often very small and often incomplete) artistic representations. This type of over-identification is also exhibited in the discussion of Hauser’s work on clay figurines from Tell Mozan (pp. 136–37), where it is unclear how the headless and legless figures of quadrupeds presented in Figures 2.68 and 2.69 are identified as representing equids and “equids in oestrus.”

Chapter III (pp. 149–245) represents a very dense and long discussion of the cuneiform evidence for the identification, exploitation and domestic status of equids and equid hybrids in Mesopotamia. This is a challenging chapter for a non-epigrapher to deal with, but it provides a detailed summary of the ancient terminology associated with equids (particularly in concert with the appendix of translations of selected cuneiform texts) and also the difficulties and uncertainties of current translations. As an example of the latter issue, it is unclear from Zarin’s discussion whether the use of the anše sign in the late Uruk texts represents a very early reference to the domestic donkey or a more general reference to equids, perhaps the native hemione (pp. 160–61). In addition to the difficulties inherent in this specialized and somewhat archaic field, it is difficult to negotiate the chronological context of the equid terminology, since the author summarizes the use of specific terms from multiple periods extending from the late fourth through the second millennia BC.

The most important points of this chapter have to do with the terminology for horses as well as the hybrid equids that Zarins argues should be referred to as the kunga. The latter sections of this chapter provide a detailed summary of the textual evidence for the uses of equids in agriculture, transportation and warfare as well as details of equid husbandry methods. The terminology used to describe horses changes significantly through time, and it is sometimes difficult to follow the chronology of the various textual references to horses and other equids through the chapter. The term anše-zi-zi is argued to be the earliest decipherable word for horse, appearing first in several Old Akkadian texts (p. 162). Interestingly, this general chronology with references to horses appearing in the mid- to late third millennium BC fits with the broad picture derived from the zooarchaeological and iconographic evidence from Mesopotamia discussed in previous chapters. Additional early terms for horse include anše-šul-gi (Early Dynastic); anše.sibu (Old Akkadian), and anše.kur.
ra (early second millennium BC), although there is little agreement on the meaning of the first two of these terms. The last term, coming into usage after the Ur III period and translated as “equid of the mountains” (p. 177) provides a strong indication that horses were associated with the highland regions to the north and east of Mesopotamia, both in terms of their origins as well as centers of their breeding such as Hamazi, Harsamna and Der, and were relatively late imports into the lowlands.

Zarins spends considerable effort summarizing evidence that the term anše-bar-an, or kunga, refers to a highly valued equid hybrid, the breeding of which seems to have been concentrated in northern and northeastern Mesopotamia. Zarins argues convincingly that the kunga, a high-priced animal almost never associated with agricultural labor, represents a hybrid, although it is somewhat unclear from the text whether Zarins thinks this term references donkey x hemione, donkey x horse (i.e., mule or hinny), or horse x hemione hybrids, a combination of all of these, or if it is simply unknown.

In the context of creating kunga hybrids, which likely involved breeding donkeys and hemiones, Zarins provides a useful summary of textual evidence for the capture and control of wild hemiones: anšedin. From this evidence it is clear that hemiones were captured (with nets and in concealed pits), bought and sold, and incorporated into herds with domestic equids in the Early Dynastic, Old Akkadian and Ur III periods. These hemiones, often females, were apparently used for breeding (presumably with male domestic donkeys) and appear also to have been raised for meat and hides (the faunal evidence supports this). In addition, some texts also mention captive adult male hemiones used for breeding, presumably with female domestic donkeys (p. 219). This indicates that a variety of hybrids were likely produced, including female donkey x male hemione, female hemione x male donkey, or even possibly female horse x male hemione, in addition to the better-known female horse x male donkey (i.e., mule). Although it is unclear which of these is represented by the kunga, based on a combination of iconography, recent fauna work, and the economy of producing large numbers of hybrids, the first of these (female donkey x male hemione) is probably the most likely.

Chapter III ends with subsections describing in detail the husbandry techniques and uses of equids (foddering, breeding, branding, agricultural labor, riding, pulling wheeled vehicles), as well as the professionals who cared for and bought and sold these valuable animals. This represents a unique and valuable perspective into the uses of these animals in Bronze Age Mesopotamian society and the specialized nature of equid husbandry techniques in the third millennium BC.

Zarins ends the book with a concise summation and conclusion section (pp. 247–57). Some aspects, such as the discussion of the taxonomy of Equus hydruntinus, the extinct European wild ass, are out of date and incorrect, but most are just as relevant today as they were forty years ago when the first draft of this book was researched and written. For example, Zarins points out the need for more information from the crucial period of the fourth millennium BC in upland regions such as Iran (and I would add Anatolia) in order to understand the appearance of domestic horses in lowland Mesopotamia. Contrary to early twentieth century scholarship, Zarins also argues that hemiones were not in fact domesticated but were, however, regularly captured, raised, and bred with other equids to produce highly valued hybrids—the kunga chief amongst these. Moreover, Zarins provides a somewhat controversial summary for the chronology of the appearance of domestic horses in Mesopotamia. Although the argument that domestic donkeys were imported from Egypt in the fourth millennium BC is in line with current views, he hypothesizes that horses made their first appearance in the region at the same time originating from eastern Anatolia or Iran. This is in contrast to the prevailing notion that horses appeared in the mid-third millennium BC and provides an important hypothesis that needs to be tested with current data from neighboring regions, including Anatolia, northern Iran, and the Caucasus.

Despite originating outside of Mesopotamia, domestic donkeys and horses became deeply embedded into the economic, religious, and political systems of Bronze Age Mesopotamia, and this book provides a valuable overview of the complicated and dynamic relationships between humans and equids. This volume represents a great feat of scholarship, a unique example of integrating three large, unwieldy and technically challenging datasets, and should be celebrated for making Near Eastern equids, some of the most important animals in the ancient world, accessible to a much wider audience.