

Camelids do not occur in the late Miocene mammal locality of Çobanpinar, Turkey

Sevket Sen

ABSTRACT. The provenance and age of camelid remains referred to *Paracamelus* cf. *aguirrei* by van der Made *et al.* (2002, 2003) are here questioned. These authors stated that the fossil material was collected from Çobanpinar, a Late Miocene locality in Central Anatolia (Turkey). Here, we demonstrate that these fossils probably came from an archeological site near Yozgat that was investigated at the same time as Çobanpinar. This paper provides detailed information concerning the origin of the material, and discusses differences in fossilization characters and colouration between the camel specimens and the mammalian fossils from Çobanpinar.

KEY WORDS: corrigendum, Camelidae, Late Miocene, Turkey.

Sevket Sen [sen@mnhn.fr], CR2P-CNRS, Muséum National d'Histoire Naturelle, 8 rue Buffon, 75005 Paris, France

Верблюды отсутствуют в фауне позднемиоценового местонахождения млекопитающих Чобанпинар, Турция

Шевкет Шен

РЕЗЮМЕ: Происхождение и возраст ископаемых остатков верблюдов, отнесенных к *Paracamelus* cf. *aguirrei* (van der Made *et al.*, 2002, 2003) ставятся под сомнение. Согласно указанным авторам, ископаемый материал был собран в позднемиоценовом местонахождении Чобанпинар (Çobanpinar) в центральной Анатолии (Турция). Мы показываем, что эти ископаемые остатки, вероятно, происходят из археологического местонахождения вблизи Ёзгата (Yozgat), исследовавшегося в то же время, что и Чобанпинар. Приводится подробная информация о происхождении материала, а также обсуждаются различия в степени фоссилизации и окраски между костными остатками верблюдов и других млекопитающих из Чобанпинара.

КЛЮЧЕВЫЕ СЛОВА: коррекция ошибочных данных, Camelidae, поздний миоцен, Турция.

Introduction

In two papers, van der Made *et al.* (2002, 2003) reported a camelid from the Late Miocene mammal locality of Çobanpinar, in Turkey. The material consists of several fragments of a mandible belonging to a young individual. They identified this material, presumably collected at Çobanpinar, as *Paracamelus* cf. *aguirrei* Morales, 1984. I am one of the co-authors of these papers because I provided the data on the rodents and age from Çobanpinar. Later on, I realized that the camel remains were not collected at Çobanpinar, but from an archeological site near Yozgat. Since the erroneous provenance has been frequently cited in the literature, it is time to correct this inaccuracy, and to explain how this mistake happened.

The Camelidae probably originated in North America during the Middle Eocene (Honey *et al.*, 1998). They immigrated to Eurasia during the Late Miocene via the Bering land-bridge during a sea level drop identified at this epoch (Titov & Logvinenko, 2006). According to Titov (2008), the dispersal of camels in Eurasia probably occurred during mammalian zone

MN12, ca. 7–7.5 Ma ago. Their earliest records in Eurasia are from Pavlodar in Kazakhstan, from the northern Black Sea and Azov Sea coasts at localities of Sinyavskaya, Novocherkassk (Russia), Eupatoria, Odessa limestone quarry and Yablonya (Ukraine), Venta del Moro and Librilla (Spain) (Titov & Logvinenko, 2006; Titov, 2008; Morales *et al.*, 1980; Pickford *et al.*, 1995). The Spanish localities are well correlated to the MN13 mammalian zone. The correlation of other localities to MN12 or MN13 is debatable (see Titov & Logvinenko, 2006; Titov, 2008). In Turkey, camelid fossils were recovered in latest Pliocene-earliest Pleistocene localities of Sarikol Tepe (Department of Ankara, *Paracamelus* cf. *alutensis*; Kostopoulos & Sen, 1999), Gülyazi (Dept. of Afyon, *P. cf. alexjevi*, Sickenberg *et al.*, 1975), Yukarisögütünü (Dept. of Eskişehir, *Paracamelus* sp.; Becker-Platen & Sickenberg, 1968) and in the Department of Burdur (pers. com. Serdar Mayda, 2010 to V.V. Titov).

In such a context, the occurrence of a camelid at Çobanpinar (correlated to MN12 or early MN13) would, if genuine, be of great interest. Based on the papers of van der Made *et al.* (2002, 2003), several authors have

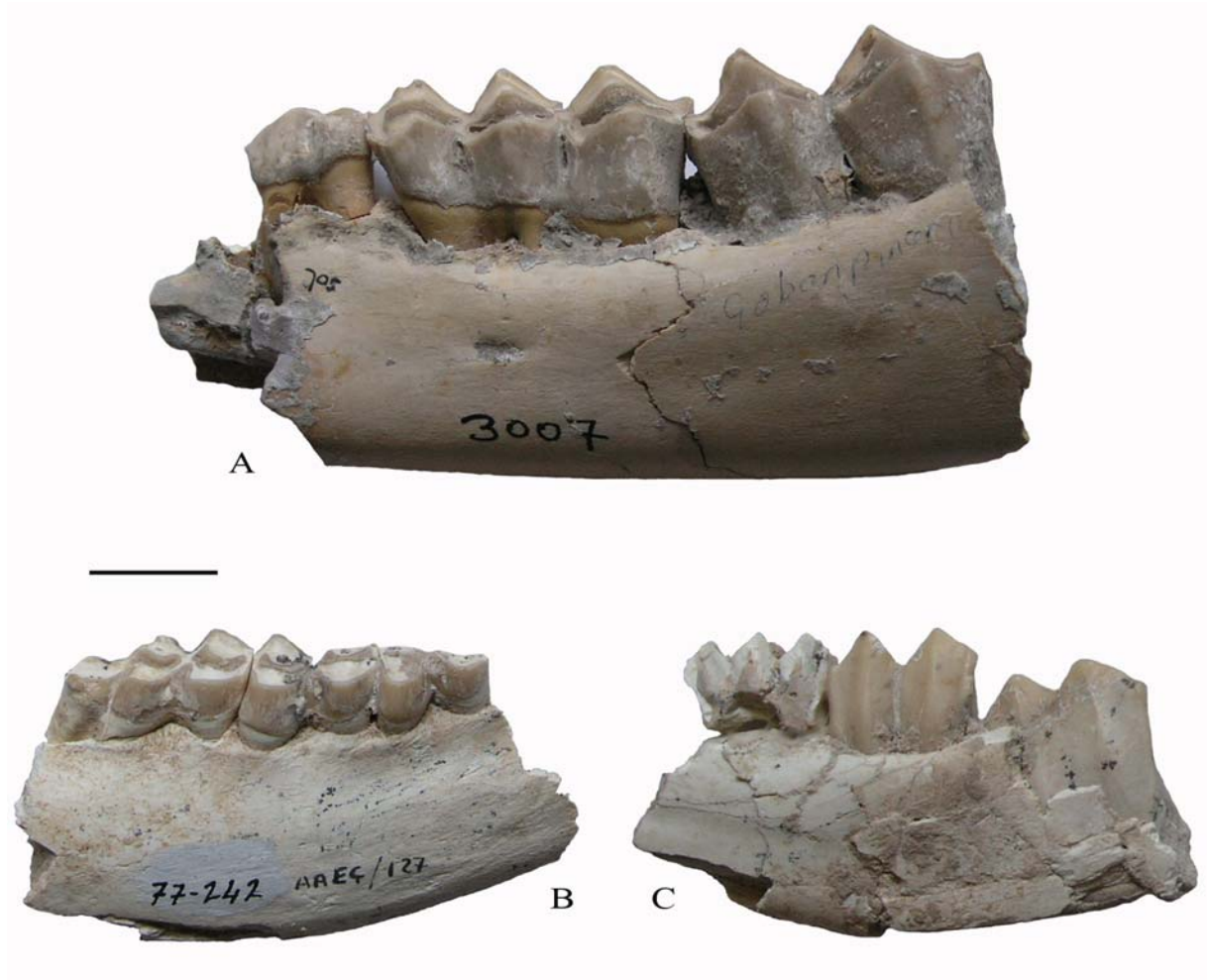


Figure 1. Comparison of the camelid mandible from Yozgat (A) with two bovid lower jaw fragments from the locality of Çobanpinar (B and C). Note the difference in colour of bones and of the matrix attached to them. Scale bar 2 cm.

already mentioned the occurrence of a camel at Çobanpinar and discussed its interest for the antiquity of camelids in Eurasia (Likius *et al.*, 2003; van der Made *et al.*, 2006; Titov & Logvinenko, 2006; Titov, 2008; Pérez-Lorente *et al.*, 2009). To avoid further interpretations of this erroneous presumed late Miocene camelid from Çobanpinar, I here provide additional details about its history and demonstrate that the camelid remains were actually collected from another site.

Çobanpinar mammal locality

The locality of Çobanpinar is situated some 50 km NW of Ankara. Its geographic coordinates are N 40°12'42.3" and E 32°32'04.9". The mammal-yielding outcrop lies on a cultivated field, to the north of the field road between the villages of Ineköy and Evciköy. At this locality, the fossils are embedded in sandy marls of a pinkish-red colour. The bones are well fossilized and are generally whitish or pinkish (Fig. 1). The fossils from Çobanpinar do not show any noticeable colour/

aspect variation as may occur in some other mammal localities. The fossiliferous horizon is part of the Kavakdere Member of the Sinap Formation (Lunkka *et al.*, 2003).

Oguz Erol discovered this locality in 1951 while studying the geology of the region (Erol, 1954) for the account of the Geological Survey of Turkey (MTA). Fikret Ozansoy, then paleontologist at MTA, started excavation at Çobanpinar the same year and continued until 1953 (Ozansoy, 1965; Sen, 2003a). Later on, several teams excavated this locality:

- In June 1967, F. Ozansoy, I. Tekkaya and I visited this locality and collected fossils exposed at the surface.

- In June 1969, the same team excavated this locality for three days, in the context of a large excavation campaign in the Kazan-Ayas area, NW of Ankara.

- In July–August 1977, a team from MTA, under the leadership of Ibrahim Tekkaya, undertook a large excavation campaign at the Sinap Formation mammal localities, including Çobanpinar. Gerçek Saraç, paleontologist at MTA, was a member of this team.

– In the framework of the “International Sinap Project” from 1989 to 1995 under the joint leadership of Berna Alpagut (Ankara), John Kappelman (Austin, Texas) and Mikael Fortelius (Helsinki), the locality was visited several times, and fossils were collected. Finally, in 1995, I collected about 60 kg of sediments from the locality to find micromammalian remains.

The material collected between 1967 and 1977 is stored at the Natural History Museum of MTA, while that of the 1989–1995 fieldwork is housed at the Anatolian Civilizations Museum, both in Ankara.

Ozansoy (1957) provided a list of mammalian taxa recovered at Çobanpınar as follows: *Choerolophodon pentelicus*, *Chilotherium persiae*, *Dicerhorhinus pachygnathus*, *Hipparion mediterraneum*, *Hipparion matthewi*, *Chalicotherium* sp., *Microstonyx erymanthius*, *Palaeoryx* cf. *pallasi*, *Tragoceros amaltheus*, *Graecoryx valenciennesi*, *Protoryx carolinae*, *Oioceros* cf. *rothi* and *Gazella gaudryi*, *Gazella deperdita*, *Gazella brevicornis*, *Helladotherium duvernoyi*, *Ictitherium hipparionum*, *Crocota eximia* and *Hystrix primigenia*. In his PhD thesis (1958), he described some of these species, but did not illustrate them. All the specimens collected by Ozansoy were lost when the MTA moved in the mid 1950s from its former building at the Adliye District to a new settlement at the Akköprü District of Ankara.

The material collected from Çobanpınar during the 1967–1995 excavations was the subject of several studies, and the following species were identified: *Schizogalerix* sp. (Selänne, 2003), “*Karnimata*” *provocator*, *Hansdebruijn* cf. *neutrum*, Muridae g. and sp. indet., *Pseudomeriones* cf. *rhodius*, *Byzantinia* sp. 1 & 2, *Tamias* sp., *Hystrix primigenia* (Sen, 2003b; Weers & Rook, 2003), *Ictitherium* cf. *intuberculatum*, cf. *Belbus beaumonti*, *Hyaenotherium wongi*, cf. *Hyaenotherium* sp., Felidae g. and sp. indet. 1 and 2 (Viranta & Werdelin, 2003), *Hipparion* sp. (Bernor *et al.*, 2003), *Chilotherium* sp., *Ceratotherium neumayri* (Fortelius *et al.*, 2003), cf. *Propotamochoerus provincialis*, *Microstonyx major* (van der Made, 2003), *Helladotherium* sp., *Tragoportax* sp., *Nisidorcus planifrons*, *Gazella* sp., *Pachytragus laticeps*, *Pseudotragus* sp. (Geraads & Güleç, 1999; Gentry, 2003). Based on the evolutionary stage of several taxa of the fauna, the Çobanpınar fossiliferous locality was correlated with mammalian zone MN12 or early MN13, i.e. Middle or Late Turolian.

The alleged camelid from Çobanpınar

In June 1995, Jan van der Made visited the Natural History Museum in Ankara. There he studied fossil suids from diverse localities of the Sinap Formation, including those from Çobanpınar, in order to prepare his contribution to a future monograph on the mammalian faunas from the Sinap Formation. During his visit, Fehmi Aslan, then curator at this museum, showed him the camelid remains said to have been collected at

Çobanpınar. The material consisted of a left mandible fragment with dp3–m1, a right mandible fragment with dp2–m1, a symphysis with right di1–dc and left i1 and root of i2, and an isolated left canine, all probably belonging to a single young individual. Astonishingly, one ramus bears the mark “Çobanpınar”, hand-written with pencil. J. van der Made and F. Aslan agreed to study these remains and to publish a paper on this material.

During the preparation phase of the “Sinap Monograph”, J. van der Made told me that he was preparing a contribution on the camelid fossils from Çobanpınar, and he asked me for data on the fossil rodents, biostratigraphy and age of Çobanpınar. I accepted co-authorship, and provided the list of rodents that I had found from the Çobanpınar sediments together with remarks on their age. As the publication of the “Sinap Monograph” took several years, J. van der Made published a first paper in 2002, and then a second in the “Sinap Monograph” in 2003.

In July 2003, I visited the Natural History Museum of Ankara, and I met there G. Saraç. He advised me that the camelid material was not collected at Çobanpınar, but at a site near Yozgat. We then went into the collections of the museum in order to examine and to compare these camelid remains with fossils from Çobanpınar. Being familiar with the sediments and fossils of Çobanpınar since 1967, I immediately recognized that he was right. After comparing these specimens with hundreds of bones and jaws from Çobanpınar that are preserved in this museum, we definitely concluded that the camelid remains must have been recovered elsewhere.

From where did these camelid remains come? In July and August 1977, a team from MTA undertook excavations at Çobanpınar, under the leadership of İbrahim Tekkaya. The team stayed at the town of Kazan, which is about ten kilometers east of Çobanpınar. During this field season, İ. Tekkaya received a letter from the head of MTA to let him know that some mammal fossils had been discovered in the Department of Yozgat in central Anatolia. Immediately, İ. Tekkaya and Gerçek Saraç decided to go to Yozgat by car to find the villager who had discovered the fossils. These fossils consisted of several bones and jaw fragments, most of them valueless for determination, including the famous camelid jaw fragments, later described by van der Made *et al.* (2002, 2003). The villager showed them the site from which he had collected these bones. They went back to Kazan (where the Çobanpınar field crew was accommodated) with the “Yozgat fossils”, and they pursued excavation in the Çobanpınar locality. All fossils collected during the 1977 summer fieldwork were carried to the Natural History Museum in Ankara.

İbrahim Tekkaya died in August 31, 1994. His field companion Gerçek Saraç continued to work as paleontologist at MTA and at its Natural History Museum in Ankara, until his retirement in 2008. He stays in Ankara.

Concerning the location from which the villager recovered these camelid remains, G. Saraç does not remember the name of the village, nor that of the villager who collected these bones (meeting in July 2003 and e-mail of May 31, 2011). He told me that the site was a small hill slope close to a village at about 3–4 km north to the Kirikkale-Yozgat main road, a few kilometers before approaching Yozgat city. He also remembers that the sediments of the site were ash like, with bone fragments scattered on the ground.

The mandible fragments referred to *Paracamelus* cf. *aguirrei* by van der Made *et al.* (2002, 2003) are barely fossilized, and instead look like subfossil bones, unlike all the specimens from Çobanpınar which display a marked fossilization. The camel specimens are yellow coloured and still bear some matrix of a grey silty clay. The bones from Çobanpınar are all white coloured and their matrix is a pink-red coloured marl (Fig. 1). Neither the state of fossilization, nor the colour of these camelid specimens or their matrix accord with the specimens recovered from Çobanpınar.

The material was identified as *Paracamelus* cf. *aguirrei*. The main arguments of these authors are: “The anterior milk molars in the specimens from Çobanpınar are small, but the DP₁ may be lacking in *Camelus*. These observations, and the large size point to *Paracamelus*” and “the material from Çobanpınar is either referable to the very large *P. aguirrei* or to *P. gigas*” (van der Made *et al.*, 2003: 120). The discussion of the morphological characters of these specimens and their taxonomic affinities is outside the scope of the present paper.

In July 30, 2003, I informed Jan van der Made by e-mail about my observations at the Natural History Museum of Ankara, and on the erroneous origin of the camelid remains. He replied the day after that this observation needs to be verified by isotopic analyses of bones and matrix both from this camelid and from other fossils from Çobanpınar. Up to today, nothing has been done. Since the publication of the two papers (van der Made *et al.*, 2002, 2003), several students mentioned the occurrence of “one of oldest camelids of the Old World” at Çobanpınar (see above). I hope that the present note will rectify this mistake, explaining how such an error was produced.

Conclusion

The camelid remains assigned to *Paracamelus* cf. *aguirrei* by van der Made *et al.* (2002, 2003) do not come from the late Miocene mammal locality of Çobanpınar, as initially stated. They were most probably collected by a villager from an archeological site near the city of Yozgat in 1977, and they were carried to the Natural History Museum of Ankara by Ibrahim Tekkaya, and erroneously stored with the material from Çobanpınar. The state of fossilization, the colour of the specimens and the matrix adhering to the specimens do not accord with those of the mammalian remains unearthed at Çobanpınar.

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