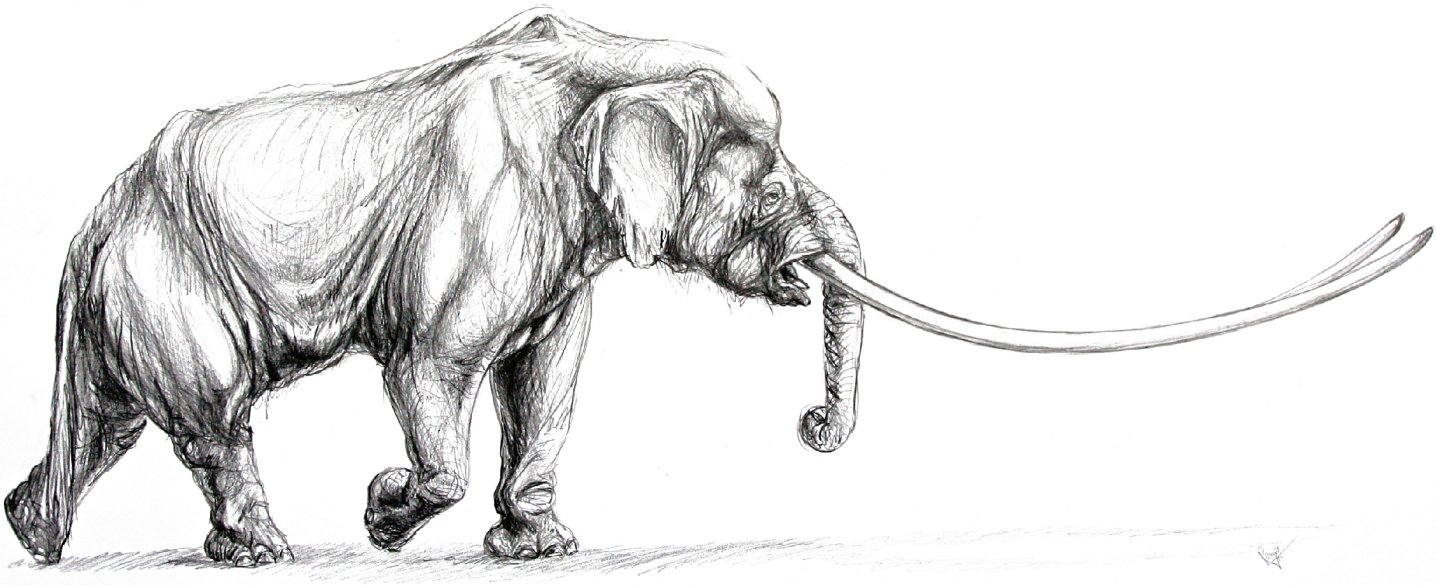
SCIENTIFIC ANNALS of the School of Geology,
Aristotle University of Thessaloniki

SPECIAL VOLUME 102



VIth International Conference on Mammoths and their Relatives

GREVENA
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GREECE 2014

ABSTRACT BOOK

Editors:
Dimitris S. KOSTOPOULOS, Evangelos VLACHOS, and Evangelia TSOUKALA

THESSALONIKI, MAY 2014

Between the feet of elephants: turtles as a common element of the associated fauna of proboscideans

Evangelos VLACHOS ✉

The Greek fossil chelonian record has been partly studied up to now, but preliminary studies have shown that the diversity of tortoises used to be much greater in the past. Interestingly, Testudines are a common element of the associated fauna of the proboscideans.

The most diverse Greek locality is the Late Pliocene site of Milia, where the zygodon *Mammut borsoni* (see Tsoukala, 2000) and the gomphothere *Anancus arvernensis* are found together with at least 3 different chelonian taxa, including terrestrial and aquatic forms. The most common is a small terrestrial tortoise, which is part of the *Testudo* s.s. group, with a partial carapace and plastral remains. The carapace preserves a posteriorly flared carapacial margin, which allows association with the *Testudo marginata* group, but is not elongated as in the present-day marginated tortoise. The second taxon is a geoemydid, preliminary attributed to the freshwater *Mauremys* sp. Finally, two specimens could be attributed to a giant terrestrial tortoise. These are a partial coracoid and a possible osteoderm that indicate the presence of '*Cheirogaster*'. The turtles and tortoises from Milia reveal that the environment of the area during Pliocene was diverse, with forested and open areas, with significant water bodies (lakes, ponds and rivers).

Other sites in Northern Greece with co-occurrences of turtles and proboscideans are Xerias, Gefira, Epanomi, Kryopigi, Platania, and Axios valley. In most cases, medium-sized to giant tortoises are found together with the proboscideans, in the humid environment of Epanomi (Pliocene, with *Mammuthus* cf. *meridionalis*, see Athanasiou and Kostopoulos, 2010) and the savannah-like environment of Axios valley (Late Miocene, with *Choerolophodon anatolicus* and *Ch. pentelici*, see Konidaris and Koufos, 2013). In other cases, Xerias (Pleistocene, with *Elephas antiquus*, see Tsoukala et al., 2011) and Platania (Late Miocene, with mastodons), small terrestrial tortoises of the *Testudo* s.s. group have been found. In southern Greece, at least three species of Testudinidae, including a giant tortoise, are found in the Late Miocene site of Pikermi, along with *Choerolophodon pentelici* (see Konidaris, 2013). These are the hinged *Testudo marmorum*, an un-hinged taxon, and the gigantic, up to 180 cm long, cf. *Cheirogaster* aff. *schafferi*. From the Pleistocene, the freshwater species *Mauremys caspica* has been documented, together with *Elephas antiquus* (see Melentis, 1961), in Megalopolis basin (Peloponnesus). In the Aegean region, giant tortoises co-occur with *Anancus arvenensis* in the Early Pleistocene site of Lesvos Island (see de Vos et al., 2002) and in the Pliocene of Rhodes Island (see Mueller-Töwe et al., 2011) and with choerolophodons in the Late Miocene sites from Samos (precise locality of the giant tortoise unknown). One of the most important co-occurrences of turtles and proboscideans is that of the Charkadio cave in Tilos Island. Along with many findings of dwarf elephants (*Elephas tiliensis*, see Theodorou et al., 2007), the preliminary study of the material revealed several postcranial remains of a small testudinid taxon (see Bachmayer and Symeonidis, 1975). The complete absence of shell remains raised questions of possible human interaction in the cave, but recent studies do not support this claim (see Michailidis et al., this volume).

Since turtles and tortoises are adapted in a variety of ecosystems and are very sensitive to the environmental changes, their detailed study can provide additional information about the reconstruction of the paleo-environment in which the proboscideans were also adapted. Specific interest is drawn upon the changes on the faunal composition of turtle assemblages since Late Miocene, which are compared with the information obtained by other well-studied mammal groups, such as proboscideans. Our data indicate that the changes in the proboscidean associations in Greece during the last 12 million years, were not followed by analogous changes in the chelonian faunas. This suggests that the various environmental and climate changes that affected the proboscidean assemblages did not cause extinction events in the more conservative turtle lineages, but rather affected their paleozoographical ranges. The only significant exception would be the extinction of the giant tortoises, which coincides with the last occurrence of *Anancus arvernensis* (in Lesvos Island, Earliest Pleistocene).

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✉ evlacho@geo.auth.gr | evlacho@gmail.com

Citation:
Vlachos, E., 2014. Between the feet of elephants: turtles as a common element of the associated fauna of proboscideans. Abstract Book of the VIth International Conference on Mammoths and their Relatives. S.A.S.G., Special Volume 102: 9.