The Proboscidea have developed an incredible diversity of forms in the Eurasian Neogene and Quaternary faunas, adapted to a variety of palaeoenvironments. Proboscidean remains are known in the Greek fossil record from the Middle Miocene to the Holocene times, attributed to several continental and insular forms. This presentation deals with the proboscidean remains that are of known stratigraphical context and come from Pliocene–Early Pleistocene faunas of this geographic area. The biochronological and palaeoecological significance of proboscidean remains in the Greek Pliocene and Early Pleistocene fossil record is discussed.

Mammut borsoni (HAYS, 1834)

It is very rare in Greece, usually known from isolated fragmentary material. All findings come from Northern Greece (DOUKAS & ATHANASSIOU 2000): a partial skeleton, including a complete mandible and two very long tusks, found in Milia (Grevena). The locality could be of Ruscinian or (more possibly) Early Villafranchian age.

Anancus arvernensis (CROIZET & JOBERT, 1828)

A rather frequent Gomphothere in the Greek fossil record. Some findings are of known stratigraphical context. SYMEONIDIS & TATARIS (1983) describe a complete, very well preserved mandible from Sésklo (Thessaly) with both M1 and M2 in situ. Its teeth have the typical anancid cusp pattern. Later on, ATHANASSIOU (1996) describes a partly preserved skull without teeth, from the same locality, that belongs to a large male. It is high with short snout. Sésklo yielded a rich mammal fauna dated in the lower MN17 (Late Pliocene).

STEENSMA (1988) reports the presence of Anancus arvernensis at Klima and possibly at Polýlakkon (Northwestern Macedonia). Klima may correspond to Early Pliocene (based on a correlation to a marine fauna), while Polýlakkon is dated in the Late Pliocene. THEODORIDOU et al. (2000) describe a juvenile cranial part from Apolakkia (Rhodes Island) with both tusks, M2, as well as the erupting M3 of both sides. It is dated in the Late Pliocene.

REFERENCES


Mammuthus meridionalis (NESTI, 1823)

This species is typical of the “Villafrianchian” fauna of Greece, and it is found in most fossil mammal localities of this stage (DOUKAS & ATHANASSIOU in press). STEENSMA (1988) describes some fragmentary dental and osteological remains attributed to M. meridionalis from the localities of Líbakos, Kapetánios, Polýlakkos and Aplólakkos Q-Profil (West Macedonia). The first locality is dated in the Early Pleistocene (possibly MNQ20), while a similar age is also probable for Kapetánios and Aplólakkos Q-Profil. Polýlakkos is dated in the Late Pliocene. ATHANASSIOU (1996) describes M. meridionalis remains from the Late Pliocene (lower MN17) locality of Sésklo (Thessaly). A partial task from Sésklo has a maximal diameter of 130 mm and a retained length of 121 cm. The specimen shows a weak torsion, which is characteristic of the species.

Postcranial material is known from Sésklo and Gerakaroú and it comprises mainly caudal bones. A pyramidal and a facet from Sésklo are of extremely large dimensions. The few postcranial remains from Gerakaroú (sternum, scapula, uninform, magnesium and phalanx I art.), indicate metrical and morphological similarities with Mammuthus meridionalis. Gerakaroú is dated at the very end of Pleistocene (end of MNQ 18). KOULOS & KOSTOPOULOS (1997).

A single elephant specimen is also known from the Late Pliocene locality of Apolakkia (Mygdonia basin, N. Greece). It is a maxillary fragment with D, D2, belonging to a young individual. According to its morphological and metrical characteristics, this specimen is placed in an intermediate position between Mammuthus meridionalis and later forms (Mammut borsoni), but a specific determination is quite difficult for the moment.

BIOCHRONOLOGY

The Early Pliocene (Ruscinian) faunas are not common in Greece, and only a couple of them include Proboscidea remains. Mammut borsoni marks the Early Pliocene faunas of Europe. Its presence in the Pliocene deposits of N. Greece is well documented, but not well dated. The species seems to survive until about the middle of the Pliocene (MN16) and it disappears thereafter.

The available Greek material of Anancus arvernensis generally represents the Late Pliocene populations of the species (though there is no dating evidence for many isolated finds). This fact could be attributed to the scarcity of Ruscinian localities in Greece. The occurrence at Sésklo, though it is not absolutely sure that the findings of the two species come from exactly the same stratigraphic level, was the latest well-documented occurrence of the species in the Late Pliocene of Sésklo.

Mammuthus meridionalis is the first representative of the family Elephantidae in Greece. It appeared during the Late Pliocene (MN17) and it coexisted for a short time period with A. arvernensis. This co-occurrence is found at Sésklo, though it is not absolutely sure that the finds of the two species come from exactly the same stratigraphic level. Anancus arvernensis and Mammuthus meridionalis may also co-occur at Polýlakkos. At the very end of Pliocene and during the Early Pleistocene Mammuthus meridionalis appears to be the only representative of Proboscidea.

PALEOECOLOGY

The successive changes in the proboscidean species plausibly reflect climatic and environmental shifts during the considered time span. The mastodonts, Mammut and Anancus, were browsers, as inferred by the bunodont morphology of their molars, and inhabited forest or woodland environments. The appearance of Mammuthus meridionalis may mark a transition from a rather wooded environment to a more open one, as this animal was less specialised and more broadly adapted feeder. This gradual environmental change caused a trend of the Mammuthus lineage during the Early Pleistocene towards more hypodont molars with more densely packed plates. The associated mammal faunas of Late Pliocene – Early Pleistocene age also indicate open and rather dry habitats, as the dominant families are the Equidae and Bovidae, while forest elements, as Cervidae or Suidae, are rare.