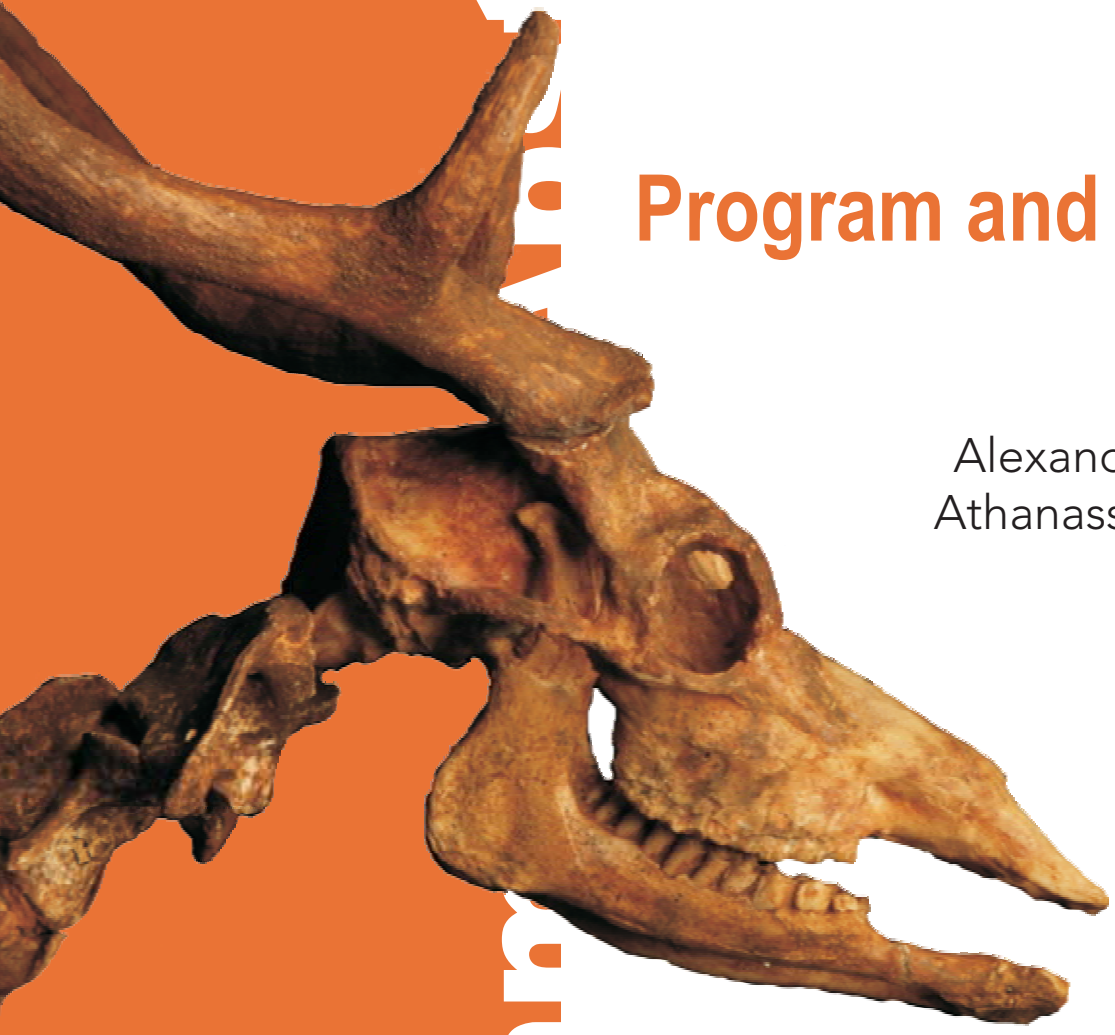
Program and Abstracts

European Association of Vertebrate Palaeontologists

9th Annual Meeting
Heraklion, Crete, Greece
14-19 June, 2011



Program and Abstracts

editors
Alexandra van der Geer
Athanassios Athanassiou

Natural History Museum of Crete
University of Crete

NCB naturalis

The mandible of *Platychoerops* sp., found in Le Quesnoy, could correspond to *Platychoerops* n. sp. announced and described by Godinot *et al.* (1998) but not yet named (Godinot pers comm.). In this case, given its well-preserved state, this mandible may be of great interest to the knowledge of this new species.

References

Godinot, M., Dutheil, D., Galoyer, A., Gheerbrant, E., Nel, A., de Ploeg, G., Russell, D.E. 1998. The Plesiadapidae across the Paleocene-Eocene Boundary in the Paris Basin. *Strata*, 9: 53-54.

New dwarf elephant material from the Pleistocene of Cyprus

Iliopoulos, G.[1,2], Athanassiou, A.[3], Konstantinou, G.[4]

[1] Department of Geology, University of Patras, Patras, Greece; iliopoulosg@upatras.gr
[2] Natural History Museum of Crete, University of Crete, Heraklion, Crete, Greece
[3] Hellenic Ministry of Culture, Ephorate of Palaeoanthropology–Speleology, Athens, Greece; aathanas@geol.uoa.gr
[4] Kerynias 6, 2200 Geri, Nicosia, Cyprus

Cyprus is a large Mediterranean oceanic Island that was inhabited during the Late Pleistocene by an endemic fauna, consisting mainly of a pygmy hippopotamus (*Phanourios minor*) and a dwarf elephant (*Elephas cypriotes*). Until now, more than forty fossiliferous localities have been found on the island (Van der Geer *et al*., 2010), the majority of which are caves, collapsed caves and rockshelters. Recently, fossil specimens of elephants and hippos were collected by one of the authors (GK) from a new open air locality, a roadcut section in the area of Xylophagou (Eastern Cyprus). The same area has already yielded fossil mammal remains (Boekschoten and Sondaar, 1972; Theodorou *et al*., 2005). The bone-bearing bed consists of well-cemented green sandstone. The fossils were found scattered in a distance of more than 500 m. The sandstone is located in the middle of a sequence with alternations of marls and thin marly limestones with *Cerastoderma* shells, overlain by coarse and poorly sorted conglomerates. The marls and marly limestones indicate deposition in a lagoonal environment. The material recovered at the new locality comprises mainly cranial and postcranial elements referred to *E. cypriotes*, including several complete molars and one complete tusk. The *P. minor* specimens are scarce at Xylophagou, unlike other Cypriot localities. In addition to mammalian specimens, a small number of bird bones that belong to a large raptor have been also collected. The discovery of a mammal-bearing bed in a lagoonal sequence can provide significant data concerning the stratigraphy and the palaeoenvironment of Cyprus during the Late Pleistocene in relation to its endemic large mammals.

References

Boekschoten, G.J., Sondaar, P.Y. 1972. On the fossil Mammalia of Cyprus. *Proceedings of the Koninklijke Nederlandse Akademie van Wetenschappen*, 75: 306-338.

Theodorou, G., Panayides, J., Tsiolakis, E., Filippidi, A. 2005. Preliminary observations on new dwarf elephant remains from the Pleistocene of Xylophagou area, Cyprus. *2nd International Congress "The World of Elephants" Sept. 22-25, 2005 Mammoth Site, Hot Springs, South Dakota, USA, Abstract Volume*.

Van der Geer, A., Lyras, G., Dermitzakis, M., De Vos, J. 2010. *Evolution of island mammals: adaptation and extinction of placental mammals on islands*. Wiley-Blackwell, Oxford: 479pp.

Hyaenid footprint from the Late Miocene of Western Crete

Iliopoulos, G.[1,2], Roussiakis, S.[3], Fassoulas, C.[2]

[1] Department of Geology, University of Patras, Greece; iliopoulosg@upatras.gr
[2] Natural History Museum of Crete, University of Crete, Heraklion, Crete, Greece; fassoulas@nhmc.uoc.gr
[3] Department of Historical Geology and Palaeontology, University of Athens, Greece; srousiak@geol.uoa.gr

Although terrestrial Miocene deposits as well as faunal and floral findings are numerous and widespread in Greek Neogene sedimentary rocks, trace fossils are sparse and are limited mainly to casts of roots and invertebrate ichnofossils. No footprints of terrestrial vertebrates and especially of mammals have been reported from the Greek Neogene to date. This is fairly strange considering that there are several important Miocene mammal localities found all over Greece. Nine terrestrial mammal localities of Miocene age have been reported from the island of Crete: five in Lassithi prefecture, one in Heraklion prefecture, two in Rethymnon prefecture and one in Chania prefecture. Their age spans from the Middle to the Late Miocene.

A new locality has recently been discovered in Western Crete where footprints of terrestrial mammals were exposed. The actual locality is situated near the village Vouves, to the west of the town of Chania. The ichnofossils come from lacustrine deposits that belong

to the Chatzi Formation. Two ichnotaxa are represented in the findings so far. The first and more impressive finding is a very well-defined footprint that can be related to a large-sized hyaenid (ichnofossil *Felipeda*). The second group of footprints are the traces of ruminant hoofs. More specifically the "hoof" traces belong to a large-sized ruminant. The hyaenid footprint (left manus) has a maximum anteroposterior diameter of 126 mm and a transverse diameter of 95 mm. It constitutes a cast where not only the imprint of the foot with the four fingers is well preserved, but also the full traces of the claws of all four fingers. This footprint can be considered as a new ichnospecies of the ichnogenus *Felipeda*. The age of nearby marine deposits of the Chatzi Formation is considered as Late Tortonian. Therefore, an equivalent age (Turolian) can also be inferred for the fossiliferous layer with the footprints. This is the first recorded case of footprint tracefossil findings from Neogene sedimentary deposits of Crete and Greece in general. In addition, these findings provide more evidence for the presence of well-established terrestrial environments and faunas in the area of Crete during the Late Miocene.

Anatomy, locomotion and constructional morphology of the polecat and the ferret (*Mustela putorius putorius* and *M. p. furo*, Mustelidae, Carnivora)

Jungnickel, S.N.[1], Frey, E.[1]

[1] Staatliches Naturkundemuseum Karlsruhe (SMNK), Department of Geology, Karlsruhe, Germany; sandra-jn@web.de, dino.frey@smnk.de

Among Mustelinae, *Mustela putorius* has a very long trunk relative to its limbs. The ratio is even higher than those of the European species of the genus *Martes*. The muscular strength and the range of movement of the body of *Mustela* is high. The thorax is conically pointed and the trunk as a whole shows great flexibility. During stance and terrestrial locomotion, the trunk is mostly held in kyphosis, the degree of which can be actively controlled. In contrast to most publications on mustelid locomotion, but partly described by Horner and Biknevicius (2010), *Mustela* very often performs almost no or only slightly inchworm-like vertical oscillations of the thoracolumbar vertebral column during slow and medium gallop up to approximately 10 km/h. The flexible thorax is supported ventrally especially by the hydraulic effect of the contracted *m. pectoralis profundus*. For the *Mustela* construction, halfbound and bound are adequate types of gallop because the trunk then is braced against torsion caused by the bouncing forces. The strong front limbs play a major role in vertical climbing and subterranean locomotion in very low but wide tunnels. *Mustela* climbs vertical structures with a walk-like striding pattern with the vertebral column held straight. On horizontal or oblique substrates, the trunk is kept kyphotic. This kyphosis results in a high centre of mass. Thus, *Mustela* often fails in the attempt to move on substrates narrower than its body or in walking downwards head first on oblique substrates with an angle of more than 25° against the horizontal plane. If the substrate does not allow claw friction or if the individual is very massive, the hindlimbs, which are weakly muscularized compared to the front limbs, may fail to support the body mass. However, a mustelid-specific muscle, *m. atlantoscapularis dorsalis*, reinforces the neck – shoulder unit especially during crawling or climbing.

References

Horner, A., Biknevicius, A.R. 2010. A comparison of epigean and subterranean locomotion in the domestic ferret (*Mustela putorius furo*: Mustelidae: Carnivora). *Zoology*, 113: 189-197.

The ontogeny of bone histology in the dwarfed island deer *Candiacervus* from the Late Pleistocene of Crete

Kolb, C.[1], De Vos, J.[2], Scheyer, T.M. [1], Sánchez-Villagra, M. R. [1]

[1] Paläontologisches Institut und Museum der Universität Zürich, Zürich, Switzerland; christian.kolb@pim.uzh.ch, tscheyer@pim.uzh.ch, m.sanchez@pim.uzh.ch
[2] Netherlands Centre for Biodiversity Naturalis, Leiden, the Netherlands; john.devos@ncbnaturalis.nl

The Late Pleistocene deer *Candiacervus* Kuss, 1975 from the Mediterranean island of Crete is an outstanding example of insular dwarfism. The smallest morphotypes are characterized by a shortening of limb bones and a higher degree of bone fusions, being typical of island ruminants (Van der Geer *et al.*, 2006). A large amount of specimens of the second smallest morphotype, *Candiacervus* sp. II (De Vos, 1979) is represented by different ontogenetic stages in specimens from Liko Cave, Crete. Humeri, femora, and metatarsals of newborn, juvenile (one to two years old), and adult specimens have been sampled histologically. This is the first bone histological examination of an ontogenetic series of a dwarfed island deer.

In humeri, femora, and fused metatarsals III+IV of juveniles and adults growth marks are present. Ontoge-