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***EARTH SYSTEM EVOLUTION AND THE MEDITERRANEAN
AREA FROM 23 MA TO THE PRESENT***

ABSTRACT BOOK

The Late Miocene mammal fauna of Samos, Greece. The Mammalian Fauna and its homogeneity

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The mammalian fauna from the Late Miocene localities of Samos is very rich, including thousands of fossil specimens dispersed today in various European and American museums and institutions. Among them, only the Forsyth-Major's collection in Lausanne and London and the Brown's collection in the American Museum of Natural History (AMNH) permit correlation with local stratigraphy. The lack of stratigraphic information, the mixing of the old material and the uniqueness of several Samos specimens arise important doubts concerning the mammal taxonomy, the age of the fauna and its homogeneity. The new Samos campaign (1993-2008) lead to a new, well stratified and accurately dated fossil collection that allows a revised taxonomy of the Samos mammal fauna and a reconsideration of its evolution through time.

Most of the fossiliferous sites are located in Potamies and Adrianos ravine, yielding mainly large mammals, some micromammals, a few reptiles (turtles, varanes) and some continental mollusks. The entire new collection is housed in the Aegean Museum of Natural History located in the village of Mytilinii, Samos. The updated faunal list of the new sites is:

Mytilinii-1 (MLN): *Hyaenictitherium* cf. *wongii*, *Protictitherium crassum*, *Hipparion* aff. *proboscideum*, *Hipparion* aff. *prostylum*, "*Diceros*" *neumayri*, *Palaeotragus rouenii*, *Palaeotragus* sp., *Samotherium boissieri*, *Gazella pilgrimi*, *Tragoportax* sp., *Miotragocerus* sp., ?*Palaeoryx* sp.

Mytilinii-3 (MYT): "*Diceros*" *neumayri*, *Dihoplus pikermiensis*, *Ancylotherium pentelicum*, *Hipparion* cf. *proboscideum*, *Hipparion* cf. *forstenae*, *Hipparion prostylum*, *Hipparion* cf. *matthewi*, *Samotherium major*, *Sporadotragus parvidens*, *Gazella pilgrimi*, *Skoufotragus zemalisorum* n. sp., *Palaeoryx* sp., ?*Majoreas* sp.

Mytilinii-1A (MTLA): *Pseudomeriones pythagorasi*, 'Karminata' *provocator*, *Spermophilinus* cf. *bredai*, *Adcrocuta eximia*, *Hyaenictitherium wongii*, *Machairodus giganteus*, *Metailurus parvulus*, *Parataxidea maraghana*, *Zygodon turicensis*, *Orycteropus gaudryi*, "*Diceros*" *neumayri*", *Dihoplus pikermiensis*, *Ancylotherium pentelicum*, *Hipparion brachypus*, *Hipparion dietrichi*, *Hipparion proboscideum*, *Hipparion* cf. *matthewi*, *Hipparion* cf. *forstenae*, *Microstonyx major*, *Palaeotragus rouenii*, *Samotherium major*, *Helladotherium duvernoyi*, *Gazella pilgrimi*, *Gazella* cf. *capricornis*, *Gazella mytilinii*, *Miotragocerus valenciennesi*, *Sporadotragus parvidens*, *Skoufotragus laticeps*, *Palaeoryx pallasii*, *Urmitherium rugosifrons*.

Mytilinii-1B (MTLB): *Pseudomeriones pythagorasi*, *Spermophilinus* cf. *bredai*, *Pliospalax* cf. *sotirisi*, *Plioviverrops orbigny*, *Hyaenictitherium wongii*, *Choerolophodon pentelici*, *Orycteropus gaudryi*, "*Diceros*" *neumayri*, *Ancylotherium pentelicum*, *Hipparion brachypus*, *Hipparion dietrichi*, *Hipparion proboscideum*, *Hipparion* cf. *matthewi*, *Hipparion* cf. *forstenae*, *Palaeotragus rouenii*, *Palaeotragus* sp., *Samotherium major*, *Gazella pilgrimi*, *Gazella* cf. *capricornis*, *Gazella mytilinii*, *Miotragocerus valenciennesi*, *Tragoportax rugosifrons*, *Skoufotragus laticeps*, *Palaeoryx pallasii*, *Palaeoryx majori*.

Mytilinii-1C (MTLC): *Hyaenictitherium* cf. *wongii*, *Pliohyrax graecus*, *Samotherium major*, *Miotragocerus valenciennesi*, *Gazella* cf. *capricornis*, *Palaeoryx majori*.

Taxonomic novelties are the presence of the carnivoran genus *Protictitherium* that was traced for first time in Samos, the establishment of the new genus *Skoufotragus* (partly based on the old-fashioned *Pachytragus*) with a new species *Skoufotragus zemalisorum*, the identification of six *Hipparion* species, the taxonomic distinction between *Samotherium boissieri* and *S. major*, the latter co-existing with *Helladotherium*, the discrimination between four *Gazella* species and the amended morphology of *Pseudomeriones* and *Urmiatherium*.

Two different opinions have been formulated about the Samos fauna: that of a single, homogeneous and isochronous assemblage and that of two different chronofaunas. Elaboration of the new data with respect to the old collections allows recognizing four chronologically succeeded mammal assemblages reflecting a “four stages-of-evolution” scheme.