DISTRIBUTION AND MIGRATION OF TERTIARY MAMMALS IN EURASIA

A THREE-DAY INTERNATIONAL CONFERENCE IN HONOUR OF HANS DE BRUIJN

THE UNIVERSITY OF UTRECHT

ABSTRACT VOLUME
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ABSTRACT VOLUME

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First Carnivore Remains (Felidae and Hyaenidae) from the Late Miocene of Kerassia (North Euboea, Greece).

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Since 1992 the systematic excavations carried out by Athens University near the village of Kerassia in Northern Euboea brought to light seven fossiliferous sites, very rich in Late Miocene mammals. In this report the first carnivore remains from the sites Kerassia 1 (K1), Kerassia 3 (K3) and Kerassia 4 (K4) are presented.

Felidae
The large felid *Machairodus giganteus* is represented by an upper canine, an almost complete mandible and a complete radius, all from the K4 site. A mandible from K1 shows considerable similarities to *Metalurus parvulus*, but its fragmentary nature makes its specific determination difficult. It is attributed to *Metalurus cf. parvulus*

Hyaenidae
The hyaenid findings include *Adcrocuta eximia* in K4. The *A. eximia* findings from K4 include two well preserved skull portions, one of these with its associated mandibles. A fragmentary upper carnassial from K1, could be referred also to *A. eximia*, but not without hesitations. An ictitherial mandible from K3 is referred as cf. *Ictitherium pannonicum*, a species relative rare in Eurasia. Certain postcranial material from K3 can be attributed to *Plioivervrops* sp. They show similarities to *P. orbignyi* from Pikermi.

The excavations, financed by the G.S.R.T in Athens and the local municipality of Nilea, are still in progress.

<table>
<thead>
<tr>
<th>KERASSIA</th>
<th>K1</th>
<th>K3</th>
<th>K4</th>
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<tr>
<td><strong>Carnivora</strong></td>
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<td><em>Machairodus giganteus</em></td>
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<td><em>Metalurus cf. parvulus</em></td>
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<td><em>Adcrocuta eximia</em></td>
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<td>cf. <em>Ictitherium pannonicum</em></td>
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<td><em>Plioivervrops</em> sp.</td>
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references:
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First carnivore remains from the Late Miocene of Kerassia (Northern Euboea, Greece)

by

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The excavations carried out the last years in Kerassia, brought to light many fossiliferous sites. The carnivores of the sites K1, K3 and K4 are discussed in this paper. Kerassia 1 (K1) includes *Metallurus cf. parvulus* and possibly *Adcrocuta eximia*; Kerassia 3 (K3) includes *Pliozivarrops* sp. and *Ictitherium pannonicum*; and Kerassia 4 (K4) includes *Adcrocuta eximia* and *Machairodus giganteus*. The carnivores as well as the rest faunal composition of these localities indicate an early to middle Turolian age.

The described carnivores from K1, K3 and K4 are in accordance with a Turolian age for these sites. Most of the species have a stratigraphic range from early Turolian (MN 11) to late Turolian (MN 13). A. eximia is very common in the middle Turolian but rarer in the early or late Turolian (Howell & Petter 1985). Especially in Greece, A. eximia seems absent from the late Turolian localities, as those of Dytiko (Bonis et al. 1996, Koufos 2000). The same is true for the rarer M. giganteus, that is absent from Dytiko. Both species are present in the Main Bone Beds of Samos (Bernor et al. 1996), dated about 7,1 Ma (Swisher III 1996), while A. eximia is also present in the older White Beds of Samos (Bernor et al. 1996, Swisher III 1996). According to the recent calibration of the MN zones (Steininger et al. 1999) the Main Bone Beds of Samos can be placed in MN 12. Except the discussed carnivores, the K1 faunal list includes also a Tragoportax that shows similarities to Tragoportax amalthea (Roth & Wagner, 1854), species known from the early and middle Turolian (Gentry et al. 1999). From the above given data and the rest of the fauna an early to middle Turolian age can be accepted for the fauna of Kerassia.
**Hyaenidae** (Gray, 1821) Gray, 1869

**Subfamily:** Hyaeninae (Gray, 1869) Mivard, 1882  
**Genus:** *Adcrocuta* Kretzoi, 1938  
*Adcrocuta eximia* (Roth & Wagner, 1854)

**Localities:** Kerassia 4 (K4) and Kerassia 1 (K1)

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**Family:** Hyaenidae (Gray, 1821) Gray, 1869  
**Subfamily:** Ictitheriinae Dietrich, 1927  
**Locality:** Kerassia 3 (K3)

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**Plioviverrops** sp., Kerassia 3.  
Distal epiphysis of a right femur (K3/B1/15), juvenile, distal view.  
Left humerus (K3/B1/4), anterior view.  
Head of a left humerus (K3.206), juvenile, proximal view.  
Right calcaneus (K3.192) medial view.  
Left Mt IV (K3.191), lateral view.

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Logarithmic ratio diagram comparing the upper dentition of the Kerassia 4 *Adcrocuta* with *A. eximia* and *C. bonisi* from various localities. *H. hyaena* (standard) according to Howell & Petter (1980). Data for the Axios, Ravin des Zouaves 5 and Ravin de la Pluie hyaenids according to Koufos (2000).

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**cf. Ictitherium pannonicum,** Kerassia 3, right mandibular ramus (K3/204), labial view

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Logarithmic ratio diagram comparing the lower dentition of the Kerassia 4 *Adcrocuta* with *A. eximia* and *C. bonisi* from various localities. *H. hyaena* (standard) according to Howell & Petter (1980). Data for the Ravin des Zouaves 1 & 5, Dytiko 1 and Ravin de la Pluie hyaenids according to Koufos (2000). *A. eximia* from Halmyropotamos according to Melentis (1968).

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**Felidae** *(Fischer von Waldheim, 1817)* Gray, 1821

**Subfamily:** Machairodontinae Gill, 1872  
**Genus:** Machairodus Kaup, 1833  
*Machairodus giganteus* (Wagner, 1848)  
**Locality:** Kerassia 4 (K4).

Logarithmic ratio diagram comparing the Kerassia 4 *Machairodus* with *M. giganteus* and *M. aphanistus* from various localities. *M. aphanistus* from Eppelsheim, Soblay and Charmoille according to Beaumont (1975), *M. giganteus* from Samos and *M. ex gr. giganteus* from Baccinello according to Rook *et al.* (1991), *M. giganteus* from Ravin X according to Koufos (2000), *M. giganteus* from Pikermi according to the authors.

Logarithmic ratio diagram comparing the Kerassia 4 *Machairodus* with other species. *M. aphanistus* from Eppelheim (standard) according to Beaumont (1975), *M. tingii* and *M. palanderi* according to Zdansky (1924), *M. alberdiae* according to Ginsburg *et al.* (1981), *M. pseudailuroides* according to Schmidt-Kittler (1976) and *M. kurteni* according to Sotnikova (1992).

**Subfamily:** Machairodontinae Gill, 1872  
**Genus:** Metalurus Zdansky, 1924  
*Metalurus cf. parvulus* (Hensel, 1862)  
**Locality:** Kerassia 1 (K1).

Logarithmic ratio diagram comparing the Kerassia 1 *Metalurus* with *M. parvulus*. 