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Correlation of Turkish and Greek mammal localities and magnetostratigraphic data

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The two countries of the Aegean area, Greece and Turkey, have large Neogene basins covering more than 50% of their land surface by continental deposits. About 400 Neogene mammal localities are listed in Turkey, and a hundred in Greece. The Greek Neogene mammalian faunas are reasonably well documented thanks to efforts of old and young paleontologists on more than one and half centuries. This is not the case in Turkey; most of mammal localities are known with preliminary lists, although some reliable efforts have been done since three decades. However, detailed systematic studies on Turkish Neogene mammals exist on some key localities and taxonomic groups (rodents, insectivores, carnivores, proboscideans, etc.), allowing to bring in light some key mammalian events.

The present data show that the correlation of the Aegean mammalian faunal successions with the European Neogene Mammal Chronology (ELMA-ages and MN-zones) remains unsatisfactory. For many intervals of the Neogene, the first and last occurrence datums of taxa are not well documented yet because of insufficient systematic studies and/or radiometric and magnetostratigraphic datings. Moreover, the faunal communities from this area are merely different from that of western Europe, except a few elements in common at genus and species level. This makes the identification of HRI intervals suggested by the EEDEN Committee complicated as well as to use the western European criteria to enlighten the time resolution of mammalian events included in these intervals.

When complete faunas are studied, it is generally observed that the correlation with MN-zones remains a problem, because there are no key elements recognizable. Thus, in the Eastern Mediterranean area it is difficult to use accurately the European zonation; on the other hand there is no other mammal zonation to correlate. Magnetostratigraphic work should help to solve these problems.

Some key localities were pointed out (Fig. 1):
Chios (early Middle Miocene): MN5 faunas from three successive horizons and magnetostratigraphic correlation to C5Br.
Sinap: the lower part of the section is without *Hipparion* which first occurs near the base of C5n at ca. 10.6 Ma.
Igbek: a late Vallesian fauna.

Kavak Dere: the main fossiliferous horizon including Loc. 26 is dated to middle Turolian.
Axios valley (near Thessaloniki): Magnetostratigraphy produced only tentative correlation to the late Vallesian (Xirohori and Ravin de la Pluie) and to the early-middle Turolian (Vathylakkos, Ravin des Zouaves 5 and Prochoma). The sections in this basin are too short for reliable magnetostratigraphic studies.
Comparison of the first apparence datum of some key taxa in Spain and Eastern Mediterranean points to great differences in age:

Hipparion:	Spain: 11.1 Ma	Eastern Mediterranean: 10.6 Ma
Muridae:	10.1 Ma	9.6 Ma

These results raise the question of the diachrony of faunal events and mammalian migrations between Eastern and Western Europe.

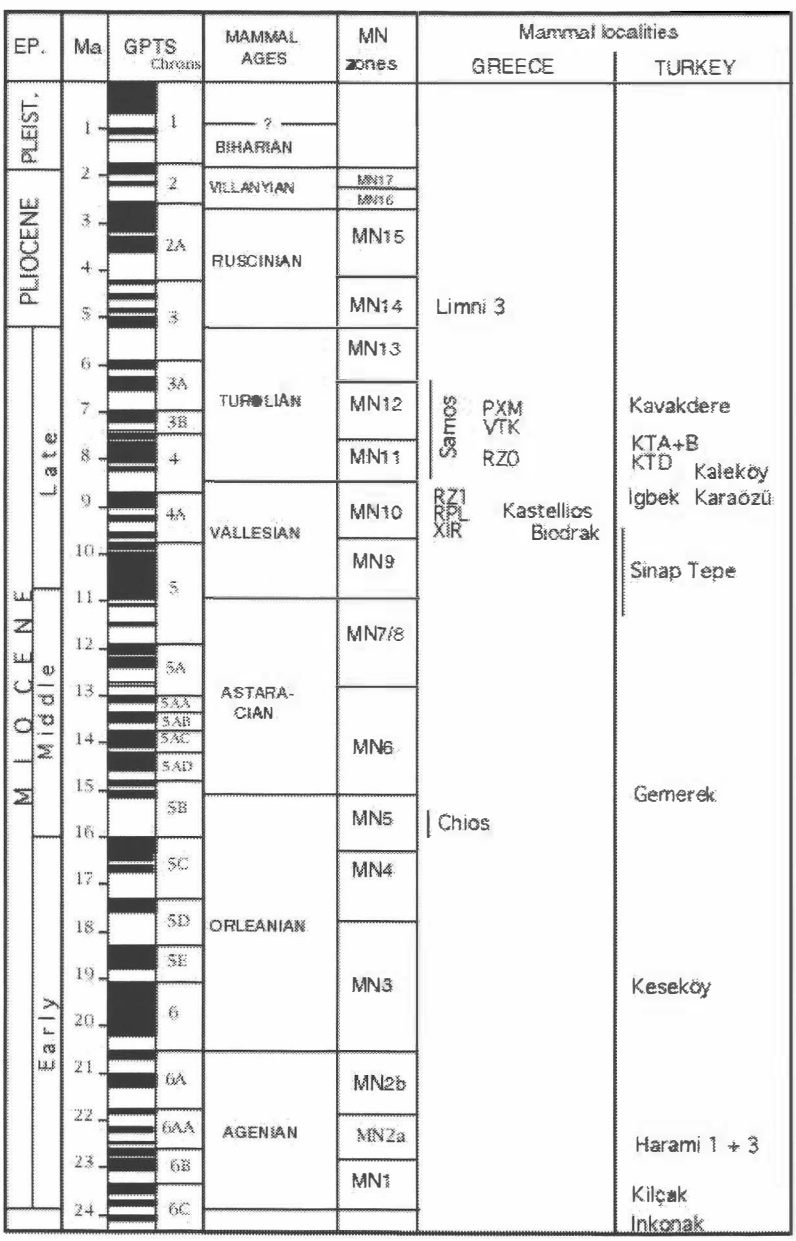

Fig. 1: Some key mammal localities from Greece and Turkey dated by magneto-stratigraphy.