

THE ANATOLIAN - EUROPEAN
TRANSITION ZONE ON
AEGEAN ISLANDS

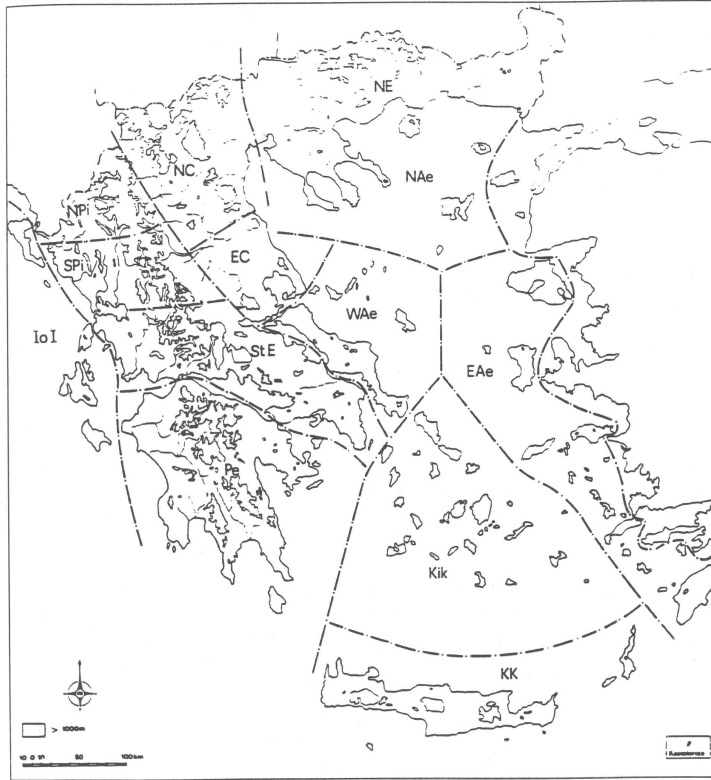
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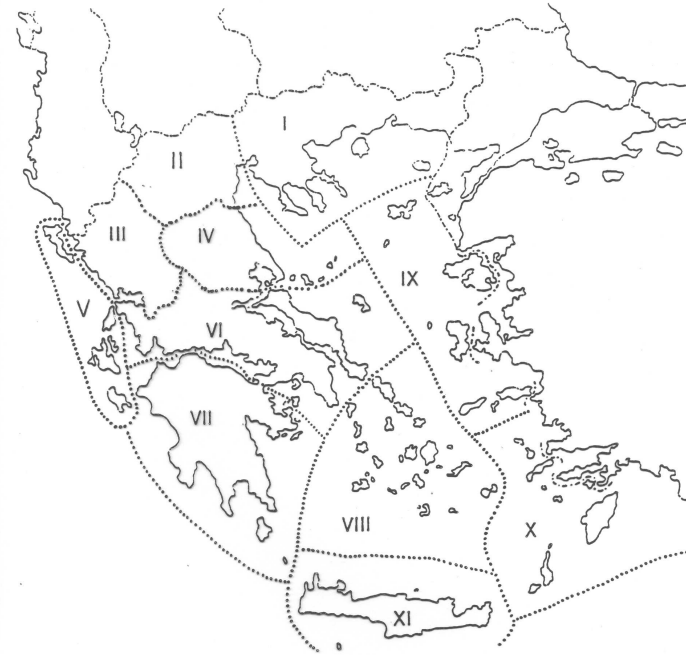
*8th International Congress on the Zoogeography and Ecology of Greece and Adjacent
Regions, Kavala, 17-21 May 1999*

Abstract

It is generally accepted that the biogeographical boundary between the Anatolian and the European fauna in the Aegean area lies somewhere between the coasts of Asia Minor and the Greek mainland. In order to study this zone in more detail, the distribution areas of a number of taxa (including mammals, reptiles, amphibians, terrestrial molluscs, terrestrial isopods and insects) that have their eastern or western boundaries in this transitional area, were analysed and compared. The results are discussed taking into account the ecology of these taxa and the paleogeographical history of this area. It seems that there are two major boundaries, one west of the eastern Aegean islands and one north of Crete and the Dodecanese. Several minor boundaries are also apparent.



Phytogeographical regions of Greece. KK: Kriti and Karpathos, Cyc: Cyclades, EAe: East Aegean Islands, WAe: West Aegean Islands, NAe: North Aegean Islands, IoI: Ionian Islands, Pe: Peloponnisos, StE: Sterea Ellas, EC: East Central Greece, SPI: Southern Pindos, NPI: Northern Pindos, NC: North Central Greece, NE: North East Greece.



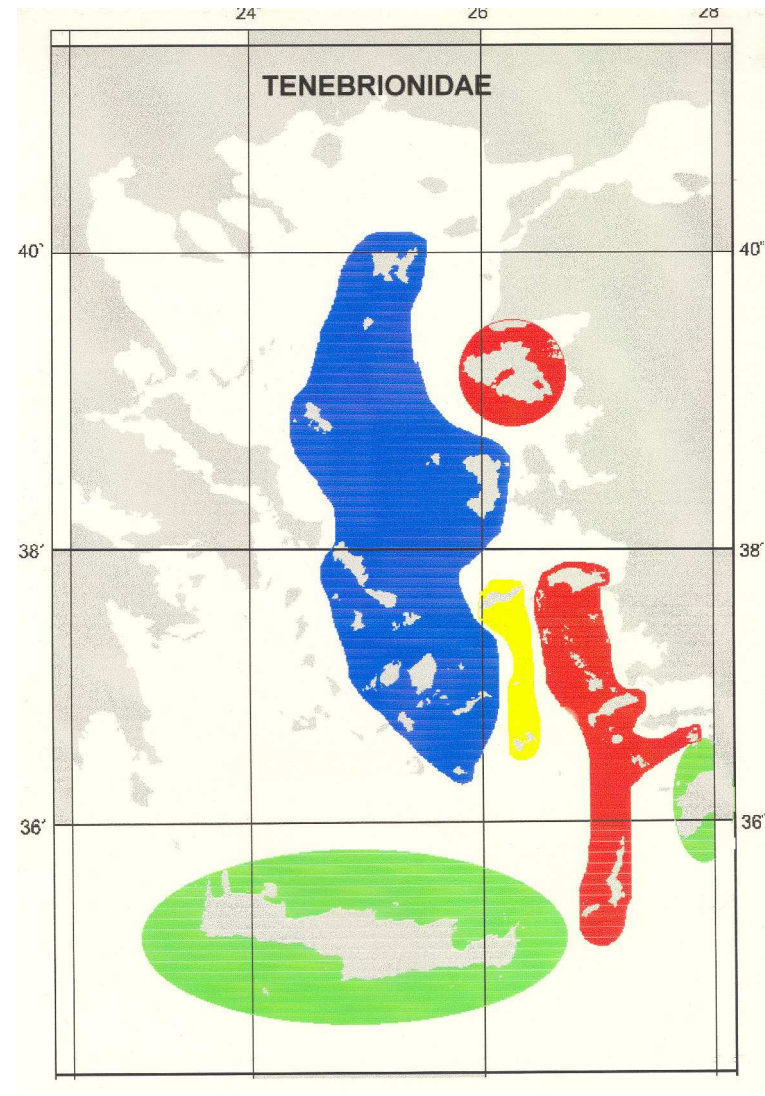
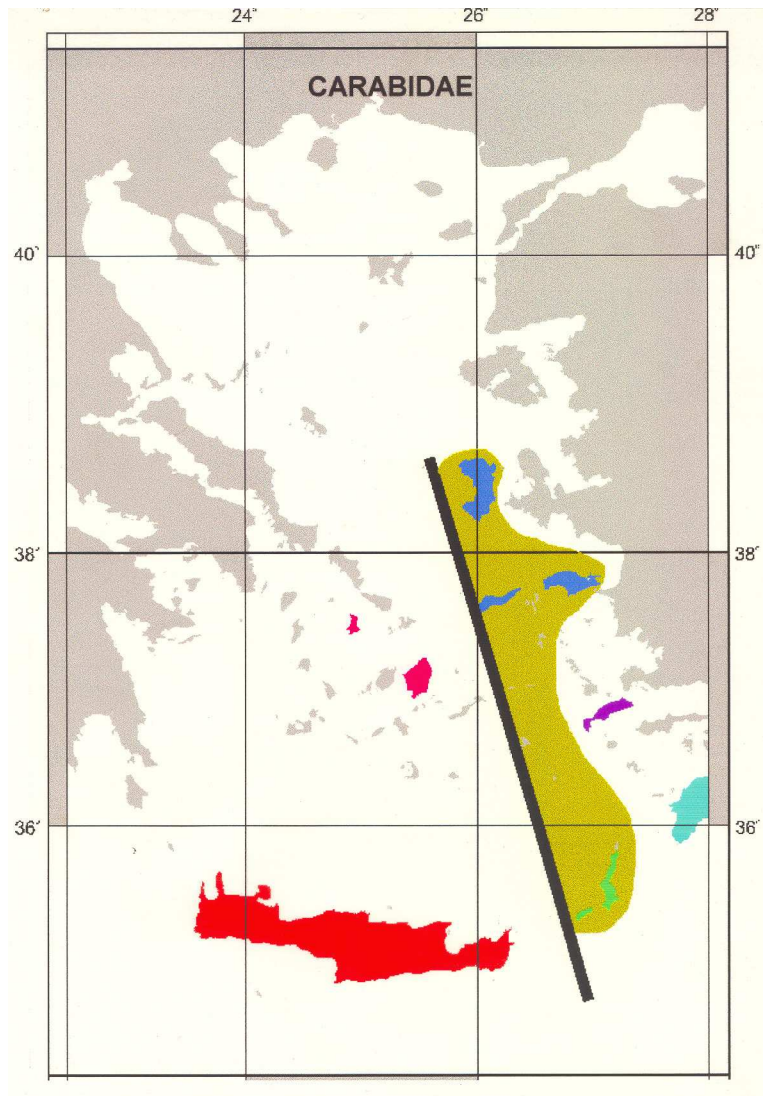
Zoogeographical regions of Greece. Modified after (a) W. Kuehnelt, 1965. *Catalogus Faunae Graeciae. Pars I. Tenebrionidae*, and (b) F. Willemse, 1984. *Catalogue of the Orthoptera of Greece. Fauna Graeciae I. Hellenic Zoological Society*. (I: Voreia Anatoliki Ellada, II: Voreia Dytiki Ellada, III: Ipeiros, IV: Thessalia, V: Ionia nisia, VI: Sterea Ellada, VII: Peloponnisos, VIII: Kyklades, IX: Voreio Aigaio, X: Dodekanisa, XI: Kriti)

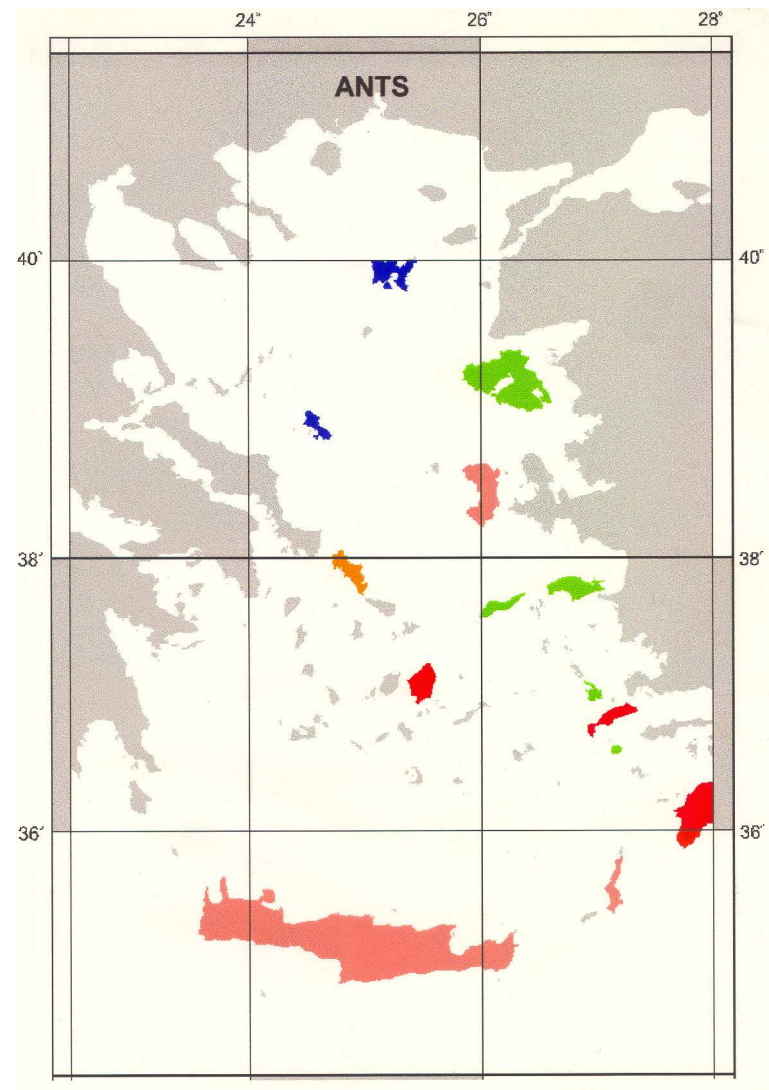
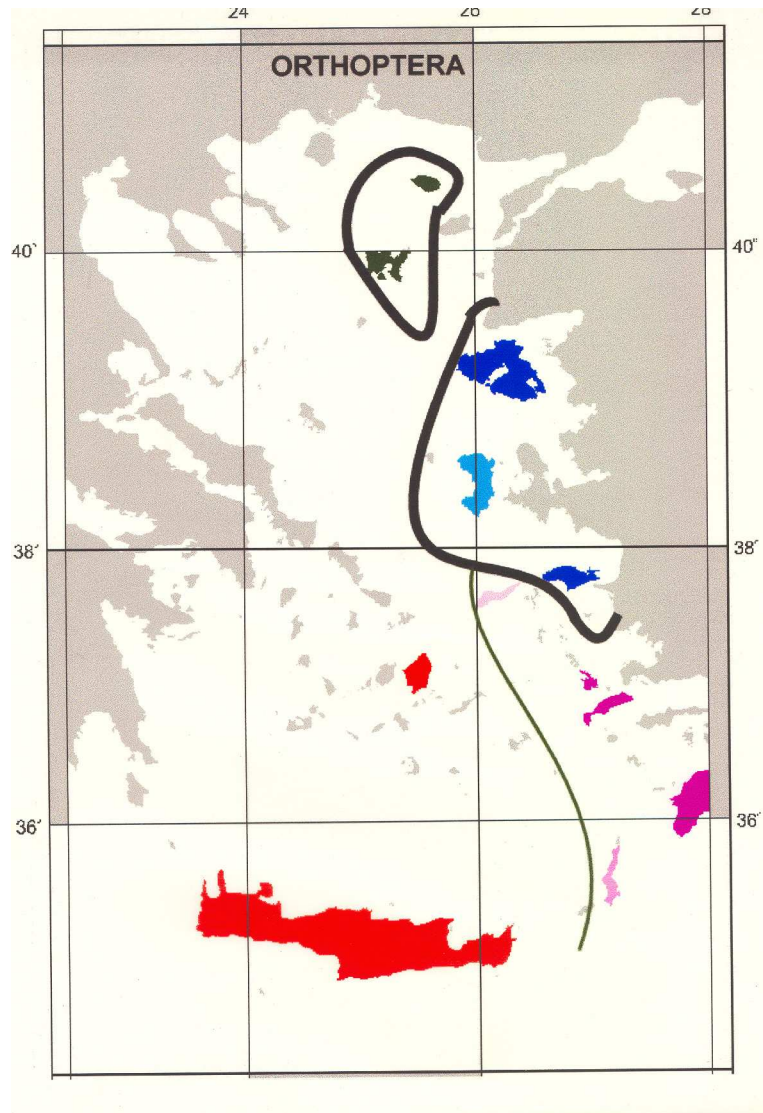
The following groups were used in the analysis

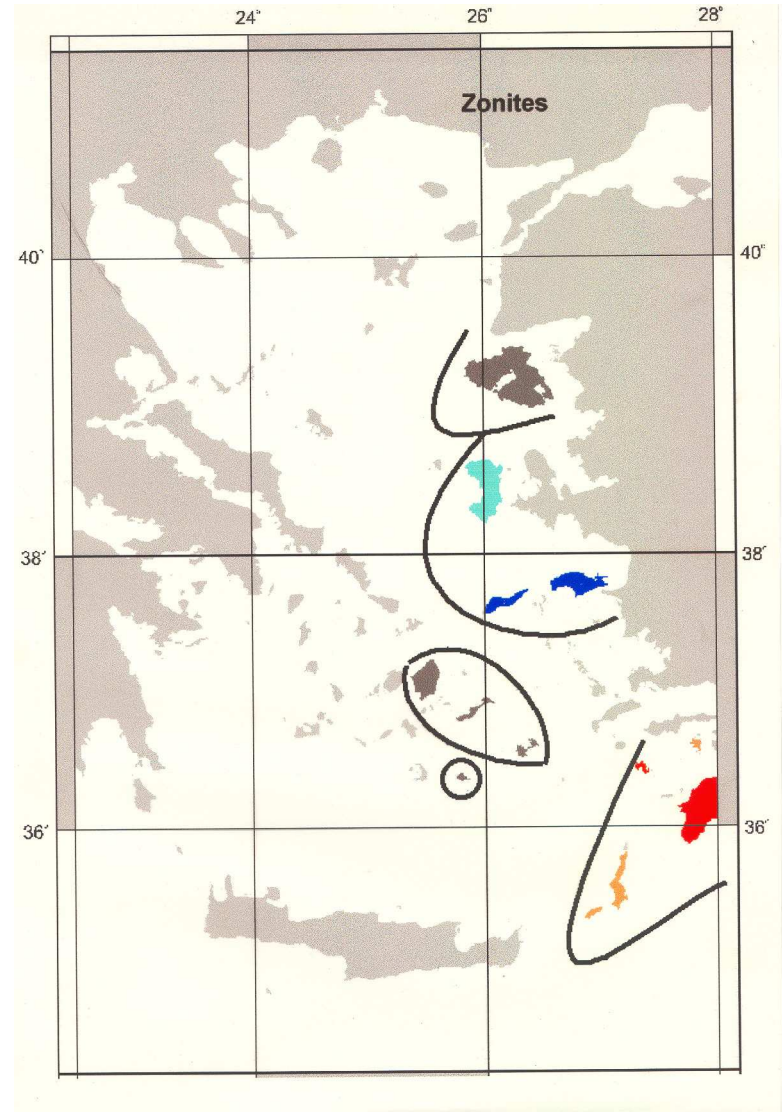
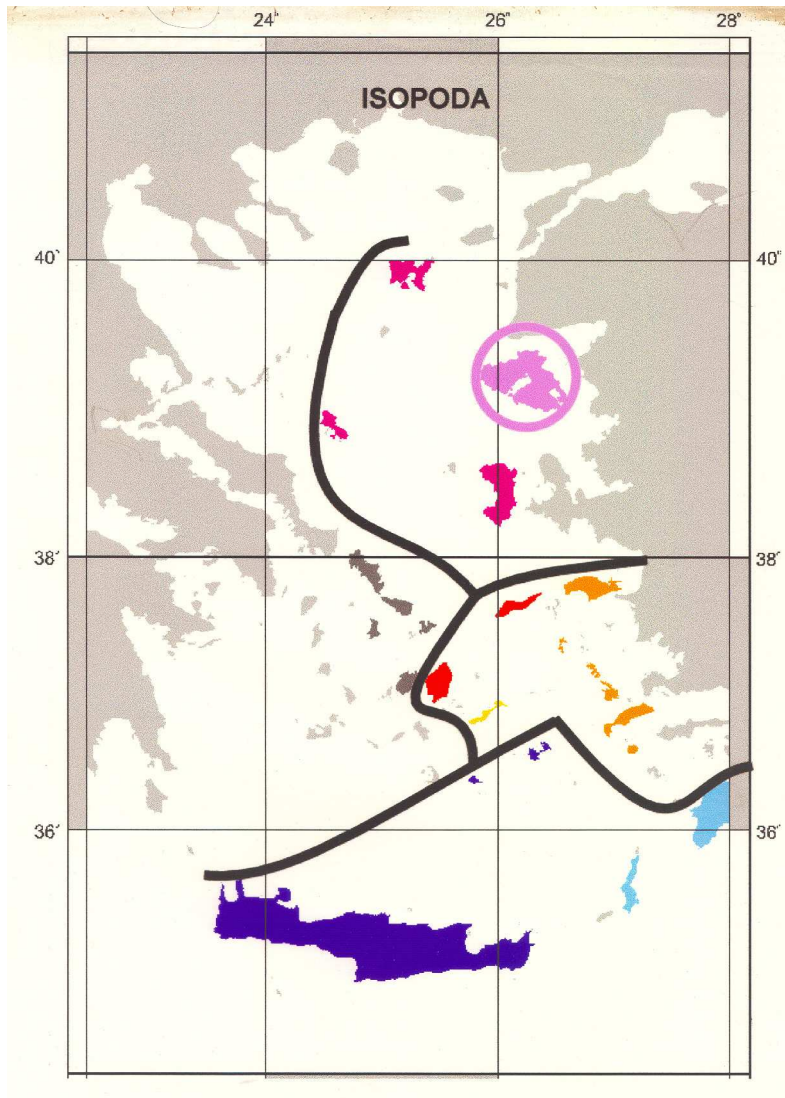
- Coleoptera:
 - Tenebrionidae
 - Carabidae
- Orthoptera
- Ants
- Terrestrial Isopods
- Land Molluscs
- Reptiles

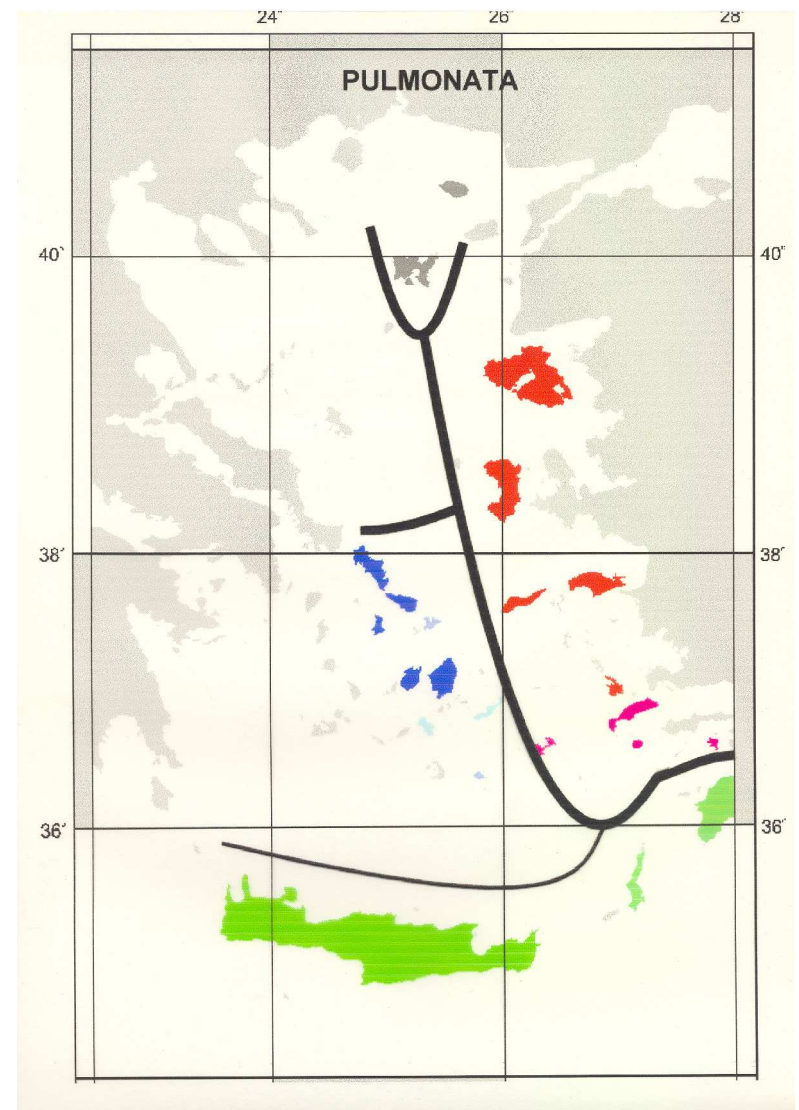
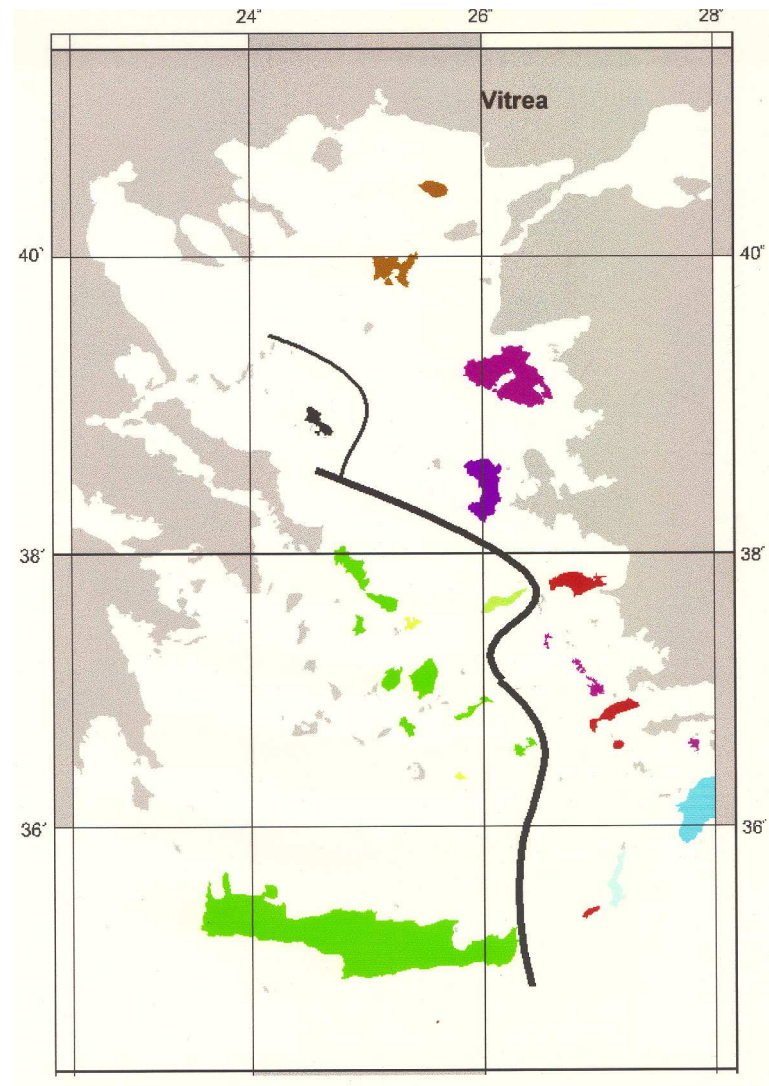
Presence-absence matrices were used to cluster the various regions of the area.

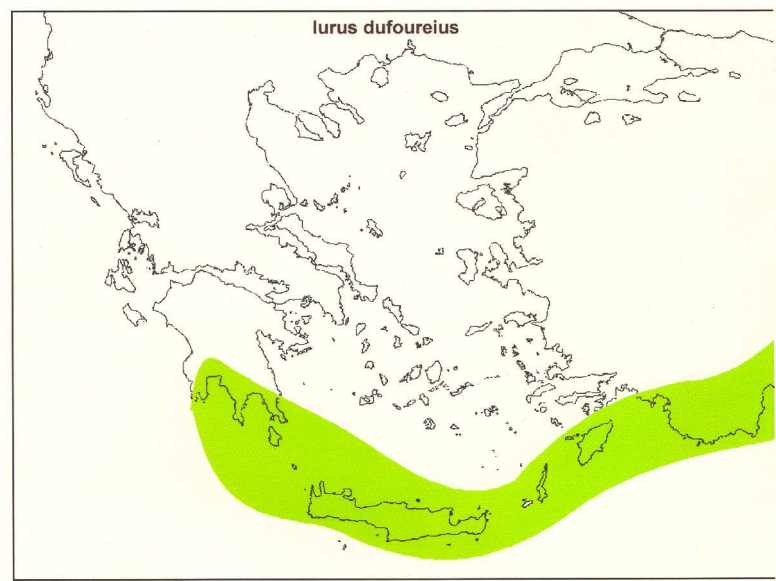
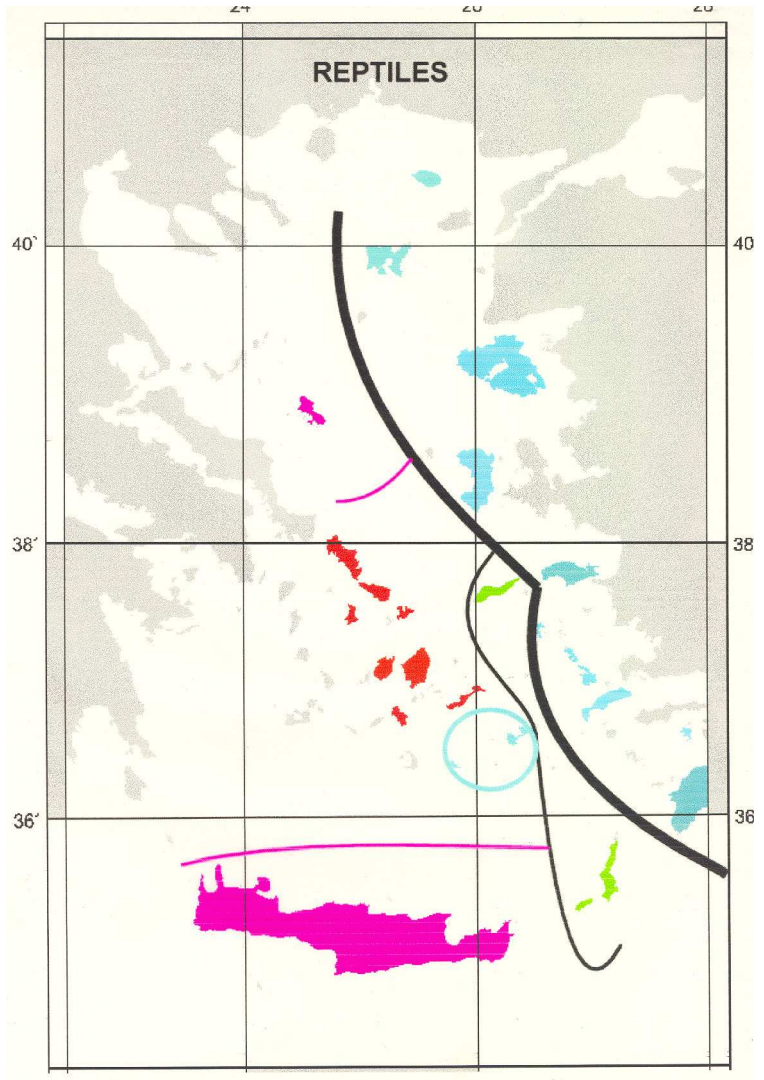
The Jaccard index was used to create a similarity matrix.
The UPGMA method was used to cluster the regions.

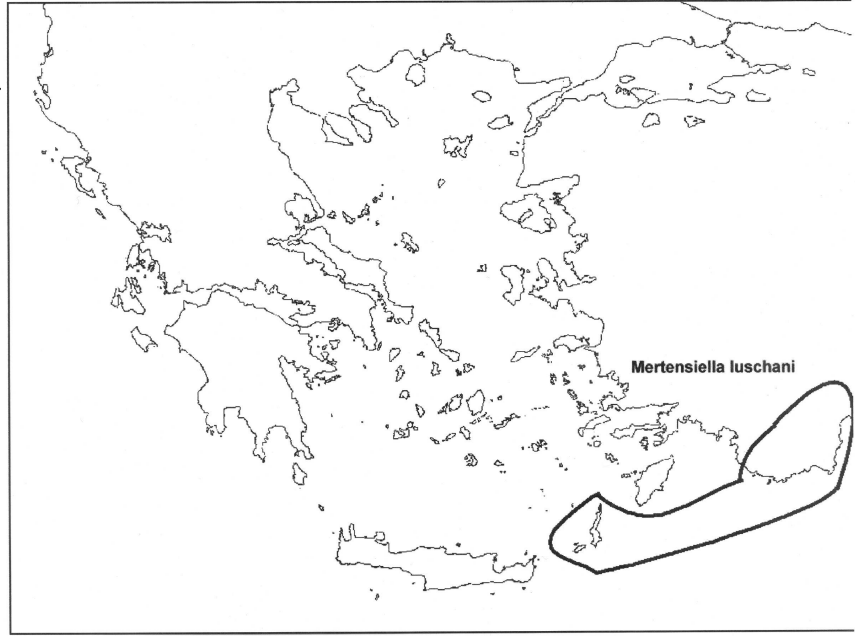
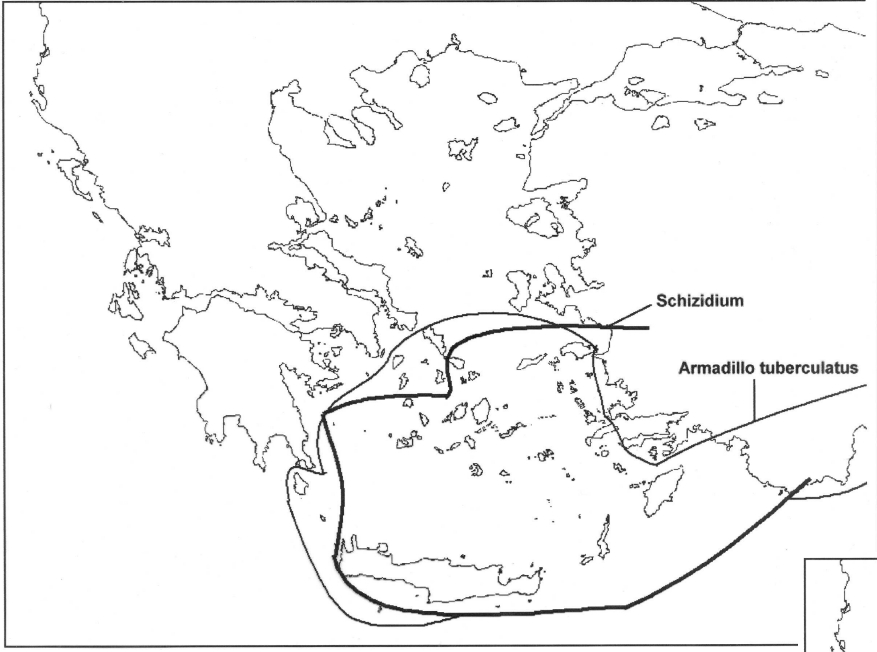


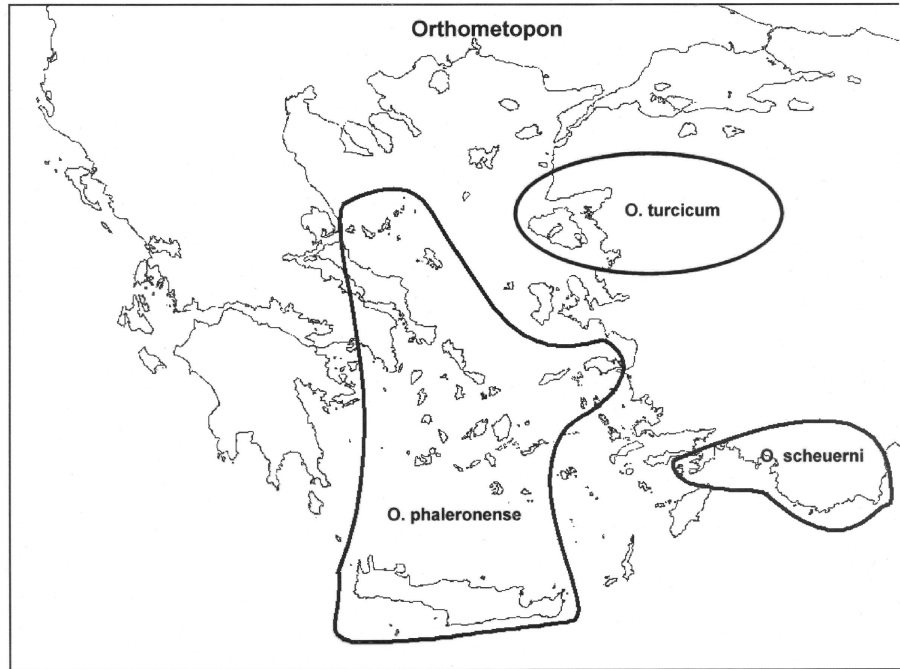
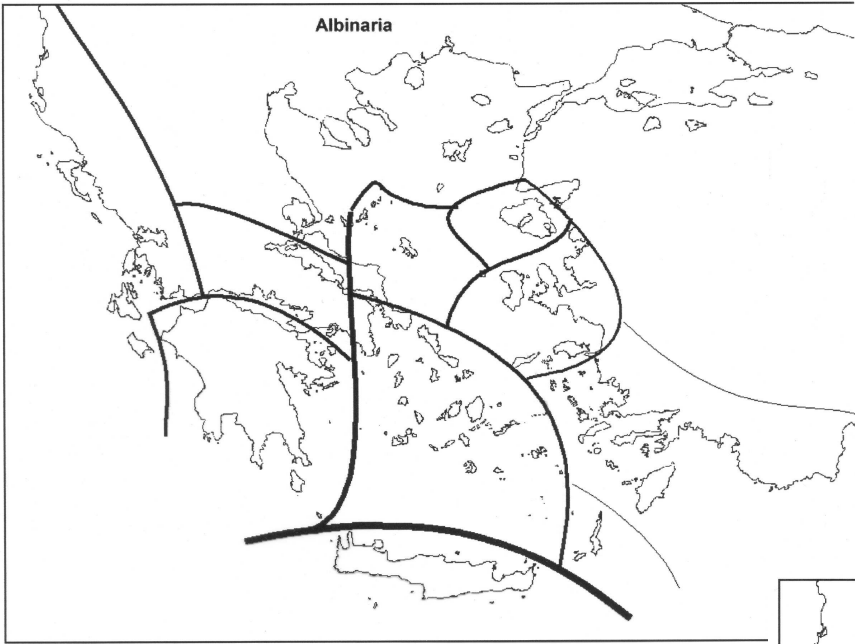


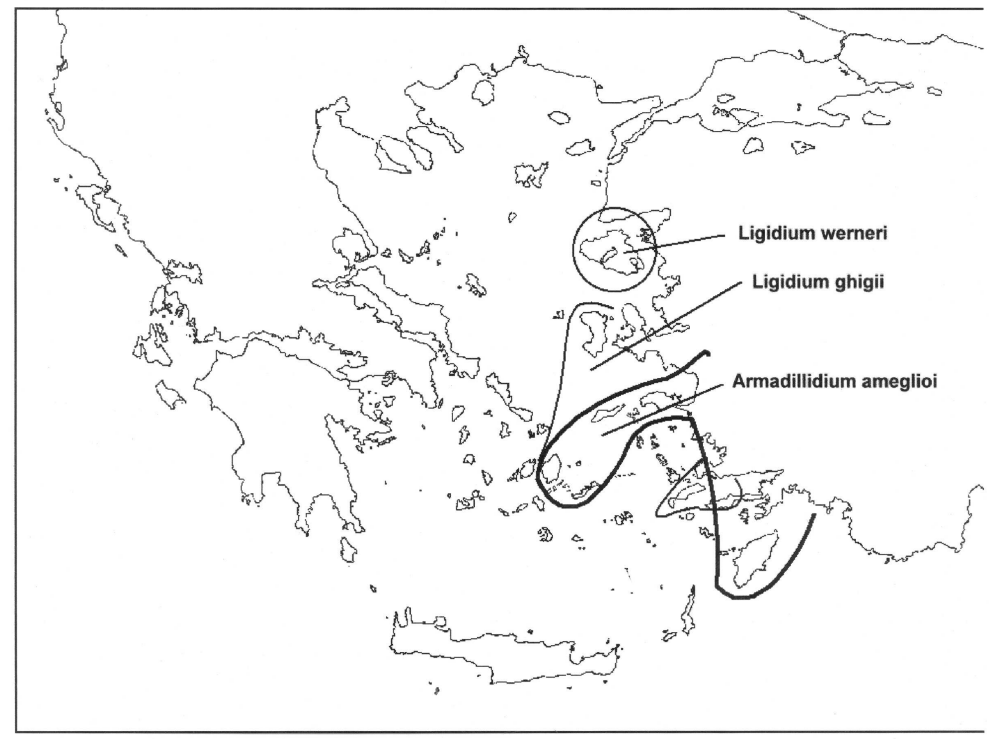
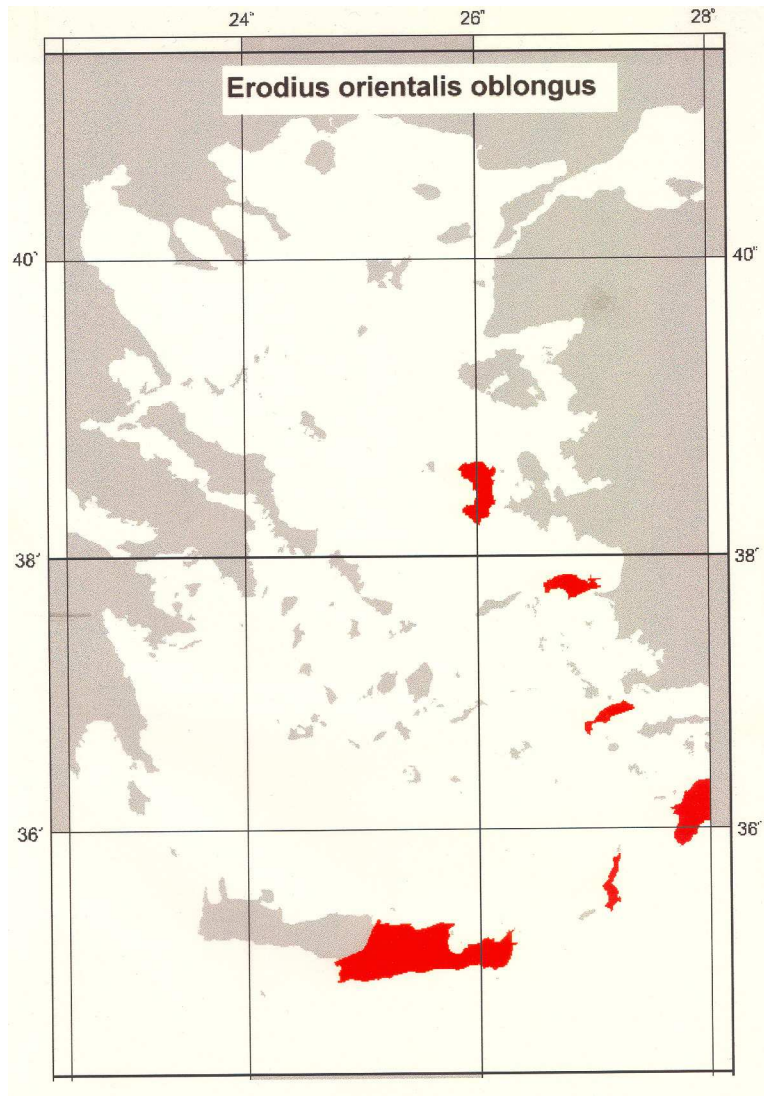


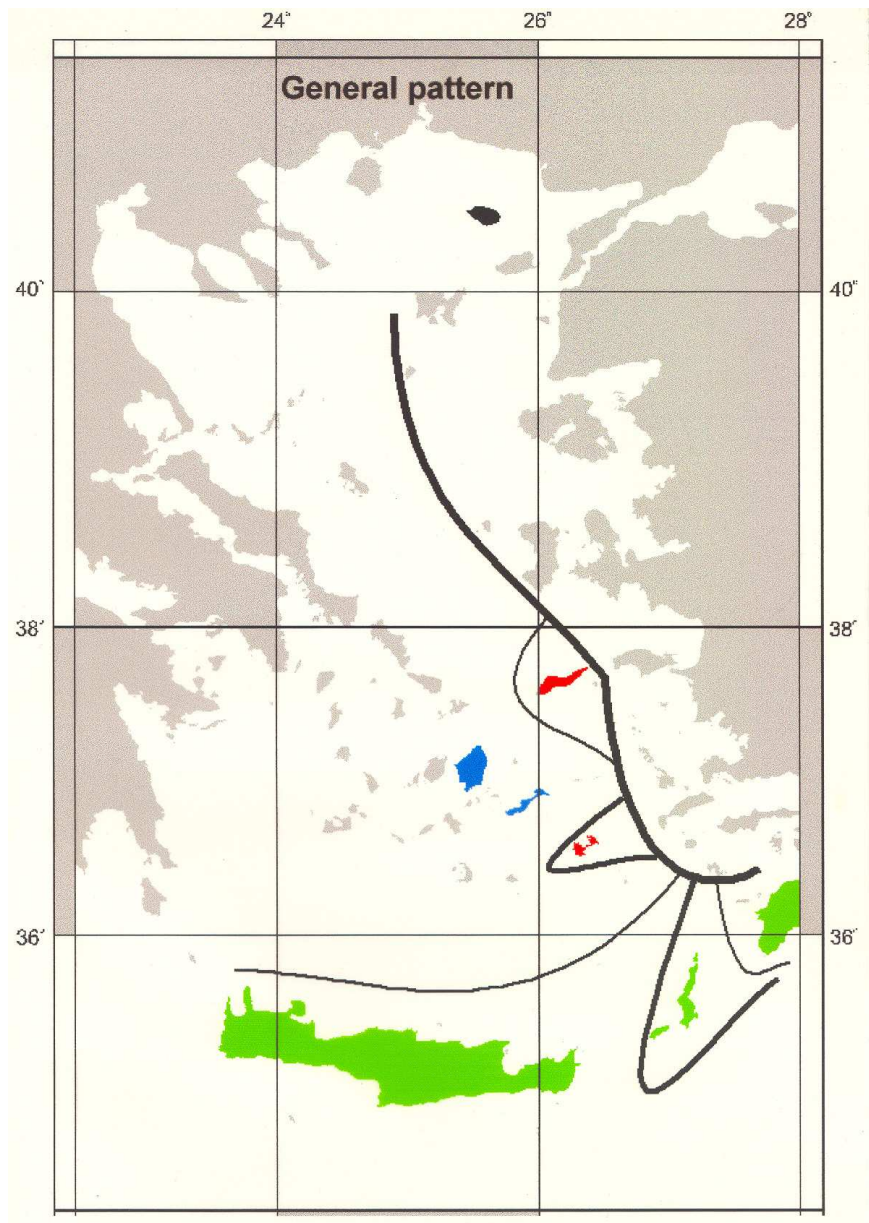












The Aegean fauna is the result of the mingling of two different faunas, the Hellenic and the Anatolian, accompanied by intense differentiation, mainly at the species level and below.

Different taxa exhibit dissimilar, but in general not contradictory distribution patterns, according to each taxon's history and ecology in the area.

The principal delimitation of the Anatolian fauna can be attributed to the recent (late Pleistocene-early Holocene) connection of most eastern Aegean islands with Asia Minor.

The particularity of the fauna of the southern Aegean arc can be attributed to the early isolation of the southern arc within the Aegaeis.

The inconsistencies to the general pattern could be caused by:

- Residual distributions, evident as disjunct patterns, caused by the eastward expansion of Hellenic faunal elements during the Pleistocene.
- Possible Pleistocenic connections, via temporary landbridges, between eastern islands and Kyklades.
- Energetic, passive or anthropochorous dispersal.
- Possible Holocene expansion of Anatolian elements, mainly due to ecological changes.