THE LAST GLACIAL MAXIMUM (18.000 – 14.000 y. B.P.) AND ITS MICROPALEONTOLOGICAL, PALEOGEOGRAPHIC AND PALEOCEANOGRAPHIC REGISTER IN THE BALEARIC SEA

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Abstract

During the Last Glacial Maximum, the Emile Baudot Escarpment and the two submarine mounts, dels Oliva and Ausiàs Marc, formed a microarchipielago between the "Pitiusa" and the "Gran Balear". The benthic and planktonic forams of this microarchipielago sediments are studied here. It is a relictual benthic fauna that belongs to the infra-circalittoral during the Glacial Maximum. In the Mont Oliva and Ausiàs Marc these species represent a 25% over the total. The other 75% consists in recent planktonic fauna that fits the actual, post-glacial, mediterranean hydrodinamics. Otherwise, in the Emile Baudot Escarpment the benthic species are predominant as it occurs in the biofacies of the balearic infra-littoral.

Keywords: Foraminifera relicts, Last Glacial Maximum

In the oceanographic cruise Pitiusas I, on board R/V *Cornide de Saavedra,* June 74, 40 samples of 25.000 benthic and planktonic foraminifera were collected together with geomagnetic study of the submarine mounts of the Balearic Sea.

In 1999 on board R/V *Hespérides* the geologists of the Spanish Oceanographic Institute began a very good cartography (M14) which digital model has permitted the visualisation of the Balearic paleogeography of the last glaciation (18.000 – 14.000 year B.P.), when the sea level lowered around 130 m and the three mounts, now submerged 90 m deep, formed the archipielago called "Banc del Francès" between the SW of the "Gran Balear" and the E of the Pitiusa, the only two great islands then in the Balearic Sea. (1,2,3)

The "modern" planktonic species which reflect the "Iberian gyre" and the relict benthic ones of the Last Glacial Maximum when the "Banc del Francès" was an archipielago with Mont dels Oliva and Mont Ausias Marc surrounded by *Posidonia* meadows and algae which relict infralittoral benthic foraminifera now are part of the postglacial pelagic sedimentation.

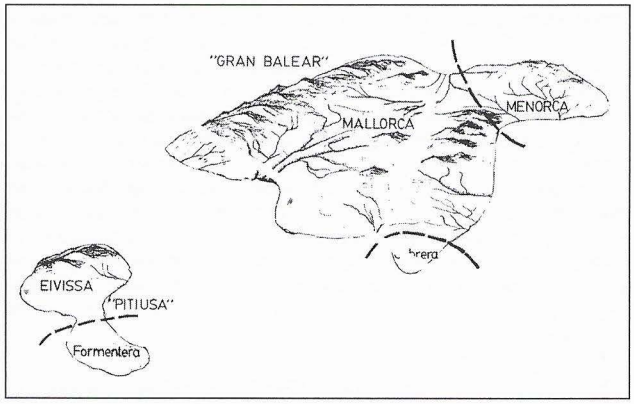

Fig. 1. The Balearic Islands in the Last Glacial Maximum.

In the present work we give some conclusions with the possible discussion of the data of which we can outline the following points:

1.- The present biofacies of the submerged islands between Eivissa and Mallorca are mostly consisting of glacier relict benthic foraminifera, of the old infralittoral ecosystem of the L.G.M. and of a 75% of postglaciar, atlantic-mediterranean, modern planktonic foraminifera, typical of the "Iberian Gyre".

2.- The taphocenosis is represented by 39 families, and 354 species, the biodiversity of which, correspond in great mesure, to the glacier climate of when the Emile Baudot, Mont dels Oliva and Mont Ausias Marc were islands, with a maximum length and width 5x1'5, 3x2 and 4'5x2 miles respectively (1,3). This microfauna original from old algal, Posidonia and psammic assemblages formed by *Cibicididae, Homotrematidae, Hauerinidae* (*Miliolidae*) and *Soritidae* and a part of the present hemipelagic Balearic Sea sediments (*Globorotalia inflata*, *Globorotalia truncatulinoides*, *Orbulina universa*, etc.).

3.- Comparing the biofacies of the 3 submerged mounts with the ones of Menorca and Cabrera channels, the psammic, epiphytic, oligobatimetric affinity of the microfauna can be observed. The hemipelagic character of the biofacies of the three submerged mounts can be seen in a 75% of planktonic forms in Mont dels Oliva and Mont Ausias Marc and in a smaller percentage in Emile Baudot. All in convergence with the mesoatlantic and northmediterranean water masses of the "Iberian Gyre" around Balearic Islands. In the Menorca and Cabrera channels there is a dominance of algal and posidonic species, with some presence of paralic lagoon species and an infralittoral holocenic consolidation specially after the Flandrien Transgression (7.000 – 6.000 y.B.P.). (4)

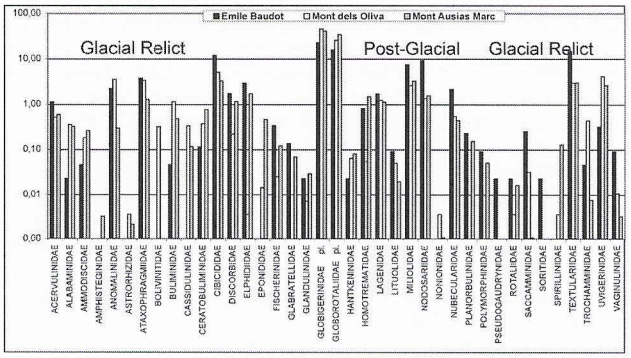

Fig. 2. Glacial and Post Glacial Foraminifera.

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