

The Senonian Subsidence of the Levant Basin

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The recently discovered Litani Anticline in the SE Mediterranean basin off northern Israel is buried under a thick sequence of regularly bedded sedimentary series, and suggests a new interpretation of the tectonic regime in the Levant during the late Cretaceous and the early Tertiary. The anticline is approximately 25 km wide, its length is more than 60 km and its crest is uplifted more than 2,000 m. The anticline is buried under series of 5 km of nearly horizontal sedimentary layers, at a water depth of 1,500 m. The apex of the anticline was apparently leveled by erosion. Seismo-stratigraphic correlations with lithological data from boreholes drilled along the continental shelf of Israel suggest that the uppermost folded layer in the Litani Anticline is of late Turonian, and the deepest seismic reflector of the nearly horizontal sequence is attributed to the early Eocene. The patterns of the thickness distribution of the Cretaceous and the Tertiary strata show that pronounced subsidence affected the Levant Basin only since the Senonian. The Turonian age of the uppermost folded layer suggests that the folding of the Litani Anticline occurred during the Senonian, and is contemporaneous with the tectonic development of the folded structures of the "Syrian Arc". The erosion of the apex of the Anticline into an abraded platform suggests further that after the folding, the Anticline was still located in an environment of shallow sea. Only after the erosion did the tectonic block that contains the Litani Anticline subside, and the deposition of the overlying latest Cretaceous - early Tertiary took place in a basinal depositional environment. The Litani Anticline thus indicates abrupt variation of contrasting tectonic regimes along the Levant continental margin of the SW Neo-Tethys Ocean during the late Cretaceous, and fast transition from compressional to extensional tectonic regimes.

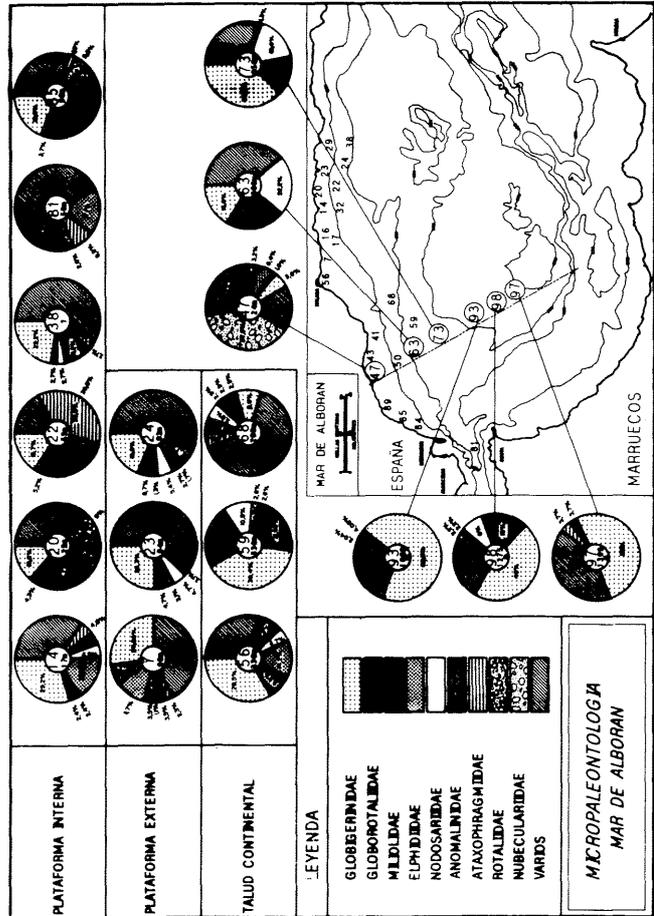
Foraminifera of the Alboran Sea : Distribution and Ecology after the last glaciation (18.000-15.000 a B.P.)

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The Alboran Sea is the object of many morphological and geophysical studies which serve as the base for the correct interpretation of its sedimentary biofacies. The biology and taphonomy (transport, dissolution, preservation, etc.) of the Foraminifera, necessitates Knowledge of biotopes or productive areas and "post mortem" deposits of the shells. The taxonomical and ecological study of 45 samples obtained between 17 and 1.400 m. of depth, provided us with 360 species and 41 families, which allows us to highlight the following :

- 1 - The benthonic microfauna is dominated by calcareous-perforates and calcareous-porcelaneous formes in the infralittoral and circalittoral zones and agglutinated species in the suprabathal zone. The greatest specific variety in *Miliolidae* (75 sp.), *Discobidae* (27 sp.) and *Cibicididae* (14 sp.) originating from algal and *Posidonia* biotopes, while the *Rotaliidae* (*Ammonia beccarii*) and *Elphidiidae* of infralittoral zone, through tafocenotic processes, reach deepers areas.
- 2 - The planktonic microfauna is represented by the post-glacial biocenosis with *Globorotalia inflata* (sinistral form), *Globorotalia truncatulinoides* (dextral form), *Globigerina bulloides* and *Orbulina universa*. Their meso-epipelagic characteristics are in harmony with the present time hydrodynamic model of Gibraltar with the upwelling of Atlantic Water in the northwest of Alboran Sea. The hemipelagic nature of the suprabathal sediments and the eupelagic character of the mesobathal deposits, responds to the planktonic fertility in this area, dating from the Holocene.
- 3 - The Quaternary glacioeustatism of Wurm IV (18.000 to 15.000 a B.P.), which 125m coastline regression and with aerial news conditions, in the infralittoral and circalittoral zones forced the emigration of wurmian species (*Cibicides, wuellerstorfi, Karreriella bradii*, etc.), while the Flandrian transgression (10.000 to 6.000 a B.P.) provided the presents biotopes dominated by calcareous forms with eurihalines and filoterrigenous species (*Ammonia, Elphidium*, etc.), when the agglutinated microfauna (*Bigenerina, Gaudryina, Textularia*, etc.) conserves its infralittoral and suprabathal biotopes without glacioeustatic incidence.



REFERENCES

MATEU G., 1971.- *Rapp. Comm. Int. Mer Médit.* 20(3):211-213.
MATEU G., 1988.- *Rapp. Comm. Int. Méd.* 31(2):87.
CARALP M.H., 1988.- *Mar. Micropal.* 13:265-213.