

Pteropoda and Heteropoda (?) from Wadi Gharandal, Western Sinai (Egypt)

by
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INTRODUCTION

On a trip to the Wadi Gharandal Area, the writer observed a thin limestone band with Pteropods in the so-called „Miocene Grits” which overlie the „Miocene Clays”, the basal deposits of the Miocene in the Gulf of Suez region (compare: MOON & SADEK, 1923, and MACFADYEN, 1930).

This find deserves some attention since records of fossil Pteropods — and Heteropods. — are rare in the eastern parts of the Mediterranean region, particularly in the Miocene. REED (1930) recorded *Carinaria* in Vindobonian deposits of Cyprus, and JACQUET (1933) representatives of *Balantium* and *Vaginella* from the Tortonian of Syria. BLANCKENHORN (1906, pp. 365, 392, figs.) described a new species, *Hyalaea* {*Cavolina*} *angusticostata*, from the Pliocene of Gebel Shellûl near the Giza Pyramids, Egypt.

Some years ago, an important paper on the subject of fossil pelagic mollusca, including an extensive bibliography, was published by RUTSCH (1934). To this bibliography may be added some more recent papers published by: REED (1930), JACQUET (1933), LADD (1934), KINDLE (1938), TROELSEN (1937), GOERGES (1941), BEETS (1942, with additional references), ALTENA & BEETS (1945), and BEETS (1950).

DESCRIPTION

The limestone band from which the sample ¹⁾ discussed here was taken, consists almost entirely of „small” Foraminifera, mainly Globigerinae. On its weathered surface a number of rather poorly preserved small Mollusca are visible, about half of which appear to correspond to the genotype of the pteropod genus *Vaginella*. The following species were observed:

¹⁾ Deposited in the „Rijksmuseum van Geologie en Mineralogie”, Leiden.

Vaginella depressa Daudin. A fair number of specimens is available. The identification was ascertained by means of a close comparison with well preserved specimens of exactly the same size and peculiar shape, derived from Middle Miocene deposits („Hemmoor Stage”) of the Netherlands, kept in the „Geologische Stichting”, Haarlem. The species was described from Burdigalien deposits of Aquitaine, France.

Vaginella cf. *lapugyensis* Kittl. There is quite a number of specimens available, which are very similar to one another. At least one is almost complete and appears to be identical with *V. lapugyensis*, a species quoted from the „II. Mediterranstufe” of Lapugy and Czechoslovakia, and the „Middle Miocene” of Monte Gargano, Italy (cf. RUTSCH, 1934, pp. 305, 306, 320, 321), and which is probably also present in the Ste. Croix beds, Trinidad.

Oxygyrus? spec. indet. The presence of a few more shells must be recorded here which evidently represent a species of Heteropoda. Most likely they belong to the family Atlantidae and may be referred, with some doubt, to the genus *Oxygyrus*, as they are apparently comparable with the first calcareous whorls of recent species.

As to the age of the Miocene deposits in the Gulf of Suez region, it may be remarked that the oldest beds, the „Miocene Clays” and equivalents, have sometimes been referred to the Lower Miocene (Burdigalien), and the overlying „Miocene Grits” and equivalents to the Vindobonian, or more precisely to the „Schlier”.

The pteropod species quoted above are not indicative in this respect, but their known range in time at least does not contradict the assumption of a Middle Miocene age for the „Miocene Grits”. It may be added that FUCHS in 1877, and BLANCKENHORN in 1901, considered all the Miocene in the Gulf as Middle Miocene, as opposed to views expressed by DEPÉRET & FOURTAU in 1900. Recently PICARD (1943, pp. 46—50), after a critical revision of the stratigraphical significance of Miocene fossils found in the Gulf region, endorsed BLANCKENHORN's views, while still admitting that the lowest beds, i.e., the „Miocene Clays” and equivalents, may be regarded as passage beds between the topmost Burdigalian and the lowermost Vindobonian, an opinion previously held by MOON & SADEK (1923, p. 22).

It has been firmly established by now that the Gulf Miocene contains a purely Mediterranean fauna. FRAAS was the first to record Miocene deposits in the Gulf region in 1867, while FUCHS in 1877 and 1883 was the first to call attention to the affinities between the

Gulf Miocene fauna (i.e., of Gebel Geneifa near the Great Bitter Lake) and the European Miocene fauna.

Secondly he recognized the absence of Indian Ocean species. Although certain Mediterranean species have since been recognized to be bi-provincial and to occur in the Indian Ocean fauna, it still remains true that the Miocene Gulf of Suez had no direct connections with the Indian Ocean at any time during the Miocene (cf. COX, 1929, 1931). Since Pteropods and Heteropods are pelagic Mollusca which could be expected to be bi-provincial more easily than other Mollusca, it is certainly worthwhile pointing out that the Pteropods recorded above characterize the Mediterranean Province, or at least, have so far never been recorded from the Indo-Western Pacific Province.

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Errata

Vol. 16, p. 49, voetnoot 3, laatste regel, voor „*A. incerta* Wood”, lees: „*A. obliquata* J. Sow.”

Vol. 16, p. 60, l. 26, for „*Punctum hottentotum* (Moss & Webb), read: „*Punctum hottentotum* (Melvill & Ponsonby)”.

Vol. 17, p. 34, regel 6, voor „5de piertje, sublittoraal. 13 V 1950”, lees: „6de piertje, sublittoraal, 30 IV 1950”.

Vol. 17, p. 34, onderschrift Fig. 1, laatste regel, voor „(Mont.); *Sphenia binghami* Turton.”, lees: „(Mont.); S: *Sphenia binghami* Turton.”