A STUDY OF THE FAMILY TURRITELLIDAE IN THE MESOZOIC AND TERTIARY OF EGYPT

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THESIS

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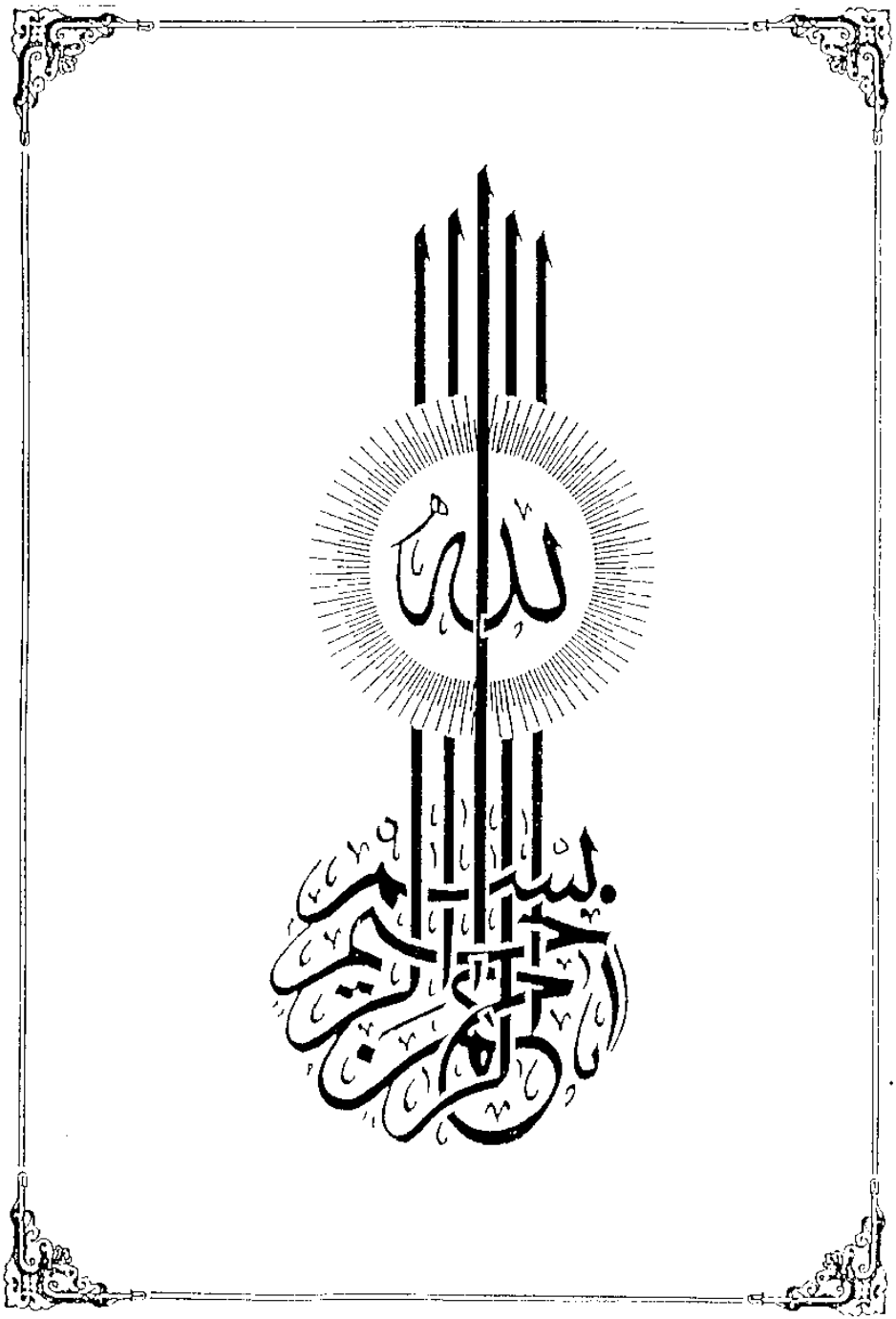

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INTRODUCTION

I N T R O D U C T I O N

This work is mainly a detailed systematic account of the family Turritellidae in the Mesozoic & Tertiary of Egypt. Several workers have studied the greater part of the known species of this family in Egypt. Some of them gave hand drawings with restorations, while the others used photographs to illustrate the described species .

The type specimens of most of the species described by Oppenheim (1906), Quaas (1902) and Wanner (1902) etc. were deposited in Museums at Munchen Zurich Berlin etc. a fact which makes it difficult to examine them. In this case their figures in the corresponding works are the only available means to do such studies.

The number of the specimens of this family is not so large. The hand specimens were either collected from different localities or were made available to the author by different collectors.

A thorough review of the Turritellidae is here intended, describing new species and redescribing the already known ones in accordance with the latest classification adopted by Wenz 1938.

An attempt is here made to trace the paleogeographic and stratigraphic distribution of the members of the family Turritellidae in Egypt.

Finally such a study would be of direct or indirect benefit for the stratigraphers, structural and economic geologists.

2. For Paleocene Epoch :

Landenian (upper Paleocene)..... Land.

Danian (Lower Paleocene)..... Dan.

3. For Stages of the Eocene Epoch :

Bartonian (Upper Eocene)..... Bart.(U.Eo.)

Lutetian (Middle Eocene)..... Lut. (M.Eo.)

Ypresian (Lower Eocene) ..... Yp. (L.Eo.)

4. For Miocene Epoch:

Upper Miocene ..... U.Mio.

Middle Miocene (Vindobonian)..... M.Mio.(Vindo.)

Lower Miocene (Burdigalian)..... L.Mio.(Burd.)

(C) ABBREVIATIONS USED FOR AUTHOR'S NAME.

Abbass.....	Abb.	Abed.....	Ab.
Awad.....	Aw.	Binkhorst.....	Bink.
Coquand.....	Coq.	Cossmann.....	Cos.
Cuvillier.....	Cuv.	Deshayes.....	Desh.
Douvillé.....	Douv.	Fourtau.....	Fau.
Gamal Mahmoud....	Gal.M.	Greco.	Ger.
Lamarck.....	Lmk.	Mayer-Eymer...	M.E.
Oppenheim.....	Opp.	Person.....	Per.
Quaas.....	Qua.	Roemer.....	Rom.
Stoliczka	Stol.	Sowerby.....	Sow.
Verdenberg.....	Verd.	Zittel.....	Zit.

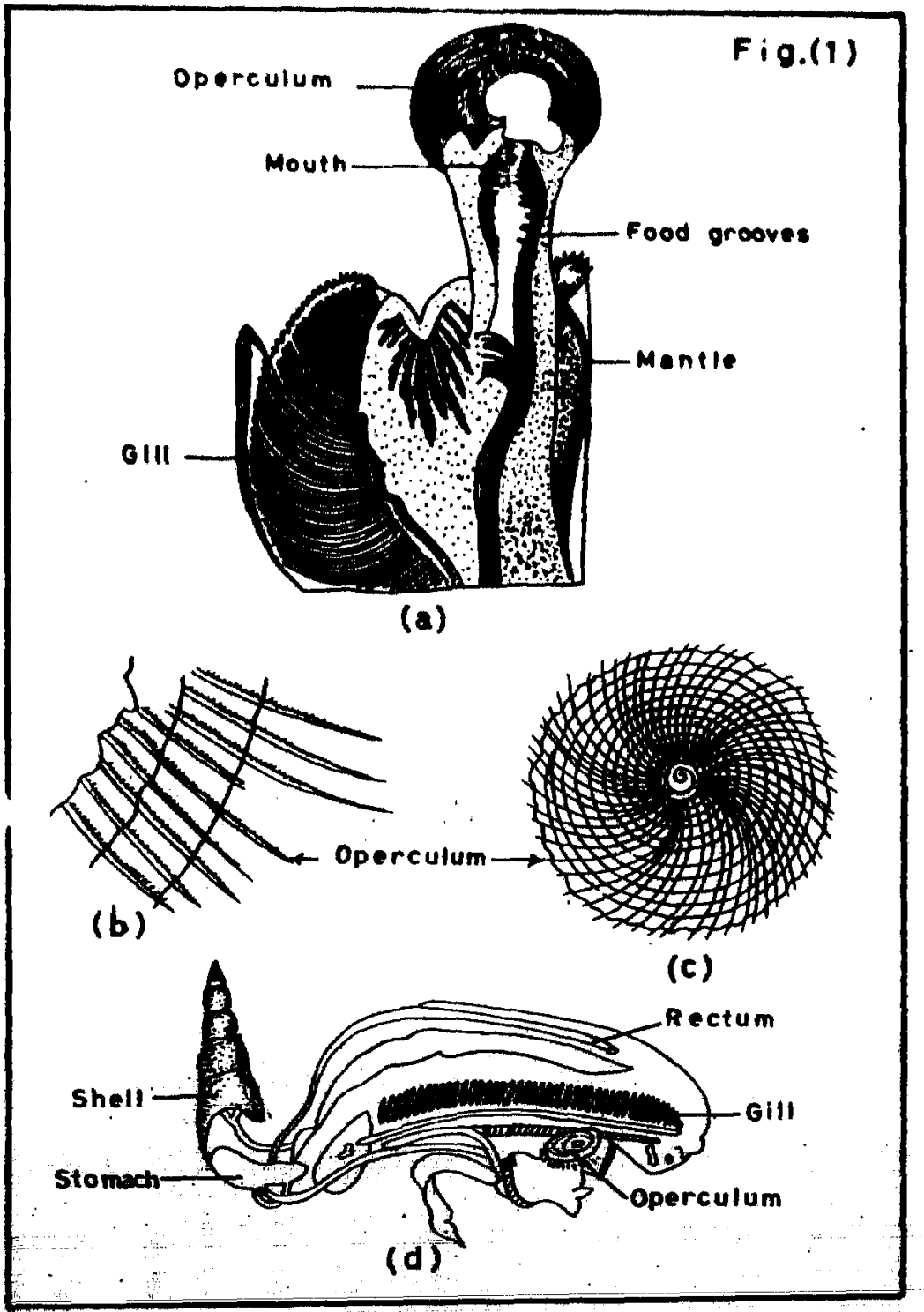
NEONTOLOGY

THE SOFT PARTS OF THE MEMBERS OF THE FAMILY TURRITELLIDAE

(A) ANATOMICAL CHARACTERS:

In studying the morphology of the shells of family Turritellidae reference must be made to the soft parts. Morton (1953) studied the anatomical character of the family Turritellidae as exemplified by Turritella communis Risso and found that the elongated gill filaments, endostyl and food grooves are common to several groups of ciliary feeding prosobranches, (Text. Fig. 1 d). The protective screen of the pallial tentacles is found in Turritella as well as in Vermetus.

The pallial organs, especially the gills are adapted for sedentary cilliary feeding and the mouth possesses spoon-shaped lope. Then Turritella communis Risso is a ciliary feeder and its radula is very little reduced. Morton also studied the anatomical character of Vermicularia (Text. Fig. 1 a) . Vermicularia could be placed in the family Turritellidae due to the great similarity between it and the genus Turritella. Vermicularia spirata Philippi begins its life as a closely coil spiral, hardly distinguished from typical Turritella and in the later whorls loosens up to form an open or irregular coil.



The opercula in Vermicularia and Turritella (Text. Fig.1 b,c) are very similar showing the same flexiable edge and slightly concave shape with overlapping whorls and the same power of retreat into the shell. But the Operculum in Vermicularia is not supported at all by bristles, this is only the difference from that of Turritella.

The genus Vermicularia is very near the genus Turritella as far as the pallial tentacles, the gill, the food grooves,the embrionic shell and the operculum are concerned. Consequently the genus Vermicularia is almost considered as a true Turritellid.

Cossmann (1912) studied the family Vermitidae in which he included the genus Pseudomesalia on the bases that the latter has the form of Vermetus conicus, Lmk. Mahmoud (1955) classified this genus seperately in the special new family Pseudomesaliidae, between the Turritellidae and the Vermitidae on the bases of the presence of a more or less wide well characterized umbilicus not found among the Turritellidae. In some individuals the aperture of well preserved shell is holostomatous like that of the Turritellidae. Moreover; the growth-lines in Vermicularia show a strong simuses.

On the basis of the above anatomical and morphological relationship between the genus Vermetus and the genus