بسم الله الرحمن الرحيم

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تم رفع هذه الرسالة بواسطة / حسام الدين محمد مغربي

بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

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Ain Shams University
Faculty of Science
Geology Department

Stratigraphic and Paleoenvironmental study of the Eocene rocks at Gebel Mokattam and its neighboring areas, Greater Cairo, Egypt

A THESIS

Submitted for Partial Fulfillment of the Requirements for the Degree of M.Sc. in Geology

By

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B.Sc. (Hons.) 2013

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To

Geology Department
Faculty of Science
Ain Shams University

2022

Master Degree Supervisor's Signatures

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Year(2022)

Validity of Master of Science Thesis in Geology

- **Student name/ Mohamed Mabrouk Abd El Monaim Mabrouk**

- **Thesis title / Stratigraphic and Paleoenvironmental study of the Eocene rocks at Gebel Mokattam and its neighboring areas, Greater Cairo, Egypt**

- **Degree / Master**

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Employee Signature **Director of Studies Department Signature**

Faculty Secretary

Note

The present thesis is submitted to the Faculty of Science, Ain Shams University, in partial fulfillment of the requirements for the degree of Master of Science in Geology.

In addition to the research work materialized in this thesis, the candidate has attended the following M.Sc. courses for one year in the following topics:

1. Advanced Structural Geology
2. Geotectonics
3. Advanced Lithostratigraphy
4. Biostratigraphy
5. Micropaleontology
6. Paleoecology
7. Sedimentation
8. Sedimentary Petrology
9. Field Geology
10. Geostatistics

He successfully passed the final examination in these courses. In fulfillment of language requirement of the degree, he also passed the final examination of a course in the English language.

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ABSTRACT

The Middle-Upper Eocene succession exposed in the study area at Gebel Mokattam and Maadi is divisible from base to top into the Mokattam Group (Observatory Formation) and the Maadi Group (Qurn, Wadi Garawi and Wadi Hof formations). The Eocene rocks in the area yielded twenty six ostracode species from the Upper Eocene succession at the Duwaiqa area in Gebel Mokattam and at the Maadi. Among the recorded ostracode species, *Triginglymus maadiensis* is newly erected. The recorded ostracode fauna has been biostratigraphically evaluated. It was possible to recognize two ostracode zones, *Paracosta humboldti* Zone and *Uromuellerina saidi* Zone, which have been both recorded in the Priabonian.

The microfacies investigation of the carbonate rocks represented in three stratigraphic sections revealed the recognition of seven microfacies types in the Duwaiqa section, two microfacies types in the New Duwaiqa section, and six microfacies types in the Maadi section. The recorded microfacies types are comparable to five Standard Microfacies Types (SMF 5, SMF 8, SMF 9, SMF 12, and SMF 14) and three "Standard Microfacies Belts" (FZ) of Wilson (1975) (FZ4, FZ6, and FZ7). These types implicate that the Observatory and Wadi Garawi formations were deposited in a foreslope environmental setting, the Qurn Formation in a setting ranging from foreslope to open platform (shelf lagoon), while the Wadi Hof Formation was deposited in a winnowed platform edge sands environment that changed into open marine platform facies

(shelf lagoon) and foreslope. Generally, the Eocene sequence exposed in the area reflects shallow marine settings with relatively deeper conditions towards the southeast. Shelf settings are further supported for the ostracode yielding parts of Wadi Garawi and Wadi Hof formations as indicated by dominance of representatives of the Trachyleberididae and Hemicytheridae which are both represented by taxa possessing eye-spots, besides the Loxoconchidae and Xestoleberididae, which become more frequent in the shallow phytal zone of the shelf.

Keywords: Ostracoda, Microfacies, Eocene, Taxonomy, Stratigraphy, Paleoenvironment, Greater Cairo, Egypt.

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Table of Contents

LIST OF FIGURES

Figure No. **Page No.**