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التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم باللّه العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

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بالرسالة صفحات لم ترد بالأصل

GEOLOGY AND RADIOACTIVITY OF ABU FURAD - UMM TAGHIR AREA, EASTER DESERT, EGYPT

A THESIS

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(Geology)

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F. Oraby

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INTRODUCTION AND PREVIOUS WORK

I.1 - Introduction.

The present study deals with the geology and radioactivity of Abu Furad-Umm Taghir area, Eastern Desert of Egypt. The examined area is bounded by latitudes 26° 34′ 13″ and 26° 42′ 20″ N and longitudes 33° 34′ 57″ and 33° 45′ 56″ E (Fig. 1). The area, represents a part of the basement rocks of Egypt and covers about 262 km^2.

Radiometric exploration works in the Central Eastern Desert of Egypt showed potentiality of the younger granite rocks as a source of uranium (Ammar 1973, El-Kassas 1974, Bakhit 1978, El-Tahir 1978, 1985, Hussein et al 1982, and Abu-Deif 1985, 1993).

During the radiometric investigation works in Abu Furad-Umm Taghir area some radioactive anomalies have been discovered. These anomalies are associated with some pegmatite bodies intruding Abu Furad granitic mass and El-Bolla granodiorite.

Taking into account these considerations, Abu Furad-Umm Taghir area was chosen to examine the relation between the

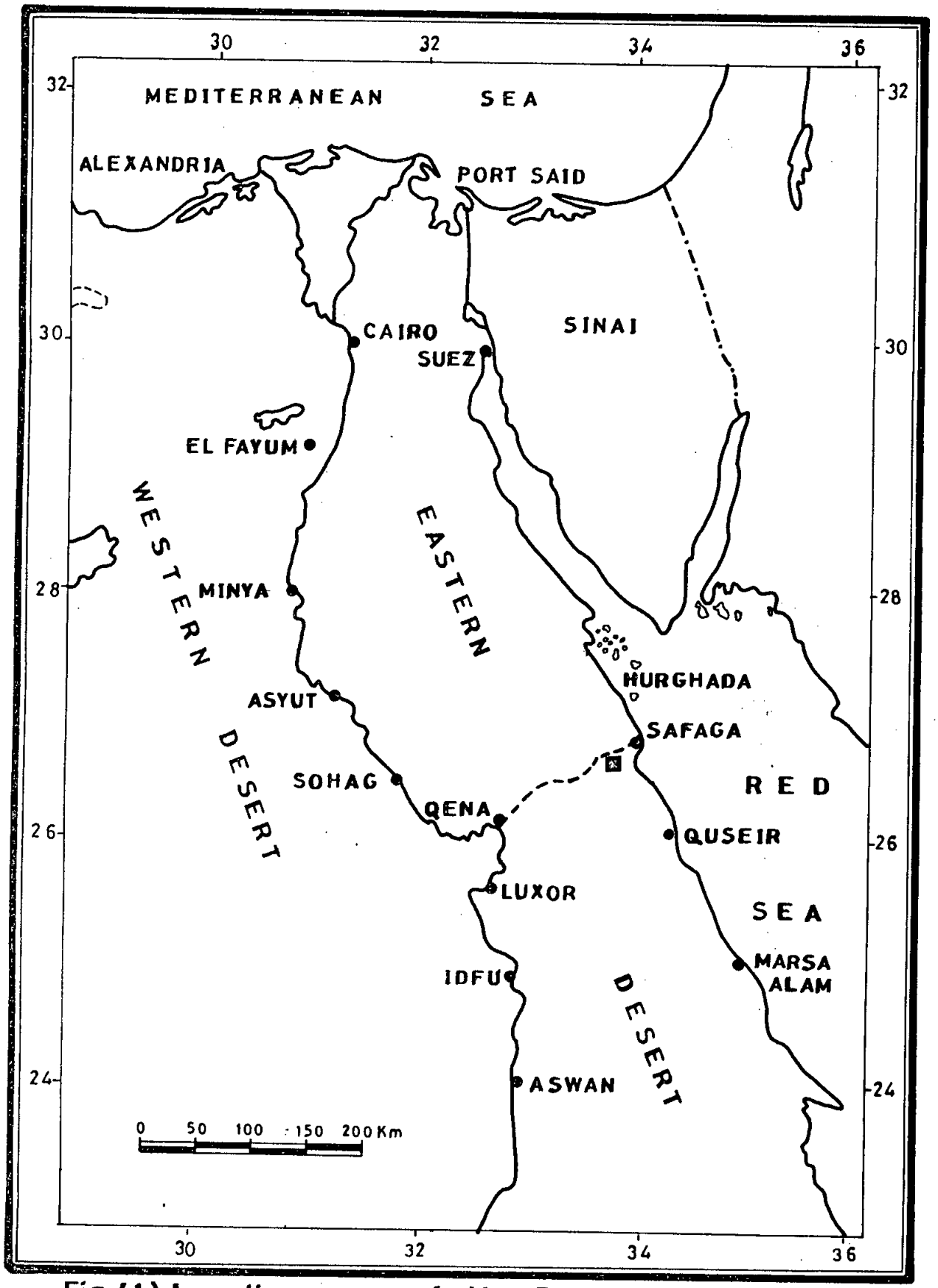

Fig.(1): Location map of Abu Furad - Umm Taghir area, Eastern Desert of Egypt.

radioactivity and the geology of the area, including petrography, structure and geochemistry of the granitic rocks and their surroundings in the area.

I.2 - Previous work.

I.2.1 - Geological investigations.

Hume (1935), Schurman (1953, 1966), El-Ramly (1972), El-Gaby (1975), Sabet et al (1976), Nagy (1977), Akaad et al (1979), Greenberg (1981), Hussein et al (1982), Habib (1982), El-Shatoury et al (1984), Stern (1985), Kabesh et al (1987), and El-Gaby et al (1988) contributed largely to the classification, petrogenesis and tectonism of granitic rocks of Egypt.

Several areas in the central part of the Eastern Desert were mapped at scale 1 : 40000 by the geologists of the Nuclear Materials Authority (N.M.A) around Qena - Safaga road (El-Kassas 1974, Bakhit, 1978, and El-Tahir 1978). In all these works, the authors adopted El-Shazly classification (1964) of the basement rocks, which is basically the classification originally proposed by El- Ramly and Akaad (1960) and elaborated by El-Ramly (1972).

Akaad and Noweir (1969), 1980), mapped the Lithostratigraphic units of the Arabian Desert orogenic belt of Egypt between

latitude 25° 35′ and 26° 30′ N. According to them, the Arabian Desert supergroup, embraces all the metamorphites of the basement, are subdivided into three groups and one individual formation, the Meatig group, Abu Fannani schists as transitional formation, Abu Ziran group and Rubshi group.

El-Gaby (1975), gave the petrochemistry and geochemistry of some granites from Egypt in which Abu Furad was represented by one chemical analysis for the major and trace elements. He concluded that the granitic rock of Abu Furad is granodiorite.

Habib (1972, 1982), ivestigated the precambrian basement rocks to the south west of port Safaga including Abu Furad-Umm Taghir area. He subdivided the synorogenic granitoid rocks according to the nature of their contacts with the enveloping country rocks into three main divisions namely autochthonous, parautochthonous, and intrusive granitoids. Habib (1982), mentioned that Abu Furad younger granite is a composite pluton obviously represents the passage from the synorogenic granitoids to the arbitrarily differentiated late orogenic granites. He also showed that the studied area lies across the northern boundary of eugeosynclinal basin of the Eastern Desert of Egypt and occupies a major shear zone. Later on, Habib (1987) used infrastructure term for migmatite and granitic gneisses.