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بسم اللّه الرحمن الرحيم

مركز الشبكات وتكنولوجيا المعلومات

قسم التوثيق الإلكتروني

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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

Salwa Akl

بعض الوثائق الأصلية تالفة
وبالرسالة صفحات لم ترد بالأصل

CONTRIBUTION TO THE GEOLOGY OF WADI GABGABA AND ENVIRONS, SOUTH EASTERN DESERT, EGYPT.

A THESIS

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Geological Survey of Egypt

CONTENTS

CHAPTER IV

CHAPTER V

LIST OF FIGURES

LIST OF PLATE

CHAPTER I

INTRODUCTION

I – INTRODUCTION

The aim of the present study is to map the area around Wadi Gabgaba south west of Aswan with a new insight on the Paleozoic section.
The present work defines a stratigraphic sequence for this section by classifying it into several rock units which are correlated with coeval formations well established in Egyptian stratigraphy .
This work deals also with facies associations and depositional environments of the clastic sections exposed at the study area and documents the fluvioglacial sediments which are recorded for the first time in this area . The igneous and metamorphic complex is beyond the scope of the present study , but the sequence is briefly described .

I – 1 . Location

The area studied lies between latitudes 22° 00` and 22° 40` N and longitude 32° 45` E and the Red Sea basement range in the east . Wadi Gabgaba is the main wadi in the study area , assuming a S N course ; its feeders are located in Sudan , north east of Dongla loop .
The Wadi runs for 200 km in Sudan before it crosses the borders into Egypt . In Egypt it courses 70 km before it joins Wadi Allaqi which drains into the Nile (Fig.1)
Gebel El- Aiviant rises 655 m a . s . l at Qarn El- Teis peak ; damming the border area between Egypt and Sudan to the east of Wadi Gabgaba . The gebel is flat topped mountainous mass 750 km² in area with vertical walls near its top.

I – 2 . Scope of work

In this work the area is mapped both geomorphologically and geologically to the scale of 1:500,000 . Both geological and geomorphological boundaries were traced on aerial photographs (scale 1:50,000 approx.) while controlled land sat (scale 1: 100,000) were used to compile the map of the area .

Several stratigraphic sections representing different rock units, were measured by Abney level . Samples from these sections were taken from different beds and later were studied petrographically .

I – 3 . Previous work

Little had been published on the geology of this remote desolate part of the south Eastern Desert till the early sixties when the construction of

the High Dam aroused the interest of geologists to study the area expected to be flooded by the water of Lake Nasser .
The following is a brief review of the previous literature concerning the area in question and its surroundings .
The earliest geological work in the area was made by **Russeger (1837)** , who described the sandstein of southern Egypt and northern Sudan (Nubia) under the name sandstein von Nubia .

Hume (1907), described the south eastern part of Egypt between latitudes 22° and 25° N . He considered the sandstone beds extending from the Nile to the Precambrian basement rocks boundary , as dissected plateau of Nubia Sandstone beds .

Hume (1908), based on a traverse from Tomas village on the Nile to Kharga Oasis via Dungul Oasis , described the succession of the exposed rocks as follows:

Lower Eocene		
	Upper Libyan	*Sismondia Jogotheti* Beds .
		Ostera multicostata Beds .
	Lower Libyan	*Operculina Libyca* Beds .
Upper Cretaceous		
		Esna Shales
	Danian	White limestone with corals
		Ash – grey shales .
		Yellow limestone including the
		Bothriopygus Beds of Dungul
	Campanian	*Gitolampts* Beds of Umm Shersher
		Turritella and *Cardita* Beds of Dush
		Exogyra overwegi Beds
Nubian Sandstone of Upper Cretaceous age		Nubian Shales (green and ochreous)
		Fine grained sandstone ,
		Coarse grained sandstone .
Igneous and Meta morphic rocks		Granite of Abu Bayan and of south Dush , Gneisses and Schists near Dungul and at Umm Shersher.

Sandford (1935), believed that the Nubia Sandstone in northern Sudan and central Sudan is of continental facies .

Shukri and Said (1946), believed that the Nubia Sandstone on the south western frontiers of Sudan and the adjoing part of southern Libya was deposited in shallow marine environment .

Knetsch (1954), described " Pseudo Eskar " in the Libyan Desert near the Nile between Aswan and Korosko . He recognized this feature as an elevated wadi – floor representing a change of wadi regime, and suggested that the feature might be of Early Pleistocene age .

Attia (1955), studied the area East of Aswan ; he subdivided the clastic section overlying the basement rocks into three members and named them Lower , Middle , and Upper and assigned them to the Senonian .

Youssef (1957) and Said (1962), subdivided the Nubia sandstone sequence into Lower Nubia Sandstone (*S. St*) and an upper variegated shales.

Said and Issawi (1964), discussed the geomorphology of Lower Nubia , Egypt in an attempt to account for the geological evolution of the River Nile in this part of its course . They divided the Nubia area into four geomorphic units which are structurally delineated . The units are separated from each other by three major north west – south east faults , considered by these authors as Late Lower Pleistocene or Early Middle Pleistocene . Said and Issawi (*Op . Cit*) also described the lithologies of the terraces wherever apparent .

Awad and Ghobrial (1965), subdivided the Nubia Sandstone and shale sequence in the Kharga Oasis area into three members :

1. Variegated shale .
2. Taref sandstone .
3. Abu Bayan sandstone shale .

Butzer (1965), described the geomorphology of the Kurkur area, which he believes to be primarily modeled by running water in Late Tertiary and Early Pleistocene times , and subsequently remodeled by wind. Analysis of the desert landforms thus sculptured under semi-arid to hyper-arid conditions shows that drainage characteristics , slope forms , and surficial materials are distinctive from those commonly associated with humid environments.

Philoobos (1969), believed that the Nubia sandstone of the Nile Valley was deposited in littoral environment.

Butzer and Hansen (1968), classified the Nubia area into :

1. Libyan Table Land .
2. Kalabsha Plain .
3. Lower Nubia Plain .
4. Dakka Plain .
5. Riqa Hills .
6. Tomas Upland .
7- Tushka Plain .
8. Abu Simbel Plateau .

Also they recorded three erosional surfaces in the area and dated them ;

a) 190 – 210 m a.s.l (Aswan Pediplain) Pre – Middle Pliocene .
b) 230 – 260 m a.s.l (Ballana Pediplain) Late Oligocene to Early Miocene.
c) 300 – 360 m a.s.l (Kurkur Pediplain) Middle to Late Tertiary age .

The same authors also studied the fluvial Quaternary deposits along the length of the Nile between KomOmbo and Wadi Halfa village in northern Sudan , and classified these sediments into five units ;

a) Shaturma Formation (Upper Wadi Alluvium) .
b) Ineiba Formation (Lower Wadi Alluvium) .
c) Gebel Silsila Formation (Younger Channel Silt) .
d) Masmas Formation (Older Flood Plain Silts) .
e) Korosko Formation (Basal Sands and Marls) .

El- Naggar (1970), classified the clastic section in the area east of Aswan into Abu Agag sandstone at the base , Timsah clay , and Um Barmil sandstone at top .

Whiteman (1970), believed of that the origin of the Nubia sandstone is an interplay of fluvial and eolian processes with shallow marine invasions .

Issawi (1971, 1973), considered the Nubia Sandstone of south Egypt as southern facies of the Upper Cretaceous – Lower Tertiary marine beds described from northern Egypt . He considered the area of Barget El Shab as a type section for the Nubia Sandstone where the formation is represented by a magna facies deposits under different conditions varying from shallow marine to continental . He subdivided the Nubia Sandstone into three members ; Taref (at base) , Quseir and Shab (at top) . The Shab Member is of Maastrichtian to Paleocene age and is coeval with the Duwi , Dakhla , Tarawan and in part Kurkur formations .

Barthel and Buttcher (1978), classified the Nubia sandstone in the Kharga – Dakhla area into :

Top a) Taref Formation .