I- INTRODUCTION

The aim of the present study is to map the area south west of Aswan with a new insight on Mesozoic stratigraphy. The sandstone section early described as one entity and given the famous name; Nubia Sandstone has caused much dispute in Egyptian stratigraphy. The importance of this section for hydrogeologists is great since in its layers water is found in more than one zone. Reclamation programs depend to a great extent on the amount of water found in this section. The misleading correlation of the different units of the sandstone in south Egypt as a whole and in the study area in particular causes several geological problems for those who are interested in the stratigraphy of the Nubia Sandstone.

The present work defines a stratigraphic sequence for this sandstone section by classifying it into several rock units which are correlated with coeval formations well established in Egyptian stratigraphy.

The importance of classifying this section into several units has also its bearing on the search for minerals; of importance is the kaolin and iron deposits recorded from this unit.

This work deals with the stratigraphy, lighological characteristics, and structural relationships of the exposed rocks in the south eastern part of the Western Desert of Egypt (Fig. 1).

I.1. LOCATION

The area studied lies west of Lake Nasser between latitudes 22° and 24° 10' N and longitude 31° 30 and the shores of the lake to the east. It covers an area of about 20,000 km^2 which includes the Egyptian Nubia plain west of Lake Nasser till Sinn El Kaddab scarp.

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 as well as structural lines were traced on aerial photographs (scale 1:50,000 approx.) while controlled mosaics (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 horizons and later were studied for both petrographic and microfaunal contents.

The main structural lines were plotted on aerial photographs and measurements of strike and dip were recorded wherever available.

The many names given by previous authors are believed misleading and cause much confusion in the understanding of the stratigraphy of the area. In the present work revision of all the formational names has been considered to acheive the present classification.

Several biostratigraphic horizons are recorded for the first time in the area investigated which ascertain a definite age for some rock units.

The Devonian Wadi Malik beds at Um Shaghir, the Bahariya Cenomanian beds west of El Malki and the Coniacian-Santonian Taref Sandstone Member are among the new discoveries in the area.

Carboniferous strata including plant fossils are also mapped for the first time, best developed in the southern part of the study area. These rocks were considered Upper Jurassic by Klitzsch (1987).

The extensive Kaolin deposits are mapped for the first time covering different patches in the studied area. These deposits are present in the form of lenses which become

relatively thick in Kalabsha quarry and adjacent areas. The lenses taper to the north and south.

Basaltic rocks are well observed in the form of cones, sheets or dykes. These intrude either the Carboniferous rocks e.g. at Wadi Tushka and vicinities or Nubia Sandstone north of Wadi Kalabsha.