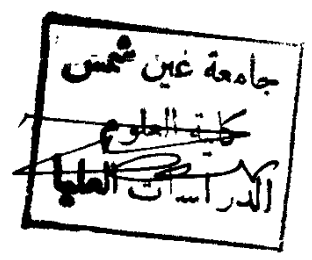


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A GENERAL SURVEY ON THE HELMINTH PARASITES OF
SOME FISH FROM FAYOUM GOVERNORATE
ARAB REPUBLIC OF EGYPT

Thesis
Submitted in Partial Fulfilment of
The Requirements for The Award
of The Master Degree of Science

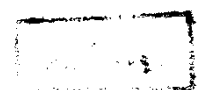


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GENERAL INTRODUCTION

The study of fish parasites in Egypt has received a good deal of attention from parasitologists working in this country. Before the close of the 19th Century, there was the work of Looss (Looss, 1896 and 1899) and early in the 20th Century we had the work of Odhner (Odhner, 1911).

Interest in the study of parasites of fishes has been revived around the middle of the 20th Century. Professor Nagaty published a series of papers from 1930-1957 on the trematodes of Red Sea fishes. This was followed by some more papers by Professor Nagaty and his coworkers from 1962-1969 and a full account on that work was published by Nagaty (1973). Saunders (1960) published the results of a general survey of blood parasites in fishes from the Red Sea. Cestodes of elasmobranches from the Egyptian coastal waters of both the Red Sea and the Mediterranean were the subject of further studies by Saoud (1963), Hassan (1976) and Saoud & Hassan (1983). Further detailed studies on helminth parasites of fishes from the Red Sea have been recently reported by Ramadan (1979; 1982; 1983 a,b and 1984 a,b) and Saoud & Ramadan (1983, 1984 a,b and 1985).

Between 1959 and 1963 Fischthal and Kuntz published a series of papers on the helminth parasites of fishes, mainly freshwater from Egypt (Fischthal and Kuntz, 1959, 1963 a,b,c,d and e). The parasites of freshwater fishes have been studied by various parasitologists. Apart from the work of Fischthal and Kuntz, the literatures includes reports by Moravec (1976 and 1977) on helminth of Nile fishes; Wannas (1977) and Hassan (1980) on helminth parasites of fishes from Lake Nasser; Mohammed (1978) on certain blood and helminth parasites of Silurid fishes from the Nile; Imam et al (1984) on blood trematodes from some Nile Fishes and Abu Al Hag (1985) on helminthes of Nile fishes from Sharkiya Governorate.

Two lakes in Fayoum Governorate, namely Qarun and Wadi Al Rayyan (Fig. 1) have been selected as sites for the present investigation which is concerned with a study of helminth parasites of fishes in Fayoum.

LAKE QARUN, is an inland closed basin of about 40 km long and 5.7 km width, with an average depth of 4.2 m (Meshal and Morcos, 1984). It lies in an arid region occupying the deepest part of Fayoum depression in the Western Desert.

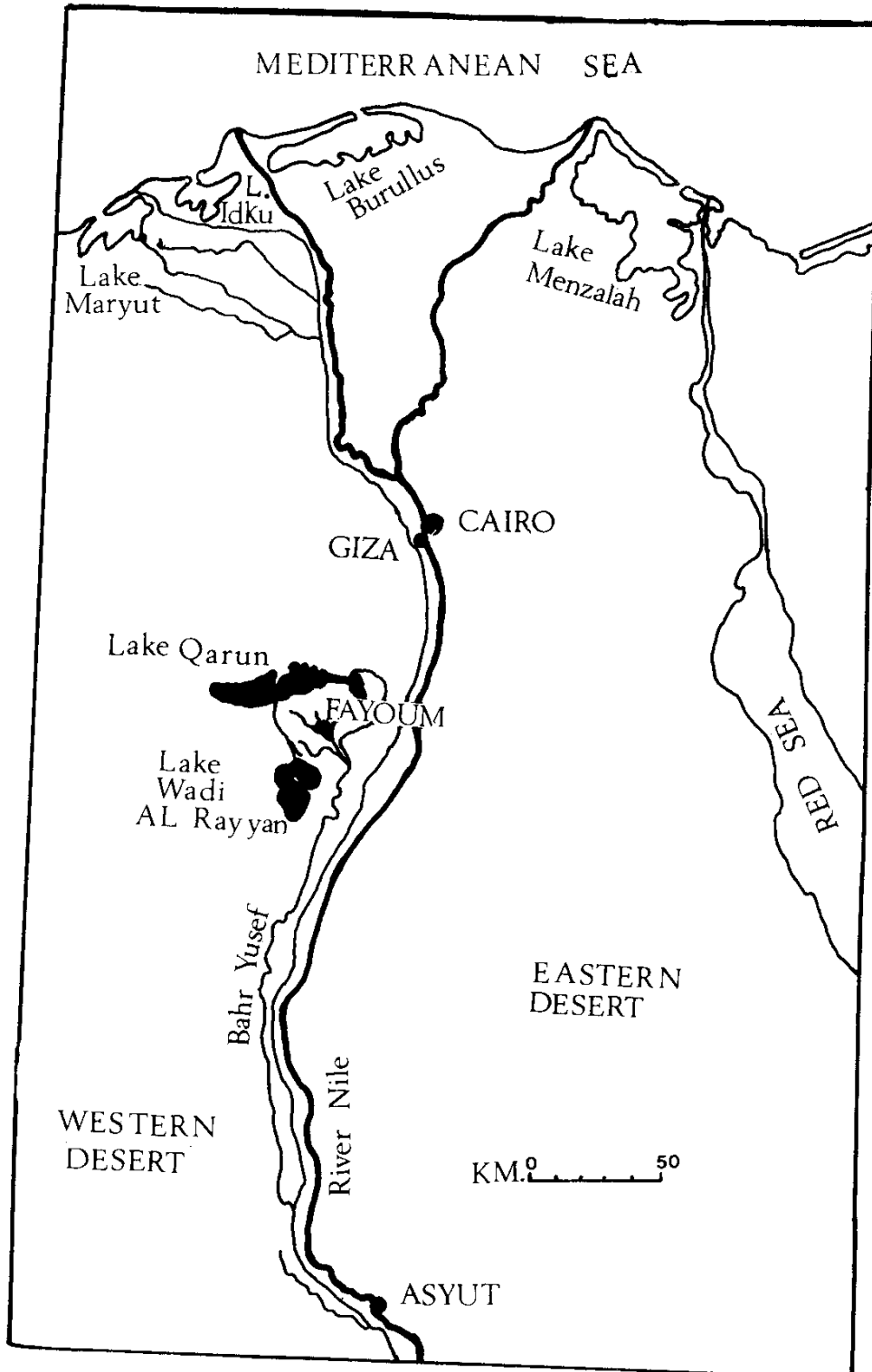


FIG.1

The water level of the lake is about 44 m below mean Sea level. The lake represents the remnant of the ancient prehistoric freshwater Lake Moeries. It was directly connected with the River Nile forming a natural reservoir for the Nile flood and therefore inhabited at that time by freshwater fauna and flora derived from the Nile water. The lake has been disconnected from the Nile and became a drainage reservoir for the cultivated lands of Fayoum and the amount of the freshwater which reached it was greatly reduced (Khalil, 1978). The lake receives only brackish water annually estimated to be as much as 390 million cubic metres which conveys about 430,000 tons of salts to the lake each year (Meshal, 1973). A volume of water nearly equal to that of drainage influx is lost through evaporation and as a result the salinity of the water increases continuously as time passes. Lucas (1906) recorded 13.41 gm/L of total dissolved solids, but Ball (1939), Naguib (1958) and Meshal (1973) reported salinity of 23.4, 30.1 and 32.8 gm/L respectively. The fish fauna of the lake was drastically affected by the increased salinity and those of freshwater origin gradually disappeared from the lake fauna. The only species from the original freshwater fauna that still exists in the lake is Tilapia zillii which naturally resists salinity (Khalil,

(1978). There was a gradual drop in the fish production from 4100 tons in 1920 to 1000-2000 tons/year during the period 1921-1933. To compensate for this reduction in annual fish catch, the Alexandria Institute of Hydrobiology and Fisheries began acclimatization of some marine fishes from the Mediterranean into the Lake. Mugil spp. were transferred to the lake in 1928 and Solea vulgaris was also introduced later. The restocking of fish from the Mediterranean was effective and the annual fish production has increased to 2000-2500 tons/year (Khalil, 1978). El Maghraby and Dowaidar (1969) have reported 36 species of planktonic forms, most of which are well known in the Mediterranean at Alexandria.

No parasitological investigation has been reported on fishes of the lake with the single exception of a record of a parasitic copepod on the gills of Tilapia zillii and Mugil spp. by Khalil (1978).

LAKE WADI AL RAYYAN, is a new man-made Lake which lies to the Southern West of Fayoum Governorate. It is formed of three sections whose total and final volume will be about two milliard cubic meters of water at -18 m below Sea level (Khalil, 1984). Its first section covers an area of about 52.8 km² at -10 m. below Sea level and is filled with water from Al-Wadi Drain which carries freshwater fish and planktonic organisms to this section.