GENERAL INTRODUCTION

Owing to the rapidly increasing human population in Egypt and consequently the increasing demand for all protein sources. Fish represent one of the most important and cheapest sources of animal protein. It contributes about 6% of the world supply of protein and about 24% of animal protein. Special attention is being paid by the Government to fish culture from all aspects.

The studies on fish parasites are of special significance in Egypt, because in this area fish may be a source of different serious helminths infection for domestic animals and man. On the other hand, these parasites that occur in fish devalue their aesthetic quality and palatability and generally, in the most serious cases lower their economic profitability. Moreover, these fishes may act as carriers or vectors of other pathogens (Williams, 1967).

Although studies on parasitic worms from Egyptian fish, date back to the last century (Wedle, 1862 and Looss, 1896 and 1899), relatively little knowledge is available on the helminthic fauna of freshwater fish in Egypt. Generally, attention has been given to digenetic trematodes while other groups of parasites on fish have been neglected. Looss (1896, 1899, 1900 and 1901) was the first to describe and illustrate several common digenetic trematodes from Egyptian fish. His work was followed by Fischthal and Kuntz (1963 a,b,c,d) who confirmed the occurrence of some species, previously described by Looss (Op. Cit.) and added several others. Lately, Moravec (1976) made a systematic survey of digenetic trematodes from 23 species of Egyptian freshwater fish.

In Egypt, several theses have been worked out on parasites of Egyptian freshwater fish, El-Naffar (1970); Imam (1971); Wannas (1977); Mohamed, (1978); Noor El-Din (1981); Aboul-Hag (1985); Lamloom, (1987) and Negm El-Din (1987). The main bulk of these theses was directed to digenetic trematodes while little was done on other groups of parasites.

Marine fishes received similar attention and more than eighty species of trematodes were described in a series of publications over the past forty years (Nagaty, 1973). His work was followed by many other workers in the Red Sea (Hassan, 1976; Ramadan, 1979; Saoud and Hassan, 1983; Saoud and Ramadan, 1983, and Aboul-Hag, 1990).

The present work done on some fishes from three coastal lakes, two lakes on the North of lower Egypt, Edku and Manzallah occur in Behara and Dakahliya Governorates respectively while the other Lake Timsah occurs in Ismailiya Governorate on the Eastern of Egypt (Fig. 1).

Lake Manzallah is economically the most important Delta Lake in Egypt, yet it produces a comparatively small amount of fishes in relation to its large area. It has a total surface area of about 213 $\times$ 10^3 feddans. It is 47 Km long and 30 Km wide, (Towes and Ishak, 1984). It lies within the borders of five Governorates (i.e. Dakahliya, Damietta, Port-Said, Ismailiya and Sharkiya and bordered by Damietta branch of River Nile from the West, Suez Canal from the East, Mediterranean sea from North and agricultural lands from the South. Water salinity varies from 1.80-35.0‰near the sea-lake connections, and 0.0-4.8‰in the other areas, water depth in the lake varies from 0.40-1.20 meter. Analysis of the annual fish catch showed that it increased considerably from a

minimum of 19.2×10^6 tons in 1965 to a maximum of 6.4×10^6 tons in 1986 (El-Serafy and Abdel-Baky, 1990) (Fig. 2).

Lake Edku is a small brackish water lake, lying to the Northern East of Behera Governorate it has an area 17.000 feddans, and its water depth varies from 0.30-1.10 meter. While its salinity ranging from 1.5-3.0‰. The fish production is about 1360 tons/year (Boraey, 1974) (Fig. 3).

Lake Timsah, with a surface depth of 15 Km^2 and has an average depth of 6 meter (Por, 1978). It lies almost half way along the Suez Canal. The Suez Canal-Lake system consists of two shallow lakes (Timsah Lake and Bitter Lakes). Lake Timsah receives high saline water from the bitter Lakes, other times it receives less saline water from the Mediterranean in addition to seasonal flow of fresh water from the Ismailia Canal, and the continuous outflow from the side lagoons. Through these connections, the exchange of water and fauna between the lake and adjoining seas (Mediterranean and Red Sea) is possible (Fig. 4).

The present study aims at contributing to our knowledge on various aspects of the fish-parasite systems in three Egyptian Lakes (Manzallah, Edku and Timsah). It is also hoped that this study will augment our knowledge on parasitic fauna of these lakes.

During the present work, more than 1612 fish, belonging to 15 families, 18 genera and 18 species, have been examined for helminthic infection. Fifteen new species have been recorded; some known species are redescribed and some new hosts and localities records are reported.

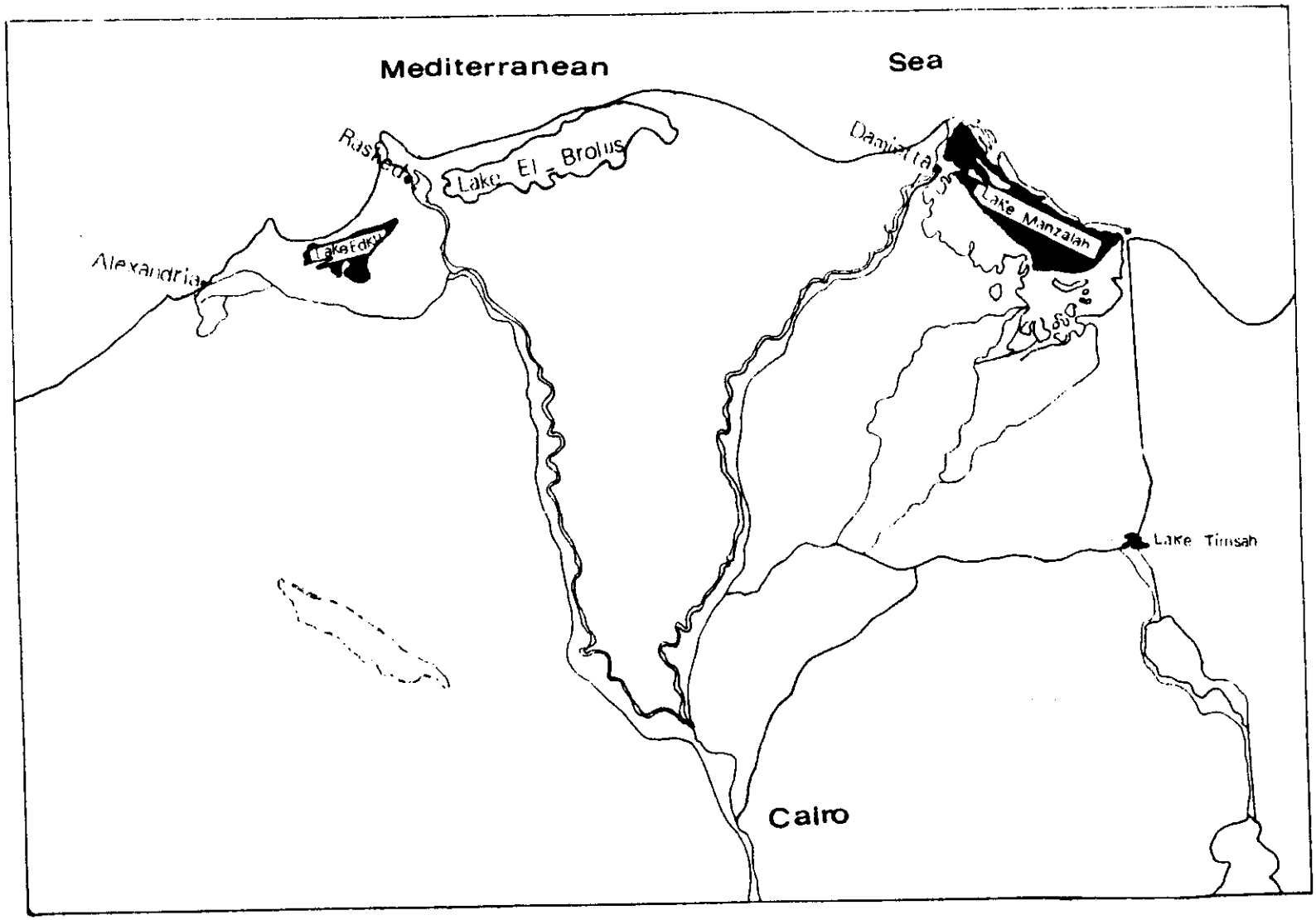

Fig. (1): Map showing the position of the three Lakes.

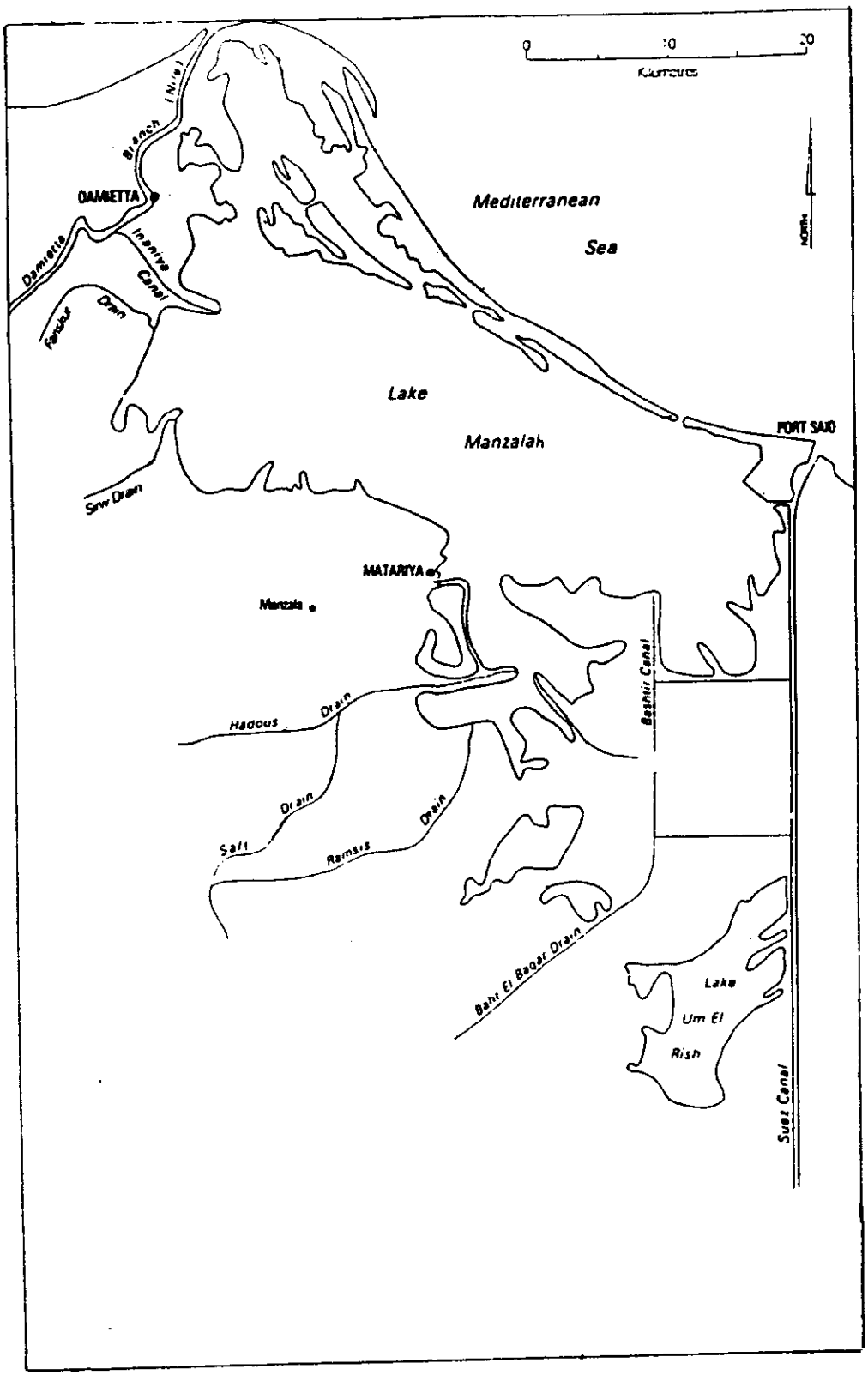

Fig. (2): Map showing the position of Lake Manzallah.

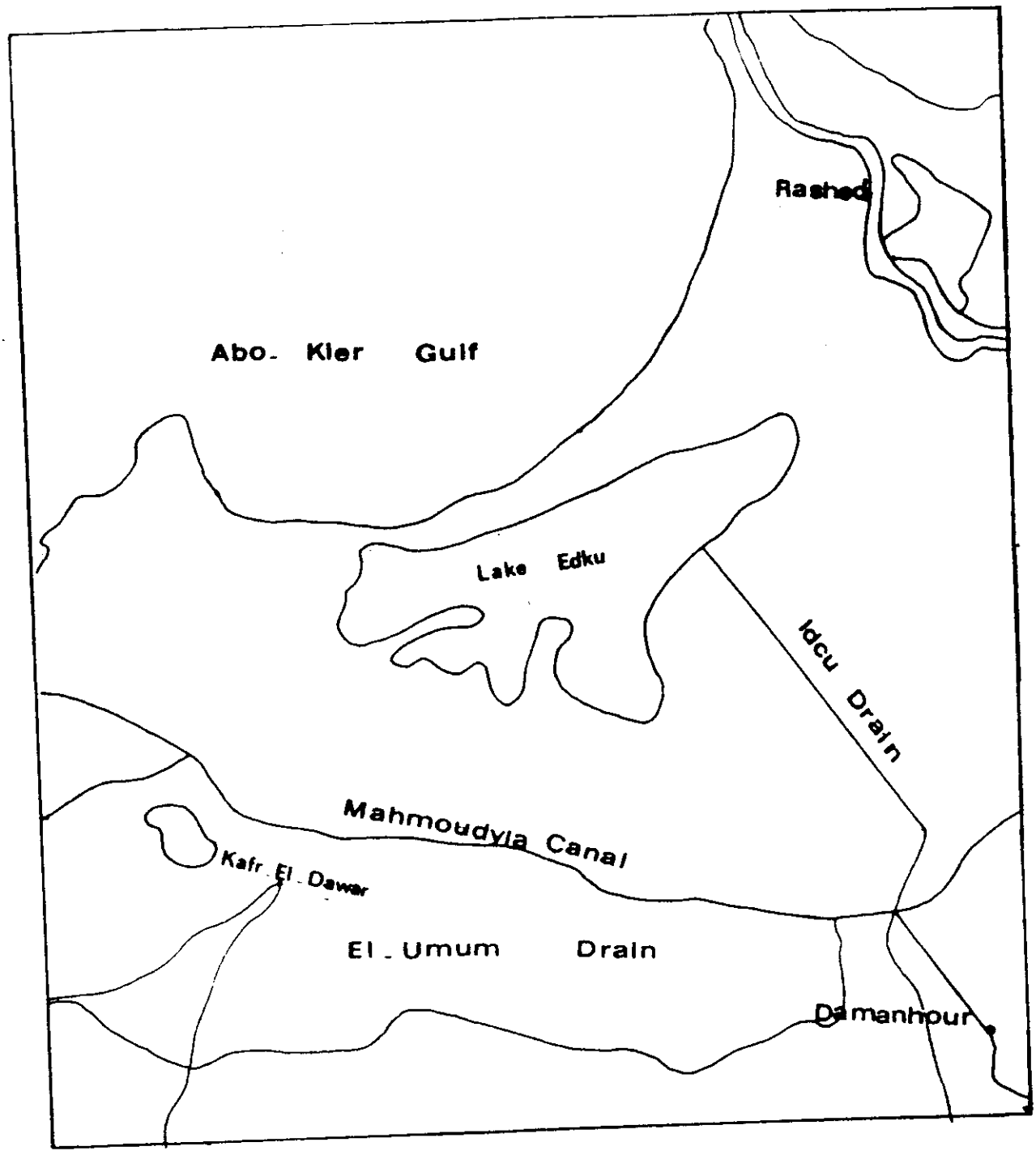

Fig. (3): Map showing the position of Lake Edku.

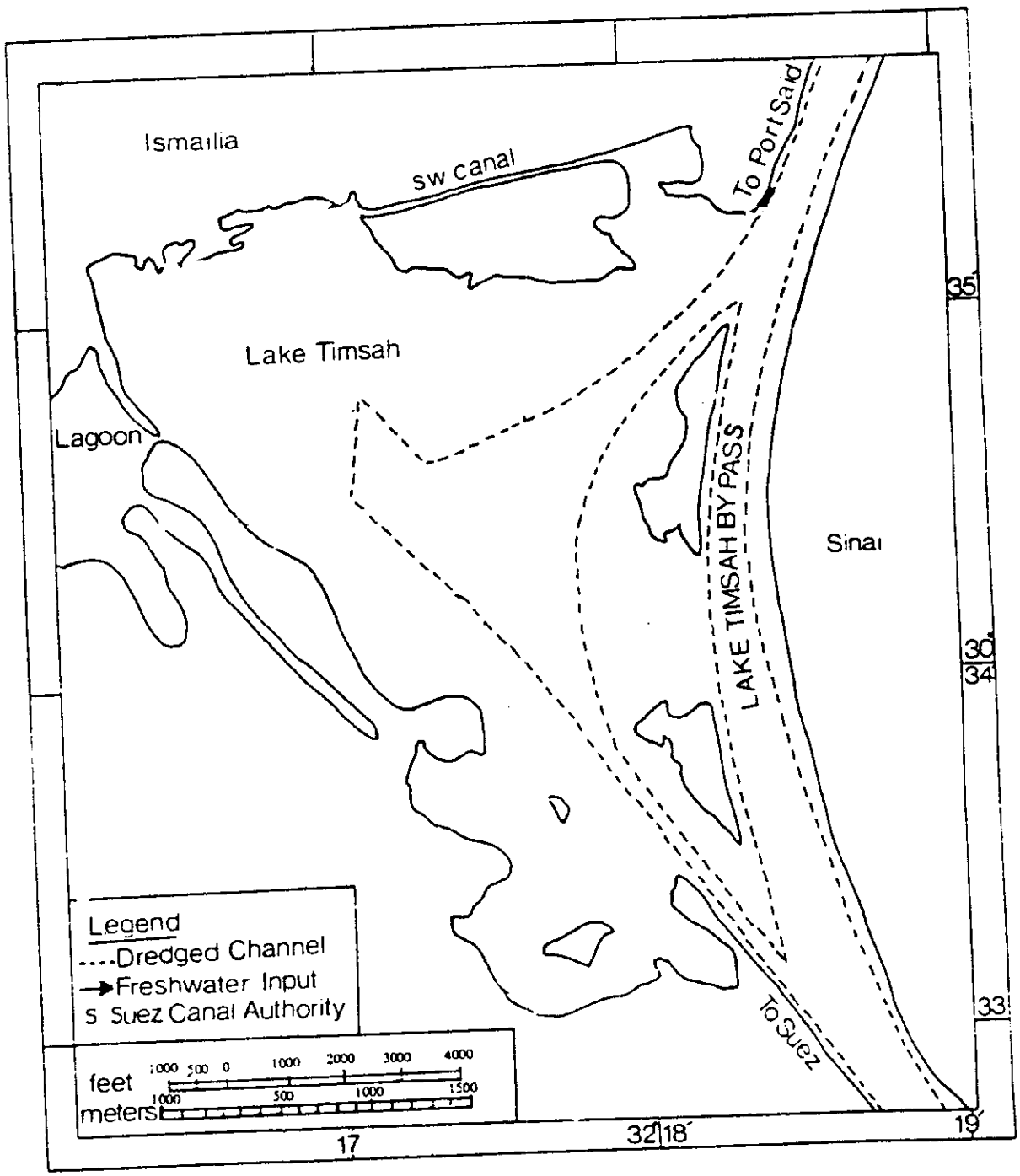

Fig. (4): Map showing the position of Lake Timsah.