بسم اللّه الرحمن الرحيم

شبكة المعلومات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

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PHYSIOLOGICAL AND HEMATOLOGICAL STUDIES ON *TILAPIA* SPECIES INFECTED WITH EXTERNAL PROTOZOA IN ISMAILIA REGION

THESIS

Submitted by

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بسم الله الرحمن الرحيم

"وقل اعملوا فسيرى الله عملكم و رسوله والمؤمنون"

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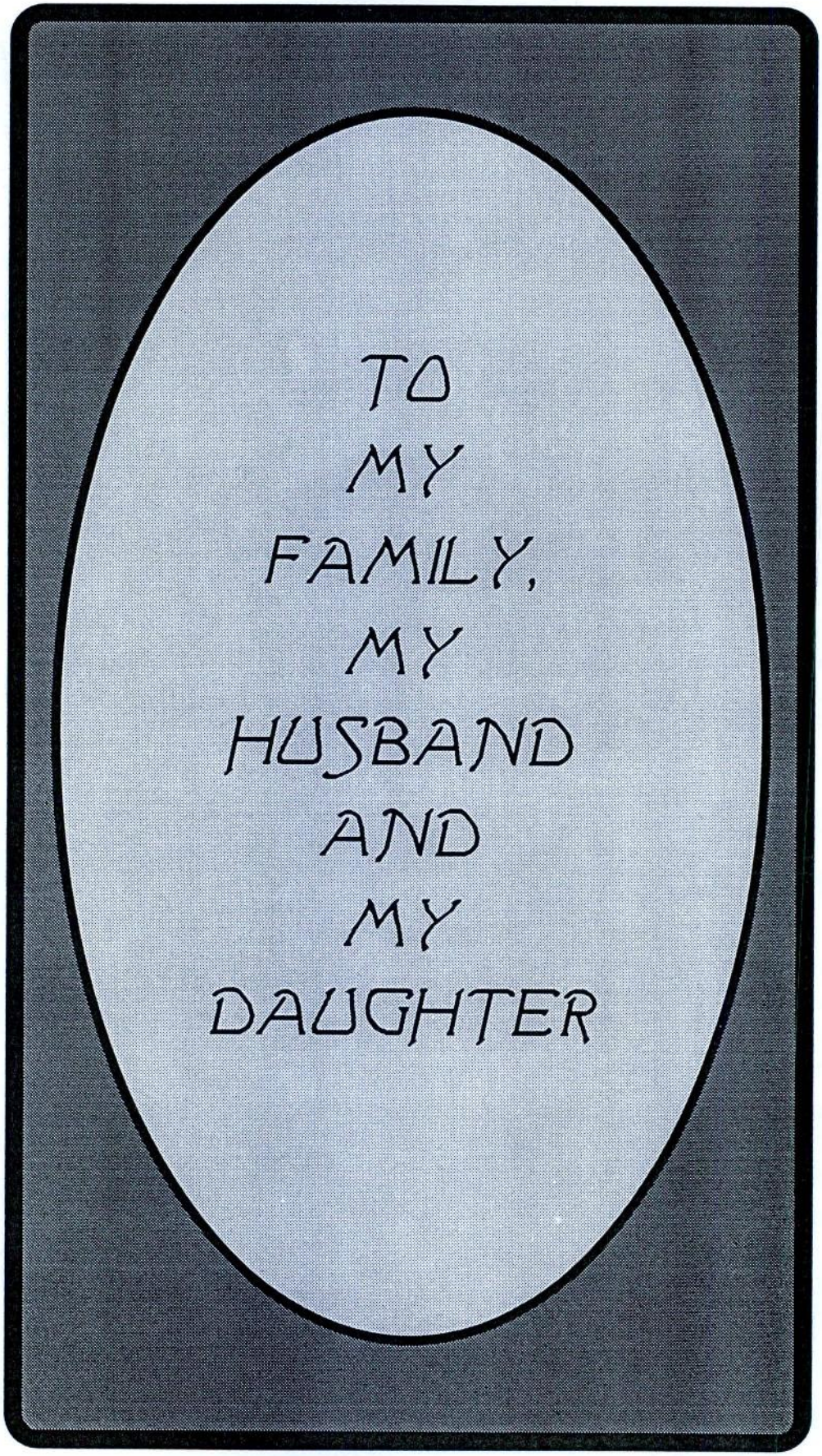
TO
MY
FAMILY,
MY
HUSBAND
AND
MY
DAUGHTER

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CHAPTER 1

INTRODUCTION AND REVIEW

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Fish represents an important source of food protein especially for the countries lying on the shore of the sea, like our country. Nowadays in Egypt, more attention is being focused to develop the natural fish resources as well as the fish cultures to fulfill the demand of the animal protein for the over population.

Tilapia sp. is one of the most popular fish especially in tropical and subtropical countries. It is naturally found in brackish and fresh water bodies as well as cultured in marine water. In Egypt, fish of genus *Tilapia* constitute 70% of the total catch and because of their abundance their prices are handy everywhere. Moreover, several trials were made to culture this fish in a commerecial way **(Chimits, 1955** and **El-Bolock & Koura,1960)**.

Fish has been the subject of many scientific studies such as intensive fish culture and related fish parasites, fish diseases and their treatment.

The study of fish parasites has attracted the attention of parasitologists since they not only cause injuries or even death to the fish but also cause some human health problems. It is reported by **Bauer (1961)** that the influence of parasitic diseases cause considerable losses in the fish supplies. He claimed that these effects are related to a total or partial mortality of fish population and total or partial reduction of the gonads, resulting in lowering of reproductive efficiency of fish as well as a worse condition of fish as a result of a slackening down of growth rate and a lowering of the nutritional state accompnied by a loss of fat content in the fish body.

Furthermore parasitic infestation of cultured fish in tropical and subtropical countries represents a serious problem for aquaculture due to severe economical losses either as a direct or inderict action of the parasites on the growth rate of fish **(Needham and Wootten, 1978)**.

Phylum Protozoa is devided into three subphyla, **flagellata** *(Mastigophora)*, **Ciliata** *(Ciliophora)* and **Suctoria** *(Sarcodina)*. Members of all these groups are represented as ectoparasites of fish. Flagellates attach themselves to the integumentary cells via the flagella. Ciliates have more than one way of attachment, *Chiladonella* is aided by the ventral cilia, while *Trichodina* via the oral dentacles. In *Glossatella* the adoral end develops into an attachment organelle, while in *Epistilis* the stalk is the attachment organ. Some species of *Epistilis* are non-obligate parasites. *Glossatella* as well as *Epistilis* and the Suctoria utilize the host only as a substrate for attachment.

Epistilis and *Glossatella* are filter feeders while suctorians are predators on microorganisms. *Trichodina*, *Chiladonella* and the parasitic flagellates are more specialized parasites and feed on host tissues and exudates. These ectoparasitic Protozoa multiply primarily by binary fission and sexual reproduction by complicated conjugation of micro-and macroconjugants (**Post, 1987**).