



BIOLOGICAL STUDIES ON PROTOZOAN PARASITES INFECTING NILE PERCH FISH LATES NILOTICUS IN EGYPT

A THESIS

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ

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INTRODUCTION

1- INTRODUCTION

Protein deficiency in Egypt is one of the major challenges facing government and this due to increasing demands for animal protein, especially that mammalian and avian protein is expensive. So, the importance of fish as a valuable source of animal protein is increased.

The Nile perch fish *Lates niloticus* Linnaeus, 1758, has a great commercial importance in Africa inhabits a wide variety of habitats, including rivers, lakes, irrigation channels (**Schofield and Chapman 2000**). In Egypt, the annual production of the Nile perch fish was 12311 tons 0.9% of the total annual production of fish wealth sector (**GAFRD, 2010**).

Fish parasites belong to several animal groups, some of the most dangerous ones are found among Protozoa. Parasitic diseases cause a wide spectrum of pathogenic effects ranging from commensalism to severe, often fatal diseases leading to high economic losses in fish.

Ectoparasitic Protozoa, particularly ciliated sessilines such as *Apiosoma*, *Scopulata*, *Ambiphrya* and *Epistylis* are obligate parasites which utilize gills and skin merely as a substrate for attachment, causing massive destruction (**Lom and Dyková 1992**). Their short life cycles, high species diversity and quicker

responses to environmental changes than most other eukaryotic organisms can cause great damage to their host fish (**Madoni and Braghiroli, 2007**). The moderate infection of these protozoan parasites on small fish may prove a fatal disease, since the infection may cause the fish to stop feeding (**Hoffman, 1970**). Whereas, the heavy infection may cause functional disturbances, retard growth, increase the susceptibility of fish for another infection and give the fish an unaesthetic appearance (**Mahmoud, 1983**).

The present study was carried out as a survey on the protozoan ectoparasites infesting gills, skin and fins of the Nile perch fish *Lates niloticus* Linnaeus, 1758, inhabiting Damietta branch of River Nile, Dakahlia Governorate. This survey has been followed by a detailed description to identify these parasites by means of a conventional light microscopy.

REVIEW
OF
LITERATURE

2- REVIEW OF LITERATURE

2-1- Genus *Apiosoma* Blanchard, 1885

The first member of genus *Apiosoma* was originally described by **Kent (1882)** with the name *Spirochona tintinnabulum*. **Bütschli (1889)** separated genus *Apiosoma* from genus *Spirochona* and renamed it *Glossatella tintinnabulum* under his newly erected generic name. Thereafter, the term *Glossatella* was widely used for a long time to describe new species of this genus until the priority of *Apiosoma* (created by **Blanchard, 1885**) was adopted by **Lom (1966)** and **Corliss (1979)** in their authoritative work. The generic name *Apiosoma* is now accepted as the valid one with *Glossatella* being merely a synonym.

In **Egypt**, some studies have been carried out on these ciliate parasites. **Abu El-Wafa (1984)** recorded *Apiosoma* spp. from both *Tilapia* and *Clarias* spp. and *Glossatella* sp. from *Tilapia* spp. from River Nile, **Behera Province**. **Ali (1992)** also described *Apiosoma piscicola*, *Apiosoma amoebae*, *Apiosoma doliaris* and *Apiosoma* sp. from *Tilapia* spp. at Serow Farm, **Damietta Province**. Whereas, **Reda (2011)** recorded *Apiosoma piscicola* and *Apiosoma conica* from gills of *Tilapia zillii* from Damietta branch of **River Nile**.

Li et al. (2008) summarized 72 species and one subspecies of *Apiosoma*, among which many members had synonyms mainly