Paperna 1980

CHAPTER 16 - Infections of Fish by Larval Bivalve Molluscs

ILLUSTRATION: Plate 27

Larval stages of fresh-water bivalve molluscs of the superfamilies Unionoidea and Muteloidea are parasitic on fins and gills of fish. The larvae of Unionidae - known as glochidium - have calcareous bivalve shells often with little hooks on their inner edges. Once the larvae come into contact with a suitable host fish, they clump on to the gills, fins or skin, where they become surrounded by host tissue (epithelial cells). In time they undergo metamorphosis to form juvenile molluscs which then detach themselves from the fish.

The larvae of Mutelidae - haustorium larvae - differ distinctly from glochidia by having a non-calcareous pellicle and a very long tentacle. The larvae attach themselves to the fins or gills, shed off the tentacle and envelop themselves completely in the non-calcareous pellicle. Then they proceed to thrust two prolongations into the host tissue which serve as an anchor as well as an organ for food absorption.

Mutelidae are endemic to Africa while Unionidae are distributed throughout the world. In Africa, the parasitic larvae of these molluscs were so far reported only from Lake Victoria (Jinja and Entebbe areas) and from Lake George. In Israel, glochidia infection has been frequently observed in *Tilapia* fingerlings in Lake Kineret. In the U.S.A. and Europe, mortalities of salmonid fingerlings have been caused by heavy glochidial infections of the gills.

Mutelid larvae are rarely found on fish. Infections were reported from *Barbus altianalis* and from *Tilapia* spp. in Lake Victoria. Unionid glochidia (possible larvae of *Caelatura* bivalves) occur frequently on gills, fins and skin of cichlids from shallow waters. Infection is more prevalent in *Tilapia* spp. than in *Haplochromis* spp. In Lake Victoria the infection already appears in small fry, 10-19 mm in length. Highest levels of infection were recorded from 20-50 mm long *Tilapia variabilis* and *T. zillii*. In such fish, the prevalence of infection exceeded 50% and in some samples the recorded prevalence was 66-75%. The number of glochidia infecting individual fish, however, never exceeded 9. They more readily infected the gills than the skin or the fins. Such infections were far less common in cichlids of Lake George (*T. nilotica* and *Haplochromis* spp.).

REFERENCES: 68, 69