STUDIES ON SOME TREMATODE LARVAE OF SOME FRESH WATER SNAILS IN FAYOUM GOVERNORATE, EGYPT

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SUMMARY

During a survey of cercarial infection of fresh water snails in El-Fayoum governorate, a total of 3489 snails were examined during October 2009 to February 2010. The rate and seasonality of the infection were recorded for each cercaria species with full morphological description.

The overall incidence of infection was 12.4% (435/3489). *Cleopatra bulimoides* have the highest incidence of infection (23.75%) followed by *Melanoides tuberalata* (14.9%), then, *Biomphalaria Alexandrina* (14.8%), *Bulinus truncatus* (3.07%) and the lowest in *Lanistus carinatus* (2.9%) while *Physa actua* and *Lymnaea natalensis* snails were found free from any infection during the period of study.

Regarding the seasonality, the highest incidence was reported during autumn (13.7%) followed by spring (13.2%) then summer (11.8%) while the lowest incidence was recorded during winter (11.6%).

During the present study, nineteen morphologically distinguishable species of cercariae belonging five major groups were recorded. These groups of cercariae were Xiphidiocercariae represented by 8 species; Furcocercous cercariae represented by 7 species; Parapleurolophocercous cercariae represented by 2 species; Echinostome cercariae represented by one species and Gymnocephalus cercariae represented by one species. The types of cercariae and their incidence in each snail were as following:

1- *Cleopatra bulimoides* snails: eight species of cercariae were recorded with incidence (23.75%), including *Cercaria vivax* I (7.5%), *Cercaria vivax* II (3%), *Cardicola* sp. cercaria (1.3%), which are belonging to Furcocecous cercariae type; *Xiphidiocercaria* sp. I (1.9%),

Xiphidiocercaria sp. II (1.6%) and *Xiphidiocercaria* sp. III (5.3%) which are belonging to *Xiphidiocercaria* type; *Philipophothalmus* sp. cercaria (1.25%) which is belonging to *Gymnocephalus* cercaria type and *Echinostom* sp. cercaria (6.7%), which is belonging to *Echinostome* cercaria type.

2- *Melanoides tuberculata* snails: Four species of cercariae were recorded with incidence (14.9%) including *Haplorchis pumilio* cercaria (5.4%) and *Stictodora* sp. cercaria (4.6%) which are belonging to parapleurolorophocercous cercaria type, *Xiphidiocercaria* sp. I (1.9%) and *Xiphidio cercaria* sp. II (1.6%) which are belonging to xiphidiocercaria type.

3- *Biomphalaria alexandrina* snails: Three species of cercaria were recorded with incidence (14.8%), including Longifurcate – pharyngeate distome cercaria type I (6%), and Logifurcate pharyngeate distome cercaria type II (6.2%) and *Schistosoma mansoni* cercaria (2.7%) which are belonging to furcocercous cercaria type.

4- *Bulinus truncatus* snails: Two species of cercaria were recorded with incidence (3.07%), including *Schistosoma haematobium* cercaria (2.1%) which is belonging to furcocercous cercaria type and *xiphidiocercaria* sp. (0.9%) which is belonging to xiphidiocercaria type.

5- *Lanistes carinatus* snails: Two species of cercaria were recorded with incidence (2.9%) including *Xiphidiocercaria* sp. I (1.5%) and *Xiphidiocercaria* sp. I (1.5)% which are belonging to xiphidiocercaria type.

It is worthy to mention that in the present work three species of cercariae were recorded for the first time in Egypt. These species are:

1- *Cercaria vivax* II from *Cleopatra bulimoides* snails

2- *Echinostome* sp. cercaria from *Cleopatra bulimoides* snails

3- Longifurcate pharyngeate cercaria type II from *Biomphalaria alexandrina* snails.

Attempts were carried out to investigate some biological characters for these cercariae in addition to its encystement ability. The following conditions were recommended:

1- Cercariae encysted without need to second intermediate host as *Philophthalmus* sp. cercaria.

2- Cecariae required second intermediate host:

a- Snails can act as second intermediate host as in case of *Xiphidiocercaria* sp. from *Bulinus truncatus* needs to the same snail for encystement.

b- *Tilapia nilotica* can act as second intermediate host as in case of *Ceraria vivax* I which need juveniles of tilapia to encysted in its muscles.

During the present study, polymerase chain reaction (PCR) has been used to detect the infection by *Schistosoma mansoni* in *Biomphalaria alexandrina* snails. The PCR results showed positive snails (field collected snails that shed cercaria in the lab) gave positive reading at 710 bp similar to that of the positive control. One pool of negative snails (did not give cercariae in the lab when crushed) gave no reading in PCR in contrary another pool of negative snails gave positive reading at 710 bp.