

PREVALENCE OF CERCARIAE OF DIGENETIC TREMATODES IN FRESHWATER SNAILS IN SARASAVI OYA

U.A. JAYAWARDENA,¹ R.S. RAJAKARUNA¹ AND P.H. AMERASINGHE²

¹Department of Zoology, Faculty of Science, University of Peradeniya

²International Water Management Institute, Colombo

Digenetic trematodes are internal parasites of wildlife, livestock and man. The life cycle of a typical digenetic trematode has two or more hosts, usually a vertebrate definitive host and a molluscan intermediate host. Trematodes show a high degree of specificity towards the molluscan hosts, and a lower specificity towards the vertebrate hosts. Involvement of snails as intermediate hosts in the transmission of trematode diseases is poorly documented in Sri Lanka. Transmission of digenetic trematodes from the snail to the vertebrate host in the life cycle depends largely on the proportion of infected snails as well as the number of cercariae released from each infected snail.

This study investigates the prevalence and the intensity of digenetic trematode parasites in aquatic snails collected from a riverine habitat in the Wet Zone of Sri Lanka. Snails were collected over a period of six months from the riverbanks of Sarasavi Oya, flowing through the University of Peradeniya, in the Kandy District. The collected snails were kept in small individual plastic containers under laboratory conditions and the release of cercariae was observed daily for 30 days. The containers with snails were exposed to sunlight to induce release of cercariae. The number of cercariae released from each snail was counted. Cercariae were slide mounted and stained with Borax Carmine. Snails and cercariae were identified using available keys.

Four species of snails namely, *Paludomus sphaerica*, *Thiara scabra*, *Thiara tuberculata*, *Gyraulus saigonensis* belonging to the two families (Thiaridae and Planorbidae) and six different types of cercariae were identified. Of the 1140 snails collected, 6% (n = 69) were infected with one or more types of cercariae (Furcocercous, n = 11) Gymnocephalous (n = 35), Gymnophallus (n = 7), Rhopalocercous (n = 1), Monostome (n = 5) and Cystocercous (n = 10). Among the infected snails the highest prevalence was observed in *T. tuberculata* (31%), with one type of cercariae, while *G. saigonensis* was not infected. The highest intensity was observed with Monostome type cercariae (25-392). Hence, *T. tuberculata* and Monostome cercariae are mainly responsible for the transmission trematode diseases in the area during the study period. Of the six types of cercariae, Gymnocephalous contributed to the highest percentage infection (50%) and was released by *P. sphaerica*, which was also infected with three other types of cercariae. Therefore, *P. sphaerica* and Gymnocephalous cercaria would also contribute largely towards the transmission of trematode diseases. Prevalence of cercariae was higher in the areas with stagnant waters and rich organic debris, compared to fast flowing waters with a sandy bottom.

This study shows that overall prevalence of cercaria is low in aquatic snails along the Sarasavi Oya riverbank and the cercariae of most digenetic trematodes are very specific in their choice of snail host. Therefore, the distribution of digenetic trematode species is dependent on the geographical distribution of suitable species of snails. This study did not associate cercariae with their adult forms or their vertebrate final hosts. Future studies would help in locating the adult trematode species, specially those of medical and veterinary importance.