

Proceedings of the Thirteenth Helminthological Days held at Ředkovec (Czech Republic) May 9 – 13, 2005

The conference 13th Helminthological Days organized by the Helminthological Section of the Czech Parasitological Society, was held at Ředkovec in the lovely countryside of the Bohemian-Moravian Highlands (CzR), May 9 – 13, 2005. A total of 65 Czech, Slovak, Austrian, French and Mexican helminthologists, including many students, participated in this meeting.

Most papers were devoted to fish helminths, their ecology, morphology and biology, several presentations reported new data from human and veterinary helminthology.

Mystery of cercarial surface structures of *Trichobilharzia* spp.

M. PODHORSKÝ, P. HORÁK

Department of Parasitology, Faculty of Science, Charles University, Viničná 7, CZ-12844 Prague 2, Czech Republic

Cercariae of *Trichobilharzia* spp. infect a wide range of birds and play an important role as the etiological agent of human cercarial dermatitis, which is now considered as an emerging disease. Unfortunately, the discrimination of species within the genus *Trichobilharzia* based on cercarial morphology is problematic. The dimensions, morphology of the excretory system, position and structure of the penetration glands and distribution of surface papillae (chaetotaxy) are used for species determination but the taxonomic value of these characteristics is often unclear. Another species of trematodes have also been studied and chaetotaxy was often used as a taxonomic criterion.

In our study, the cercariae of *T. szidati* and *T. regenti* were obtained from experimentally infected *Lymnaea stagnalis* and *Radix peregra*, respectively. Their surface structures (including chaetotaxy) were characterised and compared using scanning electron microscopy. In addition the sensory papillae were stained with 0.5 % silver nitrate and observed under a light microscope.

In both species, the tegumental surface bore posteriorly directed spines. The length of spines on the body was about 1 µm, on the tail stem and furca about 3 µm; they were densely distributed. The anterior part of the body was comprised of a head organ with gland duct openings, multiciliated, uniciliated and aciliated sensory receptors. A pore-like mouth was situated on the mid-ventral surface of the

head organ. The surface of the ventral sucker (acetabulum) was often covered with undetermined secretions. In our opinion the sucker probably contains some unknown gland duct openings. Two types of uniciliated sensory endings were distinguished: sensory endings with and without tegumental collar and with cilia of different length. Furthermore, pit-like sensory receptors on the body of cercariae were observed.

In addition to numerous studies on the genus *Trichobilharzia*, we found an extra sensory papillae on the ventral surface of cercariae of *T. regenti*. We demonstrated that chaetotaxy is a useful tool to distinguish cercariae of *T. szidati* and *T. regenti*.

Labelled lectins as a tool for differentiation of bird schistosome cercariae and for detection of changes in glycosylation during penetration of cercariae into their hosts

Z. HŮZOVÁ, L. MIKEŠ

Department of Parasitology, Charles University, Viničná 7, 12844, Prague 2, Czech Republic

The glycocalyx (sacharide coat) of cercariae is a structure that provides osmotic protection and physiological adaptation to changing environment during trematode life cycles. For cercariae in the water, this structure is absolutely essential, but after penetration into a host it could be a source of possible activation of host immune system. In order to avoid this activation, cercariae shed their saccharide coat after penetration.

Glycosylation of living cercariae was described for two species of the family Schistosomatidae: *Schistosoma mansoni* (Linder, 1984) and *Trichobilharzia szidati* (Horák & Mikeš, 1995; Horák *et al.*, 1997). On cross-sections it was characterized also for cercariae of *Trichobilharzia regenti* (Frýzková, 2004). Comparison of these four studies has shown significant differences in the glycosylation of these species. It was supposed that the type of glycosylation could be used for determination of cercariae of morphologically undistinguishable schistosome species.

During a control experiment employing a set of fluorescein-labelled lectins and two bird schistosomes (*Trichobilharzia szidati* and *Trichobilharzia regenti*) parallelly, no

1 fox was parasitized by seven parasite species; coccidia oocysts, taeniidae eggs, *Toxocara canis*, *Toxascaris leonina*, *Ancylostoma caninum*, *Trichuris vulpis* and *Capillaria* spp. were found in its fecal sample. Twelve (57.1 %) of red foxes infected with more than 5 and more parasite species came from Banská Bystrica region. Only in 133 (14.4 %) foxes were observed no parasites.

This work was supported by Science and Technology Assistance Agency under the contract No. APVT-51-010704.

Eradication of pinworm infections from laboratory rat colonies using ivermectin

A. LYTVYNETS¹, I. LANGROVÁ², J. VADLEJCH²

¹Department of Laboratory Animal breeding and Hygiene, Institute of Physiology Academy of Sciences of the Czech Republic, Videnska 1083, 142 20 Prague 4-Krc; ²Department of Zoology and Fisheries, Faculty of Agrobiological, Food and Natural Resources, Czech University of Agriculture Prague, Kamýcká 129, 165 21 Praha 6- Suchdol, Czech Republic

Oxyurids (*Syphacia muris* and *Aspiculuris tetraptera*) are common contaminants of both conventional and specific pathogen-free rodent colonies. It is difficult to control because many anthelmintics eliminate adult worms but have no effect on ova, which can survive ex vivo for prolonged periods. The purpose of this study was to evaluate an efficiency of orally administered ivermectin diluted in water as treatment for pinworms in laboratory rat colonies.

One hundred seventy rats naturally infected with pinworms (*Syphacia muris* and *Aspiculuris tetraptera*) were randomly divided into control and treated groups. The treated group of 120 rats was divided into ten subgroups of 12 animals each. Each subgroup received one to four courses of ivermectin which alternated with drinking water every 5 days. After the last (the 4th) course of ivermectin, rats were given drinking water for 15 days.

During each treatment, ivermectin was administered for 5 days in the drinking water; based on water consumption, the ivermectin dose was 2.5 mg/kg of body weight per day. Ova production was monitored by a cellophane tape test every fifth day. The hygiene conditions of this study, such as the cage change, disinfection and cleaning of the rooms, were synchronized with the treatment cycles.

The control group of 50 rats were euthanized at the beginning of experiment (day 0) and examined for adult pinworms and larvae. Parasites were detected in all control animals.

Every fifth day all rodents of one subgroup were euthanized and their caecum and large intestinal contents were examined for adult pinworms and larvae. No worms were found in caecum and intestinal contents of all treated animals; however, the cellophane tape test was negative in all rats only after the second course of ivermectin was administered.

Hymenolepis sulcata (von Linstow, 1879): occurrence in dormice, *Glis glis* (Rodentia) in Slovak Republic

R. SALAMATIN^{1,2}, D. CIELECKA¹, G. KARBOWIAK³, M. STANKO⁴

¹Department of General Biology and Parasitology, Medical University of Warsaw, Chałubińskiego 5, 02-004 Warsaw, Poland; E-mail: ruslan@ib.amwaw.edu.pl; ²I. I. Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine, B. Chmielnicki 15, 01601, Kyiv, E-mail: ruslan@izan.kiev.ua; ³W.Stefański Institute of Parasitology, Polish Academy of Sciences, Twarda 51/55, 08-818 Warsaw, Poland; ⁴Institute of Zoology, Slovak Academy of Sciences, Löfflerova 10, SK-04001 Košice, Slovak Republic

In the course of parasitological examination of rodents in Slovak Republic, only one specimen of dormice, *Glis glis* was found and dissected. This specimen was infected with *Hymenolepis sulcata* (von Linstow, 1879). *Hymenolepis sulcata* (von Linstow, 1879)

Host and locality: *Glis glis*, Rozhanovce near Košice, Slovak republic, September, 2003; localization: small intestine; intensity: probably 2 specimens, including 1 specimen with scolex. Description. Small-sized Hymenolepidid. The exact length of the mature worms was difficult to evaluate, because the material underwent fragmentation during dissection of the entire intestine, initially fixed in 70 % ethanol. The maximum width was 1 mm. Edges of the strobila are serrate. Gravid segments were filled with eggs. Scolex rounded, with 4 suckers and a rostellum. Hooks absent. Diameter of the scolex, at the level of suckers was 130 µm, and it enlarges into 175 µm in the region below the suckers. Size of the suckers 60 – 65 × 60 – 77 µm, measurements of the rostellum was 72 × 32 µm. Genital pores localized at one side of the strobila, ventral in the border of the first third of proglottids. Cirrus sac 100 – 144 × 40 µm, passes across the excretory ducts. Both internal and external seminal vesicles are present. The vagina opens into the genital atrium behind the cirrus, forming a large seminal receptacle, extending half of the segment. Testes arranged in a form of triangle, two in aporal and one in poral position. Ovary lobular, situated in the middle of segments. Vitellaria located in the posterior half of segment in the midline. Uterus saccular, occupies the entire medullary space of the mature proglottids. Eggs measure 28 – 30 × 32 – 35 µm, embryos 21 – 22 × 25 – 26 µm and oncospherical hooks 17 µm.

H. sulcata was described for the first time by von Linstow in 1879. Until now, its occurrence in *Glis glis* was reported in different parts of Europe, namely in Slovak Republic by Tenora (1965: *Československá parazitologie*, 12: 299 – 303), in Hungary by Murai and Tenora (1977: *Parasitologia Hungarica*, 10: 63 – 66), in Switzerland by Faivre and Vaucher (1978: *Bulletin de la Société Neuchateloise*

des Sciences Naturelles, 101: 53 – 58) and in Spain by Feliu (1987: *Revista Ibérica de Parasitología*, Vol. Extraord.: 79 – 83). This study is the second report of the presence of *H. sulcata* in Slovak Republic.

The study was partially financed by grant VEGA No. 2/5032/25.

Č