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RESEARCH ARTICLE

Occurrence of digenetic trematode Tracheophilus cymbius (Diesing, 1850), Skrjabin, 1913, in domestic duck (Anas boschas domesticus) from India

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Abstract

The digenetic trematode *Tracheophilus cymbius*, which is known to occur in the trachea of domestic and wild ducks and has been reported from Asian countries but there is paucity of information regarding this parasite from India. Subsequently, respiratory tracts of adult domestic ducks from slaughter houses were procured and the fairly thick, creamy white parasites recovered thereafter were routinely processed and stained for morphological identification. Parasite number varied from 1 to 7 with the preferred site of predilection being the anterior part of the lumen near the laryrnx (voice box). The parasites were identified as *Tracheophilus cymbius*, which incidentally is the first ever occurrence of the parasite from Northeast India.

INTRODUCTION

Tracheophilus cymbius (Syn: *Typhlocoelium cymbius*) is a digenetic and fairly uncommon trematode parasite of domestic and wild ducks which inhabits the trachea and bronchi and cause subclinical to clinical manifestations characterized by dyspnoea, asphyxia and even mortality (Scott et al., 1980). Although the parasite has been reported from Bangladesh (Farjana et al., 2008), China (Chongti and Chao, 1978) and once from India (Rao and Rao, 1981), there is dearth of information regarding this parasite from India, especially from this part of the country. The purpose of the study was to ascertain the prevalence of the trematode in Northeast India. The present communication reports its occurrence in domestic ducks of Northeast India and its morphological description.

Experimental procedures:

In order to study the occurrence of the parasite in domestic ducks (*Anas boschas domesticus*), slaughter houses selling duck meat were visited and a total of 132 respiratory tracts were collected in clean polyethylene bags without any preservatives for further examination. At ante-mortem inspection, few birds showed unusual symptoms like respiratory rales, discharge from the mouth and open mouthed breathing with hissing sound while others did not exhibit any unusual symptoms. The parasites, which were recovered, were routinely processed and stained with Borax Carmine and permanent mounts were made. Morphological study was undertaken to identify the parasite following the keys and description of Yamaguti (1961) and Soulsby (1982).

Results and Discussion:

Dissection of the trachea in the laboratory revealed the presence of fairly thick, creamy white trematodes ranging from a single parasite upto a total of eleven (11) parasites in a single bird lying free at the anterior part of the lumen near the voice box (Fig. 1 & 2). A total of 36 birds (27.27%) revealed the presence of parasites. The formalin fixed oval shaped specimen with rounded extremities measured 8-10 mm in length and 3-4 mm wide. The mouth was sub-terminal in

position with the absence of oral and ventral suckers. The pharynx was well developed and the intestinal caeca with simple diverticula was throughout the inner wall of the parasite. The testes were round, oblique and intercaecal in position. Ovaries were round and anterior to the hind testes. The genital pore was pre-pharyngeal and the uterine coils were filled with numerous eggs and intercaecal in position while the vitellaria were extracaecal extending longitudinally towards the posterior end of the parasite. Based on the morphological features, the trematode was identified as *Tracheophilus* under the family Cyclocoelidae and subfamily Typhlocoelinae and was found morphologically indistinguishable from *Tracheophilus cymbius*.

Records of *Tracheophilus* in ducks is comparable with that of Chongti and Chao (1978), who recorded 1-7 parasites per positive bird and incidence ranging upto 30 % in China. Similar findings of low intensity of infection with 1-4 parasites were also reported by from Bangladesh (Farjana et al., 2008). Roy (2005) could report a very high prevalence of other trematodes namely, *Echinostoma revolutum*, *Opisthorchis brahmini*, *Paryphostomum spp*., and *Psilorchis spp*. in ducks of Assam. The super humid climate of Assam, situated in the Northeast region of India with high rainfall, humidity and varied topography of the land provide a very suitable microclimatic environment for growth and development of various parasites of animals and birds and ideal for faster propagation of aquatic snails in flood prone areas having perennial water bodies, wet lands, swamps and marshy areas, which acts as intermediate hosts of a wide variety of trematodes of livestock and aquatic birds (Roy, 2005). Ducks are raised under open range system in backyard farms which feed on snails and other aquatic vegetations and are infected by the parasites. Previous works accomplished by several workers (Borkakoty and Das, 1980; Gogoi and Dev Sarma, 1986; Rajkhowa et al., 1991) on the high prevalence of aquatic snails and cercarial fauna also justify the high significance of trematode diseases in aquatic birds. Lower density of this parasite might be due to its low reproductive potential leading to development of a few cercaria from a single redial generation produced directly from the miracidium (Chongti and Chao, 1978; Soulsby, 1982).

In conclusion, investigation into the respiratory rales and some asymptomatic ducks led to the record of *T. cymbius* for the first time in the Northeastern part (Assam) of India. **Acknowledgement:** The author would like to acknowledge the help and guidance received from Dr. Prabhat Chandra Sarmah Head of the Department of Parasitology, College of Veterinary Science, Assam Agricultural University, Khanapara, Guwahati, Assam during carrying out the study and preparation of the manuscript.

Fig.1. Gross specimen of *T. cymbius* recovered from the trachea of domestic duck.

Fig.2. Adult parasite lying at the anterior part of the lumen of the trachea near the voice box.

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