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A NEW ANOPLOCEPHALINE CESTODE, *ANOPLOCEPHALOIDES ROMEROLAGI* SP. N. PARASITIC IN THE VOLCANO RABBIT, *ROMEROLAGUS DIAZI*[*1]

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A new unique anoplocephaline cestode having spinose tegument was described. *Anoplocephaloides romerolagi* sp. n. was found in the bile duct of a volcano rabbit, *Romerolagus diazi*, from Mexico. This species is related to *A. floresbarroetae*, but is differentiated by the alternative position of genital pores.

The zoogeographical significance of *Anoplocephaloides* spp. of *R. diazi* and other leporids is discussed briefly.

INTRODUCTION

In 1977 a new program for phylogenic studies on parasites of the rabbits of the subfamily Palaeolaginae was initiated after the discovery of a new mite[6] specific to the Amami rabbit, *Pentalagus furnessi*, which is related to the volcano rabbit, *Romerolagus diazi*.

A new cestode belonging to the genus *Anoplocephaloides* from the bile duct of the volvano rabbit is described in this paper.

MATERIALS AND METHODS

During the period from July to October 1977, 10 volcano rabbits were collected at Parres and Cicitec in Mexico.

A small, intact cestode showing gravid segments was collected by dissecting the bile duct of a male *R. diazi* weighing 570 g, which was captured in a field of "Sacaton" grass, *Muhlenbergia macroura*, at an approximate height of 3,500 meters at Parres, 50 km south of Mexico City. The specimen was flattened under pressure fixed in a hot solution of 10% formalin, stained with acetic carmine, processed by the standard

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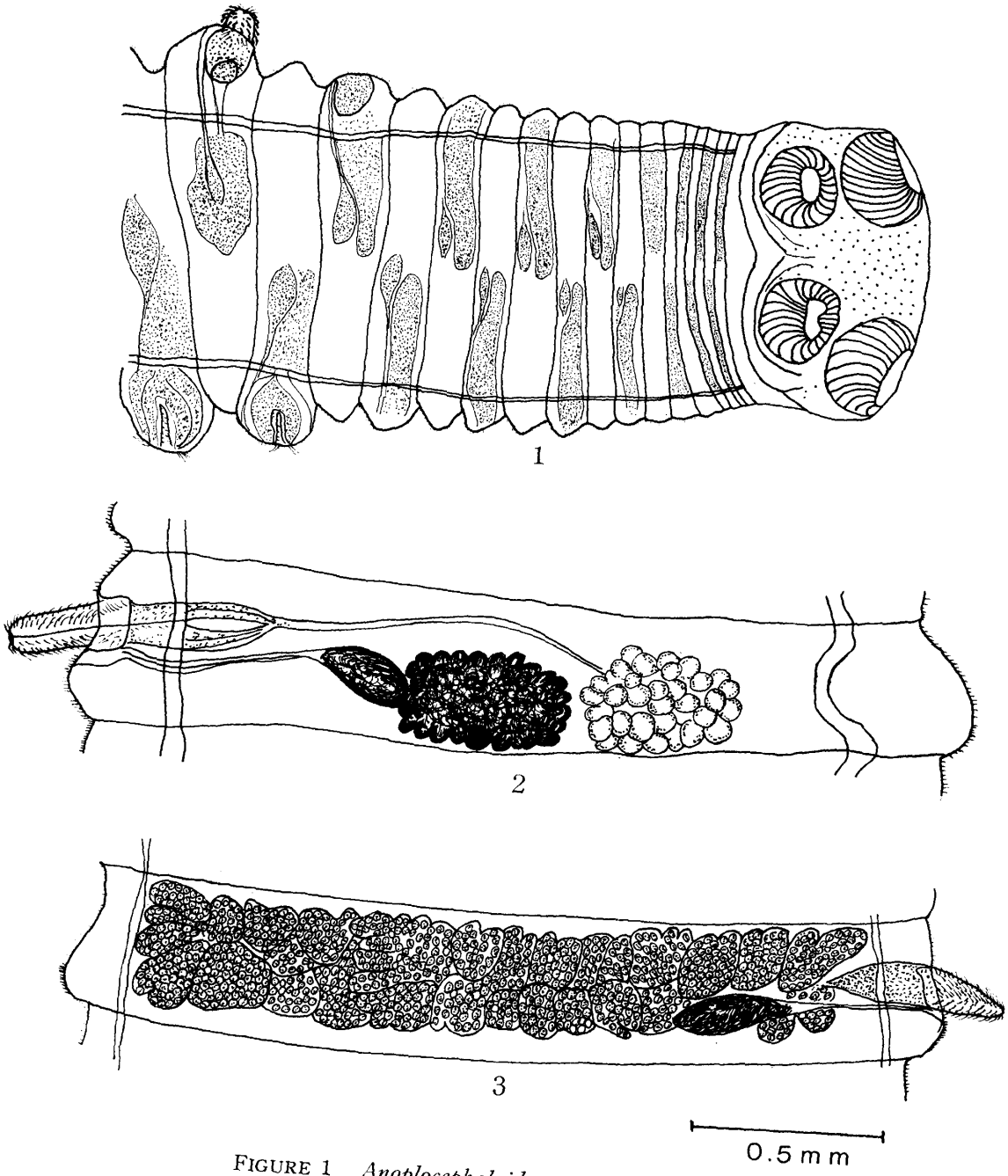

FIGURE 1 *Anoplocephaloides romerolagi* sp. n.
1 Anterior part 2 Mature segment
3 Gravid segment

method, and mounted permanently. The specimen has been placed in the helminthological collection of the Department of Parasitology, Faculty of Veterinary Medicine, Hokkaido University, Japan.

Results

Host: *Romerolagus diazi*

Habitat: Bile duct

Locality: Parres, Mexico

Collection date: October 12, 1977

Description: Strobila 20 mm long, with maximum width of 3.5 mm. All segments wider than long, with length/width ratio increasing posteriorly. Number of segments 66. Distinct spines on the cirrus and shorter spines throughout the tegument. Scolex large and distinct from strobila, size 0.77×0.45 mm. Neck very short. Location of genital organs visible directly behind neck. Genital pores alternately situated posterior to middle of segmental margin. Cirrus sac elongate, 0.31 to 0.461 mm long by 0.119 to 0.164 mm. Cirrus provided with distinct spines. Vaginal opening large. Internal seminal vesicle indistinct. Testes spherical, 0.040 to 0.071 mm in diameter, 30 to 39 per segment at poral margin of ovary. Vagina consisting of thick-walled tube, opening posterior to orifice of male duct passing medial posterior to cirrus sac. Thin-walled, pyriform seminal receptacle increasing in size in early gravid segments. Lobed ovary situated in poral half of segment with medial margin near midline. Uterus first visible as transverse tube extending across segment anterior to testes, apparently not overlapping with longitudinal excretory canals. Uterus producing anterior and posterior sacculations, filling entire gravid segment between longitudinal excretory canals. Cirrus sac and seminal receptacle persisting in gravid segments. Eggs, 0.020 to 0.026 mm, spherical, with well developed pyriform apparatus.

Discussion

There has not yet been a report on helminthic parasites of the volcano rabbit, *R. diazi*, except a report on nematode parasites submitted by Bravo-Hollis (1950)[2].

The present cestode species is the first description of a cestode from *R. diazi*, a primitive rabbit in Mexico. Although the species exhibits peculiar characteristics —spinose tegument and habitat in the bile duct, rather than in the small intestine— it is compatible in the fundamental characteristics of the genus *Anoplocephaloides* established by Baer (1923)[1].

Among various *Anoplocephaloides* species, two species, e. g., *A. wimerosa* (Moniez, 1880) and *A. floresbarroetae* Rausch, 1976, from leporids were reported. The only comparable species is *A. floresbarroetae* found in the cotton tail rabbit, *Sylvilagus brasiliensis*, captured in Costa Rica. *A. floresbarroetae* and *A. romeroliagi* are unique

in possessing a spinose tegument located in the site of localization in the host. However, the present species is differentiated from *A. floresbarroetae* by the position of genital pores, e. g., unilateral in *A. floresbarroetae*, but alternate in *A. romerolagi*.

Members of the genus *Anoplocephaloides* are known to be predominant parasites of mammals in holarctic origin (RAUSCH, 1976)[5]. The *Sylvilagus* originated in a nearctic region and was distributed through South America by way of the Isthmus of Panama during the late Pleistocene period (PATTERSON & PASCUAL, 1968)[4]. Since no *Anoplocephaloides*-like cestode was reported from leporids, including *Sylvilagus* spp. in North America, *A. floresbarroetae* found in Costa Rica had been regarded as a relatively recent parasite-host adaptation according to the process of distribution of *Sylvilagus* in South America. Although it was presumed that an unoccupied biotype of a *Sylvilagus* was provided to the precursor of *A. floresbarroetae* (RAUSCH, 1976)[5], the predominant mammal parasitized with precursor of this cestode had been unknown. The discovery of *A. romerolagi*, which possesses similar morphologic and ecologic characteristics with *A. floresbarroetae*, suggests that one of the unknown predominant mammals is possibly *Romerolagus diazi*. The taxon of *Anoplocephaloides* spp. possessing the unique, above-mentioned characteristics will be useful in tracing the evolution of anoplocephaline cestodes and palaeolagine rabbits.

The phylogeny of the congeners of subfamily Palaeolaginae and their helminths may be revealed from further investigation of the helminths of the Amami rabbit, *P. furnessi* in Amami, southern Japan, and the red rock hare, *Pronolagus repestris* in East Africa.

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