

***Dactylopsilophilus australensis* n. g., n. sp.,
a Representative of a New Family Dactylopsilophilidae,
from a Common Striped Possum, *Dactylopsila trivirgata***

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Dactylopsilophilus australensis n. g. n. sp. is described from a common striped possum, *Dactylopsila trivirgata*, as the type species of a new family Dactylopsilophilidae. This species of tapeworm has the scolex with a small apical organ and four suckers armed with 20–22 rows of spines. The internal and external seminal vesicles and seminal receptacle are present. Gravid uterus breaks up in egg capsules which contain several eggs each.

Key words: *Dactylopsilophilus australensis*, Dactylopsilophilidae, Dilepididea, *Dactylopsila trivirgata*, morphology

Introduction

Several animals of the common striped possum, *Dactylopsila trivirgata* Gray, were first introduced to Japan at Tama Zoological Park, Tokyo, and two of them died after the introduction. One of them harbored cestodes in the intestine together with nematodes and mites. This paper deals with the morphology and description of the new cestode species, *Dactylopsilophilus australensis* n. g., n. sp. and the taxonomic status of the species is discussed.

Materials and Methods

Three cestode specimens were obtained from the small intestine of a common striped possum (*Dactylopsila trivirgata*) which died at Tama Zoological Park on 22 May, 1990. The specimens pressed between two slides were fixed in 70% alcohol, stained with Heidenhain's hematoxylin, dehydrate in an alcohol series, cleared in xylene, and mounted with Canada balsam. All measurements are given in millimeter.

Description of species

Dactylopsilophilus australensis n. g., n. sp.
(Figs. 1–7)

Diagnosis: Order Dilepididea, Family Dactylopsilophilidae n. fam. Strobila 66–78 in length, 2–2.2 in maximum width, dorsoventrally flattened, craspedote. Proglottides wider than long, but in some senile ones longer than wide. Mature proglottid 0.2 long and 2 wide; gravid one in earlier developmental stage 0.2–0.22 long and 2–2.2 wide but senile one 2 long and 0.09 wide. Genital pore unilateral, situated at anterior one-third of proglottid lateral margin. Scolex 0.55–0.65 long and 0.7 wide; rostellum absent; small apical organ present. Suckers muscular, 0.25–0.3 long and 0.17–0.2 wide, armed with 20–22 rows of spines, 0.0035 long. Neck absent. Two sets of excretory canals present. Testes 17–19 in number, 8–9 of them poral, 9–10 aporal; 0.05–0.063 by 0.03–0.038 in size; distributed in semicircular field posterior and lateral to ovary, not beyond anterior margin of ovary. Genital atrium deep, 0.05 long. Cirrus pouch pyriform, 0.075 by 0.045 in size, not reaching longitudinal excretory canal. Cirrus unarmed, 0.038 by 0.005. Vas deferens not coiled, parallel to anterior margin of proglottid. Internal seminal vesicle 0.09–0.1 by 0.03 and external one 0.14 by 0.03. Ovary saclike, median,

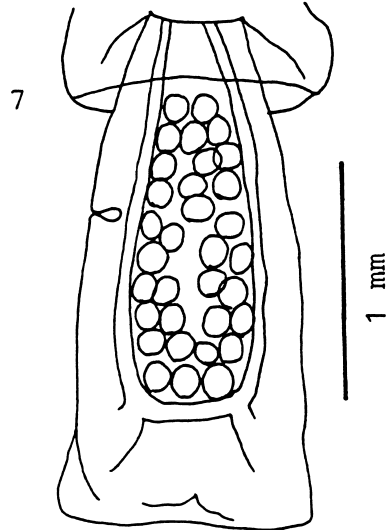
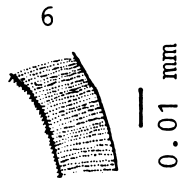
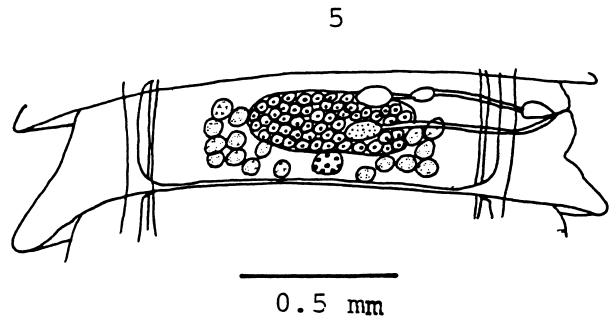
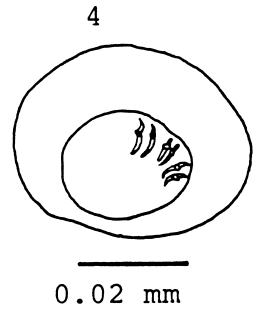
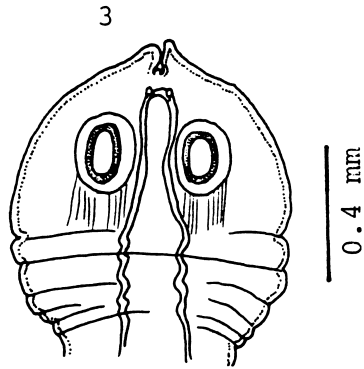
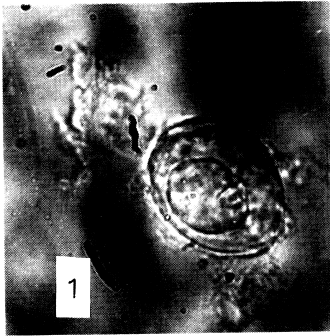


Fig. 1. Egg (400×)
Fig. 2. Acetabular spines (400×)
Fig. 3. Scolex
Fig. 4. Egg
Fig. 5. Mature proglottid
Fig. 6. Acetabular spines
Fig. 7. Gravid proglottid

0.6 by 0.05–0.08. Vitelline gland ovoid, 0.1–0.12 by 0.08–0.1, postovarian. Vagina opening posteriorly to cirrus pouch. Seminal receptacle 0.08–0.12 by 0.04. Uterus breaks up in muscular, grayish green egg capsules which contain 4–6 eggs each and extend between both longitudinal excretory canals. Egg small, 0.038 by 0.03. Onchosphere 0.023 by 0.02–0.023 in both diameters. Embryonic hooks 0.0075 long.

Host: Common striped possum, *Dactylopsila trivirgate* Gray (Marsupialia: Petauridae)

Habitat: Small intestine

Locality and date: Tama Zoological Park, Tokyo; May 22, 1990

Type specimens: Holotype and a paratype deposited in the Meguro Parasitological Museum, MPM Coll. No. 19549

Dactylopsilophilidae n. fam.

Diagnosis: Ord. Dilepididea Wardle, McLeod and Radinovsky, 1974. Worm medium in size. Scolex with an apical organ. Proglottides craspedote, dorsoventrally flattened, broader than long, but in some senile ones longer than wide. Sucker spinose. Testes numerous, medullary. Genital pores marginal, unilateral. Gravid uterus represented by egg capsules. Internal and external seminal vesicle present. Parasites of marsupials.

type genus: *Dactylopsilophilus* n. g.

Dactylopsilophilus n. g.

Diagnosis: Order Dilepididea, Family *Dactylopsilophilidae* n. fam. Scolex with an apical organ. Rostellum absent. Sucker spinose. Genital pores unilateral. Testes numerous, situated bilaterally to ovary. Internal and external seminal vesicles and seminal receptacle present. Type species: *Dactylopsilophilus australensis* n. sp.

Discussion

Opinion is divergent according to authors on the taxonomy of the Order Cyclophyllidea. The difference in the opinion is based on the characteristic features which authors use for recognition of the taxon. The order Cyclophyllidea is defined as a large order with 9 to 14 families by some authors (Wardle and McLeod, 1952; Yamaguti, 1959; Schmidt, 1986), whereas it is reduced to a smaller taxon with 6 families by removal and promotion of some families of the large order to ordinary rank by Wardle, McLeod and Radinovsky in 1974. The reduced order Cyclophyllidea has such recognition features as the multilobed, often fanlike, ovary and vitelline gland situated in the anterior third of the proglottid and the gravid uterus with a median stem and numerous pairs of irregularly shaped lateral lobes. Considering these recognition features of the order Cyclophyllidea, the present new species does not seem to belong to this order, but rather to the order Dilepididea erected by Wardle, McLeod and Radinovsky in 1974.

The order Dilepididea is divided into three families by the structure of gravid uterus: Pāruterinidae, Dipylididae and Dilepididae. The discriminative features of Dipylididae is the gravid uterus represented by egg capsules. The present species is closely related to the Dipylididae due to the presence of egg capsules in the gravid proglottides, but it differs sharply from the family in the presence of an apical organ in the scolex. Consequently the present species is assigned to the new genus *Dactylopsilophilus* of the new family *Dactylopsilophilidae*.

Acknowledgment

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