

A New Dipylidid Cestode, *Dipylidium oitaense*, from a Shiba Dog,
Canis familiaris

GIITI KUGI

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Abstract

Two cestode specimens were obtained from the small intestine of a Shiba dog, *Canis familiaris*, 94-day old at Usa city, Kyushu on November 8, 1988. The present species belongs to the genus *Dipylidium* Leuckart, 1863, which contains 7 species from carnivorous mammals: *D. caninum*, *D. buencaminoi*, *D. catus*, *D. dongolense*, *D. genettae*, *D. otocyonis*, and *D. sexcoronatum*. The present species differs from the above 7 species in the following characteristics: mature and gravid proglottids are wider than long; cirrus pouch rounded; vas deferens not coiled; and testes 230–260 in number.

Key words: cestode, *Dipylidium oitaense* n.sp., *Canis familiaris*

Introduction

Cestode specimens from a dog were examined morphologically and identified as a new species of the genus *Dipylidium*.

Materials and Methods

Two cestode specimens were obtained from the small intestine of a Shiba dog, *Canis familiaris*, at Usa City, Kyushu on November 8, 1988. The specimens were fixed in 70% alcohol after being pressed between two glass slides, stained with Heidenhain's hematoxylin, dehydrated through an alcohol series, cleared in Xylene, and mounted in Canada balsam. All measurements are given in millimeters.

Description

Dipylidium oitaense n.sp.
(Figs. 1–7)

Strobila 88–112 in length and 5.1–6.0 in maximum width. All proglottids broader than long. Scolex 0.4 long and 0.62 wide, with re-

tractile rostellum 0.07–0.08 long and 0.1–0.14 wide, armed with 5 alternating rows of 60–62 rosethorn-shaped hooks: first row hooks 0.01 long and last row hooks 0.0025 long. Rostellar sac 0.09–0.15 long and 0.07–0.1 wide, not reaching anterior margin of suckers. Suckers round, 0.2 in diameter. Neck absent. Mature proglottids 1.1 long and 3.0 wide. Genital pores muscular, 0.2 in diameter and situated slightly posterior to the middle of both proglottid margins. Testes 230–260 in number, 0.03–0.1 long and 0.05–0.12 wide and occupying entire intervascular field, distributing more numerous in front of female organ than behind it. Osmoregulatory canals running across ovary on poral side, but not across cirrus pouch. Cirrus pouch 0.15 in diameter. Cirrus, much coiled in its pouch, measuring 0.075 in length and 0.025 in width when protruded. Vas deferens not coiled. Vagina opening posterior to male genital opening. Ovary lobated, 0.55–0.6 across. Vitelline gland weakly lobate, 0.09–0.1 long and 0.18–0.3 wide, lying just posterior to ovary. Gravid proglottids 3.50–3.92 long and 6.0 wide, containing egg capsules in almost all parenchyma. Egg capsules containing 4–35 eggs each. Egg spherical, 0.03–0.04 in diameter, onchospheres 0.0225–0.0275 in diameter, with embryonic hooks 0.01 long.

2-27 Minami-matogahama, Beppu City, Oita 874, Japan
久木義一 (別府市南のヶ浜 2-27)

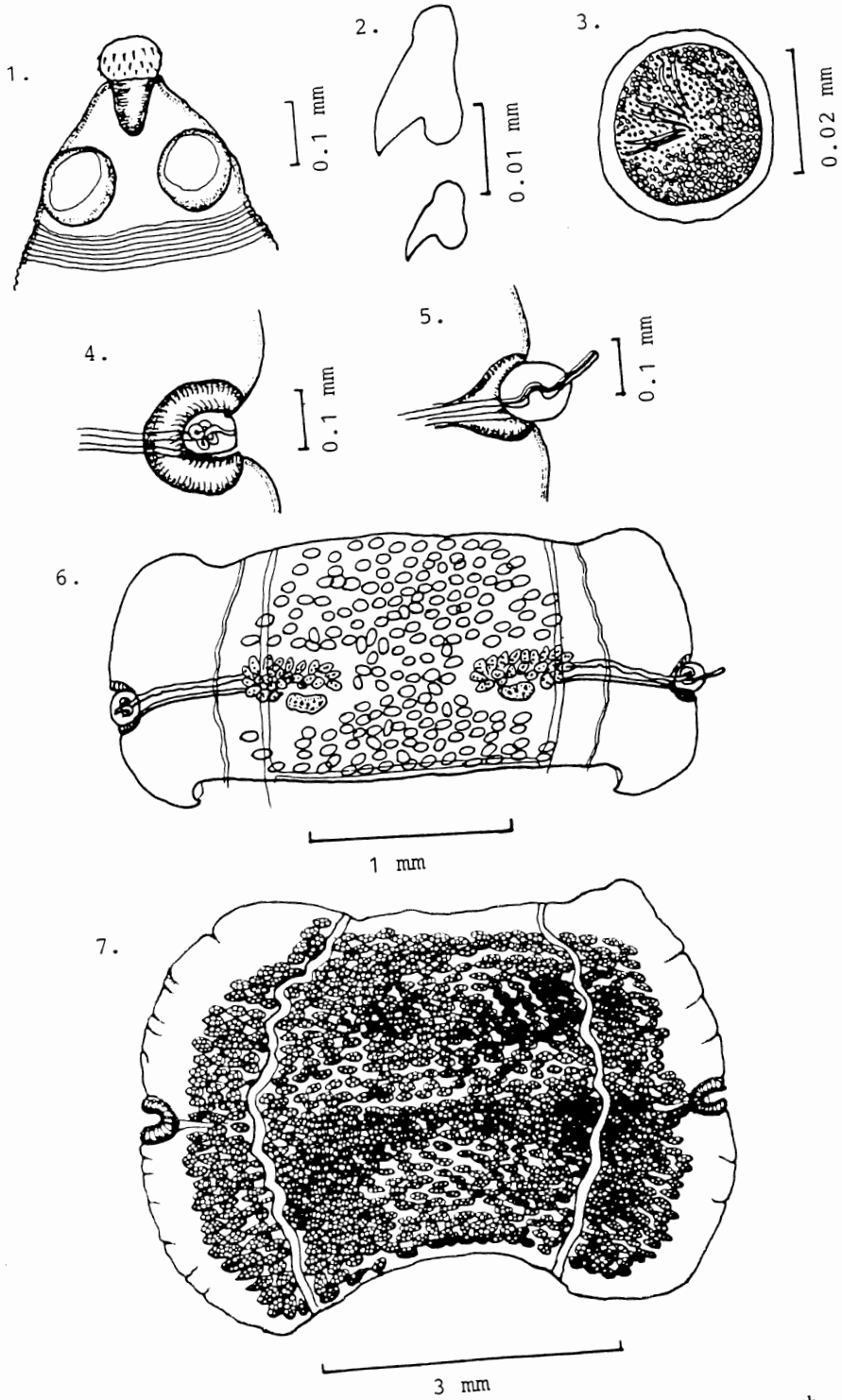


Fig. 1. Scolex Fig. 2. Rostellar hooks Fig. 3. Egg Fig. 4. Genital pore and cirrus pouch Fig. 5. Protruded cirrus pouch and cirrus Fig. 6. Mature proglottid Fig. 7. Gravid proglottid

Host: *Canis familiaris*

Habitat: Small intestine

Locality and date: Usa City; November 8, 1988.

Type specimen: Holotype deposited in Meguro Parasitological Museum, MPM Coll. No. 19537.

Discussion

The present new species has the morphological features that are characteristic of both genera *Dipylidium* and *Joyeuxiella*: the postequatorial genital pore and several eggs in each egg capsule are characteristic of the former genus, while the wider-than-long proglottid is of the latter genus. However, we tentatively assigned this new species to the genus *Dipylidium*, because the number of eggs in egg capsules is important as the generic characteristics.

Yamaguti (1959), Mathevossian (1963) and Schmidt (1986) listed 5, 4, and 5 species respectively in the genus *Dipylidium* from Carnivora. The species of *caninum*, *buencaminoi* and *otocyonis* are listed as valid species of genus *Dipylidium* by all the above authors, but some of the species are suppressed to synonyms or transferred to other genus or omitted from the list probably because of the insufficient description, although other authors listed them as valid. The present new species is morphologically compared with the following 7 species which are listed as valid by the above authors: *caninum*, *buencaminoi*, *catus*, *dongolense*, *genettae*, *otocyonis* and *sexcoronatum* (Table 1).

D. caninum differs from the present new species in the longer-than-wide mature and gravid proglottids, the elongate cirrus pouch, the coiled vas deferens and the greater numbers of testes.

D. buencaminoi is different from the present species in the smaller length of strobila and the elongate rostellum, the longer-than-wide mature and gravid proglottids, the coiled vas deferens and the elongate cirrus pouch, the smaller numbers of testes, and the smaller diameter of eggs.

D. catus can be discriminated from the present species by the smaller strobila, the smaller

numbers of testes, the much elongate cirrus pouch, and the coiled vas deferens.

D. dongolense was transferred to genus *Joyeuxiella* by Lopez-Neyra (1927), and Witenberg (1932) asserted that the description of the species is too much insufficient to permit an opinion. *D. dongolense* differs from the present species in the smaller size of strobila.

D. genettae has been also insufficiently described and is a doubtful species of genus *Dipylidium*, because it has an alternating or double genital pores in different proglottids (Wittenberg 1932, Beddard 1913, Mathevossian 1963).

D. otocyonis differs from the present species in the smaller strobila, the smaller rostellar hooks, and the elongate cirrus pouch.

D. sexcoronatum was listed as a valid species by Mathovossian (1963), but was rejected by Stewart (1939) and Yamaguti (1959) as a physiological strain of *D. caninum*. *D. sexcoronatum* is almost identical with *caninum* in morphological features.

Consequently, the most characteristic features of the new species are the wider-than-long proglottids, the round cirrus pouch and the straight vas deferens.

Acknowledgments

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Table 1. Comparison of *Dipylidium* spp. from Carnivora

Species	<i>D. oitaense</i>	<i>D. caninum</i>	<i>D. buencaminoi</i>	<i>D. catus</i>	<i>D. dongolense</i>	<i>D. genettae</i>	<i>D. otocyonis</i>	<i>D. sexcoronatum</i>
Strobila	L 88-112 W 5.1-6.0	150-500 3-4	30	28-40 1.5	5-6 1	80 2	17 4	100-230
Scolex	L 0.4 W 0.62	0.2-0.3 0.24-0.5	0.45 0.23	0.35-0.6 0.35-0.44			0.4	
Rostellum	L 0.07-0.08 W 0.1-0.14		0.13 0.05	0.08-0.12 0.08			0.13 0.16	
Rostellar hook	5 60-62 0.01-0.0025	4-7 16-20 0.013-0.011	4-5 0.007	5-6 50-60 0.012-0.006	4 0.002	4 0.002	4 0.042-0.020	6 20-25 0.011-0.013 0.004-0.005
Position of genital prore	posterior to middle of proglottid			anterior to middle of proglottid				
Testes	No 230-260 Size 0.03-0.1 0.05-0.12	150-300 pyriform 0.1-0.3	150-180 pyriform 0.114×0.038	120-150			230 0.08	150-175 (130-190) 0.055
Cirrus pouch	rounded 0.15 in diameter	pyriform 0.1-0.3	pyriform 0.114×0.038	much elongate			pyriform	0.220-0.290 X 0.050-0.060
Vas deferens	straight	coiled	loosely coiled	coiled	much coiled			
Mature proglottid	1.1 3.1		1.6-2.3 0.5-0.75	1.5-2.5 0.35-0.6				
Gravid proglottid	3.92 6.0	8-23 long	2.5-3 0.8-0.9	3-4 0.6-1.5				
Egg in the egg capsule	4-35	3-30	3-12	2-13			7-30	
Egg	0.03-0.04	0.036-0.042 0.032-0.036	0.008				0.045-0.05	0.025-0.026
Oncosphere	0.0225-0.0275	0.026-0.05 0.02-0.026					0.02	
Embryonic hook	0.01	0.012					0.008	
Final host	dog	dog and cat	dog	cat	Genetta dongolana	Viverra genetta	Otocyon megalotis	Cat Dog

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