

**Description of *Duboisitrema sawadai* gen. et sp. nov.
from Some Japanese Chiroptera
(Trematoda: Lecithodendriidae)**

TEIJI KIFUNE

*Department of Parasitology, School of Medicine,
Fukuoka University, Fukuoka 814, Japan*

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In the course of the examinations of trematode parasites of the Japanese Chiroptera mainly collected by Prof. I. Sawada of Nara University of Education, I found a unique species of which generic classification was very difficult. Through the kind advice of Dr. G. Dubois, Neuchâtel, Switzerland, I could determine that the species was new and represented a new genus in the family Lecithodendriidae.

Materials and Methods

The materials were obtained from the intestines of bats collected in several localities in Japan. As soon as the materials were collected, they were fixed with 70% alcohol. The fixed materials were brought to our laboratory and washed with distilled water. These materials were flattened, refixed with Bouin's fluid, and then stained with alum carmine. The stained materials were mounted with Eukitt or Permount *in toto*.

Results and Discussion

The data of the host bats from which

the present materials were obtained are summarized in Table 1 and their localities are shown in Fig. 1.

***Duboisitrema* gen. nov.**
(gender; neuter)

Diagnosis: Lecithodendriidae. Body fusiform or spathulate. Oral sucker subterminal, slightly smaller than acetabulum. Cirrus pouch arcuated, situated in front of acetabulum. Acetabulum circular, situated at about one-fourth to -fifth of body length from anterior extremity. Genital pore at a little front of acetabulum. Ovary circular or slightly elliptical. Testes symmetrical or, sometimes, slightly diagonal. Uterus occupying almost whole posttesticular region. A characteristic muscular orifice opening just posterior to acetabulum. A muscular meandering tubular structure originated from the orifice and reaching the anterior margin of ovary. Excretory vesicle V-shaped. Parasite of *Rhinolophus*, *Myotis*, and *Miniopterus* (Chiroptera).

***Duboisitrema sawadai* gen. et sp. nov.**
(Fig. 2)

Gen. sp. D Watanabe, 1959

Totally 53 specimens were collected from 7 examples of 3 species of the Japanese bats.

Contributions to the trematode fauna of Japan-XIII.

Table 1 List of the host materials of *Duboisitrema sawadai* gen. et sp. nov. arranged by the chronological order of the collections

Locality	Date	Host species	No. of <i>D.s.</i> obtained
Water tunnel, Tenri City, Nara Pref.	Jul. 1, 1967	<i>Miniopterus schreibersii fuliginosus</i>	1 ex.
Antigua of manganese mine, Mugegawa-chô, Gifu Pref.	May 5, 1968	<i>Rhinolophus ferrumequinum nippon</i>	4 exx.
Akiyoshi-dô, Shûhô-chô, Yamaguchi Pref.	Oct. 5, 1969	<i>Myotis macrodactylus</i>	2 exx.
"	May 26, 1970	"	15 exx.
"	"	"	1 ex.
Nakatô-dô, Shiiba-son, Miyazaki Pref.	Aug. 25, 1972	"	8 exx.
Eko, Kamiagata-chô, Nagasaki Pref. (Tsushima Is.)	Aug. 7, 1975	"	22 exx.
		Total	53 exx.



Fig. 1 Map showing the distribution of *Duboisitrema sawadai* gen. et sp. nov.

- : The localities of the present materials.
- : The locality recorded by Watanabe (1959).

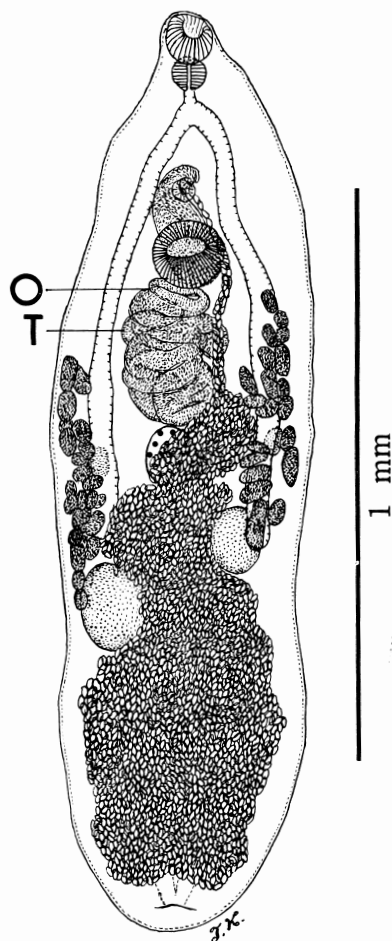


Fig. 2 *Duboisitrema sawadai* gen. et sp. nov., holotype, from *Myotis macrodactylus* collected in Miyazaki Pref., Kyushu.

O: Muscular orifice
T: Muscular tubule

Comparatively well developed 20 specimens out of them were designated to the type specimens. Description and measurements were performed on these specimens.

Description: Body 1.02–2.19 mm in length and 0.34–0.66 mm in maximum width. Oral sucker subterminal, circular or elliptical, $0.08\text{--}0.14 \times 0.08\text{--}0.11$ mm; prepharynx invisible; pharynx almost circular, $0.035\text{--}0.055$ mm in diameter; esophagus short; bifurcated simple ceca terminated at the level of testes; acetabulum almost circu-

lar, $0.085\text{--}0.18$ mm in diameter, slightly or clearly larger than oral sucker, especially in more developed examples, situated at about one-fourth to -fifth of body length from anterior extremity; ovary circular or elliptical, $0.11\text{--}0.14 \times 0.14\text{--}0.15$ mm; vitellaria separated into two groups of about 20 follicles each, situated just in front of testes, surrounding the terminal ends of ceca; testes usually longitudinally elongated, elliptical, right testis sometimes slightly smaller than the left, $0.12\text{--}0.25 \times 0.080\text{--}0.19$ mm, left testis, $0.15\text{--}0.24 \times 0.10\text{--}0.19$ mm, situated slightly posterior to the median level of body, both testes usually symmetrical, sometimes slightly diagonal (left testis situated anteriorly). Eggs elliptical, yellowish brown in color, $0.028\text{--}0.030 \times 0.012\text{--}0.013$ mm.

Specimens examined: 4 exx., Mugegawa-chô, Gifu Pref., May 5, 1968, from *Rhinolophus ferrumequinum nippon*; 2 exx., Shûhô-cho, Yamaguchi Pref., Oct. 5, 1969, 15 & 1 exx., same locality, May 26, 1970, 22 exx., Eko, Kamiagata-chô, Tsushima Is., Nagasaki Pref., Aug. 7, 1975, 8 exx., Shiiba-son, Miyazaki Pref., Aug. 25, 1972, from *Myotis macrodactylus*; 1 ex., Tenri City, Nara Pref., Jul. 1, 1967, from *Miniopterus schreibersii fuliginosus*.

Type materials: Holotype (No. T 0039) and 7 paratopotypes (Nos. T 0040–0046) from 8 exx., Shiiba-son, Miyazaki Pref., Aug. 25, 1972, and 12 paratypes (Nos. T 0047–0058) selected from 15 exx., Shûhô-chô, Yamaguchi Pref., May 26, 1970. All the types are deposited in the Department of Parasitology, School of Medicine, Fukuoka University.

Discussion: The present new genus is much characteristic and easily distinguishable from any other genera by the muscular structure between the acetabulum and the ovary together with the arrangements of the other organs. Watanabe (1959) reported an unidentified species, which may be identical to the present new species, from *Nyctalus*

maximus aviator (= *N. lasiopterus aviator*) collected in Hiroshima Pref., Honshu. This genus is somewhat allied to *Vesperugidendrium* Pande (1937) which has a muscular ridge around the acetabulum, but has no tubular muscular structure between acetabulum and ovary. The family Lecithodendriidae is separated into several subfamilies. None of them, however, is able to receive the present new genus. Then, it may rather be adequate to establish the following new subfamily.

Duboisitrematinae subfam. nov.

Diagnosis: Lecithodendriidae. Characters of this new subfamily are as stated in the generic diagnosis. This seems to be allied to *Vesperugidendriinae* Yamaguti (1958) but differs from it by the presence of a characteristic muscular orifice posterior to acetabulum and of muscular structure between acetabulum and ovary. Other organizations are generally same to the other genera of the family.

Summary

A unique trematode, *Duboisitrema sawadai* gen. et sp. nov. (Lecithodendriidae) is described on the basis of 20 out of 53 specimens (7 lots) obtained from the small intestines of 3 species of the Japanese Chiroptera (*Rhinolophus ferrumequinum nippon*, *Myotis macrodactylus*, and *Miniopterus schreibersii fuliginosus*) collected at 5 localities in Honshu and Kyushu including Tsushima Island.

The present new species is characteristic

of the presence of a muscular orifice posterior to acetabulum and muscular tubular structure between acetabulum and ovary. This species seems to be allied to *Vesperugidendrium indicum* but is easily distinguishable by the absence of muscular ridge around the acetabulum and the presence of the muscular tubular structure. A new subfamily, *Duboisitrematinae*, is proposed for receiving the present new genus.

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I wish to express my cordial gratitude to Prof. I. Sawada, Nara University of Education, for the collection and donation of the present valuable materials, and to Dr. G. Dubois, Neuchâtel, and Dr. C. Vaucher, Museum d'Histoire Naturelle de Geneve, Switzerland, for their kind advice and encouragement through the present study. Both of the specific and generic names are dedicated to Prof. Sawada and Dr. Dubois, respectively.

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日本産数種コウモリからの一新吸虫 *Duboisitrema sawadai* gen. et sp. nov. の記載

木船悌嗣

(福岡大学医学部寄生虫学教室)

奈良教育大学の沢田勇教授によって、過去数年にわたり日本各地で採集されたコウモリの寄生吸虫の標本の恵与を受けて調べてきたところ、岐阜・奈良・山口・宮崎の各県と対馬の5個所で捕獲された3種コウモリ(キクガシラ, モモジロ, ユビナガ)から1種の特異な吸虫を見出した。標本は7群より成る合計53点で、概形は明らかに *Lecithodendriidae* に属するが、腹吸盤の直後に筋肉質の開口部様構造を有し、さらにその後方に卵巣前縁にまで達する筋肉質の屈曲した管状構造を有することで、全く他に例を見ない異質の種類と判明した。インドより記録された *Vesperugidendrium indicum* Pande, 1937 は腹吸盤をとりかこむような筋肉質の隆起を有す

ることで特異な存在であるが、本種のもは明らかにそれとは異なった性質起原のものであり、それゆえ新属を設けるべきであろうとの結論に達し、モモジロコウモリより得た20個の標本を模式標本として、*Duboisitrema sawadai* gen. et sp. nov. と命名・記載した。また、かつて渡辺(1959)が報告した広島県産コウモリ寄生吸虫6種のうち、ニホンヤマコウモリ寄生のD種を本種と同定した。本新属は上述の特徴よりみて、既設のいずれの亜科にも含めがたいので、新亜科 *Duboisitrematinae* を創設してこれに配した。なお本種にはサワダキュウチュウという和名を与えたい。またこの機会に、*Lecithodendriidae* の和名として双腺吸虫科(新称)を提唱したい。