

## Trematoda of Some Indian Bats with Description of a New *Renschetrema* (Digenea, Microphallidae)<sup>1,2)</sup>

By

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### Abstract

*Renschetrema indicum* sp. nov. is described from two Indian bats, *Myotis nipalensis* and *M. muricola*, collected in Sikkim and West Bengal, India. *Neoheterophyes huynhi* and *Prosthodendrium* sp. are also recorded from *Myotis siligorensis* and *M. muricola*, respectively.

Through the courtesy of Mr. Masahiro SAKAI, Ehime University, who had participated in the Zoological Expedition to the Eastern Himalayas 1983 made by the National Science Museum, Tokyo, under the leadership of Dr. Shun-Ichi UÉNO, and of Professor Isamu SAWADA, Nara University of Education, I was able to examine the trematode parasites of three bats collected by Dr. Shigeru AE, who had also participated in the Expedition, in Sikkim and West Bengal, India. About 80 specimens were obtained from the host intestines. As it is not expected to obtain more material from this area in near future, I am going to record the data in the present paper.

### Materials and Methods

The data of the hosts examined are shown in Table 1. Their intestines were fixed with 70% alcohol and were submitted to Professor Isamu SAWADA for the inspection of helminth parasites. Trematodes were separated by him and sent to me. These materials were stained and mounted by the same method stated before (KIFUNE & SAWADA, 1979).

### Results and Discussion

The result of the identification of the trematodes is attached to Table 1. Total 84 specimens recovered consist of three species, one of which is new as described below.

1) Contributions to the trematode fauna of Asia—III.

2) This study is supported by the Grants-in-aid for Overseas Scientific Survey Nos. 58041074 and 59043068 from the Ministry of Education, Science and Culture, Japan.

Table 1. Data of the host bats and their parasites.

Hosts	Locality	(Altitude)	Date of collection	Parasites	
				Species*	No.
<i>Myotis siligorensis</i>	Bakkhim, W Sikkim	(2,660 m)	Sept. 12, 1983	<i>N. huynhi</i>	6
<i>Myotis nipalensis</i>	Choka, W Sikkim	(3,050 m)	Sept. 24, 1983	<i>R. indicum</i> sp. nov.	5
<i>Myotis muricola</i>	Gairibas, W Bengal	(2,600 m)	Oct. 1, 1983	<i>P.</i> sp.	1
				<i>R. indicum</i> sp. nov.	72

\* Generic abbreviations: *N.*: *Neoheterophyes*, *P.*: *Prosthodendrium*, *R.*: *Renschetrema*.

### Microphallidae

#### *Renschetrema indicum* sp. nov.

(Fig. 1)

Five and seventy-two specimens were collected from *Myotis nipalensis* and *M. muricola*, respectively, as shown in the table. The following description is made on the basis of 13 gravid specimens from the latter host.

*Description.* Body usually fusiform, occasionally piriform, 0.36–0.44 mm in length, 0.22–0.27 mm in maximum breadth at about a quarter of body length from the posterior extremity; cuticular spines minute, densely and almost evenly distributed in the anterior three-fourths of body; oral sucker subterminal, slightly longitudinally elongated, elliptical,  $0.056\text{--}0.063 \times 0.047\text{--}0.056$  mm; prepharynx very short; pharynx almost circular, 0.025–0.030 mm in diameter; esophagus nearly as long as oral sucker; ceca slender, gently curved outward, reaching the anterior margin of ovary; acetabulum circular or elliptical, smaller than oral sucker,  $0.050\text{--}0.053 \times 0.045\text{--}0.050$  mm; cirrus pouch long, strongly curved at the posterior third which is elliptically swollen and contains seminal vesicle, situated lateroposteriorly to acetabulum; testes subtriangular, often with shallow emarginations, situated near the posterior margin, juxtaposed, their interior margins closely approaching to each other on the median line, right testis usually slightly larger than the left,  $0.068\text{--}0.075 \times 0.100\text{--}0.122$  and  $0.062\text{--}0.094 \times 0.120$  mm, respectively; ovary fusiform or reniform, situated lateroposterior to seminal vesicle,  $0.068\text{--}0.075 \times 0.046\text{--}0.052$  mm; seminal receptacle small, situated dorsoposteriorly to ovary, elliptical; vitellaria distributed around ceca and genital organs, anterior follicles smaller than the posterior but comparatively compact and dense in extracecal region, a few follicles observed along the posterior half of esophagus; eggs dark brown in color, elliptical, embryonated,  $0.032\text{--}0.036 \times 0.020\text{--}0.024$  mm, at most 70 eggs observed in uterus.

*Specimens examined.* 5 exs. from *Myotis nipalensis* (DOBSON), Choka (alt. 3,050 m), Kangchendzonga Area, West Sikkim, Sept. 24, 1983 (S. AE); 72 exs. from *Myotis muricola* (GRAY), Gairibas (alt. 2,600 m), Singalila Dara, Darjeeling District, West Bengal, Oct. 1, 1983 (S.AE).

*Type material.* Holotype and 19 paratopotypes are selected from the 72 exs. (18

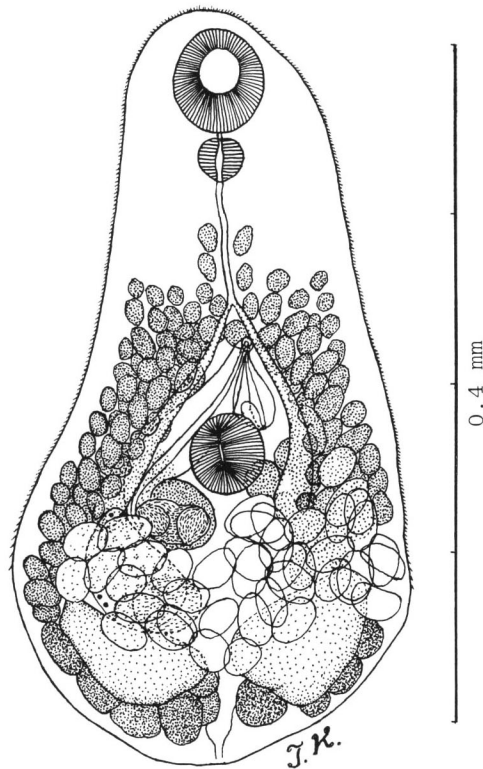


Fig. 1. *Renschetrema indicum* sp. nov.; holotype, ventral view.

of them were severely damaged and not to be mounted) from the latter host. Five paratopotypes are donated to the Department of Parasitology, School of Medicine, Fukuoka University. The remaining specimens including the holotype are deposited in the National Science Museum (Nat. Hist.), Tokyo (NSMT-PI 2940).

*Hosts.* *Myotis nipalensis* (DOBSON) and *M. muricola* (GRAY) (Chiroptera, Vespertilionidae).

*Distribution.* India (West Bengal, West Sikkim).

*Discussion.* The present new species is closely allied to *R. rohdei* MATSKÁSI, 1973, which was first discovered in Malaysia as *R. sp.* and later in Northern Vietnam and named, but differs from it by larger and more compactly distributed preacetabular vitelline follicles, larger sizes of eggs, and longitudinally situated cirrus pouch.

Up to the present, four species have been described in the genus *Renschetrema*. They are distinguishable by the following key.

1. Body almost circular, slightly broader than long; vitellaria extremely developed, distributed peripherally. Hosts: *Tylonycteris* sp.\*, *Kerivoula* sp. Distribution: Malaysia (Malay).....*R. sandoshami* ROHDE, 1964

- Body clearly longer than broad.....2
- 2. Both testes remote from each other, at least, by a distance equal to their own breadth. Hosts: *Rhinolophus* sp.\*, *Miniopterus fuliginosus*. Distribution: Northern Vietnam, Malaysia (Malay\*).....*R. malayi* ROHDE, 1964
- Both testes closely situated to each other.....3
- 3. Vitelline follicles small and sparsely distributed in the preacetabular region; eggs less than 0.026 mm in length. Host: *Rhinolophus affinis*\*, *Glischrops tylopus*. Distribution: Northern Vietnam\*, Malaysia (Malay).....*R. rohdei* MATSKÁSI, 1973
- Vitelline follicles comparatively large, compactly distributed in the preacetabular region; eggs more than 0.030 mm in length. Host: *Myotis nipalensis*, *M. muricola*\*. Distribution: India (West Bengal\*, West Sikkim)..*R. indicum* sp. nov.  
(\*: Type host and locality.)

### Heterophyidae

#### *Neoheterophyes huynhi* MATSKÁSI, 1973

Six specimens were obtained from *Myotis siligorensis* collected in West Sikkim. So far as I am aware, there are five described species in this genus. A key for their specific discrimination was already proposed by KIFUNE and SAWADA (1984). The present material is perfectly identical with this species which was first recorded from Northern Vietnam. This is the first record of the species from India and outside the type area.

*Specimens examined.* 6 exs. from *Myotis siligorensis* (HORSFIELD), Bakkhim (alt. 2,660 m), Kangchendzonga Area, West Sikkim, India, Sept. 12, 1983 (S. AÆ). One specimen is donated to the Department of Parasitology, School of Medicine, Fukuoka University. The rest are preserved in the National Science Museum (Nat. Hist.), Tokyo (NSMT-PI 2942).

*Hosts recorded.* *Myotis siligorensis* (type host) and *M. laniger*.

*Distribution.* Vietnam (Ta-phinh) (type locality) and India (West Sikkim) (new record).

### Lecithodendriidae

#### *Prosthodendrium (Prosthodendrium)* sp.

Only a single damaged specimen was found from *Myotis muricola* collected in West Bengal, India, mixed with the above-described new species, *R. indicum* sp. nov. No more precise identification was possible. Judging from its size, this is allied to *P. (P.) parvouterus*.

*Specimen examined.* 1 ex. from *Myotis muricola* (GRAY), Gairibas (alt. 2,600 m), Singalila Dara, Darjeeling District, West Bengal, India, Sept. 12, 1983 (S. AÆ) (NSMT-

Pl 2943).

### Acknowledgements

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### References

- KIFUNE, T., & I. SAWADA, 1979. Helminth fauna of bats in Japan XXI. *Med. Bull. Fukuoka Univ.*, **6**: 291–301.
- & ——— 1984. Ditto XXX. *Ibid.*, **11**: 95–111.
- MATSKÁSI, I., 1973 a. Trematodes of bats in India. *Parasit. hung.*, **6**: 77–97.
- 1973 b. Flukes from bats in Vietnam. *Acta zool. Acad. Sci. Hung.*, **19**: 339–359.
- ROHDE, K., 1964. Eine neue Trematoden-Gattung (*Renschetrema*, Microphallidae) mit drei Arten aus dem Darm malayischer Fledermause. *Z. Parasit.*, **24**: 13–22.

