

Studies on the Amphibian Helminths in Japan

I. A new Trematode, *Gorgoderina tanigawaensis* n. sp., from the Toad, *Bufo japonicus* (Schlegel, 1838)

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Thirteen specimens of a new trematode species of the genus *Gorgoderina* were obtained from 10 of 13 adult toads, *Bufo japonicus* captured at Mt. Tanigawa, Gumma Prefecture.

The flukes were fixed with a 70% alcohol solution. Some of them were stained with Heidenhain's hematoxylin and some with a mixture of carmine and hematoxylin solution; all the specimens were mounted with balsam. The figures were drawn with the aid of the camera lucida.

Description of the species *Gorgoderina tanigawaensis* n. sp.

Host; *Bufo japonicus* (Schlegel, 1838)

Habitat; Urinary bladder

Locality; Mt. Tanigawa, Gumma Prefecture

Specimens; Holotype deposited in Meguro Parasitological Museum, Coll. No. 19090; paratypes in authors collections.

The body has an elongated shape, somewhat like an ellipsoid, and measures 6.5-8.5 mm in length and 2.0-2.5 mm in breadth with maximum body width at the level of the right testis.

The oral sucker is subterminal and globular, 0.73-0.75 and 0.73-0.77 mm in diameters. The acetabulum is situated at the junction of the first and second anterior fourth of the body and measures a diameter of 0.95-1.0 mm.

There is no muscular pharynx; and the esophagus with the thin wall is short and curved and measures 0.13-0.13 mm in length.

The intestinal bifurcation takes place just in front of the acetabulum, the caeca reaching almost to the posterior end of the body.

The right testis measuring 1.68×0.47 mm is situated a little behind the middle of the body, close to the median line and the left one measuring 1.73×0.75 mm situated obliquely to the right. The testes are oblong in shape and irregularly lobed. The genital aperture opens on the median line a little behind the fork of the intestine.

The terminal part of the male reproductive organs consists of the simple vesicula seminalis, pars prostatica, prostatica cells and ductus ejaculatorius; there is no cirrus pouch.

The vesicula seminalis is an elongated oval body and lies behind the acetabulum, a little behind the middle on the left side of the body. It is irregular in shape, more or less reniform, measuring 0.55×0.35 mm.

A pair of the compact, ellipsoidal or heart shaped vitellaria lies at a short distance posterior to the acetabulum on the median line; the right one measuring 0.20×0.15 mm and the left one 0.30×0.15 mm.

The oviduct originates from the inner side of the ovary and runs toward the middle line; after ascending off the Laurer's canal, it runs anteriorly and receives the common yolk duct at the level of the middle of the left vitellarium, then it expands to form the ootype, which is surrounded by the shell glands.

The uterus runs backward and its loops mainly occupy the area between and outside

of the caeca of the posterior half of the body.

There is no receptaculum seminalis. The ova are light yellow in colour and oval in shape, measuring 0.029–0.030 mm in length and 0.019–0.020 mm in breadth.

Specific diagnosis

Gorgoderina Looss, 1905 (Syn. *Microlecithus* Ozaki, 1926). Body 6.5–8.5 mm in length and 2.0–2.5 mm in breadth; more or less pointed posteriorly.

Oral sucker 0.73–0.75 and 0.73–0.77 mm in diameters; acetabulum very prominent, 1.0 × 0.95 mm in size. Ovary 0.55 × 0.35 mm; testes very prominent, the anterior one 1.68 × 0.47 and the posterior 0.75 × 1.75 mm in size.

Host; *Bufo japonicus* (Schlegel, 1838)

Habitat; Urinary bladder

Locality; Mt. Tanigawa, Gumma Prefecture, Japan

Date; May 26, 1973

Discussion

The genus *Gorgoderina* is characteristic in the following features; that is, the body is elongate, oral sucker subterminal, esophagus short, vitelline glands just behind acetabulum at the level of the ovary and there is no pharynx.

The present species can be discriminated from the related species of *G. kajikai* Ozaki, 1926, *G. attenuata* Stafford, 1902 and *G. guptai* Jahan, 1973 in the size of the body, ovary, testes, and eggs and in the morphology of the vitellaria and uterus. (Table 1)

And furthermore, comparing with such related species as *G. skarbilovistschi*, *G. skrjabina*, *G. tanneri*, *G. vitelliloba*, and *G. translucida*, the present species differs from them in having the lobed vitellaria and testes.

All the species of the genus *Gorgoderina* have been reported to parasitize the urinary bladder of the hosts.

Table 1 Comparison of the measurements (mm) of *G. tanigawaensis* with those of the related species

	<i>G. kajikai</i> (Ozaki, 1926)	<i>G. attenuata</i> (Stafford, 1905)	<i>G. guptai</i> (Jahan, 1973)	<i>G. tanigawaensis</i> (The authors)
Body length	4.55	7.43	3.58	6.5–8.5
Body breadth	1.53	2.65	0.62	2.0–2.5
Oral sucker	0.52	0.41	0.39 × 0.35	0.74 × 0.75
Acetabulum	0.74	0.72	0.5–0.9	0.95–1.0
Esophagus			0.13	0.1–0.13
Testis (anterior)	0.76 × 0.38	0.56 × 0.44	0.49–0.33 × 1.9	0.47 × 1.68
Testis (posterior)	0.88 × 0.54	0.63 × 0.39	0.57–0.33 × 2.22	0.75 × 1.73
Vesicula seminalis	0.22 × 0.20		0.18 × 0.16	0.55 × 0.35
Vitellarium (right)	0.27 × 0.20	0.15 × 0.27	0.38 × 0.16	0.20 × 0.15
Vitellarium (left)	0.26 × 0.24	0.20 × 0.30	0.25 × 0.15	0.15 × 0.30
Eggs	0.017–0.019 × 0.010–0.012	0.072 × 0.039	0.010–0.020 × 0.008–0.010	0.019–0.020 × 0.029–0.030
Host	<i>Racophorus buergeri</i>	<i>R. catesbiana</i> <i>R. virescens</i> <i>Triturus viri- descens</i>	<i>Bufo</i> sp.	<i>Bufo japonicus</i>
Locality	Japan	Canada & U.S.A.	India	Japan

References

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日本産両棲類の寄生虫相 (第一報)
ヒキガエル *Bufo japonicus* Schlegel, 1838 より得た吸虫
Gorgoderina tanigawaensis n. sp.

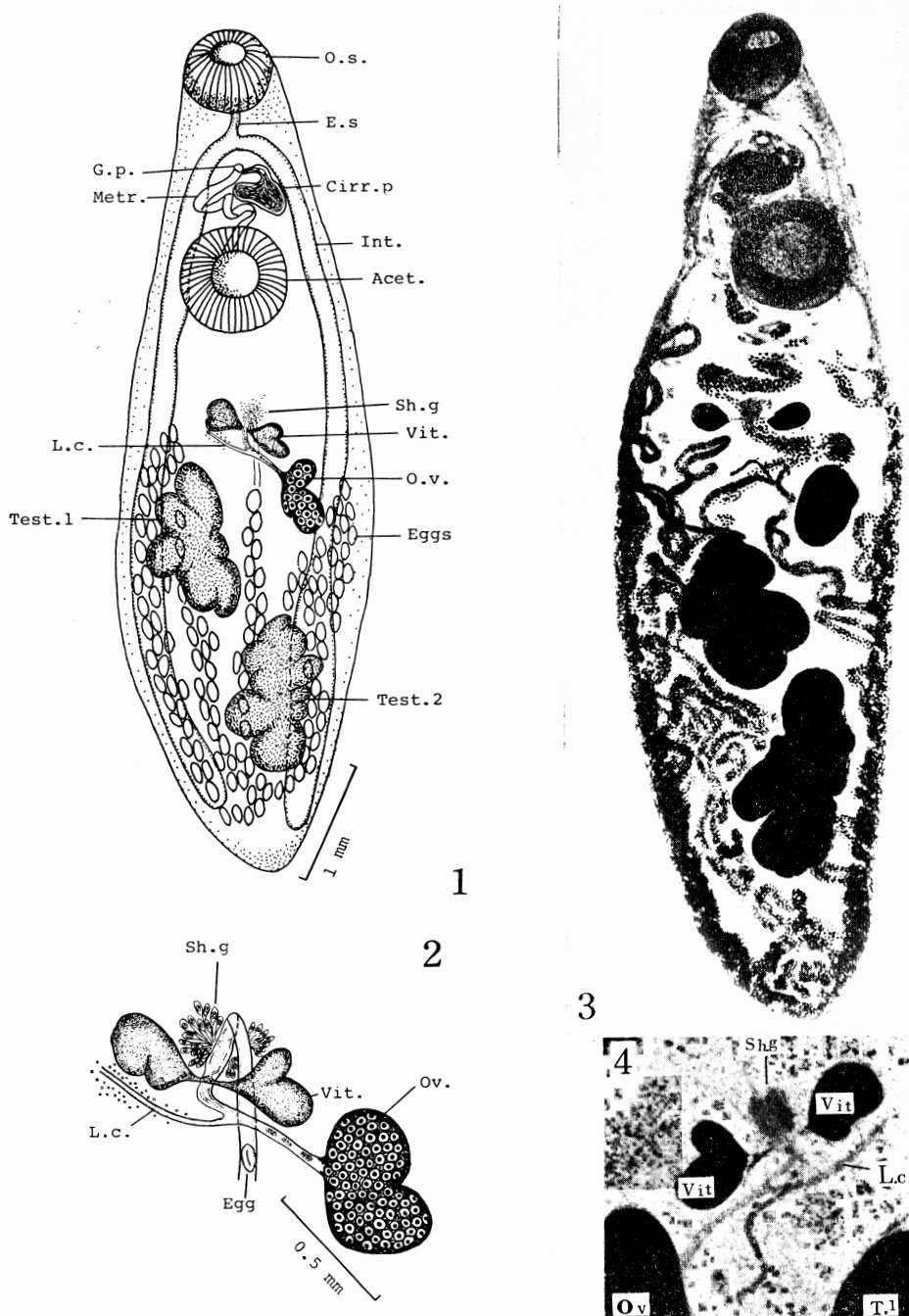
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1973年5月26日群馬県利根郡谷川岳 マチガ沢付近から採取されたヒキガエル *Bufo japonicus* を13匹剖検した中で10匹の膀胱から吸虫が見出された。形態上、虫体が明瞭に前後に区分されていない事、咽頭の欠除、精巢が2個、卵黄腺の位置などから Gorgoderidae 科の *Gorgoderina* 属にはいる。

近似種の *Gorgoderina kajikai* Ozaki, 1926 に似ているが、原記載の体長、卵の測定値と違う事また生殖孔の位置などから区別できる。

さらに *G. attenuata*, と比較すると、卵巢の位置、子宮の形態が違うことからこれとも一致しないので新種として発表する。



Figs. 1-4 *Gorgoderina tanigawaensis* n. sp.

Figs. 1 & 3. Entire worm, ventral view.

Fig. 2. Ovarian complex, ventral view.

Fig. 4. Ovarian complex, dorsal view.

Acet, acetabulum; Cirr. P, cirrus pouch; E.s, epophagus; G.P, genital pore; Int, intestine; L.c, Laurer's canal; Metr, metraterm; O.v, ovary; O.s, oral sucker; Sh. g, shell gland; Test. 1, testis (anterior); Test. 2, testis (posterior); Vit, vitellarium.