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A New Trematode, *Allodiplostomum shiraishii* sp. nov., Found from *Gallinago megala* Swinhoe in Japan (Trematoda : Strigeoidea : Diplostomatidae)

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In April, 1966, 23 specimens of a unique trematode were discovered from the upper part of rectum of a fresh corpse of a male snipe, *Gallinago megala* Swinhoe, found in a bank of the Chikugo River in Kurume City. All specimens were flattened, fixed with Bouin's fluid, and stained with borax carmine *in toto*. All of them were the same species belonging to the genus *Allodiplostomum* erected by Yamaguti (1935) ; only eight of them were gravid. As far as we are aware, the genus includes only two species, viz. *A. scolopacis* Yamaguti, 1935 (the generotype) and *A. hindustani* Verma, 1936*. After a careful comparison of our materials with the original descriptions of the two congeneric species mentioned above, we concluded that the present species is new to science as described below.

***Allodiplostomum shiraishii* sp. nov.**

Host : *Gallinago megala* Swinhoe, 1 male
Habitat : Upper rectum
Locality : Kurume City, Fukuoka Prefecture, Kyushu
Date : April 13, 1966 (S. Shiraishi)

Description and measurements are based on seven gravid specimens, which are designated as the holotype and paratypes. Other ungravid specimens are excluded from the type materials.

Description

Body shape as characteristic of the genus. Total length approximately 1.4–2.1 mm. Forebody somewhat pentagonal, 0.32–0.55 mm in length and 0.21–0.39 mm in maximum width ; hindbody more elongated than in the generotypical species, about thrice as long as forebody, 1.2–1.6 mm in length, 0.24–0.39 mm in maximum width at the level of anterior testis. Terminal oral sucker circular, 60–93 μ in diameter. Prepharynx very short or almost inconspicuous. Pharynx spherical, slightly longer than wide, 41–49×33–35 μ. Oesophagus short, almost as long as pharynx. Ceca bifurcating and running backward ; their endings inconspicuous because of thick vitellaria. Acetabulum situating between the ceca, subcircular, slightly wider than long, 82–128×102–140 μ. Vitellaria densely distributing in hindbody except a small area at the posterior end of hindbody, but never intruding into tribocytic organ. Vitelline follicles gathered in transverse grouping in almost all area in hindbody. Ovary elliptical, situating in the middle of hindbody, 72–140×96–154 μ. Testes tandem ; anterior one elliptical in lateral view but bluntly triangular in dorsal view by tapering to the right, just posterior to ovary, occupying the left half of the third quarter of hindbody, 111–231×128–257 μ ; posterior one transversely elongated,

Contributions to the the trematode fauna of Japan-II

To the part I of this series is assigned our previous paper entitled "Discovery of *Pharyngostomum cordatum* (Diesing, 1850) in cats from Kyushu, Japan" in Jap. J. Parasit. 16(6) : 403-409, 1967.

* This species has been treated as a *species inquirenda* by Dubois (1970). According to the original description, the specimens of Verma were ungravid. His measurements are partly doubtful.

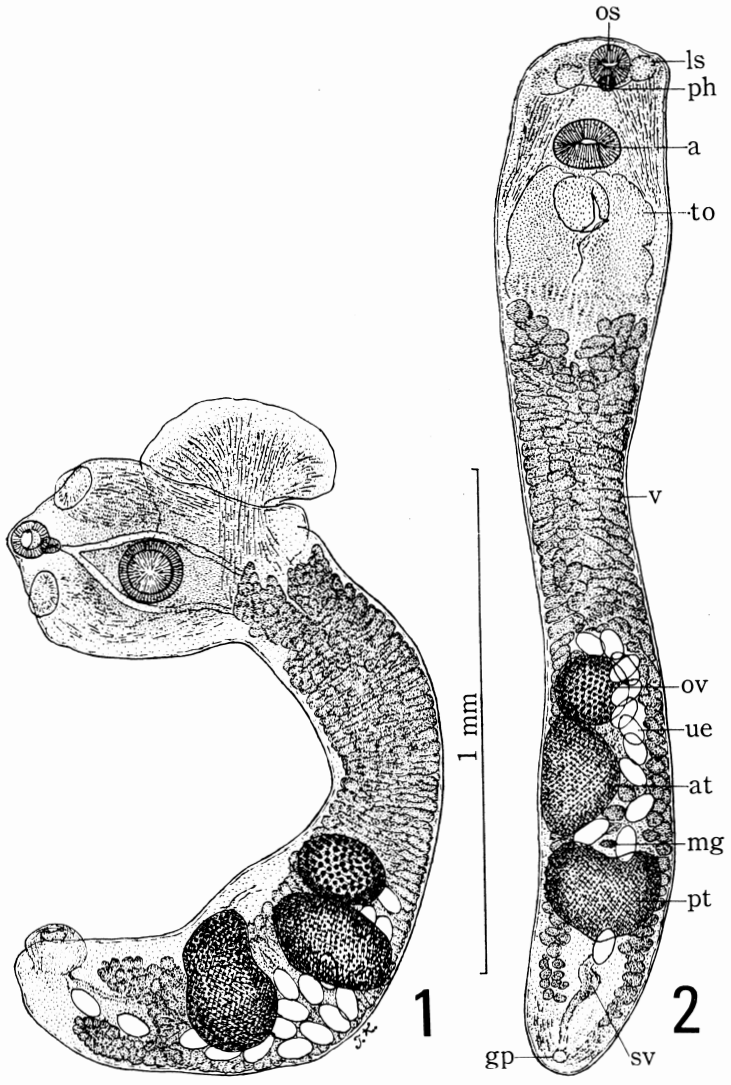

Fig. 1 *Allodiplostomum shiraishii* sp. nov., holotype (no. 205).
Forebody in dorsal view and hindbody seen from left side.

Fig. 2 Ditto, paratype (no. 203). Dorsal view.
a : acetabulum at : anterior testis gp : genital pore ls : lateral suctorial organ mg : mehlis' gland os : oral sucker ov : ovary ph : pharynx pt : posterior testis sv : seminal vesicle to : tribocytic organ ue : uterine egg v : vitellaria

elliptical, conspicuously larger and wider than the anterior, 140–187×163–292 μ. Mehlis' gland median or a little aside to the right between the two testes. Hermaphroditic canal opening on the top of spherical papilliform prominence of approximate 0.11 mm in diameter situating on the ventral side near the posterior end of body. Uterus extending a little anteriorly to ovary, containing less than 20 eggs. Uterine eggs elliptical, 82–84 ×43–46 μ. Margin of tribocytic organ not lobed. Lateral suctorial organs protruding in disc-form, elliptical. Other organs and organization similar to the generotypical

Table 1 Comparisons of measurements and other data of *Allodiplostomum* spp.
(mm.)

	A. shiraishii	*A. scolopacis*	*A. hindustani*
Authority	New record	Yamaguti, 1935	Verma, 1936
No. of specimens examined	7 out of 23	4	2
Host	*Gallinago megala*	*Scolopax rusticola*	*Lobivanellus indicus**
Habitat	Upper rectum	Small intestine	Intestine
Locality	Fukuoka, Kyushu Japan	Shimane, Honshu Japan	Allahabad, India
Date	Apr. 13, 1966	Jan. 12, 1934	?
Total length	1.4 -2.1 (1.80)		0.8-1.25 (in life)
Forebody	L 0.32 -0.55 (0.47) W 0.21 -0.39 (0.32)	0.9 -1.0	0.25, 0.38 (sect.) 0.25
Hindbody	L 1.2 -1.6 (1.50) W 0.24 -0.39 (0.30)	1.0 -1.7	0.42, 0.67 (sect.) 0.3
Oral sucker	L 0.060-0.093 (0.073) W 0.062-0.093 (0.075)	D 0.070-0.090	0.084
Acetabulum	L 0.082-0.128 (0.107) W 0.102-0.140 (0.120)	D 0.125-0.175	0.21
Pharynx	L 0.041-0.049 (0.046) W 0.033-0.035 (0.034)	D 0.036-0.050	0.17 (sic!)
Ovary	L 0.072-0.140 (0.118) W 0.096-0.154 (0.133)	D 0.11 -0.18	0.70-0.84 (sic!)
Anterior testis	L 0.111-0.231 (0.176) W 0.128-0.257 (0.184)	0.15 -0.28	0.67-0.8 (sic!) 0.15
Posterior testis	L 0.140-0.187 (0.162) W 0.163-0.292 (0.235)	0.15 -0.26 0.38 -0.5	0.1 0.22
Uterine eggs	L 0.082-0.084 (0.083) W 0.043-0.046 (0.044)	0.069-0.075 0.049-0.051	Ungravid

* After Dubois (1970). Yamaguti (1958) adopted *Sarcogrammus* as the generic name.
No scientific name was given in the original paper by Verma (1936).

species. Table 1 shows the comparison of measurements among the congeneric species.

Type materials: 1 holotype (slide no. 205, Fig. 1) and 7 paratypes (nos. 201–204 and 206–208). All are gravid.

Other specimens examined: 15 ungravid specimens simultaneously obtained with the type materials (nos. 209–223).

Type depository: Holotype, 6 paratypes (nos. 201–203 and 206–208), and other 13 ungravid specimens (nos. 209, 210, 212–218, and 220–223) are preserved in the Department of Parasitology, Kurume University School of Medicine. One paratype (no. 204) and two ungravid specimens (nos. 211 and 219) are in the collection of the Department of Parasitology, Faculty of Veterinary Medicine, Hokkaido University.

Remarks: The specific name is dedicated to Dr. Satoshi Shiraishi who collected and identified the host material.

Discussion

In his description of the genus *Allodiplostomum*, Yamaguti (1935) noticed the intrusion of vitellaria into tribocytic organ as a generic character in its diagnosis. However, none of our specimens show such a character. On the one hand, the genus *Pulvinifer* Yamaguti, 1933 (unispecific after Dubois, 1970; *P. macrostomum* only) has allied characteristics. It, however, has a broader forebody and a comparatively small tribocytic organ.

Our species shows an intermediate organization between the two genera mentioned above so far as the distribution of vitellaria is concerned. The form of body is undoubtedly allies to the former genus. Therefore, we wish to emend the generic diagnosis of *Allodiplostomum* as follows so as to include our species (Cf. Yamaguti, 1935, p. 180).

Generic diagnosis (emendation): Diplostomatidae Poirier, 1886. Forebody strongly reflexed, convex dorsally but concave ventrally. Hindbody longer than forebody, nearly cylindrical. Lateral suctorial organs being depressions or disc-like protrusions. Oral sucker larger than pharynx but significantly smaller than acetabulum. Tribocytic organ near posterior end of forebody with thin margin lobed or unlobed. Testes median, at the middle of hindbody or a little farther behind; anterior one for most part on the side opposite Mehlis' gland, posterior one across entire breadth of hindbody. Ovary median or submedian on the same side as anterior testis. Mehlis' gland lateral or median, between two testes. Vitellaria intruding or not into tribocytic organ, widely distributed in hindbody. Uterus extending a little anteriorly to ovary or to near anterior end of hindbody. Eggs oval, not very numerous, thick-shelled, light brown; contained ova not segmented. Excretory system well developed. Parasites in Charadrii (Aves).

The three species of the genus are distinguished by the following key.

Key to the species of the genus *Allodiplostomum*

1. Tribocytic organ not protruding but projecting into the hollow of forebody. India. ·····*A. hindustani* Verma, 1936
   Tribocytic organ protruding ·····2
2. Vitellaria intruding into tribocytic organ, ovary spherical. Japan.····· ····· *A. scolopacis* Yamaguti, 1935
   Vitellaria not intruding into tribocytic organ, ovary elliptical. Japan. ····· ·····*A. shiraishii* sp. nov.

This is the first record of *Gallinago megala* as a host of the diplostomatid trematodes.

Summary

Allodiplostomum shiraishii sp. nov. is described on the basis of 23 specimens obtained from the upper part of rectum of *Gallinago megala* Swinhoe (1 male) collected on April 13, 1966, in Kurume City, Kyushu, Japan. It is closely allied to *A. scolopacis* Yamaguti, 1935, but easily distinguished by the following characters: Vitellaria not distributing into tribocytic organ; elliptical ovary; conspicuous lateral suctorial organs; no lobation of margin of tribocytic organ, etc. A key to the three known species of the genus is also given. This is the first record of *Gallinago megala* as a host of the diplostomatid trematodes.

Adknowledgement

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The abstract of the present paper was demonstrated at the 23rd South Japan Regional Meeting of the Japanese Society of Parasitology held on November 1970 in Sakurajima, Kagoshima Prefecture.

References

1) Dubois, G. (1970): Synopsis des Strigeidae et des Diplostomatidae (Trematoda). Deuxième partie. Mém. Soc. neuchât. Sci. nat., 10, 259–727.
2) Verma, S. C. (1936): Notes on trematode parasies of Indian birds—Part I. Allahabad Univ. Stud., 12, 147–188.
3) Yamaguti, S. (1935): Studies on the helminth fauna of Japan. Part 5. Trematodes of birds, III. Jap. J. Zool., 6, 159–182.

4) Yamaguti, S. (1958) : Systema helminthum. Vol. 1, Interscience, New York & London, 1575 pp.
5) Yang, F. H. (1959) : Studies on strigeid trematodes from birds. I. On a new genus and three new species in Diplostomatidae. Acta zool. sin., 11, 482-498. (In Chinese with English summary)

日本産チュウジシギより見出した吸虫の一新種 *Allodiplostomum shiraishii*

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1966年4月13日に筑後川高水敷(福岡県久留米市内)で採取した1羽の雄のチュウジシギ *Gallinago megala* Swinhoe の直腸起始部より *Allodiplostomum* 属吸虫の1新種23隻(うち8隻は卵を保有)を得，*A. shiraishii* と命名記載した．あわせて同属既知2種(*A. scolopacis* Yamaguti, 1935—模式種—および *A. hindustani* Verma, 1936—本種の所属については疑問の点がある)との比較結果と本属の種に関する検索表を作成した．*A. shiraishii* は *A. scolopacis* によく似るが，卵黄巣が付着器官内には分布しないこと，卵巣が楕円形であること，擬吸盤が円盤状に突出すること，付着器官周縁の分葉が不明瞭なことなどで明瞭に区別出来る．

なお和名としては，本属にシギキュウチュウ(新称)を，また *A. scolopacis* と *A. shiraishii* にはそれぞれヤマシギキウュチュウおよびチュウジシギキュウチュウ(ともに新称)を与えたい．

チュウジシギからの Diplostomatidae 吸虫はこれがはじめての記録である．