

**A New Monorchiid Trematode of the Genus *Lasiotocus* from
Brackish Water Goby, *Tridentiger obscurus*
(Temmink and Schlegel) in Japan**

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Abstract

A new monorchiid digenean, *Lasiotocus chichibu* sp. n., is described from the intestine of a brackish water goby, *Tridentiger obscurus* (Temmink and Shlegel) in the estuaries of the Tsurumi and Jiju River in Kanagawa Prefecture, Japan. This species is distinguished from most closely related species, *L. lintoni* (Manter, 1931) Hopkins, 1941, *L. longovatus* (Hopkins, 1941) Thomas, 1959 and *L. parvus* (Manter, 1931) Yamaguti, 1954 by position of the terminal organ, egg size, shape of oral sucker and number of ovarian lobes. This is the fourth species of the genus *Lasiotocus* from fishes of Japan.

Key words: Digenea; Monorchiidae; *Lasiotocus chichibu* sp. n.; *Tridentiger obscurus*; Japan.

Introduction

In the course of an investigation of the helminth fauna of fishes in coastal waters in Yokohama City, Tokyo Bay, a fluke of the genus *Lasiotocus* Looss, 1907 was found in the intestine of a brackish water goby, *Tridentiger obscurus* (Temmink and Shlegel). This paper describes this fluke as a new species.

Materials and Methods

Host fish, *Tridentiger obscurus* (Temmink and Shlegel) (Japanese name: Chichibu) (Gobiidae) was collected in the estuaries (Tokyo Bay) of the Tsurumi and Jiju River in Kanagawa Prefecture Japan, in 1993 and 1994. Flukes were fixed in AFA solution under a slight cover glass pressure, stained with Heidenhain's hematoxylin and mounted in Canada balsam.

Live immature specimens were used for observations of the excretory system. All figures were drawn with the aid of a camera lucida.

Specimens have been deposited at the Meguro Parasitological Museum (MPM), Tokyo.

Lasiotocus chichibu n. sp.

(Figs. 1-4)

Host: *Tridentiger obscurus* (Temminck and Shlegel) (Gobiidae).

(Japanese name: Chichibu).

Location: Intestine.

Locality: Estuaries of the Tsurumi and Jiju River (Tokyo Bay) in Kanagawa Prefecture, Japan.

Holotype and paratype are deposited at the Meguro Parasitological Museum (MPM), Tokyo.

Holotype and 1 Paratype, 2 slides (Tsurumi River), MPM Coll. No. 19690, 7 Paratypes, 7 slides (Jiju River), MPM Coll. No. 19691.

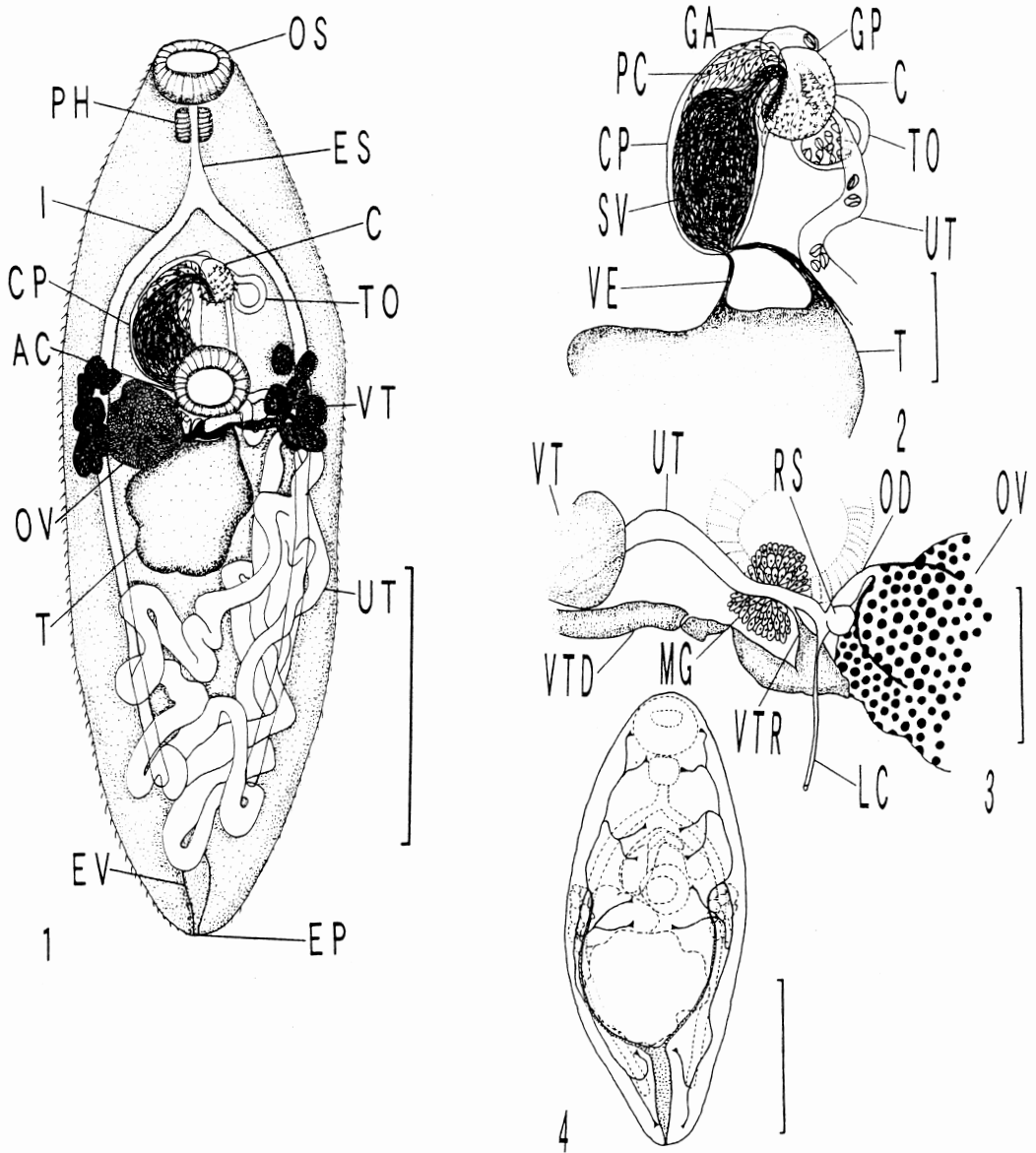
Prevalence: 36% (24 infected fish/74 fish examined)

Date: November 19, 1993, June 9 (Holotype date), September 11 and November 14, 1994.

Etymology: The specific name *chichibu* refers to the Japanese name of the host.

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Figs. 1-4 *Lasiotocus chichibu* sp. n.

Fig. 1 Entire worm, holotype ventral view.

Fig. 2 Terminal genitalia, paratype ventral view.

Fig. 3 Ovarian complex, paratype dorsal view.

Fig. 4 Excretory system, paratype ventral view.

Abbreviations: AC, acetabulum; C, cirrus; CP, cirrus pouch; ES, esophagus; EV, excretory vesicle; EP, excretory pore; GA, genital atrium; GP, genital pore; I, intestine; LC, Laurer's canal; MG, Mehlis' gland; OD, oviduct; OS, oral sucker; OV, ovary; PC, prostate cell; PH, pharynx; RS, receptaculum seminis; SV, seminal vesicle; T, testis; TO, terminal organ; UT, uterus; VE, vas efferens; VT, vitellaria; VTD, vitelline duct; VTR, vitelline reservoir.

(Scale bars: 0.5 mm in Figs. 1 and 4; 0.1 mm in Figs. 2 and 3.)

Description

Nine whole-mounted adult specimens measured. Body oval to elongate, 0.72–1.62 mm long by 0.31–0.49 mm wide at vitellarian level. Tegument beset with minute spines, anterior spines 5–7 μm long. Eye spots absent.

In living specimens, forebody transparent but hindbody yellowish brown due to uterus filled with eggs. Oral sucker subterminal, cup-shaped, 79–107 μm by 92–138 μm . Acetabulum 71–130 μm by 69–120 μm , situated in anterior part of middle of body. Sucker width ratio 1:0.7–0.87. Prepharynx short, 15–30 μm long. Pharynx well developed, 41–79 μm long by 43–64 μm wide. Esophagus 28–89 μm long. Intestines extending into post testicular space, ending blindly apart from posterior extremity of body.

Testis single, rounded or irregularly indented, 154–283 μm long by 158–263 μm wide, located a little behind mid-level of body, posttesticular space 16–43% of body length. Cirrus pouch clavate, 102–242 μm long by 51–121 μm wide, with left margin of its posterior extremity overlapping acetabulum, including thin-walled elliptical seminal vesicle, small pars prostatica and prostate cells. Cirrus extruded to outside through genital atrium, armed with wedge-like spines measuring 4–5 μm long by 3–5 μm wide. Genital atrium short. Genital pore median, near intestinal bifurcation rather than acetabulum.

Ovary 4 lobed, 3 lobes ventral and 1 lobe dorsal, 115–179 μm long by 103–153 μm wide, to right of median line, a little behind or at the same level with acetabulum. Oviduct arising from dorsal ovalian lobe. Receptaculum seminis rounded, small, 13–22 μm diameter, situated on the oviduct before branching off Laurer's canal. Laurer's canal long, 60–105 μm long, opening dorsal to testis. Uterus coiled almost in post testicular space, extending to posterior end of body, turning upward and entering terminal organ from distal end of distal portion. Terminal organ 74–132 μm long by 43–77 μm wide, situated anterior or rarely overlapping acetabulum; proximal portion globular, not spined; distal portion tubular, spined. Eggs oval, 13–17 μm by 10–12 μm . Vitellaria consisting of 8–9 oval follicles, 150–253 μm long by 43–110 μm wide, distributed in lateral fields, anterior ends reaching anterior border of acetabulum. Vitelline reservoir triangular in holotype, 65 μm

long. Excretory vesicle tubular, reaching posterior margin of testis, pore terminal; each main collecting tube running into forward bifurcating at the level of acetabulum anterior and posterior collecting tubes; flame-cell formula $2[(2+2)+(2+2)]=16$.

Discussion

This new species, *Lasiotocus chichibu* sp. n. resembles *L. lintoni* (Manter, 1931) Thomas, 1959, *L. longovatus* (Hopkins, 1941) Thomas, 1959, and *L. parvus* (Manter, 1942) Yamaguti, 1954, as described by Manter (1931, 1942) and Hopkins (1941) in position of the ovary and vitellaria, both of which are located almost in the acetabular zone. However, it is distinguished from the three species as follows: the terminal organ does not overlap the acetabulum and eggs are smaller 13–17 μm by 10–12 μm vs. 23–24 μm by 10–13 μm in *L. lintoni*, 18–20 μm by 9–11 μm in *L. longovatus*, 25–26 μm by 8–10 μm *L. parvus*. The new species also differs from *L. lintoni* and *L. longovatus* as follows: the oral sucker is cup-shaped in *L. chichibu* sp. n. vs. funnel-shaped in *L. lintoni* and *L. longovatus*; and the ovary is 2-lobed vs. rounded in *L. lintoni* and 3-lobed to almost spherical in *L. longovatus*. Moreover, the new species is different from *L. parvus* in having a larger body, 0.72–1.62 mm long by 0.31–0.49 mm wide vs. 0.330 mm long 0.232 mm wide; a longer esophagus; and the intestines extending far into the post testicular region vs. terminating at acetabular level.

In the genus *Lasiotocus*, the flame-cell formula has so far been reported as $2[(2+2)+(2+2)]=16$ in the following four species: *L. beauforti*, *L. longicystis*, *L. minutus* and *L. elongatus* (Hopkins, 1941; Bartoli, 1965; Stunkard, 1981a, b). The present species also has the same formula. In Japan, the following three species of the genus have so far been described: *L. macrorchis* (Yamaguti, 1934) Yamaguti, 1954 from *Plectorhynchus cinctus* (Pomadasyidae) from Toyama Bay, Toyama Prefecture; *L. himezi* Yamaguti, 1951 from *Upeneoides bensasi* (Mullidae) from Taiji, Wakayama Prefecture and *L. baiosomus* Kamegai, 1970 from *Hemiramphus sajori* (Hemiramphidae) from Tsushima Island, Nagasaki Prefecture (Yamaguti, 1971). Therefore, the present new species is the fourth species of the genus

Lasiotocus reported from Japan.

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