

Research Note

**Metacercaria of *Liliatrema sobolevi* from Greenling
*Hexagrammos agrammus***

JUN ARAKI¹⁾ AND MASAOKI MACHIDA²⁾

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The genus *Liliatrema* (Trematoda, Cathaemasiidae) contains two species, *L. skrjabini* Gubanov, 1953 and *L. sobolevi* Gubanov, 1953. In Japan, the adults of both species were obtained from a pelagic cormorant, *Phalacrocorax pelagicus*, captured in Hokkaido, northern Japan (Machida, 1966). The metacercariae of *L. skrjabini* were found in marine fishes of the genus *Sebastes* in Hokkaido (Ohbayashi & Konno, 1966; Ohbayashi & Araki, 1974; Shimazu, 1984) and those of *L. sobolevi* in a marine fish *Hexagrammos otakii* in Hokkaido (Ohbayashi & Araki, 1974).

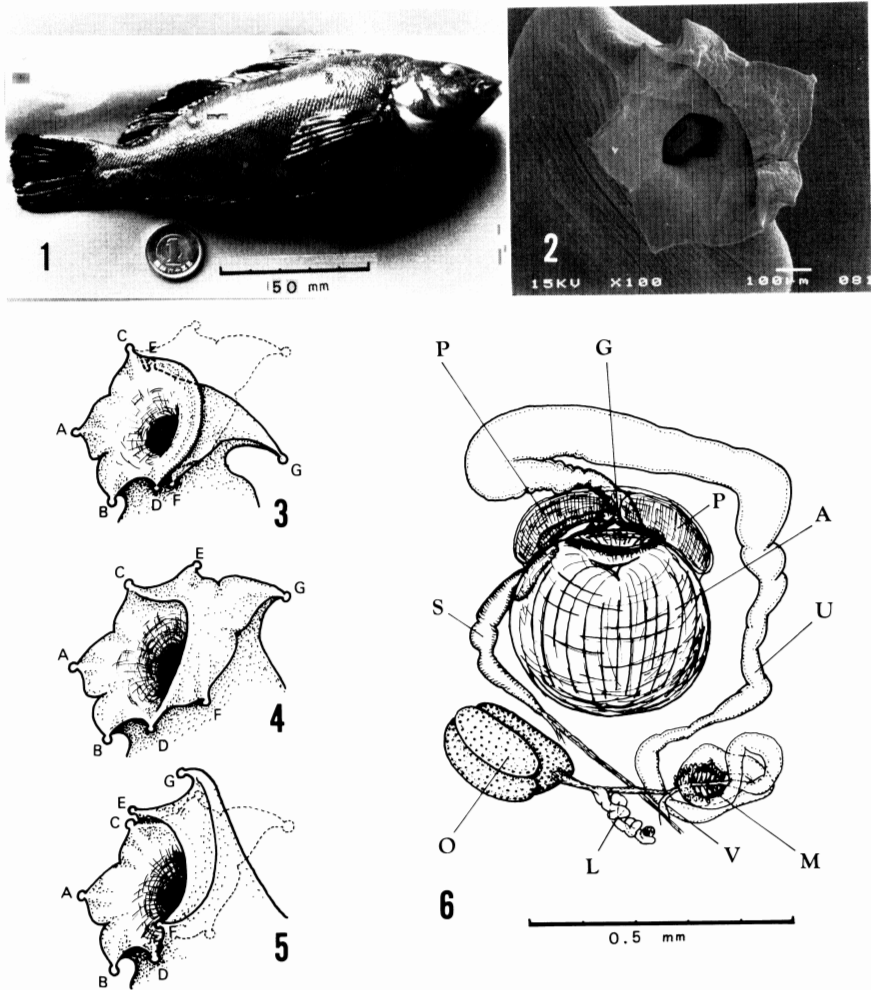
In March 1989, we found the encysted metacercariae of *L. sobolevi* in the subcutaneous muscle tissue of greenling, *Hexagrammos agrammus*, captured at Aburatsubo, Kanagawa Prefecture, on the Pacific coast of central Japan. The number of metacercariae per fish was one to six. The cyst was subglobular with a thin wall, 5.0–5.5 × 4.0–4.4 mm, surrounded by a thin connective tissue with some obscure pigments, and contained a metacercaria free in the cyst fluid. Morphology and measurements of the metacercariae, based on six specimens fixed in AFA under slight pressure and stained with Heidenhain's hematoxylin, are as follows: Body elliptical, 3.2–5.1 × 1.5–1.8 mm, with minute

spines in forebody. Oral sucker petal-shaped, 0.91–0.98 mm in diameter, taking various forms as shown in Figs. 3–5. Fig. 4 showing a normal form; oral sucker having seven processes, processes A and B lying subventrally, C and D ventrolaterally, E and F dorsolaterally, and G dorsally; processes ABDC forming a ventral plate and processes CDFGE forming a dorsal plate; and processes C and D lying on the border between the two plates; two plates slightly overlapping each other a little dorsal to the mouth opening. Ventral plate is rather stable, whereas dorsal plate is mobile. If process G extends and leans downward, processes E and F come below C and D, respectively (Fig. 3). On the other hand, if process G leans upward, processes E and F come above C and D (Fig. 5). Prepharynx up to 0.36 mm long, but usually not recognizable; pharynx 0.21–0.41 × 0.15–0.23 mm; esophagus up to 0.27 mm long, bifurcating near midlevel of forebody; caeca extending to posterior extremity, where they connect with excretory vesicle. A number of glandular cells massed in prebifurcal field. Acetabulum spherical, lying near midbody, 0.37–0.45 mm in diameter, embedded in parenchyma except for the anterior end. Testes transversely elongated, sometimes indented, tandem in hindbody; anterior testis 0.11–0.25 × 0.37–0.81 mm and posterior testis 0.08–0.32 × 0.23–0.88 mm. Anlage of seminal vesicle lying right side of acetabulum, and connecting dextrally with genital atrium, which opens between two apron-like projections just anterior

¹⁾Daito College of Medical Technology, Tokyo 175 and

²⁾Department of Zoology, National Science Museum, Tokyo 169, Japan

荒木 潤 (大東医学技術専門学校)
町田昌昭 (国立科学博物館動物研究部)



Figs. 1–6. Metacercaria of *Liliatrema sobolevi*. 1. Greenling *Hexagrammos agrammus* with a metacercaria in the subcutaneous muscle tissue (arrow). 2. SEM micrograph of the oral sucker, corresponding to Fig. 4. 3–5. Oral suckers showing various forms. A & B, subventral process; C & D, ventrolateral process; E & F, dorsolateral process; G, dorsal process. 6. Terminal genitalia and ovarian complex, ventral view. A, acetabulum; G, genital atrium; L, Laurer's canal; M, Mehlis' gland; O, ovary; P, apron-like projection; S, anlage of seminal vesicle; U, uterine anlage; V, vitelline duct.

to acetabulum. Cirrus pouch cannot be confirmed. Ovary trilobed, $0.09\text{--}0.22 \times 0.18\text{--}0.27$ mm, between acetabulum and anterior testis, dextral to midline. Oviduct arising from left side of ovary, giving off Laurer's canal, which opens mid-dorsally a little posterior to acetabulum, receiving vitelline duct, and entering into ootype. Vitellaria not developed. Uterine anlage ascending left side of acetabulum, curved anterior

to acetabulum, and connecting with genital atrium. Excretory vesicle Y-shaped; arms very short, extending to ovarian level.

Gubanov (1953) described the oral sucker as a pentagonal plate, having five papillae on the margin in *L. skrjabini* and seven papillae in *L. sobolevi*. Ohbayashi and Konno (1966) showed the oral sucker of both species to have seven processes which form two plates, and one form of

the oral sucker corresponding to our Fig. 3. As mentioned above, the oral sucker is not one form, but changeable in form depending on whether the dorsal process leans downward or upward. In addition to the structure of the oral sucker, we confirmed the following features: the acetabulum is embedded in the parenchyma except for the anterior end, and Laurer's canal opens mid-dorsally a little posterior to the acetabulum.

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