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著者	Kojima Yoshio
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A NEW TYPE OF THE EGG CAPSULE OF A PERIWINKLE,
LITTORINA SQUALIDA BRODERIP ET SOWERBY^{1,2,3)}

By

YOSHIO KOJIMA

小島芳男

Marine Biological Station of Asamushi, Aomori Prefecture, Japan

(With one figure)

Hirase (1927) and Kuroda (1955) described that *Littorina (Algaroda) squalida* Broderip et Sowerby is oviparous, but the details of its breeding had not been confirmed (Habe 1956). On July 10, 1957, mature specimens of *Littorina squalida* Broderip et Sowerby were received from the Akkeshi Marine Biological Station of the Hokkaidô University at Akkeshi, Hokkaidô, Japan, for examination. The writer investigated the spawned eggs of this species in the laboratory at the Marine Biological Station of the Tôhoku University at Asamushi, Aomori Prefecture, Japan, and the results are reported in this article.

Here the writer thanks Dr. Eturô Hirai, Director of the Marine Biological Station of the Tôhoku University at Asamushi, for his supervision during the course of this investigation, and to Mr. Fumio Iwata, of the Akkeshi Marine Biological Station of the Hokkaidô University at Akkeshi, for his kind offer of the specimens.

MATERIAL AND METHOD

In 1957, four mature specimens of *Littorina squalida* Broderip et Sowerby which were collected from high water tide in the neighborhood of the Akkeshi Marine Biological Station at Akkeshi, were received by the writer on July 10, 1957. The four materials were cleaned by a brush and placed in a glass bottle containing about 50 cc of sea water. About five hours after the bottle containing the animals were filled with sea water, two liberated eggs were found on its

1) Contributions from the Marine Biological Station of Asamushi, Aomori Ken, No. 239.

2) The Japanese name is Ezotamakibigai.

3) On September, 1957, Dr. Tadashige Habe, of the Amakusa Marine Biological Laboratory of the Kyushu University at Amakusa, Kumamoto Prefecture, Japan, informed to the writer that new genus must be created by this species basing upon the reproductive type mentioned in the present paper.

bottom.

OBSERVATION

The egg capsule is colorless, transparent and of disk-shape. The capsule is about $880\ \mu$ in diameter and about $170\ \mu$ in thickness, and consists of two parts, the outer thin and wide peripheral brim and the inner lens-shaped part. The brim is a wide wheel with the same thickness being about $100\ \mu$ in width, and about $20\ \mu$ in thickness. The inner lens-shaped part is about $680\ \mu$ in diameter and about $170\ \mu$ in thickness at the central part. The capsule is bilaterally symmetrical on the axis of the brim in side view (Fig. 1). The 14 eggs counted in the capsule were arranged on the same central plane of the brim. The egg is about $95\ \mu$ in diameter and is covered by a thin membrane about $115\ \mu$ in diameter. The granules of the egg are white and red in color. The wall of the capsule is comparatively thick and solid.

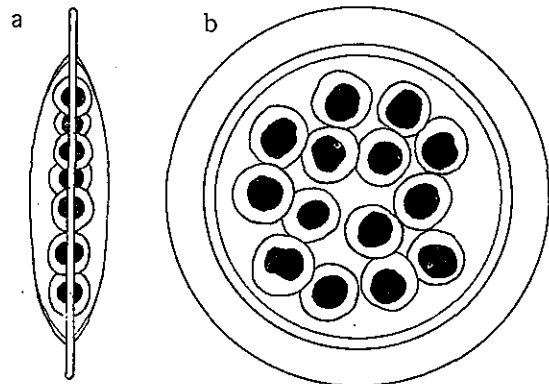


Fig. 1. The egg and capsule of *Littorina squalida* Broderip et Sowerby. $\times 57$.
a: Side view. b: Viewed from above.

CONSIDERATION

Hirase (1927) and Kuroda (1955) described that *Littorina (Algaroda) squalida* Broderip et Sowerby is oviparous, but they did not describe the structure of the egg. According to the observation of the writer the planktonic capsule of the egg of this species is disk-shaped and is of bilaterally symmetrical form in side view. According to Lebour (1935) *Littorina littorea* L. liberates helmet-shaped planktonic eggs. Tokioka and Habe (1953) classified the egg capsule of Littorinidae into following three groups, 1. Helmet-shaped, 2. Simple drum-shaped, 3. Drum-shaped, with ridges on the swollen upper side. The shape of

the egg capsule of this species is not found in their three groups of Littorinidae. The special characters of the egg capsule of this species which has a large and symmetrical shape, and which contains more eggs than the other species, show that the egg capsule of this species is a new type of the Littorinidae.

LITERATURE CITED

- HABE, T. 1956. The floating egg capsule of the Japanese periwinkles (Littorinidae). *Venus (Jap. Jour. Malac.)* 19: 117-121. (in Japanese with English summary).
HIRASE, S. 1927. Illustrated Encyclopedia of the Fauna of Japan (Nippon Dobutsu Zukan). Hokuryukan Publishers, 1389. (in Japanese).
KURODA, T. 1955. Ibid. 1158. (in Japanese).
LEBOUR, M. V. 1935. The breeding of *Littorina neritodes*. *Jour. Mar. Biol. Assoc. U.K.*, 20: 373-378.
TOKIOKA, T. and T. HABE 1953. Droplets from the plankton net. IX. A new type of *Littorina*-capsula. *Publ. Seto Mar. Biol. Lab.*, 3: 55-56.