

A report of three unrecorded Ellobiid species (Gastropoda, Eupulmonata) from Korea

Jun-Sang Lee and Yong-Seok Lee¹

Institute of Environmental Research, Kangwon National University, Chunchon 200-701

¹*Department of Life Science and Biotechnology, College of Natural Sciences, Soonchunhyang University*

ABSTRACT

Three species of Ellobiid molluscs collected from Korea were identified as *Auriculastra duplicata* (Pfeffer, 1854), *Laemodonta siamensis* (Morelete, 1875) and *Melampus (Pira) flavus* (Gmelin, 1791). This is the first record from the Korea, providing a description of the species with illustration for the shell morphology. Including the new recorded in this study, the family Ellobiidae contained six genera and 13 species in the Korea.

Keywords: Ellobiid, *Auriculastra duplicata*, *Laemodonta siamensis*, *Melampus (Pira) flavus*, first record.

INTRODUCTION

Ellobiidae is a family of small air-breathing land snails, terrestrial pulmonate gastropod mollusks in the clade Eupulmonata and the only family in the superfamily Ellobioidea, according to the taxonomy of the Gastropoda by Bouchet *et al.*, (2005). The Ellobiidae is inhabit a largely intertidal and has radiated extensively in the Indo-Pacific region live in marine or terrestrial, including arboreal habitats. Most species have a high-spined, dextral and comparatively thick-walled shell.

Five subfamilies are recognised - the Ellobiinae, Zapytychiinae, Melampinae, Pythiinae, Pedipedinae. The first four of these are represented in Korea. The Koreans, Lee (1956; one species), Choe & Park (1997; two species), Lee and Min (2002; 10 species), Lee (2005; 10 species), have been recorded Korean species.

Specimens were collected by hand, in supralittoral fringe. Morphological characters for identification

follows original articles of Pfeffer (1854) and encyclopedias of Okada *et al.*, 1967, Okutani & Habe (1975), Okutani *et al.*, (2000).

SYSTEMATIC ACCOUNTS

Order Eupulmonata Haszprunar & Huber, 1990 진유패목
Family Ellobiidae H. & A. Adams, 1855 대추귀고둥과
Subfamily Zapytychiinae Wenz, 1938
Genus *Auriculastra* Martens, 1880 이빨귀고둥속 (신칭)

1. *Auriculastra duplicata* (Pfeffer, 1854) (Fig. 1. A) 노 란이빨귀고둥 (신칭)

Melampus duplicatus Pfeffer, 1854: p. 151.

Auriculastra duplicata: Higo *et al.*, 1999, p. 403;
Okutani *et al.*, 2000, p. 821, pl. 407, fig. 22; Guido,
2010, p. 446, pl. 914, fig. 6.

Type locality: none designated.

Material examined: 1 specimen, April 5. 2009. Oryu-ri
Muan-gun, Jeollanam-do; 2 specimens, July. 14. 2015.
Mangweol-ri, Kangwha-gun, Incheon-City.

Measurement: 10.4 mm in height; 6.2 mm in width.

Description: Shell small size, moderately solid, short
fusiform in outline, not shouldered. Spire apex blunt,
often corroded in mature specimens. Periostracum
greenish brown, well-polished, smooth, with many
axial threads. Umbilicus closed, without fasciole.
Suture undulated. Aperture almost perpendicular,

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Corresponding author : Jun-Sang Lee

Tel: +82 (33) 250-7409, e-mail: sjun@kangwon.ac.kr
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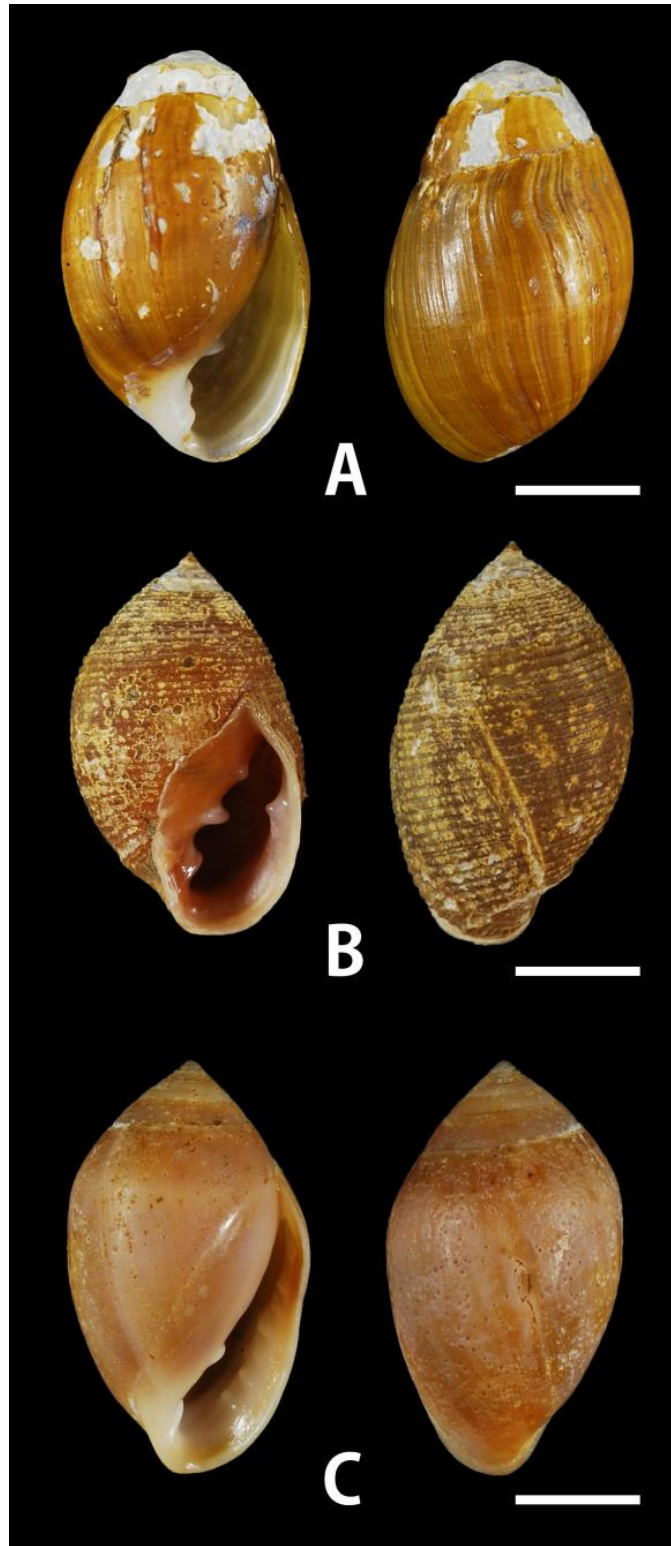


Fig. 1. Shell of three Ellobiid species. **A.** *Auriculastra duplicata*; **B.** *Laemodonta siamensis*; **C.** *Melampus (Pira) flavus*. Scale Bar: A-C 4 mm.

narrow, angled at base; one parietal plait situated deeply; two columellar plait strong, rather vertical, produced at the base; peristome straight, acute; right margin with a yellowish internal lip, thin, no callous, and furnished with about two short transverse ridges; columellar margin callous, dilated.

Habitat: Intertidal at river mouth; between root of reeds or mangroves.

Distribution: Korea, Japan, China.

Subfamily Pythiinae Odhner, 1925

Genus *Laemodonta* Philippi, 1846 작은귀고둥속

2. *Laemodonta siamensis* (Morelete, 1875) (Fig. 1. B) 거친옆줄작은귀고둥 (신칭)

Plecotrema siamensis Morelete, 1875.

Laemodonta siamensis: Higo *et al.*, 1999, p. 405; Okutani *et al.*, 2000, p. 819, pl. 406, fig. 11; Poppe, 2011, vol. 3, pl. 917, fig. 5; Lozouet & Plaziat, 2008, p. 160; Guido, 2010, p. 452, pl. 917, fig. 5.

Type locality: Siam (Thailand)

Material examined: 1 specimen, April 5, 2009. Oryu-ri Muan-gun, Jeollanam-do; 1 specimen, 7. July. 2015. Geocha-ri, Hongseong-gun, Chungcheongnam-do.

Measurement: 7.8 mm in height; 4.6 mm in width.

Description: Shell small size, solid, short fusiform in outline, not shouldered. Spire apex pointed, often corroded in mature specimens. Periostracum brown, not polished. Sculpture of numerous spiral grooves and fine axial lines, causing a latticed pattern throughout the surface of shell. Umbilicus closed, without fasciole. Because suture very shallow, difficult of each spire. Aperture an oval, narrow, poorly angled at base; two parietal plait situated deeply; columellar plait strong, rather oblique, produced at the base; peristome straight, acute; right margin with a reddish brown internal lip, then brownish-callous, and furnished with one denticle outer lip; columellar margin callous, thin dilated.

Habitat: Tidal flats in bays and inland seas; among roots of reeds.

Distribution: Korea, Japan, China, Taiwan, Thailand, Philippines.

Subfamily Melampinae Stimpson, 1851

Genus *Melampus* Montfort, 1810 귀고둥속

3. *Melampus (Pira) flavus* (Gmelin, 1791) (Fig. 1. C) 얇은귀고둥 (신칭)

Voluta flava Gmelin, 1791: p. 3436.

Melampus (Pira) flavus: Okada *et al.*, 1967, p. 186; Okutani & Habe, 1975, p. 40, 236; Habe, 1976, p. 95, pl. 44, fig. 9; Higo *et al.*, 1999, p. 406; Okutani *et al.*, 2000, p. 821, pl. 408, Fig. 27. Kimura, 2000, p. 72, pl. 3, Fig. I; Guido, 2010, p. 454, pl. 918, fig. 9.

Type locality: none designated.

Material examined: 9 specimens, 12 July. 1999. Biyang Island, Seogwipo-si, Jeju-do; 2 specimens, Jongdal-ri, Jeju-si, Jeju-do.

Measurement: 16 mm in height; 8.6 mm in width.

Description: Shell small size, solid, short fusiform in outline. Spire rather high and little shouldered. Spire apex pointed, almost not corroded in mature specimens. Surface chestnut brown sometime with bands, polished, smooth. Suture very shallow. Aperture almost perpendicular, narrow, angled at base; one parietal plait situated deeply; columellar plait strong, rather vertical, produced at the base; peristome straight, acute; right margin with a brownish internal lip, then whitish-callous, and furnished with about ten short transverse ridges; columellar margin callous, dilated.

Habitat: Intertidal, flats in bays and inland seas; among roots of reeds.

Distribution: Korea, Japan, China, Taiwan, Thailand, Philippines.

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REFERENCES

- Bouchet, P., Rocroi, J., Ponder, W., Valdes A. and Waren, A. (2005) Classification and nomenclator of gastropod families. *Malacologia*, 47(1-2): 1-397.
- Choi, B.R. and Park, J.K. (1997) Mollusca. *In*: List of animals in Korea. The Korean Society of Systematic Zoology, Seoul, 489 pp. [In Korean].

- Gmelin, J.E. (1791) Caroli a Linne Systema naturae per regna tria naturae. Editio decima tertia (Systema naturae, 13th edition). vol. 1 (6) 'Vermis': 3021-3910. Pub. R. Poli, Leipzig, Germany (Lipsiae).
- Guido, T.P. (2011) Philippine Marine Mollusks. vol. III, Conchbooks. 665 pp.
- Habe, T. (1976) Coloured Illustrations of the Shell of Japan (II). pp. 182, Hoikusha Pub. Co., Ltd. Osaka.
- Higo, S., Callomon, P. and Goto, Y. (1999) Catalogue and bibliography of the marine shell bearing mollusca of Japan. Elle Scientific Publications. Osaka, 749 pp.
- Kimura, S. (2000) Ellobiid fauna in Miyakojima Island, Okinawa Pref., Southwestern Japan. *Chiribotan*, **31**(3): 69-84. [In Japanese].
- Lee, B.D. (1956) The catalogue of Molluscan Shell of Korea. *Bull. Pusan Fish. Coll.*, **1**(1): 53-100. [In Korean].
- Lee, J.S. and Min, D.K. (2002) A Catalogue of Molluscan Fauna in Korea. *Korean J. Malacol.*, **18**(2): 93-217. [In Korean].
- Lee, J.S. (2015) National list of species of Korea (Invertebrates-VI). National Institute of Biological Resources, Korea. 206 pp. [In Korean].
- Lozouet P. and Plaziat J.C. (2008) Mangrove environments and molluscs. Abatan River, Bohol and Panglao Islands, central Philippines. Hackenheim: Conchbooks. 160 pp.
- Morelete, A. (1875) Séries Conchyliologiques compenant l'énumération de Mollusques terrestres et fluviatiles. Livr. 4. Paris.
- Okada, K. (1967) New illustrated encyclopedia of the fauna of Japan (II). Hokuryukan Co., LTD, Tokyo. 803 pp. [In Japanese].
- Okutani, T. (ed.) (2000) Marine Mollusks in Japan. Tokai Univ., Tokyo. 1171 pp. [In Japanese and English].
- Okutani, T. and Habe, T. (1975) The mollusks of Japan. Gakken illustrated nature encyclopedia. Gakken Pub. Co. Tokyo. 301 pp. [In Japanese].
- Pfeiffer, L. (1854) Descriptions of seven species of Cyclostomacea and Ausriculacea from Mr. Cuming's collecton. *Proceedings of the Zoological Science of London*, part **22**: 150-152.