Korean J. Malacol. 35(3): 239-242 2019
https://doi.org/10.9710/kjm.2019.35.3.239

[단보, Short communication]

Three unrecorded marine molluscan species from Korea

Jun-Sang Lee and Sang-Hwa Lee[1]

Department of Life Science and Biotechnology Soonchunhyang University, 31538, Korea.
[1] National Marine Biodiversity Institute of Korea, Seocheon, 33662, Republic of Korea.

ABSTRACT

Three marine gastropod species were collected in 2000 and 2019 years from Korean waters (Daejin, Gangwon-do; Dongmak, Incheon City; Seogwipo harbour, Jeju-do). They were identified as *Sagamilepeta sagamiensis* (Kuroda & Habe, 1971), *Fluviocingula nipponica* Kuroda and Habe, 1954 and *Distorsio reticularis* (Linnaeus, 1758) that come out into the unrecorded species in Korea. In this study, we provide descriptions and pictures of the shell morphology of three species as a new record in the Korean sea.

Keywords: New recorded, *Sagamilepeta sagamiensis, Fluviocingula nipponica, Distorsio reticularis*.

INTRODUCTION

In this study, three species of unrecorded marine gastropods were collected from the tidal flats during 2000-2019 through hand work and fishing net survey. Morphological features of all collected specimen were observed under a stereomicroscope and performed with reference to the illustrated guide to mollusk of Okutani *et al*., (2000), Min *et al*., (2004), and Poppe (2008) for identification. Each specimen was identified as *Sagamilepeta sagamiensis* (Kuroda & Habe, 1971), *Fluviocingula nipponica* Kuroda and Habe, 1954, and *Distorsio reticularis* (Linnaeus, 1758). The classification scheme is based mainly on WoRMS (World Register of Marine Species, 2019) and Higo *et al*. (1999), NIBR (2019) literature are referred. For photographs, a Nikon D80 digital camera was used. Specimens studied were either stored dry or immersed in 70% ethanol.

Received: September 20, 2019; Revised: September 15, 2019; Accepted: September 30, 2019
Corresponding author: Sang-Hwa Lee
Tel: +82 (41) 950-0731, e-mail: tony018@mabik.re.kr
1225-3480/24735

SYSTEMATIC ACCOUNTS

Class Gastropoda Cuvier, 1795 복족강
Subclass Patellogastropoda Lindberg, 1986 삿갓조개아강
Superfamily Lottiodea Gray, 1840 두드럭배말상과
Family Lepetidae Gray, 1850 무새흰삿갓조개과
Genus *Sagamilepeta* Okutani, 1987 민무늬무새흰삿갓조개속

1. *Sagamilepeta sagamiensis* (Kuroda & Habe, 1971) (Fig. 1, A) 민무늬무새흰삿갓조개 (신칭)

Lepeta sagamienesis: Kuroda & Habe, 1971, pp. 30, 21, pl. 8, figs. 5, 6; Okutani, 1987, p. 128, pl. 1; Higo *et al*., 1999, p. 32.
Sagamilepeta sagamienesis: Okutani *et al*., 2000, p. 27, fig. 3; Hasegawa & Okutani, 2011, p. 103.

Type locality: Japan.
Habitat: Course gravel and rock substrate, depth of 70-500 m.
Distribution: Korea, Japan
Material examined: 18 specimens (Daejin, Goseong-gun, Gangwon-do: 8.iv.1997; 5.ix.2000); 3 specimens (Geojin, Goseong-gun, Gangwon-do: 5.ix.2000).
Measurement: Height 4 mm; length 10 mm; width 7 mm.
Description: Shell small-sized, elliptical limpet shape, width of anterior little narrow than posterior. The shell not thick and solid; apertural margin thin and

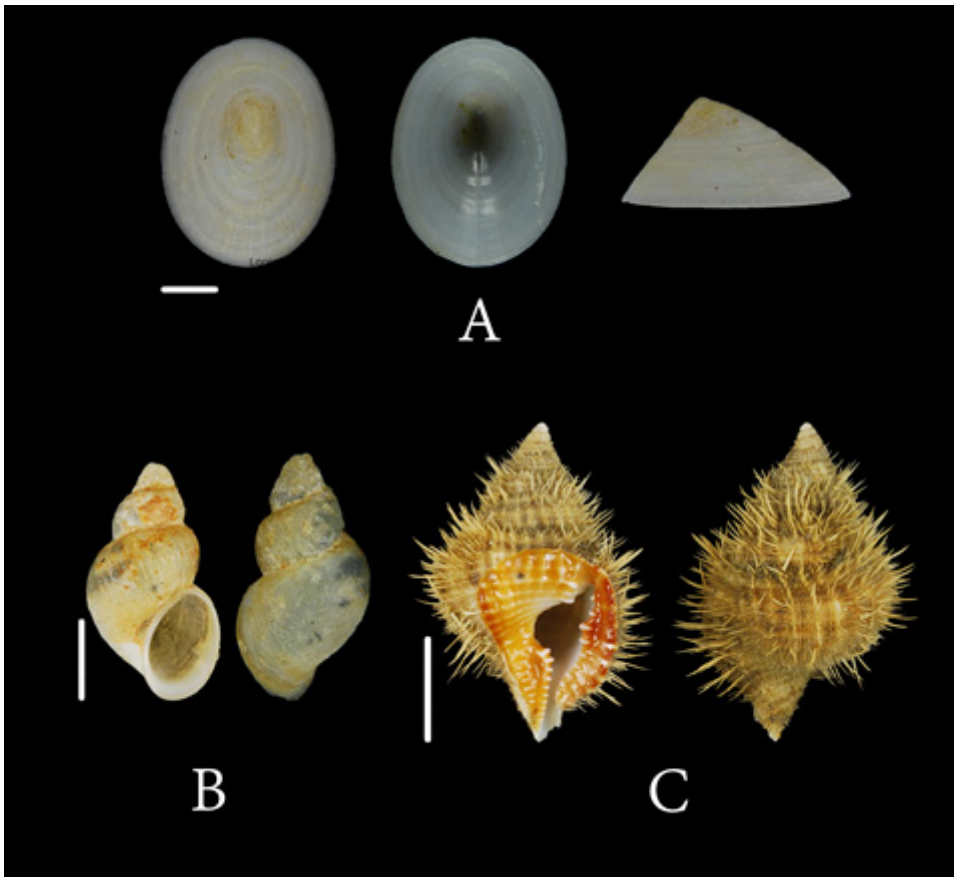

Fig. 1. New record Korean marine mollusks. **A**, *S. sagamiensis*. Scale: 2 mm; **B**, *F. nipponica*. Scale: 2.5 mm; **C**, **D**. *reticularis*. Scale: 10 mm.

hard. Apex low, anteriorly situated of the shell; the end mostly pointed and uncurved; tinted with white. Shell surface white and unpatterned. Dorsal margin slope of anterior steep and shorter than posterior. Posterior dorsal margin gentle in slope, long length, and weakly convex. Exterior surface smooth; sculpture with low and densely riblets extends from the apex to the shell margin and concentric lines cross with the radial ribs. Central area of shell inside muscle scar white and boundaries not clear. Interior of shell white, lightly polished. The inner margin same color as the inner surface.

Class Gastropoda Cuvier, 1795 복족강
Subclass Caenogastropoda Cox, 1960 신생복족아강
Order Littorinimorpha Golikov & Starobogatov, 1975 총알고둥목
Superfamily Truncatelloidea Gray, 1840 목주림고둥상과
Family Iravadiidae Thiele, 1928 깨고둥붙이과
Genus *Fluviocingula* Kuroda & Habe, 1954
예쁜이깨고둥붙이속

2. *Fluviocingula nipponica* Kuroda and Habe, 1954 (Fig. 1, B) 동막깨고둥붙이 (신칭)

Fluviocingula nipponica Kuroda and Habe, 1954, p. 74. Tfs. 5-7; Habe, 1961, p. 22, pl. 10, fig. 10; Habe, 1973, p. 312, pl. 17-2, fig. 24; Higo *et al*., 1999. p. 96; Kantor & Sysoev, 2006, p. 112.

Type locality: Japan.
Habitat: Brackish water, on mud at river mouth.
Distribution: Korea, Japan.
Material examined: 32 specimens (Dongmak, Hwado-myeon, Gangwha-gun, Incheon City: 25.vii.2000).
Measurement: Height 4 mm; width 1.5 mm.
Description: Shell small and elongate-ovate in shape.

Body whorl large and swollen, spire whorls relatively inflated and regularly decreases in the height. The protoconch small, depressed dome-shape, and smooth. The suture deep. Outer surface relatively smooth and not glossy, with fine lines of growth. Umbilicus very narrow and shallow. Aperture large ovate in shape and yellowish white, the circumference smooth and thick. Operculum thin and corneous, ovate.

Remark: Higo *et al*. (1999) and Kantor & Sysoev (2006) were synonymized to *Fluviocingula elegatula* (A.Adams, 1861), but now considered a separate species (WoRMS, 2019).

Superfamily Tonnoidea Suter, 1913 위고둥상과
Family Personidae Gray, 1854 날개입고둥과 (신칭)
Genus *Distorsio* Röding, 1798 날개입고둥속 (신칭)

3. *Distorsio reticularis* (Linnaeus, 1758) (Fig. 1, C)
그물무늬날개입고둥

Murex reticularis, Linnaeus, 1758, p. 749.
Distorsio reticularis: Carpenter and Niem, 1998, p.548; Higo *et al*., 1999, p. 160; Okutani *et al*., 2000. p. 293, pl. 145, fig. 2; Poppe, 2008, p. 630, pl. 260, figs. 3,5,7; Robin, 2008, p. 164, figs. 9, 10.
Distorsio reticulata Röding, 1798, p. 133: Qi *et al*., 2004. p. 77, pl. 47 fig. B; Min & Lee, 2007, p. 171, fig. 746.
Triton decipiens Reeve, 1844. pp. 121-122.
Distorsio decipiens: Higo *et al*., 1999, p. 160; Okutani *et al*., 2000. p. 293, pl. 145, fig. 4; Poppe, 2008, p. 630, pl. 260, fig. 2.

Type locality: None designated.
Habitat: Rocky and gravel bottom in 50-200 m deep.
Distribution: Japan, Philippines, Indo-western Pacific, Australia.
Material examined: 1 specimen (Seogwipo Harbour, Seogwipo-si, Jeju-do: 15.v.2019).
Measurement: Height 38 mm; width 22 mm.
Description: Shell rhombus-shaped, inflated and roughly sculptured. Body whorl large and swollen, spire whorls irregular, with wavered suture. Sculpture nodulous axial and spire ribs, and with low axial varices. Peripheral ribs forming a wide shoulder keel. Surface with the reticulate marks and yellowish-brown in color. Periostracum conspicuous, fibrous to hairy. Aperture distorted, narrowed by strong teeth arising from the outer and inner lips. Inner lip strongly sinuous, with an extensive shield-shaped callus. Siphonal canal relatively short, dorsally recurved anteriorly. Operculum corneous, irregularly ovate.

ACKNOWLEDGMENTS

This work was supported by a grant from the National Institute of Biological Resources (NIBR), funded by the Ministry of Environment (MOE) of the Republic of Korea (NIBR201902204).

REFERENCES

Carpenter, K.E. and V.H. Niem. (1998) The living marine resources of the Western Central Pacific. vol. 1. Seaweeds, corals, bivalves and gastropods. Food and Agriculture Organization of the United Nations. Rome. pp. 1-686.

Habe T. (1961) Coloured Illustrations of the shells of Japan, vol. II, ix+2+182 pp., 66 pls. Pub. Hoikusha, Osaka, Japan.

Hasegawa, K. and Okutani, T. (2011) A Review of Bathyal Shell-bearing Gastropods in Sagami Bay. *Mem. Natl. Mus. Nat. Sci., Tokyo*, (**47**): 97-144.

Higo, S., Callomon, P. and Goto, Y. (1999) Catalogue and Bibliography of the Marine Shell-Bearing Mollusca of Japan. Elle Scientific Publication. Osaka.

Kantor, Y. & A.V. Sysoev. (2006) Marine and brackish water Gastopoda of Russia and adjacent contries: an illustrated catalogue. KMK Scientific Press Ltd. Moscow.

Kuroda T., Habe T. and Oyama K. (1971) The seashells of Sagami bay. pp.741, Maruzen Pub. Co., Tokyo. 1-741 (in Japanese), 1-489 (in English), 121 pls.

Kuroda, T. and T. Habe. (1954) New Aquatic Gastropods from Japan. *Venus*, **18**(2): 71-79, text-figs. 1-12.

Linnaeus, C. (1758) Systema Naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis. *Editio decima*, reformata [10th revised edition], vol. 1: 824 pp.

Min, D.K. and J.S. Lee. (2007) Shell of the world. Min Molluscan Research Institute, Seoul. pp. 426.

Min, D.K., J.S. Lee, D.B. Koh and J.K. Je. (2004) Mollusks in Korea. Min Molluscan Research Institute. Seoul.

National Institute of Biological Resources (NIBR). (2019) National Species List of Korea II. Incheon, 904 pp.

Okutani, T. (ed.), (2000) Marine Mollusks in Japan. pp. 1172, Tokai University Press. Tokyo.

Okutani, T. (1987) Sagamilepeta a New Genus for "*Leprta*" sagamiensis Kuroda & Habe, 1971 (Gastropoda: Lepetidae). *Venus*, **46**(2):127-130.

Poppe, G.T. (2008) Philippine Marine Mollusks. vol. 1, Gastropoda Part 1. Conchbook.

Qi, Z., (ed.). (2004) Seashells in China. pp.418, pls. 193. China Ocean Press, Beijing.

Reeve, L.A. (1844) Descriptions of New species of Triton, collected by Hugh Cuming. Proceedings of the Zoological Society of London. pp. 110-122.

Röding, P.E. (1798) Museum Boltenianum sive catalogus cimeloriume tribus regnis naturase quae olim collegerat Joa. Fried. Bolten, M.D.p.d. per XL. Annos Protophysicus Hamburgensis, pars secunda continens conchylia sive testacea univalvia, bivalvia et multivalvia. vii+199 pp. Pub. J. C. Trapii, Hamburg.

Robin, A. (2008) Encyclopedia of Marine Gastropods. Xenophora and ConckBooks. pp. 1-480.

Ueno, M. (ed.). (1973) Freshwater Biology of Japan. In Habe, T., Mollusca. Hokuryukan Pub. Co., Ltd., Tokyo.

World Register of Marine Species (WoRMS). (2019) http://www.marinespecies.org.