

Newly Record of *Megayoldia toyamaensis* (Kuroda, 1929) (Bivalvia: Nuculanoidea: Yoldiidae) in Korean Fauna

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ABSTRACT

A yoldiid species, *Megayoldia toyamaensis* (Kuroda, 1929) is newly recorded from Korea. Six individuals were collected by standard bottom trawl survey (East Sea) from April and October 2023. To date, three species, belonging to the genus *Megayoldia* have been reported from Korea. In this study, we have added *M. toyamaensis* (Kuroda, 1929) as a new record from Korean waters with its morphological description.

Keywords: New record, *Megayoldia toyamaensis*, trawl survey, Korea

INTRODUCTION

The family Yoldiidae Dall, 1908, commonly known as yoldiids, belongs to the superfamily Nuculanoidea in the bivalve order Nuculanida. Yoldiids are one of a group of Protobranch bivalves, most of which are found in mud or sand beds in the deep sea (Paula *et al.*, 2008).

The family Yoldiidae contains one subfamily, 9 genera and approximately 230 species worldwide (MolluscaBase, 2023), of which 4 genera and 11 species occur in Korea (NIBR, 2022). To date, three species belonging to the genus *Megayoldia* have been reported from Korea, these species being *M. japonica* (A. Adams & Reeve, 1850), *M. lischkei* (E. A. Smith, 1885) and *M. thraciaeformis* (Storer, 1838) (Min, *et al.*, 2004; NIBR, 2022). In this study, we have added *M. toyamaensis*

(Kuroda, 1929) as a new record from Korean waters with its morphological description.

MATERIALS AND METHODS

Specimens were collected during a DeepSea joint survey conducted by the National Marine Biodiversity Institute of Korea (MABIK) and the National Institute of Fisheries Science (NIFS) within the Ministry of Oceans and Fisheries (MOF). 6 Specimens of *M. toyamaensis* were collected by the bottom trawling from the subtidal zone of Gangwon and Gyeongbuk offshore in the East Sea at a depth of 300 m to 500 m from April and October 2023 with the research ships (Tamgu 23ho [1,679G/T] and Tamgu 22ho [1,458G/T]) of NIFS. Among them, three specimens were collected with a research ship (Tamgu 23ho) at a depth of 500 m from Gyeongbuk offshore on 9 April 2023 and the other three specimens were collected with another research ship (Tamgu 22ho) at a depth of 300 m from Gangwon offshore on 7 October 2023.

Specimens were observed under a stereomicroscope (Leica MZ12.5, Germany) and identified as *M. toyamaensis* (Kuroda, 1929), a new record from Korean fauna, based on its shell characters. After

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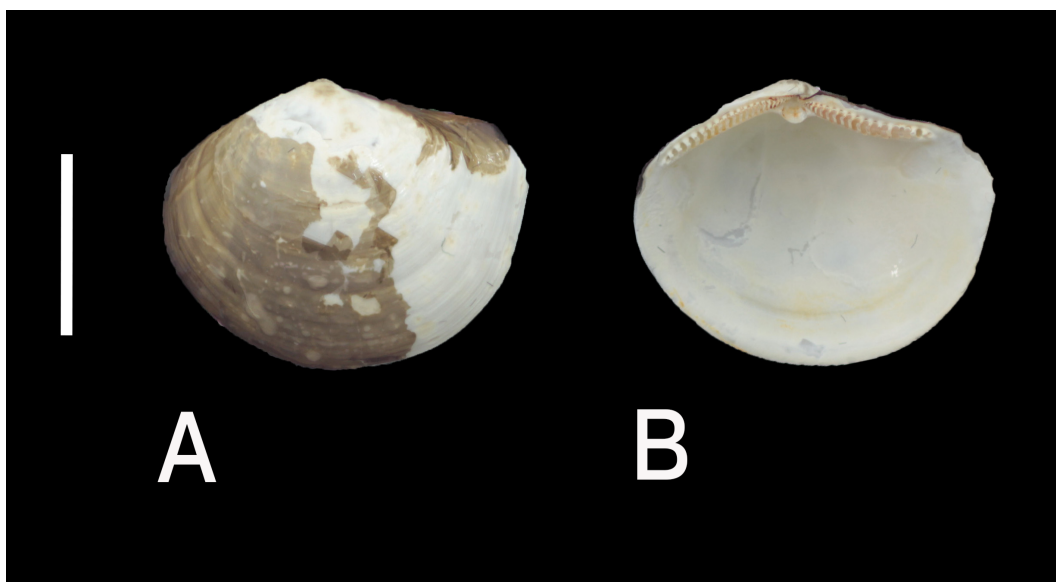


Fig. 1. *Megayoldia toyamaensis* (Kuroda, 1929). A, Exterior of left valve; B, Interior of right valve. Scale bar: 10 mm.

alcohol-fixing them to a purity of up to 95%, voucher specimens are deposited at MABIK, Seocheon, Republic of Korea.

SYSTEMATIC ACCOUNTS

Class Bivalvia Linnaeus, 1758 이매패강

Order Nuculanida Carter, Campbell and Campbell, 2000 애호두조개목(신칭)

Superfamily Nuculanoidea H. Adams & A. Adams 1858 맷시조개상과

Family Yoldiidae Dall, 1908 반달조개과

Genus *Megayoldia* A. E. Verrill & K. J. Bush, 1897 큰맷시조개속

***Megayoldia toyamaensis* (Kuroda, 1929) (Fig. 1) 작은맷시조개(신칭)**

Yoldia toyamaensis Kuroda, 1929: 11, textfigs. 14, 15.

Portlandia (*Portlandella*) *toyamaensis*; Kuroda, 1957: pl. 2, figs. 2, 2a-c; Habe, 1958: 250;

Portlandia toyamaensis; Matsui, 1985: 227, pl. 31, fig. 13; Higo *et al.*, 1999: 645; Okutani, 2000: 845, pl. 420, fig. 35; Lutaenko, 2005: 67, pl. 1, fig. K; Okutani & Saito, 2014: 61, figs. 2F-G.

Megayoldia sp.; Kamenev, 2013: 127-128, figs. 3A-H.

Megayoldia toyamaensis; Okutani & Saito, 2017: 40, figs. 3F-H.

Type locality: Toyama bay, eastern Noto peninsula, Japan Sea (Higo *et al.*, 1999).

Habitat: Mud or fine sandy mud bottoms, 100-1400 m deep.

Distribution: Japan (Sado Island, Oga peninsula, Kyushu, Hokkaido) and Korea (Yellow Sea and East Sea).

Material examined: 3 specimen (MABIK MO00184527), Gyesangbuk-do offshore (East Sea), Korea, 36°12'52.58"N 129°53'21.26"E, 500m, 9 April 2023, and 3 specimen (MABIK MO00184897), Gangwon-do offshore (East Sea), Korea, 37°13'44.1"N 129°24'45.2"E, 300m, 7 October 2023, M-H Shin.

Measurement: Shell height, 13 mm; shell width, 18 mm.

Description: Shell thin but sturdy, oblong-ovate. Umbo moderately low, situated about center of shell length. Anterior end obtusely and roundedly angular, posterodorsal margin straight with upturned posterior end. Ventral margin evenly curved. Posteroventral corner, posterior margin vertically meeting, forming rectangular posterodorsal angle. Surface porcellaneous white, covered by adherent, light to dark grayish-brown periostracum. Hinge-plate very thick and strong, its inner margin straight on both sides; 17-18 anterior teeth, 15-16 posteriorly. Inner surface white with weak yellow hue.

Remarks: *M. toyamaensis* is often misidentified as *M. lischkei*, because it is highly morphologically similar, particularly in juveniles, and has the same habitat (Okutani & Saito, 2014; 2017). However, this species is easily distinguished from *M. lischkei* that the umbo is located in the center of the shell and the ventral margin is more inflated.

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