Occurrence of the Fossil Freshwater Molluscan Genus *Tulotomoides* from Japan

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淡水産化石属 *Tulotomoides* 日本に産す

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(要　　旨)

滋賀県甲西町国鉄草津線三雲駅近くの野洲川河床の粘土層から発見されたタニシ科の化石種は，中国及びシベリア（バイカル湖附近）の始新世—鮮新世の地層から少数の種が報告されている化石属 *Tulotomoides* WENZ, 1939の新種で，*Tulotomoides japonica* HABE & TOMODA, sp nov. と命名する．この産地の層序はまだ明かになっていないが，鮮新世最上部の古琵琶湖層と思われ，大陸と古琵琶湖から共通の絶滅属が発見されたことは古生物地理学上重要な意義をもっている．

Introduction

In 1963 Mr. Ichiro KIMURA, formerly master of the Konan Daisan Elementary School, had collected several specimens of this interesting fossil viviparid species, *Tulotomoides japonica* sp. nov. in the clay mud at the bottom of River Yasu near Mikumo Railway Station of Kusatsu Line, Kōsei-cho, Shiga Prefecture. But they were not good for study. Therefore, in 1978 he visited again to get good specimens of this new species at that locality with Mr. Tsuneo NAKAJIMA and junior author, Yoshio TOMODA. They are described on the following lines.

Tulotomoides japonica sp. nov.
(Pl. 5, figs. 1–5; Textfigs. 1, 2)

Shell medium in size for the genus, ovate in shape with an elevated spire of about 5 whorls. Whorl with a strongly keeled cord on the shoulder and with the horizontally flat area between the upper suture and the shoulder and the flattened peripheral area, slightly constricted just below the shoulder cord. Suture rather deep. Surface with the densely set growth lines. Body whorl very large, about two thirds of shell height and with a strongly keeled shoulder cord and constricted just below the shoulder and rounded at the base. Umbilicus concave but not perforated. Aperture wide, ovate in shape, Outer margin angulated at the shoulder and rather straight to the rounded basal margin.

Height 23.5 mm and breadth 17.2 mm (Type specimen housed in the National

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Science Museum, NSMT-Mo 58466)

Height 22.0 mm and breadth 15.7 mm (Paratype specimen No. 1 NSMT-Mo 58467)

Height 20.8 mm and breadth 16.8 mm (Paratype specimen No. 2 NSMT-Mo 58468)

Height 21.8 mm and breadth 19.9 mm (Paratype specimen No. 3 housed in the Mizunami Fossil Museum Reg. No. 110001)

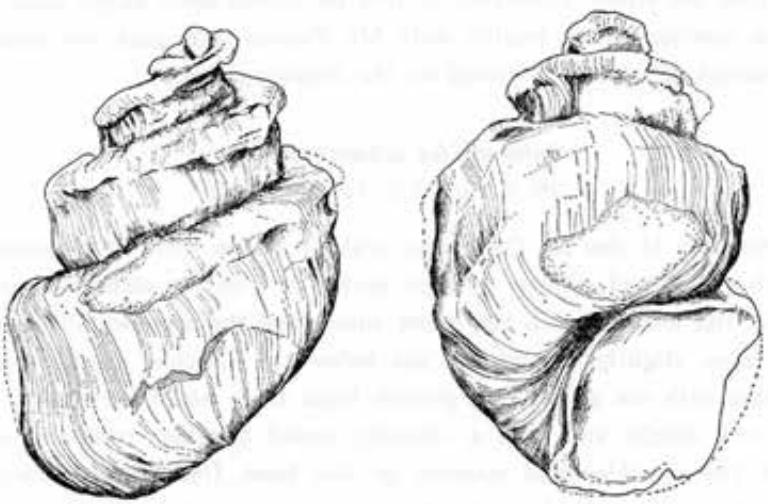
Height 24.0 mm and breadth 17.3 mm (Paratype specimen No. 4 MFM Reg. No. 110002)

Type locality: In the clay mud deposit of Ko-Biwako Group at bottom of River Yasu near Mikumo Railway Station of Kusatsu Line in Kōsei-cho, Kōga-gun, Shiga Prefecture, Honshu

Geological age: Kōga Formation of Ko-Biwako Group, the proposed upper Pliocene

Remarks: This is the first record of the viviparid genus *Tulotomoides* from Japan. This genus had been established by WENZ, 1939 for *Tulotoma kwangsiensis* HSÜ, 1935 from the Pliocene deposit at Napo, Kwangsi, South China and now several species have been described from Tertiary deposits of various parts of China and the Circum-Baikalia, Siberia. The occurrence of *Tulotomoides japonica* suggests that the freshwater molluscan fauna in Pliocene Period was closely related between East Asian Continent and Japan by the land connection.

This new species is very close to *T. kwangsiensis* (HSÜ, 1935), *T. lii* (HSÜ, 1935) from Kwangsi, South China and *T. aspricarinata* YOULOU, 1978 from Bohai, North China in shape, but has more strongly keeled shoulder cord on the somewhat constricted large body whorl.



Text-figs. 1a, b. *Tulotomoides japonica* HABE & TOMODA, sp. nov. × ca. 3

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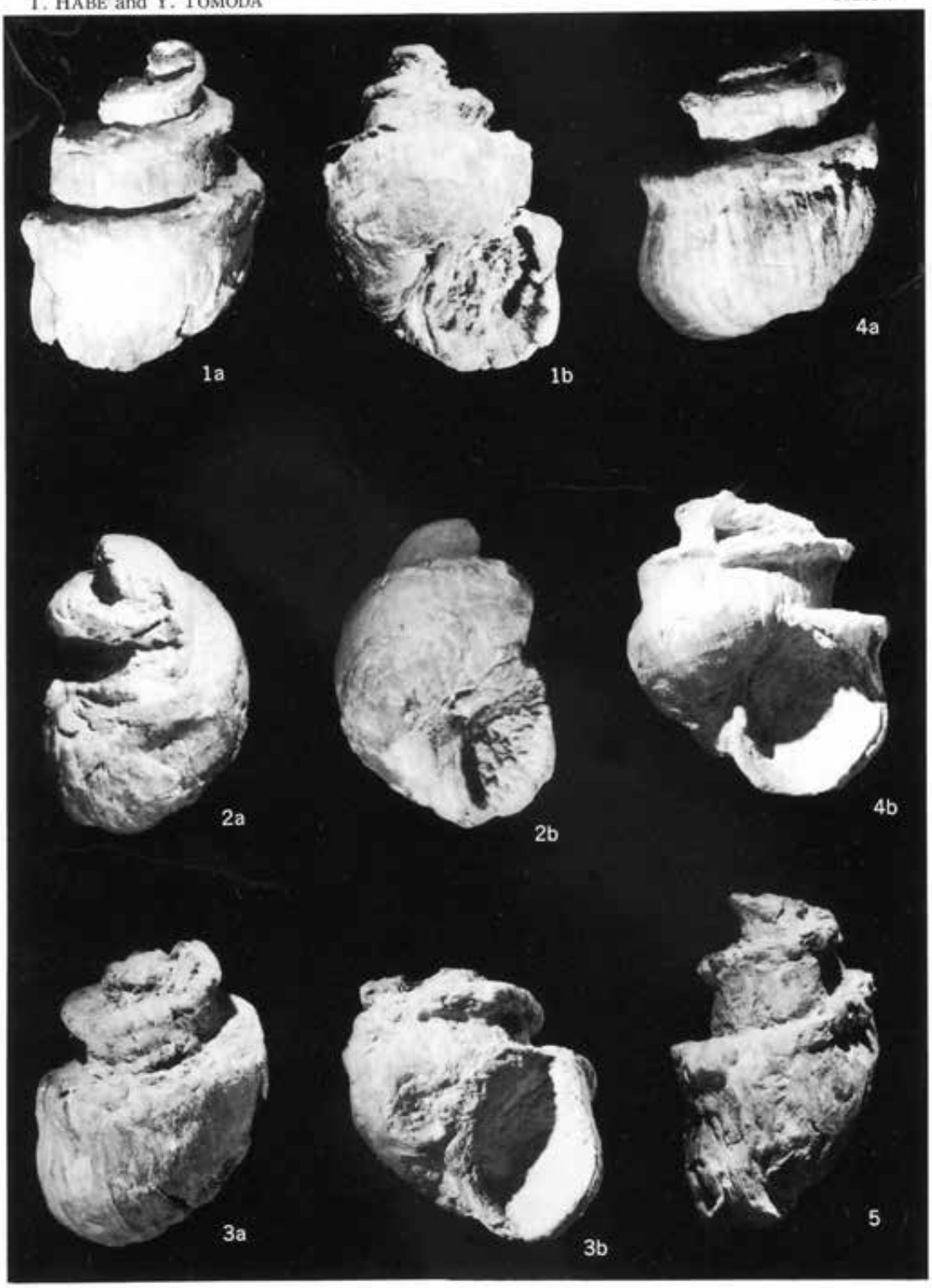
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1a
1b
4a
2a
2b
4b
3a
3b
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