Report on specimens of the family Rhyacichthyidae (Teleostei: Gobiiformes) deposited in the Department of Zoology, The University Museum, The University of Tokyo

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Abstract

The specimens of the family Rhyacichthyidae (Teleostei: Gobiiformes) deposited in the Department of Zoology, The University Museum, The University of Tokyo (ZUMT) were re-identified in the present study. In total 5 specimens representing only a single species, *Rhyacichthys aspro* (Valenciennes, 1837) were found from the collection. No types for the family were found.

Introduction

The loach gobies of the family Rhyacichthyidae Jordan, 1905 are characterized by the following combination of characters: pelvic fins separated; complete lateral-line system; three epural bones in caudal skeleton; six branchiostegal rays; and no ventral sucker (Asaoka et al. 2014; Senou 2021; Haÿ et al. 2022). Because of Rhyacichthyidae is a sister group of all other Gobiiformes, it is regarded as the most primitive group of gobies (Springer 1983; Asaoka et al. 2014; Senou 2021; Haÿ et al. 2022). Rhyacichthyidae comprises two genera from the Indo-Pacific: *Protogobius* Watson and Pöllabauer, 1998 and *Rhyacichthys* Boulenger, 1901. The former is monospecific (*P. attiti* Watson and Pöllabauer, 1998) and the latter currently includes three valid species, *R. aspro* (Valenciennes, 1837), *R. guilberti* Dingerkus & Séret, 1992 and *R. novaeguineae* Boulenger, 1903 (Haÿ et al. 2022). Gobies of Rhyacichthyidae usually inhabit the lower to middle courses of clear and rapid streams and all of them are regarded as amphidromous species: i.e., adults spawn in the freshwater habitats, larvae after hatching immediately migrate downstream to the marine waters, and thereafter, the juveniles recruit to the inland waters (Tabouret et al. 2014; Suzuki 2015; Senou 2021; Haÿ et al. 2022). Although many species of Rhyacichthyidae are assessed by IUCN and/or governments due to concerns about habitat destruction caused by river construction and pollution of river water (e.g., Keith 2002; Suzuki 2015; Larson 2020), some of them are listed as “DD” (Data Deficient)” due to the lack of enough data to determine their conservational status (Larson 2012; Jaafer 2019).

To aid future taxonomic and biogeographic studies and conservation, a list of specimens of Rhyacichthyidae deposited in the Department of Zoology, The University Museum, The University of Tokyo (ZUMT) is herein provided.

Materials and Methods

Species nomenclature and identifications of ZUMT specimens generally followed Akihito et al. (2013) and Haÿ et al. (2022). Size of the specimens are expressed in standard length (mm; abbreviated as SL). Sex of the specimens are determined by following Cole and Parenti (2022). The localities of some specimens collected recently are given at the island scale to protect the collection sites from overexploitation by ornamental fish dealers, aquarium hobbyists, and researchers. The collection year and collector for some specimens were estimated by following Koeda et al. (2022).

Collection of Rhyacichthyidae in ZUMT

As a result of our survey, 5 specimens of a single species, *Rhyacichthys aspro* (Valenciennes, 1837) were confirmed. No specimens of *Protogobius* or types for the family Rhyacichthyidae were found from the collection.

Rhyacichthyidae Jordan, 1905　ツバサハゼ科
Rhyacichthys Boulenger, 1901　ツバサハゼ属
Rhyacichthys aspro (Valenciennes, 1837)　ツバサハゼ
（Figs. 1, 2）

JAPAN

ZUMT 58108: female, 120.0 mm SL, Nakama-gawa River (仲間川), Iriomote-jima Island, Yaeyama Islands, Okinawa Pref., Ryukyu Archipelago, 9 July 1988, hand net, coll. H. Senou (瀬能　宏) and M. Aizawa (藍澤正宏).

ZUMT 60623: female, 90.8 mm SL, Ara-kawa River (荒川), Ishigaki-jima Island, Yaeyama Islands, Okinawa Pref., Ryukyu Archipelago, 27 Aug. 1989, coll. H. Senou and M. Aizawa.

ZUMT 67184: male, 81.3 mm SL, Ishigaki-jima Island, Yaeyama Islands, Okinawa Pref., Ryukyu Archipelago, 19 Dec. 2023, hand net, coll. K. Seki (関　航志).

TAIWAN

ZUMT 52500: female, 98.6 mm SL, upper branch of Kao-Ping-Chi (Shimo-Tansui Kei) River, near Liukuel (Rokki) at Tek-AhMug (Chikushimon), 51 km from the mouth of the river, Kaohsiung County (Takao-ken) [高雄県六亀付近，竹子門, 高屏溪 (下淡水溪) 上流], 28 Mar. 1969, coll. M. Watanabe (渡部正雄).

Remarks. Watanabe (1972) reported ZUMT 52500 as the first Taiwanese record of *R. aspro*.

PHILIPPINES

ZUMT 42622: female, 124.1 mm SL, Basilan Island, 1926, coll. U. Yamamura (山村楳次郎) and Y. Yamamura (山村八重子).

Acknowledgements

We are deeply grateful to the late Y. Tominaga for his dedication and efforts to the ZUMT collection. We are also grateful to H. Wada (Kanagawa Prefectural Museum of Natural History), S. Mabuchi, J. Oi, K. Seki and O. Sakai (Azabu Junior and Senior High School), S. Fujiwara, M. Fukatani, A. Iinuma, S. Ito, H. Kamei, Y. Kaneko, K. Kobayashi, K. Mochizuki, N. Osakabe, M. Saito, A. Takahashi and other volunteers of ZUMT for providing curatorial assistance.

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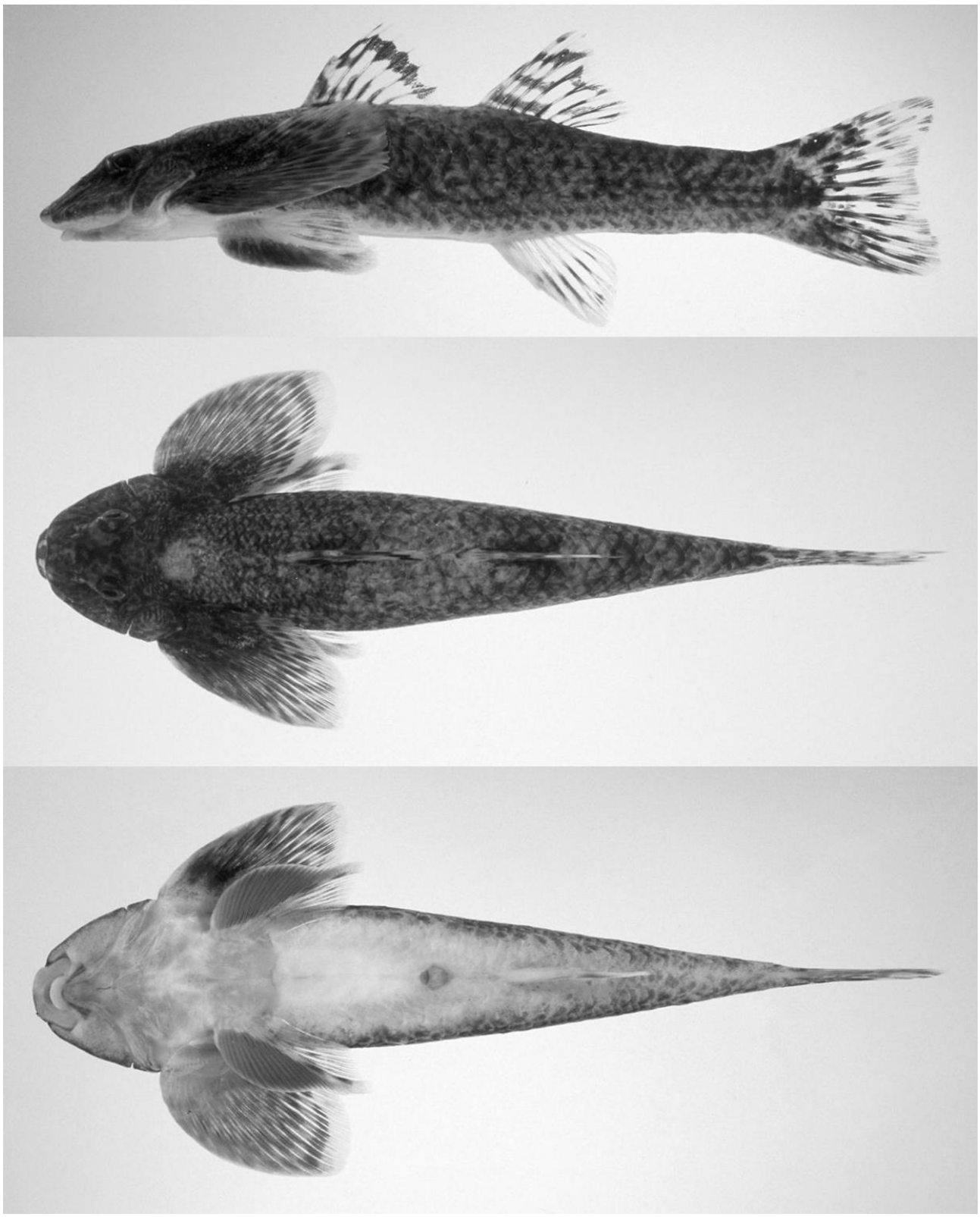

Figure 1. *Rhyacichthys aspro* from Iriomote-jima I., Yaeyama Is., Ryukyu Archipelago, Japan, immediately after fixation (ZUMT 58108, female, 120.0 mm SL). Photos by M. Aizawa.

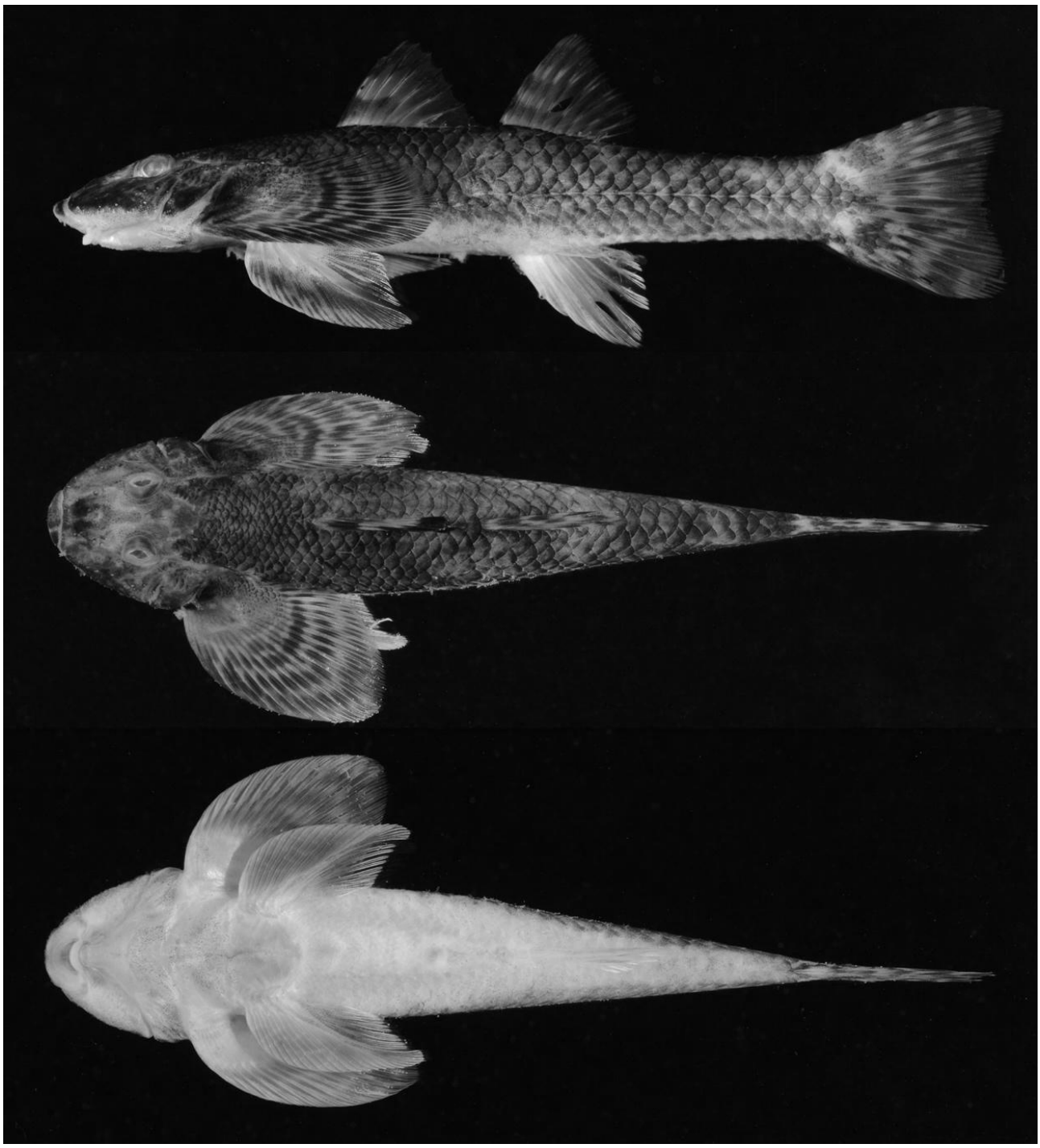

Figure 2. *Rhyacichthys aspro* from Ishigaki-jima I., Yaeyama Is., Ryukyu Archipelago, Japan, immediately after fixation (ZUMT 67184, male, 81.3 mm SL). Photos by D. Oyama.