

Specimens of the family Gobiesocidae (Teleostei: Gobiesociformes) deposited in the Department of Zoology, The University Museum, The University of Tokyo

Kyoji Fujiwara^{1)*}, Hidetoshi Wada²⁾, Masahiro Aizawa²⁾, Kazuo Sakamoto^{2,3)}, Rei Ueshima^{2,4)}

¹⁾National Museum of Nature and Science, 4-1-1 Amakubo, Tsukuba, Ibaraki 305-0005, Japan

²⁾The University Museum, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan

³⁾Fish Information Center and Museum, 6-6 Toyosu, Koto-ku, Tokyo 135-0061, Japan

⁴⁾Department of Biological Sciences, Graduate School of Science, The University of Tokyo, 7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan

*Corresponding author: E-mail: k_fujiwara@kahaku.go.jp

Abstract

Specimens of the family Gobiesocidae, deposited in the Department of Zoology, The University Museum, The University of Tokyo, were examined and found to represent eight genera and species as follows: *Aspasma ubauo* Fujiwara & Motomura, 2019, *Aspasmichthys ciconiae* (Jordan & Fowler, 1902), *Conidens laticephalus* (Tanaka, 1909), *Diademichthys lineatus* (Sauvage, 1883), *Kopua yoko* Fujiwara, Okamoto & Motomura, 2018, *Pherallodus indicus* (Weber, 1913), *Propherallodus briggsi* Shiogaki & Dotsu, 1983, and *Lepadichthys misakius* (Tanaka, 1908).

Introduction

Clingfishes in the family Gobiesocidae inhabit a range of habitats in the Atlantic and Indo-Pacific oceans, from intertidal to deep sea, with some additional tropical species occurring in freshwater streams (Conway et al. 2020). The family is characterized by the following combination of characters: body slender, cylindrical and compressed at caudal peduncle, and lacking scales; single dorsal and anal fins; pelvic fins and pelvic girdle forming adhesive disc (except for species of *Alabes* Cloquet, 1816). Currently 191 gobiesocid species, included in 52 genera, are recognized (Briggs 1955; Nelson et al. 2016; Fricke et al. 2023; Fujiwara et al. 2023).

During the first authors' revisional study of Gobiesocidae, all specimens of the family deposited in the Department of Zoology, The University Museum, The University of Tokyo (abbreviated as ZUMT) were examined. A list of those specimens is provided herein, along with brief comments on type specimens.

Materials and Methods

Gobiesocid specimens were identified by the first author, with reference to Hayashi et al. (1986), Hayashi and Hagiwara (2013), Fujiwara and Motomura (2018, 2019a, b), and Fujiwara et al. (2018). Standard lengths (SL) of all specimens were measured, except for some in poor condition. The collection year and collector are given where recorded in the ZUMT specimen catalogue or on a tag, with some also determined following Koeda et al. (2022). The following list includes ZUMT number, SL, number of specimens when two or more, type status if any, collection locality, and associated collection data. Collection data for specimens are omitted if the same as that for the next specimen listed.

Although some of the ZUMT specimens collected by Dr. Tokiharu Abe had not been registered into the ZUMT collection, with the collection data of most missing, they are listed herein together with their ZUMT ABE number (number with underbar written on the specimen label), in the hope that Dr. Abe's catalog books with collection data will be rediscovered in the future.

Collection of Gobiesocidae in ZUMT

A total 272 specimens in 67 lots of Gobiesocidae were found in the ZUMT collection, and subsequently

identified as eight genera and species as listed below. All specimens were collected from Japan in the 20th century (from 1908 to 1989), the majority from the Japanese mainland. Compared with currently known distributional records, no specimens, except for ZUMT 65731, represented range extensions for their respective species. ZUMT 65731 was reported as the first records of *Kopua yoko* Fujiwara, Okamoto & Motomura, 2018 from the southern East China Sea by Fujiwara & Wada (2023). According to the ZUMT specimen catalogue and Tanaka (1908, 1909), three type specimens of Gobiesocidae had been deposited in ZUMT (viz., ZUMT 1981, 1982, 2158). However, the holotype of *Aspasma laticephala* (= *Conidens laticephalus*; ZUMT 2158) and paratype of *Aspasma misakia* (= *Lepadichthys misakius*; ZUMT 1982) have apparently been lost as they could not be found during the present search. The remaining specimen (ZUMT 1981: holotype of *Aspasma misakia*) was reported in Fujiwara and Motomura (2019a: fig. 9) and Fig. 1.

Gobiesocidae ウバウオ科

Aspasma Jordan & Fowler, 1902 ウバウオ属

Aspasma ubauo Fujiwara & Motomura, 2019 ウバウオ

- ZUMT 1783**: 12 specimens, 25.1–46.0 mm SL; **ZUMT 1785**: 13 specimens, 24.8–47.6 mm SL, tide pool at Misaki, Miura, Kanagawa Pref., May 1908, S. Tanaka.
ZUMT 2125: 59.5 mm SL, “Anbotatekawa” (probably Tateyama), Chiba Pref., 5 Apr. 1908.
ZUMT 5468: 3 specimens, 24.2–43.1 mm SL, Jyogashima, Miura, Kanagawa Pref.
ZUMT 7812: 3 specimens, 35.2–42.9 mm SL, Jyogashima, Miura, Kanagawa Pref., Apr. 1917, S. Tanaka.
ZUMT 22021: 42.2 mm SL, Wakayama Pref., Jan. 1920.
ZUMT 28393: 37.8 mm SL; **ZUMT 28394**: 25.6 mm SL; **ZUMT 28395**: 23.5 mm SL; **ZUMT 28396**: 23.4 mm SL, Misaki, Miura, Kanagawa Pref.
ZUMT 28639: 106 specimens, 17.8–49.4 mm SL, Misaki, Miura, Kanagawa Pref., 2 May 1909.
ZUMT 29021: 25.7 mm SL; **ZUMT 29022**: 29.1 mm SL; **ZUMT 29023**: 22.6 mm SL; **ZUMT 29024**: 24.6 mm SL; **ZUMT 29025**: 28.5 mm SL; **ZUMT 29026**: 28.7 mm SL; **ZUMT 29027**: 25.3 mm SL; **ZUMT 29028**: 25.4 mm SL; **ZUMT 29029**: 26.2 mm SL, Misaki, Miura, Kanagawa Pref., May 1918.
ZUMT 38979: 42.9 mm SL **ZUMT 38980**: 32.8 mm SL **ZUMT 38981**: 32.3 mm SL, Misaki, Miura, Kanagawa Pref.
ZUMT 48691: 43.7 mm SL, Najima-sensho (fishing point at northeastern Sagami Bay), Kanagawa Pref., 11 June 1956, donated from Biological Laboratory, Akasaka Imperial Palace, Imperial Household, Tokyo, Japan.
ZUMT 54789: 27.1 mm SL; **ZUMT 54790**: 24.1 mm SL; **ZUMT 54791**: 45.0 mm SL; **ZUMT 54851**: 4 specimens, 23.2–37.1 mm SL, tide pool at Moroiso Beach, Misaki, Miura, Kanagawa Pref., 5 May 1985.
ZUMT 55183: 7 specimens, 29.0–41.2 mm SL, Mito Beach, Mito, Miura, Kanagawa Pref., 20 July 1966.
ZUMT 55184: 6 specimens, 25.6–38.6 mm SL, Ebishima (vicinity of Moroiso Beach), Misaki, Miura, Kanagawa Pref., 21 Apr. 1966.
ZUMT 55185: 38 specimens, 21.3–38.4 mm SL; **ZUMT 55186**: 19 specimens, 13.6–43.1 mm SL, Misaki, Miura, Kanagawa Pref.
ZUMT 55268: 40.5 mm SL, tide pool at Ebishima (vicinity of Moroiso Beach), Misaki, Miura, Kanagawa Pref., 10 May 1986, M. Aizawa.
ZUMT 58932: 30.4 mm SL; **ZUMT 58933**: 43.5 mm SL, Arai Beach, Koajiro, Miura, Kanagawa Pref., 30 Apr. 1990, M. Aizawa.
ZUMT ABE 1929: 44.1 mm SL; **ZUMT ABE 1930**: 47.7 mm SL, locality unknown.

Aspasmichthys Briggs, 1955 ツルウバウオ属

Aspasmichthys ciconiae (Jordan & Fowler, 1902) ツルウバウオ

- ZUMT 9859**: 73.1 mm SL, south coast of Awaji-shima island, Hyogo Pref., K. Yamadori.

ZUMT 18933: 49.7 mm SL, Okino-shima island, Sukumo, Kochi Pref., Nov. 1926, T. Kamohara.
ZUMT 20570: 51.8 mm SL, Wakayama Pref., Jan. 1920.
ZUMT 25576: 51.4 mm SL, Shimoda, Shizuoka Pref., May 1933, T. Ishida.
ZUMT 42414: 74.6 mm SL, Shimoda, Shizuoka Pref., M. Kato.
ZUMT 55285: 19.1 mm SL, tide pool at Motomachi, Izu-oshima island, Izu Islands, Tokyo, 18 Aug. 1933, I. Tomiyama.

Conidens Briggs, 1955 アンコウバウオ属
Conidens laticephalus (Tanaka, 1909) アンコウバウオ

ZUMT 41071: 12.7 mm SL, Hachijyo-jima island, Izu Islands, Tokyo, S. Watanabe.
ZUMT 54748: 32.7 mm SL, Mito Beach, Mito, Miura, Kanagawa Pref., 20 July 1966.
ZUMT 60791: 32.1 mm SL; **ZUMT 60792**: 31.1 mm SL; **ZUMT 60793**: 29.8 mm SL; **ZUMT 60794**: 25.0 mm SL, Izu Oceanic Park, Futo, Itou, Shizuoka Pref., 24 May 1990, H. Senou and M. Aizawa.

Diademichthys Pfaff, 1942 ハシナガウバウオ属
Diademichthys lineatus (Sauvage, 1883) ハシナガウバウオ

ZUMT 60673: 40.1 mm SL, Kabira Bay, Ishigaki-jima island, Yaeyama Islands, Okinawa Pref., 28 Aug. 1989, H. Senou and M. Aizawa.
ZUMT 61455: 24.7 mm SL, locality unknown.

Kopua Hardy, 1984 ヨザクラウバウオ属
Kopua yoko Fujiwara, Okamoto & Motomura, 2018) ヨウコウヨザクラウバウオ

ZUMT 65731: 2 specimens, ca. 16–19 mm SL, southern East China Sea (ca. 200 km northwest of Kume Island, Okinawa Islands, Okinawa Pref.), RV *Hakuho-maru*.

Pheralloodus Briggs, 1955 ホソウバウオ属
Pheralloodus indicus (Weber, 1913) ホソウバウオ

ZUMT 54737: 2 specimens, standard length undetermined; **ZUMT 55181**: clear and stained specimen, standard length undetermined; **ZUMT 55182**: 3 specimens, 22.0–25.8 mm SL, Mito Beach, Mito, Miura, Kanagawa Pref., 20 July 1966.

Propheralloodus Shiogaki & Dotsu, 1983 ヒメウバウオ属
Propheralloodus briggsi Shiogaki & Dotsu, 1983 ヒメウバウオ

ZUMT 63012: 24.6 mm SL, tide pool at Okada Port, Izu-oshima island, Izu Islands, Tokyo, 28 July 1991.

Lepadichthys Waite, 1904 ミサキウバウオ属
Lepadichthys misakius (Tanaka, 1908) ミサキウバウオ

ZUMT 1981: holotype of *Aspasma misakia*, 51.9 mm SL, Misaki, Miura, Kanagawa Pref., S. Tanaka, May 1908.

- ZUMT 19233:** 40.0 mm SL, Hachijyo-jima island, Izu Islands, Tokyo, 1 July 1929, Y. Otsuki.
- ZUMT 29000:** 47.8 mm SL, Misaki, Miura, Kanagawa Pref.
- ZUMT 41875:** 32.3 mm SL; **ZUMT 41876:** 45.2 mm SL; Hachijyo-jima island, Izu Islands, Tokyo, Sept. 1922, K. Uchiyama.
- ZUMT 42858:** 22.8 mm SL, Hachijyo-jima island, Izu Islands, Tokyo, Sept. 1922, M. Uchiyama.
- ZUMT 55178:** 40.0 mm SL; **ZUMT 55179:** 48.1 mm SL; **ZUMT 55180:** 53.8 mm SL, Misaki, Miura, Kanagawa Pref., 2 May 1909.
- ZUMT 56842:** 55.9 mm SL, Aburatsubo Bay, Miura, Kanagawa Pref., 1 Aug. 1987.
- ZUMT 60795:** 44.6 mm SL, Izu Oceanic Park, Futo, Itou, Shizuoka Pref., 24 May 1990, H. Senou and M. Aizawa.
- ZUMT 61450:** originally included in ZUMT 55186, 48.3 mm SL, Misaki, Miura, Kanagawa Pref.

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Fig. 1. Holotype of *Aspasma misakia* (= *Lepadichthys misakius*), ZUMT 1981, 51.9 mm SL, Misaki, Miura, Kanagawa Pref., Japan.