

A list of specimens of Triglidae (Actinopterygii: Teleostei) in the Department of Zoology, The University Museum, The University of Tokyo with comments on type specimens of Triglidae deposited in the museum's Department of Fisheries

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Abstract

A list of specimens in the collection of Triglidae (Teleostei), excluding species of the subfamily Peristediinae, held in the Department of Zoology, The University Museum, The University of Tokyo (ZUMT), consisting of 554 specimens in 525 lots, and representing 15 species, is provided. The collection of the Department of Fisheries in the museum (FUMT) was investigated. The holotype of *Lepidotrigla paradoxa* Matsubara and Hiyama, 1932 was found and catalogue numbers of syntypes of *Lepidotrigla hime* Matsubara and Hiyama, 1932 and *Lepidotrigla teraoi* Matsubara and Hiyama, 1932 were identified.

Introduction

The Triglidae, known as gurnards or sea-robins, is distributed in tropical to temperate waters around the world (Nelson et al., 2016). Although the family had been recognized as consisting of three subfamilies (Richards and Jones, 2002), recent phylogenetic studies have shown the Triglidae as previously recognized to be paraphyletic and have proposed a new classification, which includes a fourth subfamily Peristediinae, formerly recognized as the family Peristediidae, known as armored sea-robins (Portnoy et al., 2017; Smith et al., 2018). Some studies have adopted the new classification (e.g. Roy et al., 2023; Fricke et al., 2024), while others continue to follow the previous classification (e.g. Yato, 2020a, b; Richards, 2022; Kawai and Richards, 2022). In the series of the lists of the collection of the Department of Zoology, The University Museum, The University of Tokyo (ZUMT), the list of Peristediinae was presented as the family Peristediidae (Wada et al., 2022). A list of specimens of Triglidae deposited in the ZUMT, excluding the Peristediinae, is given in this study. The remaining triglid specimens of ZUMT were collected mainly in 1902–1988 from Japan, East China Sea, China, Taiwan, and Thailand.

The museum also has a collection of the Department of Fisheries (FUMT). Matsubara and Hiyama (1932) was the first study to review and describe in detail the Triglidae in Japan, including seven new species. As stated in the description, type specimens were deposited in the museum of the Zoological Laboratory, Imperial Fisheries Institute, Tokyo, and the museum of the Fishery Institute, Faculty of Agriculture, Tokyo Imperial University (currently FUMT), but catalogue numbers for the specimens were not given. As a consequence, types of the species have been considered to be lost (Fricke et al., 2024). The identification of the holotype of *Lepidotrigla paradoxa* Matsubara and Hiyama, 1932 and some information about type specimens of other species found are based on examinations of the FUMT collection during this study.

Materials and Methods

The specimens of Triglidae, except for the Peristediinae, in the ZUMT were re-identified in the present study, based on Kamohara (1936), Richards (1968), Ochiai and Yato (1984), Yato (1985), Richards and Yato (2012), Yamada and Yagishita (2013), Ye et al. (2015), Prokofiev (2022) and comparisons with type specimens. The standard length (SL) of the specimens were measured to the nearest 0.1 mm for all specimens following the method of Richards et al. (2003). The collection year for specimens without collecting dates in the ledger or on specimen tags was estimated following Koeda et al. (2022). The following list includes the ZUMT number, number of specimens when more than one, SL, collection locality, collection depth, collection date, collecting method, collector or donator and affiliation, and remarks when applicable. Counts and measurements follow Gomon and Psomadakis (2018).

Comparative materials: *Lepidotrigla argyrosoma*: USNM 98873, holotype, 72.6 mm SL; *Lepidotrigla venusta*: USNM 98872, holotype, 86.8 mm SL.

Results and Discussion

Specimen list in ZUMT

A total of 554 specimens in 525 lots representing 15 species in four genera are confirmed in the ZUMT collection.

Triglidae ホウボウ科

Chelidonichthys Kaup, 1873 ホウボウ属

Chelidonichthys spinosus (McClelland, 1843) ホウボウ

[Japan]

Hokkaido Pref.

ZUMT 11327: 141.8 mm SL, Muroran, 22 Nov. 1923, M. Tsuda (津田三津彦／北海道水産試験場室蘭支場), local name “kanagashira カナガシラ”.

Aomori Pref.

ZUMT 12914: 154.0 mm SL; **ZUMT 12915**: 198.5 mm SL, Koen-maehama, Aomori, 4 Nov. 1923, beach seine, S. Tanabe (田辺貞夫), local name “kimyoo キミヨオ”.

ZUMT 13289: 201.1 mm SL, off Fukaura, Nishitsugaru-gun, 5 Dec. 1923, S. Tanabe (田辺貞夫).

Iwate Pref.

ZUMT 13063: 127.5 mm SL, coast of Sokei, Shimohei-gun, probably before 1925, S. Tanabe (田辺貞夫).

Chiba Pref.

ZUMT 28321: 25.6 mm SL, 1927, S. Obama (小浜 秀／千葉県女子師範学校).

ZUMT 32531: 64.5 mm SL, Onuki, Kazusa, Aug. 1928, S. Watanabe (渡辺洲三／下目黒).

Tokyo

ZUMT 19592: 185.4 mm SL, Tokyo market, local name “kurohooboo クロホオボオ”.

ZUMT 20454: 101.7 mm SL; **ZUMT 20455**: 135.9 mm SL; **ZUMT 20456**: 103.3 mm SL; **ZUMT 20457**: 121.9 mm SL; **ZUMT 21690**: 86.0 mm SL; **ZUMT 21691**: 125.5 mm SL; **ZUMT 21692**: 118.2 mm SL; **ZUMT 21693**: 119.4 mm SL; **ZUMT 21694**: 114.2 mm SL; **ZUMT 21695**: 106.4 mm SL; **ZUMT 21696**: 121.3 mm SL; **ZUMT 21697**: 111.9 mm SL, Tokyo market.

ZUMT 31773: 124.1 mm SL, Tokyo market, 6 May 1936, S. Inuo (犬尾三郎).

Kanagawa Pref.

ZUMT 41898: 122.6 mm SL, Sagami Bay, Odawara, probably 1942, T. Fujita (藤田 正).

ZUMT 43655: 23.1 mm SL, Sagami Bay, Misaki, probably 1942.

ZUMT 64967: 114.4 mm SL, Sagami Bay, Zaimokuza, Kamakura, 14 Apr. 1932, T. Abe (阿部宗明).
ZUMT 64968: 89.2 mm SL; **ZUMT 64969:** 78.7 mm SL; **ZUMT 64970:** 53.5 mm SL, Sagami Bay, Yuigahama Beach, Kamakura, 31 Mar. 1932, T. Abe (阿部宗明).

Niigata Pref.

ZUMT 23342: 189.1 mm SL, Niigata, K. Igarashi (五十嵐こづる／新潟県立新潟高等女学校), local name “kimiyo キミヨ”.

ZUMT 46640: 183.1 mm SL, around Niigata, Aug. 1923, M. Imai (今井倭武).

Shizuoka Pref.

ZUMT 16275: 117.4 mm SL; **ZUMT 16276:** 101.3 mm SL, Sagami Bay, Kakisaki, Shimoda, T. Yoneyama (米山太郎吉／静岡県伊豆下田高女).

ZUMT 31110: 72.8 mm SL; **ZUMT 31111:** 52.9 mm SL, Suruga Bay, Shizuura, Numazu, donated by N. Kuroda (黒田長礼).

Wakayama Pref.

ZUMT 20367: 93.6 mm SL, Tanabe, N. Ui (宇井縫蔵).

Kyoto Pref.

ZUMT 24356: 156.2 mm SL, Miyazu, Tango, Nov. 1931, Kyoto Fisheries Training Institute (京都府水産講習所).

Shimane Pref.

ZUMT 31199: 189.3 mm SL, Matsue, T. Yanai (柳井隆一／松江高等学校).

Fukuoka Pref.

ZUMT 34995: 51.4 mm SL; **ZUMT 34996:** 45.3 mm SL; **ZUMT 34997:** 48.9 mm SL; **ZUMT 34998:** 45.8 mm SL, Ariake Sea, Okinohata, Yamato-gun, 28–31 May 1931, I. Toyama (富山一郎).

ZUMT 49797: 206.5 mm SL, Fukuoka fish market, July 1959.

ZUMT 49839: 245.5 mm SL, Fukuoka fish market, 28 July 1959.

ZUMT 50783: 138.6 mm SL; **ZUMT 50784:** 133.3 mm SL, Fukuoka fish market, 1 Sept. 1959.

ZUMT 51881: 126.1 mm SL, Fukuoka fish market, July or early in Aug. 1959.

ZUMT 52281: 129.9 mm SL, Fukuoka fish market, 18 Aug. 1960.

Nagasaki Pref.

ZUMT 2288: 128.3 mm SL, Nagasaki, 27 June 1909.

ZUMT 2306: 164.6 mm SL, 11 July 1909.

ZUMT 33781: 82.5 mm SL, Mar. 1909. S. Tanaka (田中茂穂).

ZUMT 48149: 71.5 mm SL; **ZUMT 48150:** 51.4 mm SL; **ZUMT 48151:** 55.3 mm SL; **ZUMT 48152:** 58.5 mm SL; **ZUMT 48153:** 50.9 mm SL; **ZUMT 48154:** 58.8 mm SL; **ZUMT 48155:** 59.2 mm SL; **ZUMT 48156:** 44.2 mm SL, fish market of Fishery Cooperative of Fukue, Fukue-jima I., Goto Is., 20, 21, 25 May 1953, I. Tomiyama (富山一郎).

Miyazaki Pref.

ZUMT 21163: 94.4 mm SL, Fishery Cooperative of Fukushima (福島村漁業組合).

Kagoshima Pref.

ZUMT 20003: 100.0 mm SL; **ZUMT 26543:** 81.5 mm SL, Kagoshima market, 17 Mar. 1920, local name “kanagashira カナガシラ”.

ZUMT 22897: 147.0 mm SL, Sea near Shibushi, 27 Oct. 1902, local name “fugu フグ and kanagashira カナガシラ”.

ZUMT 23878: 207.1 mm SL, Naya, local name “hobo ホボ”.

[China]

ZUMT 21244: 214.4 mm SL, China.

[Taiwan]

ZUMT 37449: 138.5 mm SL, Keelung, Aug. 1908.

[East China Sea]

ZUMT 51274: 205.1 mm SL; **ZUMT 51285:** 203.1 mm SL, East China Sea (landed at Fukuoka fish market collected by the 51st and 52nd Tenyo-maru), 24 Dec. 1959, Y. Tominaga (富永義昭).

ZUMT 51774: 126.6 mm SL, East China Sea, the 51st Tenyo-maru arrived in port on 17 Aug. 1959.

ZUMT 54430: 151.1 mm SL; **ZUMT 54431:** 164.2 mm SL; **ZUMT 54432:** 173.5 mm SL; **ZUMT 54433:** 146.4 mm SL; **ZUMT 54434:** 175.1 mm SL; **ZUMT 54435:** 151.0 mm SL; **ZUMT 54436:** 169.4 mm SL, Yellow Sea, 34°47'N, 122°20'E, Agriculture and Forestry District 351, 24 m depth, 15 Oct. 1984, trawl net, M. Aizawa (藍澤正宏), the eighth Tenyo-maru.

ZUMT 54444: 151.5 mm SL; **ZUMT 54445:** 159.7 mm SL; **ZUMT 54549:** 158.4 mm SL, Yellow Sea, 34°23'N, 122°38'E, Agriculture and Forestry District 342, 25 m depth, 14 Oct. 1984, M. Aizawa (藍澤正宏), the eighth Tenyo-maru.

ZUMT 54471: 157.0 mm SL, Yellow Sea, 32°35'N, 122°40'E, Agriculture and Forestry District 345, 23 m depth, 11 Oct. 1984, M. Aizawa (藍澤正宏), the eighth Tenyo-maru.

ZUMT 64999: 281.1 mm SL, Western East China Sea, 28°2.0'N, 124°58.7'E, Agriculture and Forestry District 504, 103 m depth, trawl net, Y. Tominaga (富永義昭), Hakuho-maru.

[Locality unknown]

ZUMT 13341: 242.8 mm SL, S. Tanabe (田辺貞夫).

ZUMT 27442: 84.4 mm SL, Chiba or Ibaraki Pref., donated by S. Yoshida (吉田貞次／山形県米沢市).

ZUMT 46523: 130.4 mm SL; **ZUMT 65003:** 80.0 mm SL; **ZUMT 65004:** 104.1 mm SL.

Eutrigla Fraser-Brunner, 1938
Eutrigla gurnardus (Linnaeus, 1758)

[Locality unknown]

ZUMT 12300: 104.7 mm SL, donated by British Museum.

Lepidotrigla Günther, 1860 カナガシラ属
Lepidotrigla abyssalis Jourdan and Starks, 1904 ソコカナガシラ

[Japan]

Aomori Pref.

ZUMT 13259: 136.2 mm SL; **ZUMT 13260:** 76.3 mm SL; **ZUMT 13261:** 95.7 mm SL, off Fukaura, Nishitsugaru-gun, May. 1923, S. Tanabe (田辺貞夫).

Akita Pref.

ZUMT 13361: 129.9 mm SL; **ZUMT 13363:** 133.3 mm SL, 12 miles off of Nyudozaki, 95 m depth, 24 Nov. 1923, S. Tanabe (田辺貞夫).

Kanagawa Pref.

ZUMT 15474: 116.6 mm SL; **ZUMT 15519:** 95.6 mm SL, S. Miyashiro (宮代周輔／東神奈川工業学校).

ZUMT 18901: 99.0 mm SL, Suka Elementary School, Hiratsuka.

ZUMT 20630: 102.8 mm SL; **ZUMT 20709:** 97.2 mm SL; **ZUMT 20840:** 89.2 mm SL, Sagami Bay, Misaki,

probably 1930.

ZUMT 49624: 77 mm SL, Sagami Bay, off Hayama, Miura, 10 Feb. 1959, Danish seine.

ZUMT 49687: 67.5 mm SL; **ZUMT 49688:** 71.5 mm SL, Sagami Bay, off Hayama, Miura, 4 Dec. 1957, Danish seine.

ZUMT 49710: 72.6 mm SL, Sagami Bay, off Hayama, Miura, 3 Dec. 1957, Danish seine.

Niigata Pref.

ZUMT 24441: 114.1 mm SL, Niigata.

ZUMT 25046: 106.2 mm SL, Nou, Itoigawa, local name “ijimi イジミ”.

ZUMT 32896: 111.1 mm SL, Nou, Itoigawa, Niigata Nou Fisheries School (新潟県能生水産学校), donated on 12 Sept. 1933.

Toyama Pref.

ZUMT 41424: 120.6 mm SL, Namerikawa and Uozu, I. Tomiyama (冨山一郎).

ZUMT 46230: 116.7 mm SL; **ZUMT 46310:** 101.6 mm SL, Namerikawa, I. Tomiyama (冨山一郎).

Fukui Pref.

ZUMT 16032: 164.4 mm SL, 23 Feb. 1922, Danish seine, Fukui Prefectural Fisheries Experimental Station (福井県水産試験場).

ZUMT 16036: 126.2 mm SL, 6 Feb. 1922, Danish seine, Fukui Prefectural Fisheries Experimental Station (福井県水産試験場), local name “shishinbo シシンボ”.

Shizuoka Pref.

ZUMT 33514: 61.1 mm SL, Suruga Bay, Shizuura, Numazu, May 1935, N. Kuroda (黒田長礼).

Wakayama Pref.

ZUMT 9646: 76.4 mm SL, Tanabe, Kishu, N. Ui (宇井縫蔵).

ZUMT 22447: 57.0 mm SL, Tanabe, Kishu, 11 Aug. 1920, N. Ui (宇井縫蔵).

ZUMT 29521: 88.7 mm SL, Wakayama, Mar. 1909, S. Tanaka (田中茂穂).

Kochi Pref.

ZUMT 47095: 97.2 mm SL, probably Tosa.

Nagasaki Pref.

ZUMT 43521: 67.9 mm SL; **ZUMT 43522:** 63.1 mm SL; **ZUMT 43523:** 66.2 mm SL, 12 Feb. 1912.

ZUMT 43718: 68.9 mm SL; **ZUMT 43719:** 63.3 mm SL.

ZUMT 47962: 116.0 mm SL; **ZUMT 47963:** 102.0 mm SL; **ZUMT 47964:** 118.1 mm SL; **ZUMT 47966:** 113.6 mm SL; **ZUMT 47967:** 111.1 mm SL, Miiraku, Fukue-jima I., Goto Is., 22 May 1953, I. Tomiyama (冨山一郎).

ZUMT 48263: 43.3 mm SL; **ZUMT 48264:** 42.2 mm SL, Tamanoura, Minamimatsuura-gun, 23 May 1953, I. Tomiyama (冨山一郎).

ZUMT 49915: 99.4 mm SL, Fukue, Fukue-jima I., Goto Is., 10 June 1953, I. Tomiyama (冨山一郎).

ZUMT 50280: 116.3 mm SL; **ZUMT 50281:** 102.9 mm SL; **ZUMT 50289:** 103.7 mm SL, Sasebo fish market, Miura, Sasebo, 22 Oct. 1953, I. Tomiyama (冨山一郎).

ZUMT 51716: 102.1 mm SL, Sasebo fish market, Miura, Sasebo, 25 Aug. 1959, trawl net.

Miyazaki Pref.

ZUMT 18817: 118.3 mm SL; **ZUMT 18818:** 113.9 mm SL, Miyazaki.

ZUMT 21767: 115.4 mm SL; **ZUMT 22394:** 106.2 mm SL, Miyazaki, S. Tanaka (田中茂穂).

Kagoshima Pref.

ZUMT 20164: 101.0 mm SL; **ZUMT 21952:** 121.8 mm SL, Kagoshima.

ZUMT 23834: 125.3 mm SL; **ZUMT 23835:** 127.1 mm SL, Naya, Kagoshima, local name “kanagashita カナガシタ”.

[East China Sea]

ZUMT 52073: 150.8 mm SL, East China Sea, Agriculture and Forestry District 253 or 254, landed at Fukuoka fish market on 2 May 1960.

ZUMT 54310: 123.0 mm SL; **ZUMT 56553:** 95.8 mm SL; **ZUMT 56554:** 98.8 mm SL; **ZUMT 56558:** 92.7 mm SL; **ZUMT 56559:** 100.7 mm SL; **ZUMT 56560:** 97.7 mm SL; **ZUMT 56561:** 106.7 mm SL; **ZUMT 56562:** 103.8 mm SL; **ZUMT 56563:** 98.0 mm SL; **ZUMT 56565:** 96.7 mm SL; **ZUMT 56568:** 99.0 mm SL; **ZUMT 56571:** 98.7 mm SL; **ZUMT 56572:** 95.6 mm SL; **ZUMT 56573:** 98.4 mm SL; **ZUMT 56574:** 97.7 mm SL; **ZUMT 56575:** 99.1 mm SL; **ZUMT 56576:** 92.5 mm SL; **ZUMT 56577:** 98.8 mm SL; **ZUMT 56578:** 107.7 mm SL; **ZUMT 56580:** 109.2 mm SL; **ZUMT 56581:** 97.6 mm SL; **ZUMT 56582:** 100.1 mm SL; **ZUMT 56583:** 88.2 mm SL; **ZUMT 56588:** 113.3 mm SL; **ZUMT 56591:** 104.0 mm SL; **ZUMT 56594:** 107.2 mm SL; **ZUMT 56595:** 107.2 mm SL; **ZUMT 56596:** 98.4 mm SL; **ZUMT 56597:** 113.5 mm SL; **ZUMT 56599:** 101.4 mm SL; **ZUMT 56600:** 91.5 mm SL; **ZUMT 56601:** 81.4 mm SL; **ZUMT 56602:** 105.8 mm SL; **ZUMT 56604:** 89.5 mm SL; **ZUMT 56606:** 113.0 mm SL; **ZUMT 56607:** 93.9 mm SL; **ZUMT 56608:** 97.4 mm SL; **ZUMT 60971:** 90.9 mm SL; **ZUMT 60972:** 94.4 mm SL; **ZUMT 60973:** 91.3 mm SL; **ZUMT 60974:** 97.8 mm SL; **ZUMT 60975:** 107.5 mm SL; **ZUMT 60977:** 97.8 mm SL; **ZUMT 60978:** 90.3 mm SL; **ZUMT 60979:** 94.4 mm SL; **ZUMT 60980:** 116.9 mm SL; **ZUMT 60981:** 94.0 mm SL; **ZUMT 60982:** 88.7 mm SL; **ZUMT 60983:** 100.9 mm SL; **ZUMT 60984:** 92.7 mm SL; **ZUMT 60985:** 96.0 mm SL; **ZUMT 60986:** 90.9 mm SL; **ZUMT 60987:** 99.1 mm SL; **ZUMT 60988:** 106.9 mm SL; **ZUMT 60989:** 85.5 mm SL; **ZUMT 60990:** 88.6 mm SL, Southern East China Sea, 26°55.0'N, 125°0.5'E–26°56.6'N, 125°2.5'E, Agriculture and Forestry District 497, 120 m depth, 24 May 1968, otter trawl net, Y. Tominaga (富永義昭), Hakuho-maru.

ZUMT 60995: 110.8 mm SL; **ZUMT 60997:** 107.8 mm SL; **ZUMT 60998:** 117.0 mm SL; **ZUMT 60999:** 109.8 mm SL, East China Sea, 31°30'N, 128°3'E, 147 m depth, 14 May 1988, M. Aizawa (藍澤正宏).

ZUMT 64621: 130.2 mm SL; **ZUMT 64623:** 104.7 mm SL; **ZUMT 64624:** 100.6 mm SL; **ZUMT 64628:** 101.6 mm SL; **ZUMT 64629:** 88.0 mm SL; **ZUMT 64630:** 87.7 mm SL; **ZUMT 64631:** 91.3 mm SL; **ZUMT 64633:** 83.1 mm SL; **ZUMT 64634:** 99.7 mm SL; **ZUMT 64635:** 106.6 mm SL, East China Sea, 32°29'N, 127°30'E, 133 m depth, 9 May 1988, M. Aizawa (藍澤正宏).

[Locality unknown]

ZUMT 64975: 67.7 mm SL.

Lepidotrigla alata (Houttuyn, 1782) イゴダカホドリ

[Japan]

Kanagawa Pref.

ZUMT 43647: 46.7 mm SL, Sagami Bay, Misaki, probably 1942.

ZUMT 44255: 33.2 mm SL, Sagami Bay, Odawara, probably 1942.

Shizuoka Pref.

ZUMT 16277: 67.3 mm SL, Sagami Bay, Kakizaki, Shimoda, T. Yoneyama (米山太郎吉／静岡県立伊豆下田高女).

Wakayama Pref.

ZUMT 41025: 107.7 mm SL, Tatsugahama, Minoshima, Arita-gun, 20 Nov. 1941, M. Inoue (井上光雄).

ZUMT 41837: 121.7 mm SL, Shirahama or Tatsugahama, 10 Apr. 1942, M. Inoue (井上光雄).

Ehime Pref.

ZUMT 24955: 168.5 mm SL, coast of Horie, Onsen-gun, Oct. 1931, J. Ishikawa (石川重治郎／松山高等女学校).

Kochi Pref.

ZUMT 18655: 61.3 mm SL, Suzaki, July 1926, T. Kamohara (蒲原稔治), local name “ganando ガナンド”.

ZUMT 47157: 87.5 mm SL; **ZUMT 47194:** 60.1 mm SL, Tosa.

Nagasaki Pref.

ZUMT 20589: 112.2 mm SL; **ZUMT 33783:** 107.8 mm SL, Mar. 1903, S. Tanaka (田中茂穂).

ZUMT 32006: 132.7 mm SL, trawl net, donated by T. A. Glover (倉場富三郎).

ZUMT 50073: 139.5 mm SL; **ZUMT 50074:** 104.4 mm SL, Tamanoura, Fukue-jima I., Goto Is. 14 Oct. 1953, I. Tomiyama (冨山一郎), local name “kanagashira カナガシラ”.

ZUMT 50335: 96.2 mm SL, Usuka, 20 Oct. 1953, I. Tomiyama (冨山一郎), local name “gattsu ガツツ or kanagashira カナガシラ”.

ZUMT 50368: 112.5 mm SL; **ZUMT 50369:** 118.7 mm SL; Himosashi, Kitamatsuura-gun, Oct. 1953, I. Tomiyama (冨山一郎).

Miyazaki Pref.

ZUMT 21149: 138.9 mm SL, Fishery Cooperative of Fukushima, Miyazaki (宮崎県福島村漁業組合).

Kagoshima Pref.

ZUMT 24123: 148.7 mm SL, Kushikino, local name “kanahobu カナホブ”.

[Taiwan]

ZUMT 13654: 153.5 mm SL; **ZUMT 13655:** 164.3 mm SL, 150 miles off the Northwest of Pengjia Islet, probably before 1945, T. Aoki (青木赳雄／台湾総督府水産課).

[East China Sea]

ZUMT 51099: 152.4 mm SL, East China Sea, Dec. 1959, trawl net.

ZUMT 65107: 138.2 mm SL, Southeastern waters of the East China Sea, 29°49.0'N, 124°32.2'E, 66 m depth, 23 May 1968, trawl net, Y. Tominaga, Hakuho-maru.

[Locality unknown]

ZUMT 52220: 110.2 mm SL; **ZUMT 64971:** 113.2 mm SL; **ZUMT 64972:** 90.1 mm SL; **ZUMT 65000:** 128.5 mm SL; **ZUMT 65001:** 132.5 mm SL.

***Lepidotrigla argyrosoma* Fowler, 1938**

[Thailand]

ZUMT 66069: 103.3 mm SL, off Sonkhla, Southeast of Gulf of Thailand, 09 July 1985, trawl net.

Remarks: this specimen has the following characters: posterior margin of pectoral fin pointed; breast scaled; posterior margin of opercular flap beyond origin of first dorsal fin; posterior tip of longest free pectoral-fin rays beyond anus. These characters are consistent with *Lepidotrigla lepidojuglata* Li, 1981 (Ye et al., 2015; Prokofiev, 2022), and type specimens of *Lepidotrigla argyrosoma* Fowler, 1938 and *Lepidotrigla venusta* Fowler, 1938 examined by the first author. These three species are confused taxonomically and a revision is needed. This specimen is provisionally identified as *Lepidotrigla argyrosoma* because it has seniority if the these names are found to be synonymous (International Commission on Zoological Nomenclature, 1999).

[Japan]

Akita Pref.

ZUMT 13359: 170.9 mm SL; **ZUMT 13360:** 170.6 mm SL; **ZUMT 13362:** 124.9 mm SL, 12 miles off Nyudosaki, 95 m depth, 24 Nov. 1923, S. Tanabe (田辺貞夫).

Yamagata Pref.

ZUMT 43563: 135.9 mm SL, C. Sugihara (杉原千代太／酒田市第一国民学校), donated on 16 Dec. 1942.

Tokyo

ZUMT 32572: 172.3 mm SL, Fukagawa fish market, (currently Monzen-naka-cho, Koto-ku), Nov. 1931, S. Watanabe (渡辺洲三).

Kanagawa Pref.

ZUMT 20607: 67.9 mm SL; **ZUMT 20653:** 71.2 mm SL; **ZUMT 20839:** 104.4 mm SL, Sagami Bay, Misaki, Miura, probably 1930.

ZUMT 26729: 53.8 mm SL, Aburatsubo, Sagami Bay, Misaki, Miura, Oct. 1903.

ZUMT 42908: 67.0 mm SL, Sagami Bay, Misaki, Miura, 27 Mar. 1906, local name “kanadou カナドウ”.

ZUMT 49109: 194.3 mm SL; **ZUMT 49129:** 191.7 mm, Sagami Bay, Misaki, Miura, 1956, I. Tomiyama (冨山一郎).

ZUMT 49598: 55.9 mm SL, Sagami Bay, off Hayama (Amadaiba, Kannotsukadashi), Miura, 16 Feb. 1959, Danish seine.

ZUMT 49628: 62.1 mm SL, Sagami Bay, 1.5 miles off the southwest of Jogashima, Miura, 87–89 m depth, 21 Jan. 1959.

ZUMT 49700: 81.0 mm SL, Sagami Bay, off Hayama (Amadaiba, Maruyamadashi), Miura, 14 July 1957.

ZUMT 49711: 76.7 mm SL, Sagami Bay, off Hayama (Amadaiba, Kannotsukadashi), Miura, 16 July 1959.

ZUMT 50884: 115.6 mm SL, Sagami Bay, off Hayama (Amadaiba, Kannotsukadashi), Miura, 60–65 m depth, 29 July. 1957.

ZUMT 50911: 92.2 mm SL; **ZUMT 50921:** 41.5 mm SL, Sagami Bay, off Hayama (Amadaiba, Maruyamadashi), Miura, 60–65 m depth, 17 July 1959.

ZUMT 50916: 47.1 mm SL, Sagami Bay, 2.5 km off the south of Jogashima, Miura, 85 m depth, 27 July 1959.

ZUMT 50938: 84.0 mm SL, Sagami Bay, off Hayama (Amadaiba, Kannotsukadashi), Miura, 70–80 m depth, 21 July 1959.

ZUMT 50961: 52.3 mm SL, Sagami Bay, off Hayama (Amadaiba, Kannotsukadashi), Miura, 70–62 m depth, 23 July 1957.

Niigata Pref.

ZUMT 32895: 106.9 mm SL, Nou, Itoigawa, Niigata Nou Fisheries School (新潟県能生水産学校), donated on 12 Sept. 1933.

ZUMT 34704: 158.8 mm SL; **ZUMT 34705:** 171.1 mm SL, around Niigata, Aug. 1923, M. Imai (今井倭武).

Toyama Pref.

ZUMT 41503: 188.4 mm SL, Uozu, June 1932, I. Tomiyama (冨山一郎).

ZUMT 46283: 138.3 mm SL; **ZUMT 46684:** 122.8 mm SL, Toyama Bay, Namerigawa, I. Tomiyama (冨山一郎).

Shizuoka Pref.

ZUMT 18528: 115.6 mm SL, Maisaka, S. Ooe (大恵尚一／静岡県浜松市高等魚学校).

ZUMT 31109: 40.8 mm SL; **ZUMT 43352:** 49.5 mm SL; **ZUMT 43353:** 42.9 mm SL, Suruga Bay, Shizuura, Numazu, donated by N. Kuroda (黒田長礼).

ZUMT 32900: 179.4 mm SL, donated by Fuji Girl's High School (静岡県立富士高等女学校) on 27 Oct. 1933.

ZUMT 33515: 57.0 mm SL; **ZUMT 33516:** 49.9 mm SL, Suruga Bay, Shizuura, Numazu, May 1935, N. Kuroda (黒田長礼).

ZUMT 54682: 102.6 mm SL; **ZUMT 54683:** 147.0 mm SL; **ZUMT 54684:** 140.4 mm SL; **ZUMT 54685:** 154.4 mm SL, Suruga Bay, off Kunouzan, 9 May 1983, trawl net.

ZUMT 64574: 102.9 mm SL, Shizuoka, date unknown, hand net, M. Fukatani (深谷真央).

Mie Pref.

ZUMT 23421: 120.2 mm SL, Owase, T. Nakahara (中原綱作), local name “kanagashira カナガシラ”.

ZUMT 25361: 102.3 mm SL, 200 fathoms off the south of Shima, 31 Mar. 1933, S. Yoshikane (吉兼宗一／愛知県女子師範学校).

Kyoto Pref.

ZUMT 5408: 111.2 mm SL, Taiza, Takeno-gun, F. Azuma (東 文治), donated on 14 Aug. 1902.

Kochi Pref.

ZUMT 47089: 126.3 mm SL, probably Tosa.

Fukuoka Pref.

ZUMT 35793: 143.3 mm SL, Ariake Sea, Okinohata, Yanagawa, Oct. 1931, I. Tomiyama (富山一郎), local name “kanagashira カナガシラ”.

Nagasaki Pref.

ZUMT 47965: 138.2 mm SL; **ZUMT 47968:** 161.1 mm SL, Miiraku, Fukue-jima I., Goto Is., 22 May 1953, I. Tomiyama (富山一郎).

ZUMT 49929: 149.6 mm SL, Fukue, Fukue-jima I., Goto Is., 10 June 1953, I. Tomiyama (富山一郎).

ZUMT 50277: 155.9 mm SL, Sasebo fish market, Miura, Sasebo, 22 Oct. 1953, I. Tomiyama (富山一郎).

ZUMT 56931: 128.9 mm SL; **ZUMT 56932:** 118.0 mm SL, Southeast waters of Tsushima, 34°23.1'N, 129°51.0'E, 116 m depth, 10 July 1987, trawl net, Y. Tominaga (富永義昭) and M. Aizawa (藍澤正宏), the 36th Tenyo-maru.

ZUMT 56967: 133.6 mm SL, **ZUMT 56968:** 119.3 mm SL, Southeast waters of Tsushima, 34°20.7'N, 129°56.6'E, 119–122 m depth, 10 July 1987, Y. Tominaga (富永義昭) and M. Aizawa (藍澤正宏), the 36th Tenyo-maru.

Oita Pref.

ZUMT 5667: 3, 37.9–74.0 mm SL, Beppu, T. Terasaki (寺崎留吉).

Kagoshima Pref.

ZUMT 23776: 154.5 mm SL; **ZUMT 23777:** 147.6 mm SL, Taniyama, 20 July 1930.

ZUMT 31613: 142.3 mm SL, Kagoshima, donated by Y. Miyoshi (三好保徳) in Mar. 1936.

[East China Sea]

ZUMT 51023: 99.6 mm SL, East China Sea, 16 Mar. 1960, trawl net, the 35th or 38th Tenyo-maru, landed at Fukuoka fish market.

ZUMT 51589: 93.0 mm SL, East China Sea, Agriculture and Forestry District 266, 28 Mar. 1960.

ZUMT 51717: 138.7 mm SL, East China Sea, collected at Sasebo fish market, 25 Aug. 1959, trawl net.

ZUMT 52081: 123.5 mm SL, East China Sea, Agriculture and Forestry District 253 or 254, landed at Fukuoka fish market on 2 May 1960.

ZUMT 52221: 161.5 mm SL, East China Sea.

ZUMT 52253: 86.8 mm SL, East China Sea, around Jeju I., Agriculture and Forestry District 253 or 254, the first and second Shotoku-maru, 5 May 1960.

ZUMT 52262: 146.2 mm SL, East China Sea, Agriculture and Forestry District 319, 23 May 1960, trawl net, Y. Tominaga (富永義昭), the 31st Tenyo-maru.

ZUMT 54302: 132.4 mm SL; **ZUMT 56556:** 110.3 mm SL; **ZUMT 56557:** 117.1 mm SL; **ZUMT 56564:** 137.0 mm SL; **ZUMT 56567:** 85.7 mm SL; **ZUMT 56569:** 138.3 mm SL; **ZUMT 56570:** 105.0 mm SL; **ZUMT 56584:** 141.9 mm SL; **ZUMT 56585:** 122.5 mm SL; **ZUMT 56589:** 138.0 mm SL; **ZUMT 56592:** 129.2 mm SL; **ZUMT 56598:** 101.8 mm SL; **ZUMT 56605:** 100.0 mm SL; **ZUMT 56609:** 81.8 mm SL, South of East China Sea, 26°55.0'N, 125°0.5'E–26°56.6'N, 125°2.5'E, Agriculture and Forestry District 497, 120 m depth, 24 May 1968, otter trawl net, Y. Tominaga (富永義昭), Hakuho-maru.

ZUMT 57638: 144.2 mm SL; **ZUMT 64622:** 141.0 mm SL; **ZUMT 64625:** 78.0 mm SL; **ZUMT 64626:** 68.4 mm SL; **ZUMT 64627:** 64.2 mm SL; **ZUMT 64632:** 92.8 mm SL, East China Sea, 32°29'N, 127°30'E, 133 m depth, 9 May 1988, M. Aizawa (藍澤正宏).

ZUMT 57670: 154.1 mm SL; **ZUMT 60991:** 148.2 mm SL; **ZUMT 60992:** 140.2 mm SL; **ZUMT 60993:** 156.5 mm SL; **ZUMT 60994:** 139.4 mm SL; **ZUMT 60996:** 127.2 mm SL; **ZUMT 61000:** 142.2 mm SL, East China Sea, 31°30'N, 128°3'E, 147 m depth, 14 May 1988, M. Aizawa (藍澤正宏).

ZUMT 64638: 162.1 mm SL, East China Sea, collected at Fukuoka fish market, 22 Mar. 1963, Y. Tominaga (富永義昭).

ZUMT 65096: 97.4 mm SL, west waters of East China Sea, 28°2.0'N, 124°58.7'E, Agriculture and Forestry District 504, 103 m depth, 23 May 1968, trawl net, Y. Tominaga (富永義昭), Hakuho-maru.

ZUMT 65123: 52.9 mm SL, East China Sea, 31°42.6'N, 126°44.0'E, 103 m depth, 19 May 1968, trawl net, Y. Tominaga (富永義昭), Hakuho-maru.

[Locality unknown]

ZUMT 46880: 115.8 mm SL; **ZUMT 46906:** 115.4 mm SL; **ZUMT 48403:** 117.4 mm SL; **ZUMT 48404:** 117.8 mm SL; **ZUMT 64965:** 123.6 mm SL; **ZUMT 64982:** 142.0 mm SL; **ZUMT 65002:** 207.1 mm SL.

Lepidotrigla hime Matsubara and Hiyama, 1932 ヒメソコカナガシラ

[East China Sea]

ZUMT 57627: 11, 81.9–99.3 mm SL, East China Sea, 30°18'N, 126°40'E, 93 m depth, 7 May 1988, M. Aizawa (藍澤正宏).

[Taiwan]

ZUMT 19036: 117.8 mm SL, Keelung, H. Sato (佐藤春吉).

[Locality unknown]

ZUMT 64974: 61.4 mm SL.

Lepidotrigla japonica (Bleeker, 1854) トゲカナガシラ

[Japan]

Kanagawa Pref.

ZUMT 26728: 43.2 mm SL; **ZUMT 26731:** 65.0 mm SL, Sagami Bay, Aburatsubo, Misaki, Miura, Oct. 1903.

ZUMT 30082: 79.3 mm SL, Sagami Bay, Hayama, Miura, Aug. 1934.

ZUMT 43648: 49.4 mm SL; **ZUMT 43649:** 48.7 mm SL; **ZUMT 43650:** 49.8 mm SL; **ZUMT 43651:** 49.9 mm SL; **ZUMT 43652:** 52.1 mm SL; **ZUMT 43653:** 47.6 mm SL; **ZUMT 43654:** 48.4 mm SL, Sagami Bay, Misaki, Miura, probably 1942.

Wakayama Pref.

ZUMT 22451: 92.6 mm SL, Tanabe, Kishu, N. Ui (宇井縫蔵), donated on 11 Aug. 1920.

ZUMT 22527: 67.5 mm SL, Tanabe, Wakayama, Jan. 1920, N. Ui (宇井縫蔵).

Yamaguchi Pref.

ZUMT 10113: 119.2 mm SL, Senzaki, S. Tanaka (田中茂穂).

Fukuoka Pref.

ZUMT 34994: 90.7 mm SL, Ariake Sea, Okinohata, Yamato, Fukuoka, 28–31 May 1931, I. Tomiyama (富山一郎).

Nagasaki Pref.

ZUMT 27099: 45.7 mm SL, Nagasaki, donated by I. Kaneko (金子一狼) on 8 June 1911.

ZUMT 32009: 125.1 mm SL, off Nagasaki, trawl net, donated by T. A. Glover (倉場富三郎).

ZUMT 35339: 45.6 mm SL.

ZUMT 47878: 144.5 mm SL; **ZUMT 47879:** 133.2 mm SL; **ZUMT 47923:** 135.9 mm SL; **ZUMT 48198:** 61.3 mm SL, Tamanoura, Fukue-jima I., Goto Is., 23 May 1953, trawl net, I. Tomiyama (富山一郎).

ZUMT 50149: 125.0 mm SL, Tamanoura, Fukue-jima I., Goto Is., 16 Oct. 1953, I. Tomiyama (富山一郎).

ZUMT 50417: 120.0 mm SL; **ZUMT 50418:** 136.9 mm SL, Ichibu, Ikitsuki, 25 Oct. 1953, triangular set net, I. Tomiyama (富山一郎).

Miyazaki Pref.

ZUMT 21153: 124.7 mm SL, Fishery Cooperatives of Fukushima (福島漁業協同組合), Miyazaki.

Kagoshima Pref.

ZUMT 23880: 124.7 mm SL, Naya, Kagoshima, local name “kanagashita カナガシタ”.

ZUMT 24022: 98.1 mm SL; **ZUMT 24023:** 103.7 mm SL, Shibushi.

ZUMT 24136: 120.6 mm SL, Kushikino, local name “kanahobu カナホブ”.

[Taiwan]

ZUMT 13648: 164.6 mm SL; **ZUMT 13649:** 164.2 mm SL, 150 miles off the Northwest of Pengjia Islet, probably before 1945, T. Aoki (青木赳雄／台湾総督府水産課).

[East China Sea]

ZUMT 65124: 25.6 mm SL, East China Sea, 31°42.6'N, 126°44.0'E, 103 m depth, 19 May 1968, Y. Tominaga (富永義昭), Hakoho-maru.

[Locality unknown]

ZUMT 812: 46.1 mm SL.

ZUMT 46904: 127.6 mm SL.

ZUMT 64973: 95.9 mm SL.

ZUMT 64991: 133.6 mm SL.

Lepidotrigla kanagashira Kamohara, 1936 ヒレナガカナガシラ

[Japan]

Kanagawa Pref.

ZUMT 26727: 42.8 mm SL; **ZUMT 26730:** 40.7 mm SL, Sagami Bay, Aburatsubo, Misaki, Miura, Oct. 1903.

Aichi Pref.

ZUMT 24909: 84.9 mm SL, Toyohashi fish market, 23 Sept. 1932.

Nagasaki Pref.

ZUMT 43600: 56.7 mm SL, Nagasaki, Feb. 1912.

Kagoshima Pref.

ZUMT 18850: 140.8 mm SL, Kagoshima.

[Locality unknown]

ZUMT 29988: 41.1 mm SL, probably Southern Japan.

Lepidotrigla kishinouyei Snyder, 1911 オニカナガシラ

[Japan]

Ibaraki Pref.

ZUMT 59379: 107.6 mm SL; **ZUMT 59380:** 103.1 mm SL, Kashimanada, off Nakaminato, Hitachinaka, ca. 36°19.51'N, 140°37.12'E, 70–73 m depth, 29 Oct. 1988, trawl net.

Kanagawa Pref.

ZUMT 15472: 113.1 mm SL; **ZUMT 15473:** 99.7 mm SL, S. Miyashiro (宮代周輔／横浜工業学校).

Niigata Pref.

ZUMT 23430: 137.3 mm SL, Niigata, K. Igarashi (五十嵐こづる／新潟県立新潟高等女学校), local name “kanagashira カナガシラ”.

ZUMT 24440: 90.1 mm SL, Niigata.

ZUMT 33478: 84.8 mm SL, Shibata or environs, before 15 Apr. 1909, H. Hatayama (畠山久重).

Toyama Pref.

ZUMT 25831: 131.3 mm SL; **ZUMT 25832:** 132.7 mm SL; **ZUMT 25867:** 77.1 mm SL, probably Toyama Bay, K. Kikuchi (菊池勘左衛門／富山高等学校).

ZUMT 32696: 32.2 mm SL, Toyama Bay, H. Yamashita (山下博三／富山高校), donated on 14 Sept. 1935.

ZUMT 41425: 115.0 mm SL, Uozu or Namerikawa, Toyama, I. Tomiyama (富山一郎).

ZUMT 41502: 103.3 mm SL, Uozu, Toyama, June 1932, I. Tomiyama (富山一郎).

ZUMT 46305: 105.5 mm SL; **ZUMT 46683:** 90.8 mm SL, Namerikawa, Toyama, I. Tomiyama (富山一郎).

Mie Pref.

ZUMT 20068: 115.4 mm SL; **ZUMT 20069:** 107.4 mm SL; **ZUMT 20070:** 105.5 mm SL; **ZUMT 20071:** 94.6 mm SL; **ZUMT 20414:** 94.9 mm SL; **ZUMT 20415:** 105.2 mm SL; **ZUMT 20416:** 97.3 mm SL; **ZUMT 20417:** 98.9 mm SL, Y. Tsuchiga (槌賀安平／三重県宇治山田市).

ZUMT 23373: 115.8 mm SL, Owase, T. Nakahara (中原綱作), local name “karando カランド”.

Shimane Pref.

ZUMT 31243: 113.7 mm SL, Matsue, T. Yanai (柳井隆一／松江高校).

Kochi Pref.

ZUMT 23471: 88.8 mm SL, Urado, Oct. 1930, T. Kamohara (蒲原稔治／高知高等学校).

Fukuoka Pref.

ZUMT 49806: 88.6 mm SL, Fukuoka fish market, July 1959.

Nagasaki Pref.

ZUMT 17629: 102.1 mm SL, off Goto Is., 13 May 1927, Y. Yamamoto (山本義光／大分県師範学校), local name “kanagashira カナガシラ”.

ZUMT 48191: 59.0 mm SL, Tomie, Fukue-jima I., Goto Is., 24 May 1953, I. Tomiyama (富山一郎).

ZUMT 49914: 66.2 mm SL; **ZUMT 49949:** 108.1 mm SL, Fukue, Fukue-jima I., Goto Is., 10 June 1953, I.

Tomiyama (富山一郎).

ZUMT 49996: 67.6 mm SL, Arikawa, Nakadoori-jima I., Goto Is., 10 June 1953, I. Tomiyama (富山一郎).

ZUMT 50145: 123.1 mm SL; **ZUMT 50146:** 94.8 mm SL; **ZUMT 50147:** 98.3 mm SL, Tamanoura, Fukue-jima I., Goto Is., 16 Oct. 1953, trawl net, I. Tomiyama (富山一郎).

ZUMT 50228: 65.9 mm SL; **ZUMT 50229:** 64.4 mm SL, Fuefuki, Ojika-jima I., Goto Is., 10 June 1953, I. Tomiyama (富山一郎).

ZUMT 50617: 72.9 mm SL; **ZUMT 50618:** 79.4 mm SL, Ainoura fish market, Sasebo, 26 Aug. 1959, Y. Tominaga (富永義昭).

Kagoshima Pref.

ZUMT 22896: 117.5 mm SL, near Kushikino, 17 Nov. 1902, local name “tsunohobu ツノホブ”.

[East China Sea]

ZUMT 51124: 81.3 mm SL, East China Sea, Dec. 1959, trawl net.

ZUMT 56555: 96.8 mm SL; **ZUMT 56579:** 97.6 mm SL; **ZUMT 56586:** 98.0 mm SL; **ZUMT 56587:** 97.0 mm SL; **ZUMT 56590:** 104.1 mm SL; **ZUMT 56593:** 117.6 mm SL; **ZUMT 56603:** 119.5 mm SL, Southern East China Sea, 26°55.0'N, 125°0.5'E–26°56.6'N, 125°2.5' E, Agriculture and Forestry District 497, 120 m depth, 24 May 1968, trawl net, Y. Tominaga (富永義昭), Hakuho-maru.

ZUMT 65086: 133.3 mm SL; **ZUMT 65087:** 97.1 mm SL; **ZUMT 65088:** 100.3 mm SL; **ZUMT 65089:** 95.8 mm SL; **ZUMT 65090:** 98.9 mm SL; **ZUMT 65091:** 99.1 mm SL; **ZUMT 65092:** 98.9 mm SL; **ZUMT 65093:** 95.6 mm SL; **ZUMT 65094:** 93.6 mm SL; **ZUMT 65095:** 116.6 mm SL, Western East China Sea, 28°2.0'N, 124°58.7'E, Agriculture and Forestry District 504, 103 m, 23 May 1968, trawl net, Y. Tominaga (富永義昭), Hakuho-maru.

ZUMT 65151: 78.1 mm SL; **ZUMT 65152:** 82.5 mm SL; **ZUMT 65153:** 91.3 mm SL; **ZUMT 65154:** 95.1 mm SL; **ZUMT 65155:** 97.8 mm SL; **ZUMT 65156:** 96.4 mm SL; **ZUMT 65157:** 101.9 mm SL; **ZUMT 65158:** 100.1 mm SL; **ZUMT 65159:** 102.9 mm SL; **ZUMT 65160:** 103.3 mm SL; **ZUMT 65161:** 107.3 mm SL; **ZUMT 65162:** 102.6 mm SL; **ZUMT 65163:** 103.3 mm SL; **ZUMT 65164:** 114.5 mm SL; **ZUMT 65165:** 110.1 mm SL, Yellow Sea, 34°5'N, 122°33'E, Agriculture and Forestry District 342, 13 Oct. 1984, trawl net, M. Aizawa (藍澤正宏), the eighth Tenyo-maru.

[Locality unknown]

ZUMT 15974: 139.1 mm SL, 8 Dec. 1921, Danish seine.

ZUMT 32680: 75.8 mm SL.

ZUMT 39359: 117.1 mm SL.

ZUMT 64976: 4, 45.2–51.8 mm SL.

ZUMT 64977: 93.8 mm SL.

ZUMT 64978: 93.5 mm SL.

ZUMT 64979: 95.6 mm SL.

ZUMT 64980: 93.3 mm SL.

Lepidotrigla longifaciata Yato, 1981 ツラナガソコカナガシラ

[Japan]

Shizuoka Pref.

ZUMT 64573: 94.1 mm SL, Shizuoka, date unknown, hand net, M. Fukatani (深谷真央).

[Japan]

Aomori Pref.

ZUMT 12944: 213.7 mm SL, Koen-maehama, Aomori, Apr. 1922, beach seine, S. Tanabe (田辺貞夫).

ZUMT 13152: 144.6 mm SL, Samemura-maehama, 23 Oct. 1923, S. Tanabe (田辺貞夫).

ZUMT 13287: 188.2 mm SL; **ZUMT 13288:** 175.7 mm SL, off Fukaura, Nishitsugaru-gun, 5 Dec. 1923, S. Tanabe (田辺貞夫).

ZUMT 41706: 192.0 mm SL; **ZUMT 41707:** 171.4 mm SL; **ZUMT 41708:** 168.2 mm SL, Asamushi, probably before 1925, S. Tanabe (田辺貞夫).

Iwate Pref.

ZUMT 13035: 100.8 mm SL; **ZUMT 13036:** 112.5 mm SL; Miyako Bay, Shirahamazaki and Fudozaki, probably before 1925, S. Tanabe (田辺貞夫).

ZUMT 13060: 61.6 mm SL; **ZUMT 13061:** 70.4 mm SL; **ZUMT 13062:** 155.9 mm SL, coast of Sokei, Shimoheigun, probably before 1925, S. Tanabe (田辺貞夫).

ZUMT 13813: 207.8 mm SL, Iwate, 16 Dec. 1924, G. Toba (鳥羽源蔵／岩手県師範学校).

Akita Pref.

ZUMT 13371: 175.1 mm SL, 12 miles off Nyudozaki, 95 m depth, 24 Nov. 1923, S. Tanabe (田辺貞夫).

Ibaraki Pref.

ZUMT 31661: 242.4 mm SL, donated by K. Tashiro (田代清友／茨城県水産試験場長).

Fukushima Pref.

ZUMT 11501: 155.1 mm SL; **ZUMT 11502:** 146.3 mm SL; **ZUMT 11506:** 173.3 mm SL, T. Nakahira (中平貞次郎／福島県小名浜水産試験場).

Toyama Pref.

ZUMT 5406: 199.4 mm SL, Fushigi, Etchu.

ZUMT 11519: 163.1 mm SL, Toyama, 20 fathoms depth, 16 Nov. 1922, S. Nakahira (中平貞次郎／福島県小名浜水産試験場).

ZUMT 41501: 227.9 mm SL, Uozu, June 1932, I. Tomiyama (富山一郎).

ZUMT 45791: 50.2 mm SL, Namerikawa, I. Tomiyama (富山一郎).

ZUMT 46210: 131.8 mm SL, probably Uozu or Namerikawa, I. Tomiyama (富山一郎).

Mie Pref.

ZUMT 20072: 95.7 mm SL; **ZUMT 20418:** 97.5 mm SL, Y. Tsuchiga (槌賀安平／三重県宇治山田市).

ZUMT 23375: 142.5 mm SL, Owase, T. Nakahara (中原綱作), local name “kana カナ, karando カランド or houboo ホウボオ”.

Wakayama Pref.

ZUMT 22508: 96.3 mm SL, Tanabe, Kishu, Jan. 1920, N. Ui (宇井縫蔵).

Yamaguchi Pref.

ZUMT 10099: 107.7 mm SL, Senzaki, S. Tanaka (田中茂穂).

ZUMT 17533: 147.8 mm SL; **ZUMT 17534:** 144.3 mm SL, Y. Makiyama (牧山吉郎／山口県熊毛郡宝積町牛島), local name “kanando カナンド”.

Kagoshima Pref.

ZUMT 18853: 122.1 mm SL; **ZUMT 21820:** 138.1 mm SL, Kagoshima.

[China]

ZUMT 36239: 152.7 mm SL, Zhifu, Yantai, Shandong, Apr. 1906, H. Kuwano (桑野久任).

ZUMT 61332: 263.3 mm SL, Yantai, Shandong, 1905.

[East China Sea]

ZUMT 51265: 124.2 mm SL; **ZUMT 51286:** 218.6 mm SL, East China Sea (landed at Fukuoka fish market from the 51st and 52nd Tenyo-maru), 24 Dec. 1959, Y. Tominaga (富永義昭).

ZUMT 51321: 146.0 mm SL; **ZUMT 51323:** 184.7 mm SL, East China Sea, 2 Sept. 1959, Y. Tominaga (富永義昭).

ZUMT 51683: 246.3 mm SL; **ZUMT 51684:** 167.6 mm SL; **ZUMT 51685:** 176.2 mm SL, East China Sea, Agriculture and Forestry District 319–320, 1–5 Apr. 1960.

ZUMT 64636: 210.5 mm SL; **ZUMT 64637:** 180.6 mm SL, East China Sea (landed at Fukuoka fish market), 22 Mar. 1963, Y. Tominaga (富永義昭).

[Locality unknown]

ZUMT 62579: 60.7 mm SL.

Lepidotrigla punctipectoralis Fowler, 1938 ヒレホシカナガシラ

[East China Sea]

ZUMT 65122: 72.7 mm SL, East China Sea, off the west of Kyusyu, 31°42.6'N, 126°44.0'E, 103 m, 19 May 1968, trawl net, Y. Tominaga (富永義昭), Hakuho-maru.

Lepidotrigla sp. カナガシラ属の未同定種

[Japan]

Kanagawa Pref.

ZUMT 49669: 39.4 mm SL, Sagami Bay, off Hayama (Amadaiba, Maruyamadashi and Kannontsukadashi), Miura, 24 July 1957.

ZUMT 50915: 36.7 mm SL, Sagami Bay, off Hayama (Amadaiba, Kannontsukadashi), Miura, 21 July 1957.

Nagasaki Pref.

ZUMT 48261: 35.4 mm SL; **ZUMT 48262:** 39.0 mm SL, Tamanoura, Minamimatsuura-gun, 23 May 1953, I. Tomiyama (冨山一郎).

East China Sea

ZUMT 65142: 30.7 mm SL; **ZUMT 65166:** 20.1 mm SL, East China Sea, off the west of Kyusyu, 31°42.6'N, 126°44.0'E, 103 m depth, 19 May 1968, trawl net, Y. Tominaga (富永義昭), Hakuho-maru.

ZUMT 65239: 15, 23.4–32.5 mm SL, Central East China Sea, 30°32.2'N, 125°17.6'E–30°31.3'N, 125°18.0'E, 62 m depth, Agriculture and Forestry District 289, 21 May 1968, trawl net, Y. Tominaga (富永義昭), Hakuho-maru.

Remarks: these specimens could not be identified to species because they are immature and have not developed important diagnostic characters, such as rostral spines and inner surface of pectoral-fin pattern.

Pterygotrigla Waite, 1899 ソコホウボウ属
Pterygotrigla hemisticta (Temminck and Schlegel, 1843) ソコホウボウ

[Japan]

Kanagawa Pref.

ZUMT 15385: 205.7 mm SL, Sagami Bay, Odawara, Apr. 1925, Danish seine, T. Fujita (藤田 正), Odawara Kisen.

Nagasaki Pref.

ZUMT 49951: 137.5 mm SL, Fukue, Fukue-jima I., Goto Is., 10 June 1953, I. Tomiyama (冨山一郎).

[Locality unknown]

ZUMT 64981: 270.6 mm SL.

Pterygotrigla ryukyuensis Matsubara and Hiyama, 1932 リュウキュウソコホウボウ

[Locality unknown]

ZUMT 52219: 231.1 mm SL.

Type specimens in FUMT collection

The holotype of *Lepidotrigla paradoxa* was found and catalogue numbers of the syntypes of *Lepidotrigla hime* and *Lepidotrigla teraoi* were discovered in the ledger of the FUMT in this study.

Lepidotrigla paradoxa Matsubara and Hiyama, 1932 カワリイゴダカ
(Fig. 1)

Holotype: FUMT-P 2568, 155.8 mm SL, Kumamoto, Y. Wakiya (脇谷洋次郎).

Remarks: the description of *Lepidotrigla paradoxa* was based on a single specimen deposited in the museum of Fishery Institute, Faculty of Agriculture, Tokyo Imperial University, without a catalogue number. The FUMT collection has a registration number, FUMT-P 2568, recorded as belonging to the Hiyama collection with the same locality information as the type of *L. paradoxa*. It consists of two specimens from Kumamoto (the locality given for the specimen on which the description is based) and China Sea (probably East China Sea). The fixed condition of the former specimen is consistent with the figure of the original description (Fig. 1). Comparisons of measurements and meristic characters of the specimen and the original description failed to identify significant differences, except for pectoral-fin length, pelvic-fin length, suborbital stay depth, cleithral spine length, numbers of lateral line scales and numbers of branchiostegal rays (Table 1). Because Matsubara and Hiyama (1932) did not describe their methods for taking measurements, the methods used in our study cannot be assured to be the same as for the original description. The mismatches are assumed to be due to differences in the methodology for these measurements. The differences of the number of lateral-line scales are considered to be a miscount in the original description. The number of branchiostegal rays is six in the original description but seven in our study. Because the number of branchiostegal rays is usually seven in the Triglidae (Nelson et al., 2016), we assume the value in the original description is a miscount. Because the catalogue number of the specimen is also close to that of other specimens referred to by Matsubara and Hiyama (1932), we conclude that the specimen from Kumamoto is the holotype of *L. paradoxa*. To avoid further confusion, the holotype retain the registration number FUMT-P 2568 and the specimen from the China Sea is now registered as FUMT-P 21736. As the holotype of *Lepidotrigla paradoxa* is identifiable as *L. alata* (Houttuyn, 1782) the two names are synonymous, and latter holds priority (Kuronuma, 1939; Shindo, 1951; Richards, 1992).

Syntype: FUMT-P 2558 (2).

Remarks: in the original description, specimens of *Lepidotrigla hime* were deposited in the Imperial Fisheries Institute Museum and registered as No. 13. FUMT-P 2558 was recorded as the cotype of *L. hime* in a ledger of the FUMT. As *Lepidotrigla hime* was apparently described, from two specimens without either designated as the holotype, FUMT-P 2558 is considered to represent syntypes. A search of all specimens of Triglidae in the FUMT failed to find FUMT-P 2558 and we conclude it to be lost. Kuronuma (1931) and Shindo (1951) indicated that *L. hime* is a synonym of *L. abyssalis* Jordan and Starks, 1904, while both of species is currently recognized as a valid species (Yato, 1985; Richards, 1991; Yamada and Yagishita, 2013).

Lepidotrigla teraoi Matsubara and Hiyama, 1932 テラオカナド

Syntype: FUMT-P 2559 (4).

Remarks: in the original description, types of *Lepidotrigla teraoi* were stated as having been deposited in the Imperial Fisheries Institute Museum and recorded as No. 11. As with the syntypes of *L. hime*, FUMT-P 2559 was described as the cotype of *Lepidotrigla teraoi* in a FUMT ledger. The description of *Lepidotrigla teraoi* was based on four specimens without any designated as the holotype, FUMT-P 2559 is considered to represent syntypes. We were also unable to find FUMT-P 2559 and conclude it to be lost as well. *Lepidotrigla teraoi* is currently recognized as a synonym of *L. guentheri* Hilgendorf, 1879 (Kuronuma, 1939; Shindo, 1951; Richards, 1992).

Other type specimens

Matsubara and Hiyama (1932) described seven new species. The holotype of *L. paradoxa* was found and the catalogue numbers of *L. hime* and *L. teraoi* were revealed in this study. Type specimens of the remaining four species, *Lepidotrigla alitivelis*, *Lepidotrigla brevispinis*, *Lepidotrigla truncate* and *Pterygotrigla ryukyuensis*, were apparently not registered in the FUMT as the names were not found in a ledger. We examined all specimens of Triglidae deposited in the FUMT and could not find specimens consistent with figures and measurements appearing the original descriptions. Therefore, we conclude that type specimens of four species are not registered in the FUMT.

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Table 1. Comparison of measurements and counts of holotype of *Lepidotrigla paradoxa* taken for the present study and those of Matsubara and Hiyama (1932).

	Present study FUMT-P 2568	Matsubara and Hiyama (1932) Holotype
Total length (mm)	N/A*	196
Standard length		
Mouth open	160.9	162.9**
Mouth closed	155.8	N/A
Measurements		
% TL		
Body depth	N/A*	26.3***
Head length (HL)	N/A*	31.3***
% HL		
Orbit diameter (OD)	28.2	27.0***
Snout length	50.6	50.0***
Upper jaw length	35.4	37.0***
Interorbital width	28.7	28.6***
First dorsal-fin spine length	45.6	44.4***
Second dorsal-fin spine length	57.1	58.8***
Third dorsal-fin spine length	54.4	55.6***
Fourth dorsal-fin spine length	45.0	45.5***
Pectoral-fin length	84.2	90.9***
Pelvic-fin length	74.6	69.0***
% OD		
Rostral spine length	N/A*	66.7***
Inter-rostral spines width	N/A*	64.5***
Suborbital stay depth	124.5	130***
Cleithral spine length	124.5	130***
Counts		
Dorsal-fin spines	8	8
Dorsal-fin rays	16	16
Anal-fin rays	16	16
Subdorsal scute	24	24
Lateral-line scales	61	60
Total gill rakers	9	9
Branchiostegal rays	7	6

* Rostral spines broken.

** Calculated using aspect of TL and SL from figure in original description.

*** Recalculated as “% TL, HL or OD” to compare with calculations, like “in TL” or “times of eye”, use in original description.

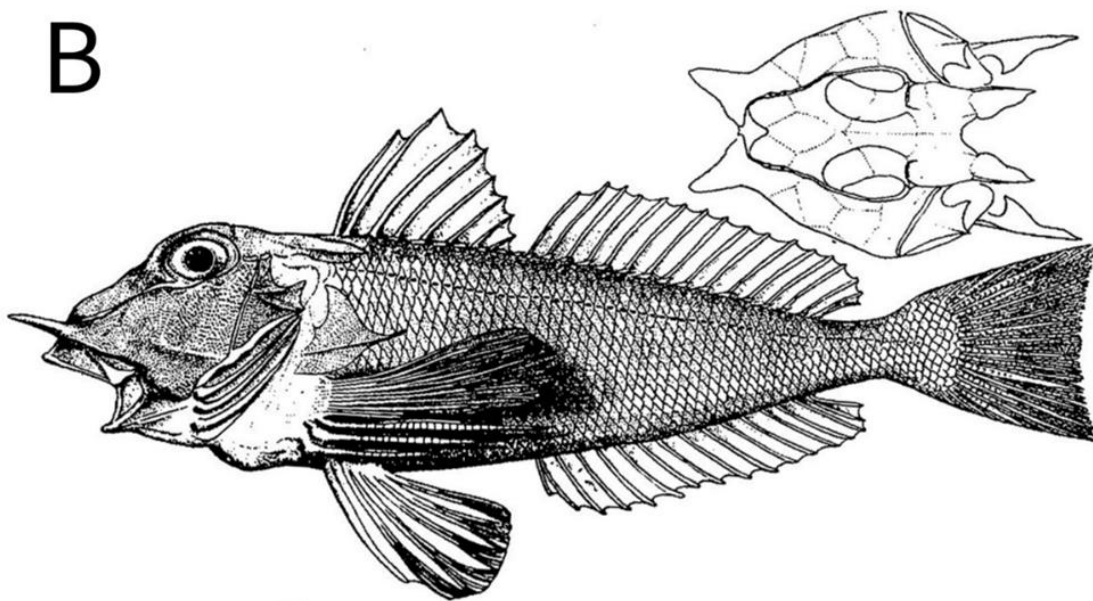
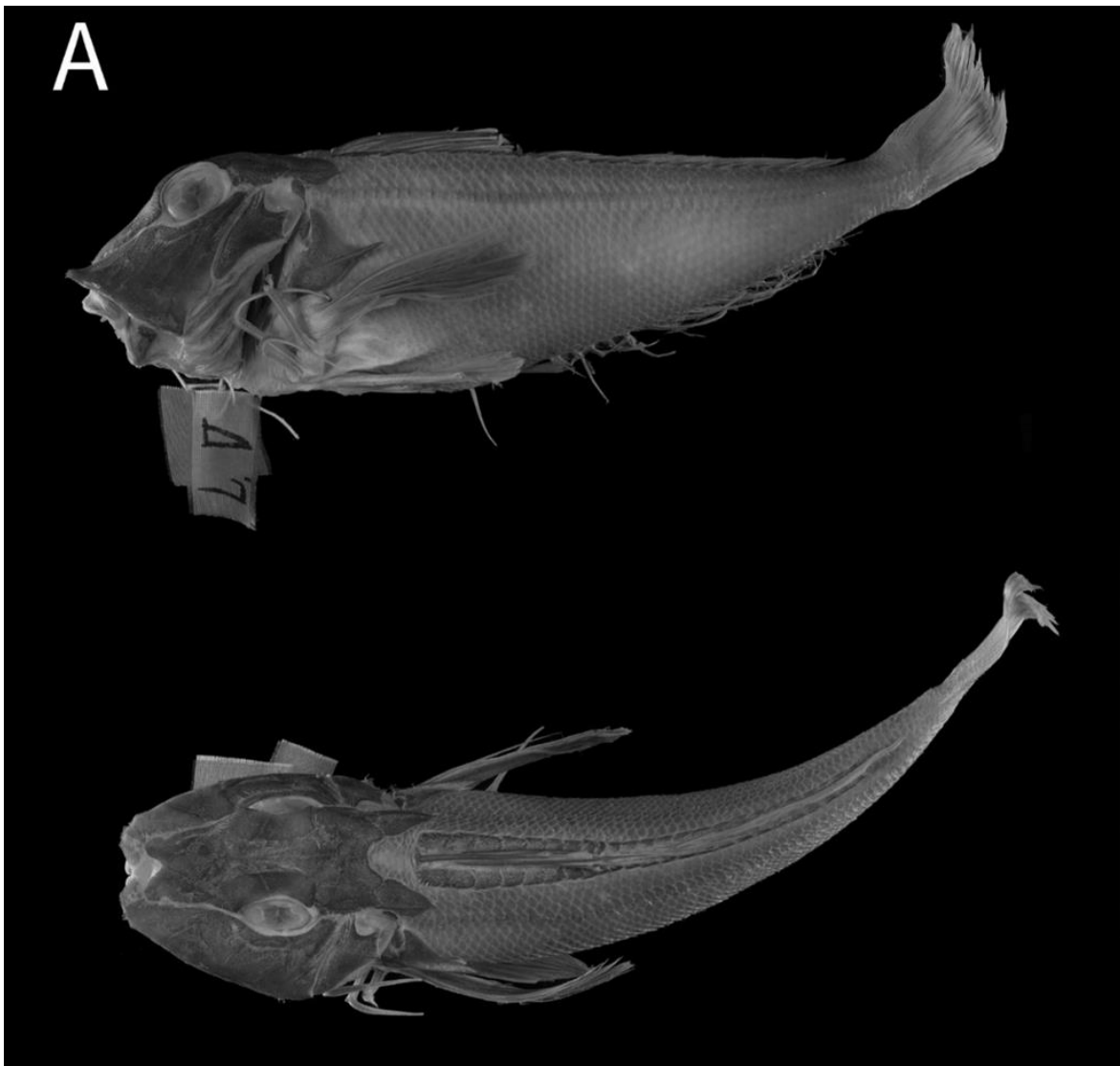


Figure 1. Holotype of *Lepidotrigla paradoxa*. (A) lateral view (upper) and dorsal view (lower) of the preserved specimen, FUMT-P 2568, 155.8 mm SL, with broken rostral spines, and (B) figure in original description (from Matsubara and Hiyama, 1932), with intact rostral spines.