

Historical Japanese Fish Specimens from the Sagami Sea in the National Museum of Natural History, Smithsonian Institution

By

Gento Shinohara^{1)*} and Jeffrey T. Williams²⁾

篠原現人^{1)*}・Jeffrey T. Williams²⁾：米国国立自然史博物館に所蔵される
古い相模灘産魚類標本

Abstract: Fish specimens collected from the Sagami Sea from the 1870's to the 1920's and archived in the National Museum of Natural History, Smithsonian Institution, were examined and an annotated checklist of the species represented by these specimens is provided. The collection of the Sagami Sea fishes includes representative specimens of 152 species in 71 families belonging to 22 orders. This historic collection includes 100 type specimens and at least 734 specimens representing 99 species from the collections of the United States Fisheries Commission Steamer *Albatross*. The oldest specimens are an ophichthid, two carangids, a gobiid and a scombrid collected in 1878.

Key words: Sagami Sea, Smithsonian Institution, fish collection, *Albatross*

Introduction

The National Museum of Natural History (NMNH; historically named the United States National Museum and continuing to use USNM as the catalog number acronym in the Division of Fishes), Smithsonian Institution, houses the largest fish collection in the world with almost 4 million specimens (approximately 540,000 lots) collected from aquatic habitats worldwide. These 4 million specimens are more than twice the 1.5 million fish specimens in the National Science Museum, Tokyo. Over half of the lots of fish specimens have been computer cataloged and data for these specimens are currently accessible on the Fish Division website (<http://www.nmnh.si.edu/vert/fishes/fishcat/index.html>).

The NMNH fish collection was started in the mid 1800's, and contains many historically important collections, including many of the marine fishes donated from the United States Bureau of

¹⁾ Department of Zoology, National Science Museum, Tokyo
国立科学博物館動物研究部

²⁾ Department of Vertebrate Zoology, Division of Fishes-NHB-MRC-159, Smithsonian Institution
米国国立自然史博物館魚類部門

* Corresponding author: 3-23-1 Hyakunin-cho, Shinjuku-ku, Tokyo 169-0073, Japan
E-mail: s-gento@kahaku.go.jp
連絡先：169-0073 東京都新宿区百人町 3-23-1

Fisheries trawling expeditions conducted by the *Blake*, *Albatross*, *Fish Hawk* and other ships in the late 1800's and early 1900's. The *Albatross* (United States Fisheries Commission Steamer *Albatross*) collection is noteworthy and includes many historically important Japanese specimens. David Starr Jordan (1851–1931) of Stanford University and his colleagues and students published descriptions of many new species based on the specimens in the *Albatross* collections. Scientists continue to discover new species of fishes as the specimens in these collections are further studied a century after the original collections were taken.

The NMNH also houses numerous fish specimens from the Sagami Sea (Fig. 1) collected and carried back to the United States of America by the *Albatross*. Additionally, other historically important fish specimens from the Sagami Sea were donated to the NMNH from Japan [e.g., Misaki Marine Biological Station (the University of Tokyo), which was established in 1887 and is one of the oldest marine biological stations in the world]. Kakichi Mitsukuri (1858–1909), professor of zoology and the first head of the Misaki Marine Biological Station, collected fishes from Sagami Bay using the dredges and long-lines of shipmaster Alan Owston, English trader and naturalist, and using long-lines and other fishing techniques by fisherman Kumakichi Aoki, a specimen collecting specialist of the station (see Misaki Biological Marine Station homepage: <http://www.mmbs.s.u-tokyo.ac.jp/history/history.html>), and donated portions of their collections to D.S. Jordan and his colleagues, John Otterbein Snyder (1867–1943) and Michitaro Sindo (dates unknown). Jordan and colleagues visited Japan in 1900 and collected fishes with the assistance of Mitsukuri. Jordan revisited Japan in 1911 (Brittan, 1997). Snyder and Charles Henry Gilbert (1859–1928) traveled to Japan aboard the *Albatross* in 1906 and collected additional specimens, including specimens from the Sagami Sea (Snyder, 1912; Dunn, 1997).

We investigated the NMNH fish specimens taken from the Sagami Sea from the late 1870's into the early 1920's and provide a list herein. Our checklist includes 152 species of fishes in 71 families belonging to 22 orders, including 100 type specimens (17 holotypes, 3 syntypes, 1 lectotype, 3 paralectotypes and 76 paratypes) (Figs. 2–4). It is also revealed that the taxonomic status of three congrid species (*Arisoma flavirostris*, *Conger erebennus* and *Conger jordani*) and a zoarcid (*Bothrocara zestum*) are unresolved taxonomically and additional taxonomic studies on Japanese fishes are needed. In addition, there were at least 734 *Albatross* specimens, representing 99 species (125 catalog lots) from the Sagami Sea, in the NMNH. The oldest Sagami Sea fishes, which were collected by the Japanese Government in 1878 and donated to the NMNH, were identified as an ophichthid, *Ophisurus macrorhynchus*, two carangids, *Carangoides equula* and *Trachurus japonicus*, a scombrid, *Scomber japonicus*, and a gobiid, *Pterogobius virgo* (Fig. 5).

Materials and Methods

Collecting localities are shown in Fig. 1. Systematic arrangement of taxa follows Nelson (1994). Updated family allocations of taxa, authorship, and year of each scientific name follow Eschmeyer's "The Catalog of Fishes On-line" (<http://www.calacademy.org/research/ichthyology/catalog>). Number of specimens is indicated in parentheses after the catalog number. Head length (HL), standard length (SL) or total length (TL) is used, depending on the taxon. Identification of specimens and Japanese names follow Nakabo (2002a).

Specimens on loan, cleared & stained, and/or skeletonized were excluded from our list. An asterisk by a scientific name indicates that type specimens are listed.

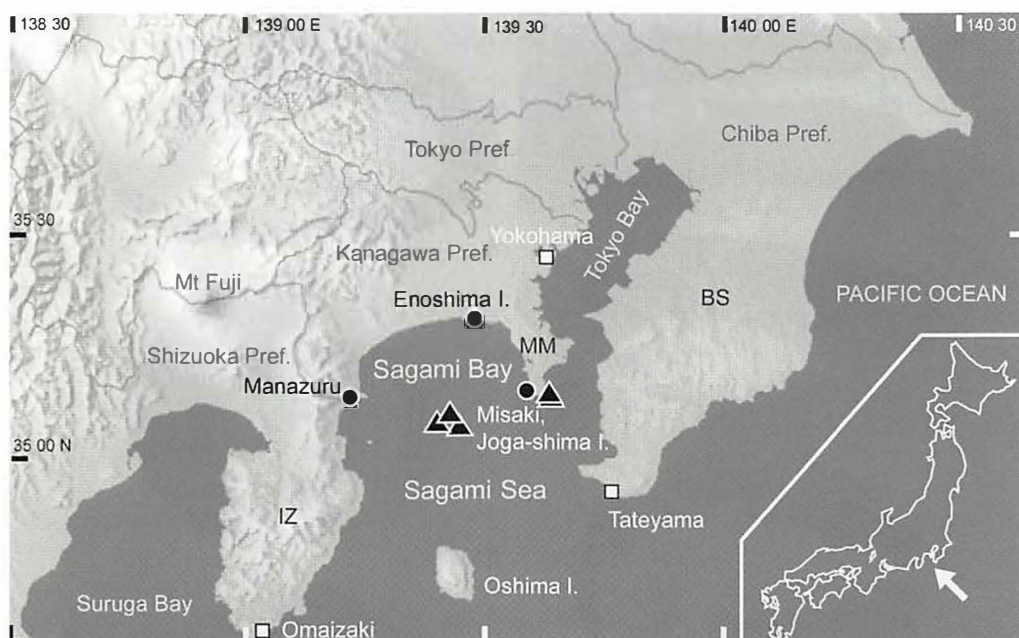


Fig. 1. Map showing the Sagami Sea with collection localities of USNM specimens. Solid circles, collection localities of coastal fishes; solid triangles, *Albatross* stations. BS, Boso Peninsula; IZ, Izu Peninsula; MM, Miura-misaki Peninsula.

Species List

Class Myxini
Order Myxiniformes
Family Myxinidae

**Myxine garmani* Jordan & Snyder, 1901 [Japanese name: Mekuraunagi]
(Fig. 2A)

Material. USNM 49981 (2), ca. 375–380 mm TL, paralectotypes of *Myxine garmani*, Misaki, the Imperial Museum (=Tokyo National Museum), date unknown.

Class Cephalaspidomorphi
Order Petromyzontiformes
Family Petromyzontidae

Eptatretus burgeri (Girard, 1855) [Jn.: Nutauagi]

Material. USNM 49975 (1), 435 mm TL, Misaki, Jordan, D. S. and Snyder, J.O., date unknown.

Class Chondrichthyes
Order Heterodontiformes
Family Heterodontidae

Heterodontus japonicus Maclay & Maclay, 1884 [Jn.: Nekoame]



Material. USNM 50730 (1), 314 mm TL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

Order Carcharhiniiformes

Family Triakidae

Muselus manazo Bleeker, 1954 [Jn.: Hoshizame]

Material. USNM 152536 (1), 255 mm TL, Misaki, Aoki, K., date unknown.

Triakis scyllium Müller & Henle, 1839 [Jn.: Dochizame]

Material. USNM 71709 (1), 351 mm TL, Misaki, *Albatross*, date unknown; USNM 71710 (1), 344 mm TL, Misaki, *Albatross*, date unknown; USNM 71711 (1), 298 mm TL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 71712 (1), 357 mm TL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 71765 (1), 254 mm TL, Misaki, *Albatross*, date unknown; USNM 71772 (1), 307 mm TL, Misaki, *Albatross*, date unknown; USNM 71773 (1), 316 mm TL, Misaki, *Albatross*, date unknown.

Family Dalatiidae

**Centroscyllum ritteri* Jordan & Fowler, 1903 [Jn.: Kasumizame]

(Fig. 2B)

Material. USNM 51388 (1), 335+ mm TL, paratype of *Centroscyllum ritteri*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

**Etmopterus lucifer* Jordan & Snyder, 1902 [Jn.: Fujikujira]

(Fig. 2C)

Material. USNM 50728 (1), holotype of *Etmopterus lucifer*, ca. 280 mm TL, Misaki, Jordan, D. S. and Snyder, J. O., 1900 (date unknown); USNM 51282 (10), Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

Etmopterus molleri (Whitley, 1939) [Jn.: Hiretakafujikujira]

Material. USNM 161515 (1), 325 mm TL, Sagami Bay, date unknown.

Etmopterus pusillus (Lowe, 1839) [Jn.: Karasuzame]

Material. USNM 196521 (1), 188 mm TL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

Fig. 2. Type specimens of the Myxinidae, Dalatiidae, Congridae, Ophichthidae, Sternoptychidae and Macrouridae from the Sagami Sea. A, *Myxine garmani* (USNM 49975, paralectotype, ca. 375 mm TL); B, *Centroscyllum ritteri*, (USNM 51388, paratype, 335+ mm TL); C, *Etmopterus lucifer* (USNM 50728, holotype, ca. 280 mm TL); D, *Enchelycore lichenosa* (USNM 49976, paratype, ca. 635 mm TL); E, *Leptocephalus flavirostris* (USNM 62230, holotype, ca. 385 mm TL); F, *Leptocephalus erebennus* (USNM 48966, paratype, ca. 380 mm TL); G, *Conger jordani* (USNM 71844, holotype, ca. 660 mm TL); H, *Microdonophis erabo* (USNM 49924, paratype, 567 mm TL); I, *Polyipnus stereope* (USNM 51451, holotype, 52 mm TL); J, *Melanobranchius antrodes* (USNM 50932, holotype, 249+ mm TL); K, *Hymenocephalus lethoneus* (USNM 50936, holotype, 139+ mm TL); L, *Hymenocephalus papiraceus* (USNM 50935, holotype, 112+ mm TL); M, *Coryphaenoides misakius* (USNM 51421, paratype, 337+ mm TL).

Order Rajiformes

Family Torpedinidae

Narke japonica (Temminck & Schlegel, 1850) [Jn.: Shibire-ei]

Material. USNM 71186 (1), 159 mm TL, Misaki, *Albatross*, 1906 (exact date unknown).

Family Rajidae

Raja kenoei Müller & Henle, 1841 [Jn.: Komonkasube]

Material. USNM 151757 (1), 172 mm TL, Misaki, Aoki, K., October–November 1922.

Family Dasyatidae

Dasyatis matsubarae Miyosi, 1939 [Jn.: Hoshiei]

Material. USNM 71903 (1), 650 mm TL, Misaki, *Albatross*, date unknown.

Family Urolophidae

Urolophus aurantiacus Müller & Henle, 1841 [Jn.: Hirataei]

Material. USNM 151756 (2), 148–163 mm TL, Misaki, Aoki, K., October–November 1922.

Class Actinopterygii

Order Anguilliformes

Family Anguillidae

Anguilla japonica Temminck & Schlegel, 1846 [Jn.: Unagi]

Material. USNM 71784 (7), 189–410 mm TL, Misaki, *Albatross*, 1906 (exact date unknown).

Family Muraenidae

**Enchelycore lichenosa* (Jordan & Snyder, 1901) [Jn.: Kokeutsubo]

(Fig. 2D)

Material. USNM 49976 (1), ca. 635 mm TL, paratype of *Aemasia lichenosa*, Misaki, Jordan, D. S. and Snyder, J. O., 1900 (exact date unknown); USNM 71302 (1), 197 mm TL, Misaki, *Albatross*, 1906 (exact date unknown).

Gymnothorax kidako (Temminck & Schlegel, 1846) [Jn.: Utsubo]

Material. USNM 71825 (1), 445 mm TL, Misaki, *Albatross*, Jordan, D. S., Snyder, J. O. and Sindo, M., 1906 (exact date unknown); USNM 71826 (1), 522 mm TL, Misaki, *Albatross*, Jordan, D. S. and Snyder, J. O., 1906 (exact date unknown).

Gymnothorax minor (Temminck & Schlegel, 1846) [Jn.: Amiutsubo]

Material. USNM 151755 (1), 511 mm TL, Misaki, Aoki, K., October–November 1922 (exact date unknown).

Family Synphobranchidae

Synphobranchus affinis Günther, 1877 [Jn.: Horaanago]

Material. USNM 49995 (1), 381 mm TL, Sagami Bay, *Albatross* Station 2347, date unknown.

***Synphobranchus* sp.** [Jn.: Sodeanago]

Material. USNM 160611 (1), 407 mm TL, off Joga-shima Island, 614 fathoms, *Albatross* Station 5087 (35°09'40"N, 139°19'05"E), 23 October 1906 (12:52–13:28).

Family Congridae

****Ariosoma flavirostris*** (Snyder, 1908)

(Fig. 2E)

Material. USNM 62230 (1), ca. 385 mm TL, holotype of *Leptocephalus flavirostris*, Misaki, *Albatross*, date unknown.

Remarks. This species has no Japanese name and the taxonomic status is uncertain. David Smith (pers. comm.) informed us that this name is either valid or the species is a synonym of *Ariosoma anagoides* (Bleeker, 1864), which was described from Indonesia.

****Conger erebennus*** (Jordan & Snyder, 1901) [Jn.: Dainan-anago]

(Fig. 2F)

Material. USNM 49866 (1), ca. 380 mm TL, paratype of *Leptocephalus erebennus*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

Remarks. USNM 49866 is also a paratype of *Conger jordani* Kanazawa, 1958.

Conger japonicus Bleeker, 1879 [Jn.: Kuroanago]

Material. USNM 71915 (1), 536 mm TL, Misaki, *Albatross*, 1906 (exact date unknown).

****Conger jordani*** Kanazawa, 1958

(Fig. 2G)

Material. USNM 71844 (1), ca. 660 mm TL, holotype of *Conger jordani*, Misaki, Jordan, D. S., Snyder, J. O. and Sindo, M., *Albatross*, 1906 (exact date unknown); USNM 49866 (1), ca. 380 mm TL, paratype of *C. jordani*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown; USNM 71715 (1) ca. 530 mm TL, paratype of *C. jordani*, Misaki, Jordan, D. S., Snyder, J. O. and Sindo, M., date unknown; USNM 71716 (1), ca. 465 mm TL, paratype of *C. jordani*, Misaki, Jordan, D. S., Snyder, J. O. and Sindo, M., date unknown; USNM 71843 (1), ca. 495 mm TL, paratype of *C. jordani*, Misaki, *Albatross*, Jordan, D. S., Snyder, J. O. and Sindo, M., 1906 (exact date unknown); USNM 71845 (1), ca. 585 mm TL, paratype of *C. jordani*, Misaki, *Albatross*, 1906 (exact date unknown); USNM 71963 (1), ca. 655 mm TL, paratype of *C. jordani*, Misaki, *Albatross*, 1906 (exact date unknown); USNM 72003 (1), ca. 630 mm TL, paratype of *C. jordani*, Misaki, *Albatross*, 1906 (exact date unknown).

Remarks. This species has no Japanese name and the taxonomic status is uncertain. USNM 49866 is also a paratype of *Leptocephalus erebennus* Jordan & Snyder, 1901.

Conger myriaster (Brevoort, 1856) [Jn.: Ma-anago]

Material. USNM 71868(1), 447 mm TL, Misaki, *Albatross*, 1906 (exact date unknown).

Family Ophichthidae

****Ophichthus erabo*** (Jordan & Snyder, 1901) [Jn.: Mongaradooshi]

(Fig. 2H)

Material. USNM 49924 (1), 567 mm TL, paratype of *Microdonophis erabo*, Misaki, Jordan, D. S. and Snyder, J. O., 1900–1901 (exact date unknown).

Ophisurus macrorhynchus Bleeker, 1853 [Jn.: Dainan-umihabi]

(Fig. 5A)

Material. USNM 22600 (1), >2400 mm TL, Sagami, Japanese Government, 19 April 1878.

Order Clupeiformes

Family Engraulidae

Engraulis japonicus Temminck & Schlegel, 1846 [Jn.: Katakuchiiwashi]

Material. USNM 71368 (18), 58–62 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 82609 (1), 101 mm SL, Misaki, *Albatross*, date unknown; USNM 151763 (1), 96 mm SL, Misaki, Aoki, K., date unknown.

Family Clupeidae

Konosirus punctatus (Temminck & Schlegel, 1846) [Jn.: Konoshiro]

Material. USNM 71212 (1), 81 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Sardinops melanostictus (Temminck & Schlegel, 1846) [Jn.: Maiwashi]

Material. USNM 71037 (40), 77–96 mm SL, Misaki, *Albatross*, date unknown.

Order Stomiiformes

Family Sternoptychidae

* *Polyipnus stereope* Jordan & Starks, 1904 [Jn.: Katahounen-eso]

(Fig. 2I)

Material. USNM 51451 (1), 52 mm SL, holotype of *Polyipnus stereope*, off Manazuru, *Albatross* Station 3698, 5 May 1900; USNM 177895 (1), 25 mm SL, paratype of *P. stereope*, off Manazuru, *Albatross* Station 3698, 5 May 1900.

Order Osmeriformes

Family Alepocephalidae

Xenodermichthys nodulosus Günther, 1878 [Jn.: Tsubuiwashi]

Material. USNM 51433 (1), 207 mm SL, Sagami Bay, *Albatross* Station 3697, 11 August 1906.

Order Aulopiformes

Family Synodontidae

Synodus ulae Schultz in Schultz, Herald, Lachner, Welander & Woods, 1953 [Jn.: Akaeso]

Material. USNM 71006 (1), 209 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Trachinocephalus myops (Forster in Bloch & Schneider, 1801) [Jn.: Okieso]

Material. USNM 71102 (2), 73–77 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Order Ophidiiformes

Family Ophidiidae

Neobythites stigmus Machida in Okamura & Kitajima, 1984 [Jn.: Shimaitachiuo]

Material. USNM 150293 (1), 124 mm SL, Uruga Strait near Joga-shima Island, 88 fathoms, Albatross Station 5094 (35°4'42"N, 139°38'20"E), 26 October 1906 (13:57–14:12).

Order Gadiformes

Family Macrouridae

**Bathygadus antrodus* (Jordan & Starks, 1904) [Jn.: Anadara]

(Fig. 2J)

Material. USNM 50932 (1), 249+ mm TL, holotype of *Melanobranchus antrodes*, Sagami Bay, Jordan, D. S. and Snyder, J. O., date unknown; USNM 51442(2), 143+ – 367+ mm TL, paratypes of *M. antrodes*, Sagami Bay, Albatross, date unknown.

**Hymenocephalus lethoemus* Jordan & Gilbert in Jordan & Starks, 1904 [Jn.: Itodara]

(Fig. 2K)

Material. USNM 50936 (1), 139+ mm TL, holotype of *Hymenocephalus lethoemus*, Sagami Bay, Jordan, D. S. and Snyder, J. O., date unknown.

**Hymenocephalus papyraceus* Jordan & Gilbert in Jordan & Starks, 1904 [Jn.: Kamidara]

(Fig. 2L)

Material. USNM 50935 (1), 112+ mm TL, holotype of *Hymenocephalus papyraceus*, Sagami Bay, Jordan, D. S. and Snyder, J. O., date unknown.

Nezumia condylura Jordan & Gilbert in Jordan and Starks, 1904 [Jn.: Nezumidara]

Material. USNM 77216 (2), 167+ – 172+ mm TL, off Joga-shima Island, 292 fathoms, Albatross Station 5086 (35°8'15"N, 139°20'E), 23 October 1906 (10:34–11:03); USNM 77219 (1), 141+ mm TL, off Joga-shima Island, 369–405 fathoms, Albatross Station 5088 (35°11'25"N, 139°28'20"E), 25 October 1906 (08:48–09:12).

**Ventrifossa misakia* (Jordan & Gilbert in Jordan & Starks, 1904) [Jn.: Misakisokodara]

(Fig. 2M)

Material. USNM 51421 (4), 208+ – 337+ mm TL, paratypes of *Coryphaenoides misakius*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

Family Moridae

Physiculus japonicus Hilgendorf, 1879 [Jn.: Chigodara]

Material. USNM 151747 (2), 187–217 mm SL, Aoki, K., October–November 1922.

Order Lophiiformes

Family Antennariidae

**Antennarius nummifer* (Cuvier, 1817) [Jn.: Beniizariuo]

(Fig. 3A)

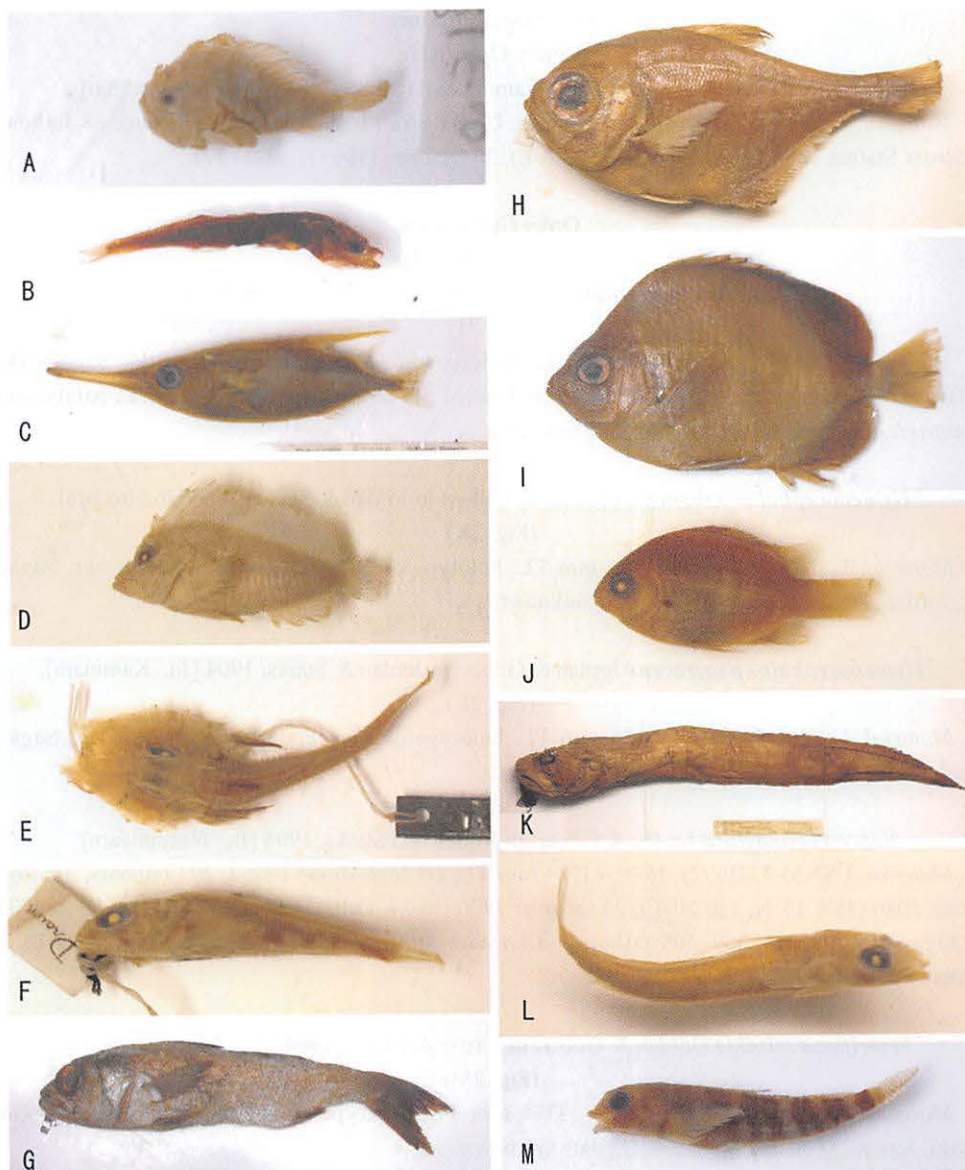


Fig. 3. Type specimens of the Antennariidae, Atherinidae, Macrorhamphosidae, Scorpaenidae, Triglidae, Cottidae, Pomatomidae, Pempheridae, Chaetodontidae, Pomacentridae, Zoarcidae, Percophidae and Tripterygiidae from the Sagami Sea. A, *Antennarius sanguifluus* (USNM 49820, paralectotype, 24 mm SL); B, *Atherion elymus* (USNM 49812, paratype, ca. 29 mm SL); C, *Macroramphosus sagifue* (USNM 51389, paratype, 108 mm SL); D, *Ocosia vespa* (USNM 50911, lectotype, 39 mm SL); E, *Peristedion amiscus* (USNM 51482, holotype, 85 mm SL); F, *Schmidtia misakia* (USNM 50913, holotype, 63 mm SL); G, *Telescopias gilberti* (USNM 57540, paratype, 405 mm SL); H, *Catalufa umbra* (USNM 68229, holotype, 160 mm SL); I, *Chaetodon decipiens* (USNM 72111, syntype, 111 mm SL); J, *Abudefduf clarki* (USNM 74588, paratype, 32 mm SL); K, *Bothrocara zesta* (USNM 50576, holotype, ca. 490 mm TL); L, *Pteropsaron evolans* (USNM 50006, holotype, 61 mm SL); M, *Tripterygion etheostoma* (USNM 50299, paratype, 50 mm SL).

Material. USNM 49820 (1), 24 mm SL, paralectotype of *Antennarius sanguifluus*, Misaki, Imperial University of Tokyo (=the University of Tokyo).

Remarks. *Antennarius sanguifluus* Jordan, 1902 is a junior synonym of this species (Pietsch and Grobecker, 1987).

Order Atheriniformes

Family Atherinidae

* *Atherion elymus* Jordan & Starks, 1901 [Jn.: Mugiiwashi]

(Fig. 3B)

Material. USNM 49812 (6), 16–33 mm SL, paratypes of *Atherion elymus*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

Hypoatherina valenciennesi (Bleeker, 1853) [Jn.: Tougoruiwashi]

Material. USNM 49813 (2), 100–110 mm SL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

Order Belontiiformes

Family Exocoetidae

Cypselurus agoo agoo (Temminck & Schlegel, 1846) [Jn.: Tobiuo]

Material. USNM 151741 (1), 65 mm SL, Misaki, Aoki, K., October–November 1922.

Order Beryciformes

Family Monocentridae

Monocentris japonicus (Houttuyn, 1782) [Jn.: Matsukasauo]

Material. USNM 71932 (4), 60–98 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Order Gasterosteiformes

Suborder Syngnathoidae

Family Syngnathidae

Hippocampus mohnikei Bleeker, 1853 [Jn.: Sangotatsu]

Material. USNM 70725 (3), 14–16 mm HL, Misaki, *Albatross*, Jordan, D. S., Snyder, J. O. and Sindo, M., 1906 (exact date unknown); USNM 152470 (3), 9–14 mm HL, Enoshima Island, Jordan, D. S., 1922 (exact date unknown).

Hippocampus sindonis Jordan & Snyder, 1901 [Jn.: Hanatatsu]

Material. USNM 49808 (1), 16 mm HL, Misaki, Jordan, D. S., Snyder, J. O. and Sindo, M., *Albatross*, 1906 (exact date unknown).

Syngnathus schlegelii Kaup, 1856 [Jn.: Youjiuo]

Material. USNM 71362 (8), 194–273 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Family Aulorhynchidae

Aulichthys japonicus Brevoort in Gill, 1862 [Jn.: Kudayagara]

Material. USNM 71122 (1), 93 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Family Macroramphosidae

**Macroramphosus scolopax* (Linnaeus, 1758) [Jn.: Sagifue]
(Fig. 3C)

Material. USNM 51389 (1), 108 mm SL, paratype of *Macroramphosus sagifue*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown; USNM 151754 (1), 110 mm SL, Misaki, Aoki, K., date unknown.

Remarks. *Macroramphosus sagifue* Jordan & Starks, 1902 is a junior synonym of this species (Mohr, 1937).

Order Dactylopteriformes

Family Dactylopteridae

Dactyloptena peterseni (Nyström, 1887) [Jn.: Hoshisemihoubou]

Material. USNM 152533 (1), 60 mm SL, Misaki, Aoki, K., date unknown.

Order Scorpaeniformes

Suborder Scorpaenoidei

Family Scorpaenidae

Subfamily Pteroinae

Pterois lunulata Temminck & Schlegel, 1843 [Jn.: Minokasago]

Material. USNM 72103 (2), 126–160 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Subfamily Scorpaeninae

Scorpaena izensis Jordan & Starks, 1904 [Jn.: Izukasago]

Material. USNM 152538 (1), 110 mm SL, Misaki, Aoki, K., date unknown.

Remarks. Although Jordan and Starks (1904) reported an additional specimen (USNM 51392, 51 mm SL, Sune Point, Sagami Bay, *Albatross* Station 3754, 48–52 fathoms, 1 May 1900) as *Scorpaena izensis*, this specimen is not *S. izensis*, but is either *Scorpaena miostoma* or *Scorpaena onaria*, because it has thoracic scales. They also identified another specimen (USNM 51266, 39 mm SL, Sagami Bay, *Albatross* 3763, 49–52 fathoms, 1899–1900) as *S. izensis*, but it is actually *S. miostoma*.

Scorpaena miostoma Günther, 1877 [Jn.: Kokuchifusakasago]

Material. USNM 51266 (1), 39 mm SL, listed as an additional specimen in the original description of *Scorpaena izensis*, Sagami Bay, *Albatross* Station 3767, 22 May 1900.

Scorpaena ornaria Jordan & Snyder, 1900 [Jn.: Fusakasago]

Material. USNM 51278 (1), 131 mm SL, Sagami Bay, *Albatross*, date unknown.

Subfamily Sebastinae

Sebastes inermis (Cuvier in Cuvier & Valenciennes, 1829) [Jn.: Mebaru]

Material. USNM 71620 (25), 56–181 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 71802 (27), 30–130 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 152537

(1), 111 mm SL, Misaki, Aoki, K., date unknown.

Sebastes oblongus Günther, 1877 [Jn.: Takenokomebaru]

Material. USNM 103143 (1), 51 mm SL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

Sebastes owstoni (Jordan & Thompson, 1914) [Jn.: Hatsume]

Material. USNM 135392 (3), 116–137 mm SL, Oshima Island, *Albatross* Station 4835, 23 July 1906.

Sebastes pachycephalus Temminck & Schlegel, 1843 [Jn.: Murasoi]

Material. USNM 72014 (2), 55–128 mm SL, Misaki, *Albatross*, date unknown.

Sebastes marmoratus (Cuvier in Cuvier & Valenciennes, 1829) [Jn.: Kasago]

Material. USNM 51243 (2), 140–176 mm SL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown; USNM 71957 (1), 165 mm SL, Misaki, *Albatross*, date unknown; USNM 72013 (1), 121 mm SL, Misaki, *Albatross*, date unknown.

Subfamily Sebastobinae

Sebastolobus macrochir (Günther, 1877) [Jn.: Kichiji]

Material. USNM 51261 (1), 165 mm SL, Sagami Bay, *Albatross*, date unknown; USNM 51262 (1), 168 mm SL, Sagami Bay, *Albatross*, date unknown; USNM 122323 (1), 68 mm SL, Sagami Bay, *Albatross* Station 5086 (35°8'15"N, 139°20'E), 23 October 1906.

Family Tetraoginae

Hypodytes rubripinnis (Temminck & Schlegel, 1843) [Jn.: Haokoze]

Material. USNM 51320 (18), 31–60 mm SL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown; USNM 151760 (1), 53 mm SL, Misaki, Aoki, K., date unknown.

**Ocosia vespa* Jordan & Starks, 1904 [Jn.: Hachiokoze]

(Fig. 3D)

Material. USNM 50911 (1), 39 mm SL, lectotype of *Ocosia vespa*, Sagami Bay, *Albatross* Station 3757, 19 May 1900; USNM 51463 (1), 39+ mm SL, Sagami Bay, *Albatross* Station 3764, 22 May 1900.

Family Synanceiidae

Subfamily Synanceiinae

Erosa erosa (Cuvier in Cuvier & Valenciennes, 1829) [Jn.: Darumaokoze]

Material. USNM 51342 (1), 60 mm SL, Sagami Bay, Owston, A., date unknown.

Subfamily Choridactylinae

Inimicus japonicus (Cuvier in Cuvier & Valenciennes, 1829) [Jn.: Oniokoze]

Material. USNM 71781 (1), 197 mm SL, Misaki, *Albatross*, date unknown; USNM 151749 (1), 151 mm SL, Misaki, Aoki, K., date unknown.

Family Triglidae

Chelidonichthys spinosus (McClelland, 1844) [Jn.: Houbou]

Material. USNM 71739 (1), 152 mm SL, *Albatross*, date unknown; USNM 72125 (1), 183 mm SL, *Albatross*, 1906 (exact date unknown).

Lepidotrigla alata (Houttuyn, 1782) [Jn.: Igodakahoderi]

Material. USNM 62335 (1), 98 mm SL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

Lepidotrigla japonica (Bleeker, 1854) [Jn.: Togekanagashira]

Material. USNM 51245 (1), 105 mm SL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

Remarks. This specimen is identical with *Lepidotrigla japonicus* (*sensu* Yamada, 2002), but this name is preoccupied by two older names *Dactylopterus japonicus* Lecepède, 1801 and *Trigla japonica* Shaw, 1803, both being synonyms of *Lepidotrigla alata* (Houttuyn, 1782) (Eschmeyer's "The Catalog of Fishes On-line," accessed in 8 November 2005). Eschmeyer suggested "a new name is needed for this species or the two older names need to be suppressed." Further study is needed to resolve the nomenclatorial problem with this species name.

Family Peristediidae

**Satyrichthys amiscus* (Jordan & Starks, 1904) [Jn.: Higekihoubou]

(Fig. 3E)

Material. USNM 51428 (1), 85 mm SL, holotype of *Peristedion amiscus*, off Manazuru, *Albatross* Station 3698, 5 May 1900.

Suborder Platycephaloidei

Family Platycephalidae

Inegocia japonica (Tilesius, 1812) [Jn.: Tokagegochi]

Material. USNM 72153 (1), 114 mm SL, Misaki, *Albatross*, Jordan, D. S. and Snyder, J. O. and Sindo, M., 1906 (exact date unknown).

Platycephalus sp. [Jn.: Yoshinogochi]

Material. USNM 72070 (1), 262 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Suborder Cottoidei

Family Cottidae

Furcina osimae Jordan & Starks, 1904 [Jn.: Kinukajika]

Material. USNM 72020 (12), 35–69 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Pseudoblennius cottoides (Richardson, 1848) [Jn.: Asahi-anahaze]

Material. USNM 71703 (36), 51–64 mm SL, Misaki, *Albatross*, date unknown.

Pseudoblennius marmoratus (Döderlein in Steindachner & Döderlein, 1884) [Jn.: Aya-anahaze]

Material. USNM 72098 (1), 110 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 72099 (1), 82 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Pseudoblennius percoides Günther, 1861 [Jn.: Anahaze]

Material. USNM 22571 (1), 145 mm SL, Miura-misaki Peninsula, Jordan, D. S. and Snyder, J. O., date unknown; USNM 51274 (3), 109–153 mm SL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown; USNM 71038 (6), 73–166 mm SL, Misaki, *Albatross*, date unknown.

**Stlengis misakia* (Jordan & Starks, 1904) [Jn.: Urokokajika]

(Fig. 3F)

Material. USNM 50913 (1), 63 mm SL, holotype of *Schmidtia misakia*, off Manazuru, *Albatross* Station 3698, 5 May 1900; USNM 74714 (1), 62 mm SL, Uraga Strait near Joga-shima Island, 88 fathoms, *Albatross* Station 5094 (35°4'42"N, 139°38'20"E), 26 October 1906 (13:57–14:12).

Stlengis osensis Jordan & Starks, 1904 [Jn.: Kushikajika]

Material. USNM 151449 (7), 28–35 mm SL, Uraga Strait, 77 fathoms, *Albatross* Station 5092 (35°4'50"N, 139°38'18"E), 26 October 1906 (10:40–10:55).

Vellitor centropomus (Richardson, 1848) [Jn.: Sui]

Material. USNM 51326 (7), 83–91 mm SL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown; USNM 72101 (7), 61–92 mm SL, Misaki, Snyder, J. O. and Sindo, M., date unknown.

Order Perciformes

Suborder Percoidei

Family Serranidae

Aulacocephalus temmincki Bleeker, 1854 [Jn.: Rurihada]

Material. USNM 22524 (1), 146 mm SL, Sagami, Japanese Government, date unknown.

Epinephelus poecilonotus (Temminck & Schlegel, 1842) [Jn.: Iyagohata]

Material. USNM 71074 (1), 108 mm SL, Misaki, *Albatross*, date unknown.

Family Priacanthidae

Priacanthus hamrur (Forsskal, 1775) [Jn.: Housekikintoki]

Material. USNM 71205 (3), 61–64 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Family Apogonidae

Apogon semilineatus Temminck & Schlegel, 1942 [Jn.: Nembutsudai]

Material. USNM 71366 (5), 67–94 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 152542 (1), 65 mm SL, Misaki, Aoki, K., 1922 (exact date unknown).

Family Pomatomidae

**Scombrops gilberti* (Jordan & Snyder, 1901) [Jn.: Kuromutsu]

(Fig. 3G)

Material. USNM 57540 (1), 405 mm SL, paratype of *Telescopias gilberti*, between Misaki and Oshima Island, Jordan, D. S. and Snyder, J. O., date unknown.

Family Carangidae

Carangoides equula (Temminck & Schlegel, 1844) [Jn.: Kaiwari]
(Fig. 5C)

Material. USNM 22587 (2), 114–150 mm SL, Japan, Miura-misaki Peninsula, Japanese Government, 5 June 1878.

Trachurus japonicus (Temminck & Schlegel, 1844) [Jn.: Ma-aji]
(Fig. 5B)

Material. USNM 22590 (1), 181+ mm TL, Miura-misaki Peninsula, Japanese Government, 6 May 1878.

Family Sparidae

Dentex tumifrons (Temminck & Schlegel, 1843) [Jn.: Kidai or Renkodai]

Material. USNM 152535 (1), 75 mm SL, Misaki, Aoki K., date unknown.

Pagrus major (Temminck & Schlegel, 1843) [Jn.: Madai]

Material. USNM 75477(4), 70–91 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Family Pempheridae

**Pempheris japonicus* Döderlein, 1884 [Jn.: Tsumagurohatampo]
(Fig. 3H)

Material. USNM 68229 (1), 160 mm SL, holotype of *Catalufa umbra*, Misaki, *Albatross*, Aoki, K., 1906 (exact date unknown).

Remarks. *Catalufa umbra* Snyder, 1911 is a junior synonym of this species (Tominaga, 1963).

Family Chaetodontidae

**Chaetodon nippon* Steindachner, 1883 [Jn.: Shirakodai]
(Fig. 3I)

Material. USNM 72111 (3), 96–111 mm SL, syntypes of *Chaetodon decipiens*, Misaki, *Albatross*, 1906 (exact date unknown).

Remarks. *Chaetodon decipiens* Ahl, 1923 is a junior synonym of this species (Burgess, 1978).

Family Kyphosidae

Girella leonina (Richardson, 1846) [Jn.: Kuromejina]

Material. USNM 71009 (5), 35–79 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 71391 (2), 64–74 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Girella mezina Jordan & Starks, 1907 [Jn.: Okinamejina]

Material. USNM 71008 (1), 57 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Girella punctata Gray, 1835 [Jn.: Mejina]

Material. USNM 62337 (13), 37–103 mm SL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown; USNM 71007 (14), 29–57 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM

151750 (1), 158 mm SL, Misaki, Aoki, K., date unknown.

Family Oplegnathidae

Oplegnathus fasciatus (Temminck & Schlegel, 1844) [Jn.: Ishidai]

Material. USNM 151753 (1), 95 mm SL, Misaki, Aoki, K., date unknown.

Oplegnathus punctatus (Temminck & Schlegel, 1844) [Jn.: Ishigakidai]

Material. USNM 151758 (1), 128 mm SL, Misaki, Aoki, K., date unknown.

Family Cheilodactylidae

Goniistius zonatus (Cuvier in Cuvier & Valenciennes, 1830) [Jn.: Takanohadai]

Material. USNM 71062 (1), 222 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 71156 (1), 205 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 71157 (1), ca. 310 mm SL, Misaki, *Albatross*, date unknown; USNM 112507 (1), 107 mm SL, Misaki, Aoki, K., date unknown.

Family Pomacentridae

**Abudefduf notatus* (Day, 1870) [Jn.: Isosuzumedai]

(Fig. 3J)

Material. USNM 74588 (2), 19–32 mm SL, paratypes of *Abudefduf clarki*, Misaki, *Albatross*, 1906 (exact date unknown).

Remarks. *Abudefduf clarki* Snyder, 1911 is a junior synonym of this species (Allen, 1991).

Abudefduf sordidus (Forsskal, 1775) [Jn.: Shimasuzumedai]

Material. USNM 71225 (13), 17–41 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Chromis notata notata (Temminck & Schlegel, 1843) [Jn.: Suzumedai]

Material. USNM 71587 (3), 107–110 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Chrysiptera glauca (Cuvier in Cuvier & Valenciennes, 1830) [Jn.: Nezusuzumedai]

Material. USNM 70749 (1), 27 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Suborder Labroidei

Family Labridae

Parajulis poecilepterus (Temminck & Schlegel, 1845) [Jn.: Kyusen]

Material. USNM 71576 (15), 77–183 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Pseudolabrus sieboldi Mabuchi & Nakabo, 1997 [Jn.: Hoshisasaohabera]

Material. USNM 151745 (1), 135 mm SL, Misaki, Aoki, K., 1922 (exact date unknown).

Pteragogus aurigarius (Richardson, 1845) [Jn.: Ohagurobera]

Material. USNM 151761 (1), 145 mm SL, Misaki, Aoki, K., October–November 1922.



Fig. 4. Type specimens of the Blenniidae, Chaenopsidae, Gobiidae, Monacanthidae and Ostraciidae from the Sagami Sea. A, *Istiblennius enosimae* (USNM 50297, paratype, 97 mm SL); B, *Zacalles bryope* (USNM 50296, paratype, 71 mm SL); C, *Gobius poecilichthys* (USNM 49919, paratype, 22 mm SL); D, *Chasmias misakius* (USNM 49948, paratype, 57 mm SL); E, *Asterropteryx abax* (USNM 49917, paratype, 30 mm SL); F, *Inu ama* (USNM 62956, holotype, 34 mm SL); G, *Inu koma* (USNM 62955, holotype, 33 mm SL); H, *Exopedia parvulus* (USNM 62945, holotype, 31 mm SL); I, *Prerogobius zonoleucus* (USNM 49918, paratype, 43 mm SL); J, *Zonogobius boreus* (USNM 62953, holotype, 27 mm SL); K, *Tridentiger bucco* (USNM 49902, paratype, 61 mm SL); L, *Rudarius ercodes* (USNM 23186, paratype, 41 mm SL); M, *Lactophrys tritropis* (USNM 68235, holotype, 62 mm SL).

Thalassoma cupido (Temminck & Schlegel, 1845) [Jn.: Nishikibera]

Material. USNM 71224 (9), 36–104 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Family Scaridae

Calotomus japonicus (Valenciennes in Cuvier & Valenciennes, 1840) [Jn.: Budai]

Material. USNM 71249(3), 80–110 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Suborder Zoarcoidei

Family Zoarcidae

**Bothrocara zestum* Jordan & Fowler, 1902

(Fig. 3K)

Material. USNM 50576 (1), ca. 490 mm TL, holotype of *Bothrocara zesta*, off Enoshima Island, 501–749 fathoms, *Albatross* Station 3696, 5 May 1900; USNM 331717 (1), not measurable, paratype of *B. zesta*, off Enoshima Island, 501–749 fathoms, *Albatross* Station 3696, 5 May 1900.

Remarks. USNM 331717 was removed from USNM 50576, the former being a specimen used for a drawing with an original metal tag (No. 2342). This species has no Japanese name. The taxonomic status is unknown (Anderson and Fedorov, 1994).

Family Stichaeidae

Dictyosoma burgeri van der Hoeven, 1855 [Jn.: Dainanginpo]

Material. USNM 71092 (36), 46–160 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Suborder Trachinoidei

Family Pinguipedidae

Parapercis sexfasciata (Temminck & Schlegel, 1843) [Jn.: Kurakaketoragisu]

Material. USNM 22512 (1), 160 mm SL, Sagami, Japanese Government, date unknown.

Family Percophidae

**Pteropsaron evolans* Jordan & Snyder, 1902 [Jn.: Hokaketoragisu]

(Fig. 3L)

Material. USNM 50006 (1), 61 mm SL, holotype of *Pteropsaron evolans*, Sagami Bay, *Albatross*, date unknown.

Suborder Blennioidei

Family Tripterygiidae

**Enneapterygius etheostoma* (Jordan & Snyder, 1902) [Jn.: Hebiginpo]

(Fig. 3M)

Material. USNM 50299 (7), 29–56 mm SL, paratypes of *Tripterygium etheostoma*, Misaki, Jordan, D. S. and Snyder, J. O., 1906 (exact date unknown).

Family Blennidae

**Istiblennius enosimae* (Jordan & Snyder, 1902) [Jn.: Kaeruuo]

(Fig. 4A)

Material. USNM 50297 (2), 97–110 mm SL, paratypes of *Scatichthys enosimae*, Misaki, 1906 (exact date unknown); USNM 71115 (25), 24–103 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 75842 (1), 44 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Omobranchus elegans (Steindachner, 1876) [Jn.: Nabeka]

Material. USNM 71530 (94), 21–61 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 208472 (4), 54–58 mm SL, Misaki, 2 May 1912; USNM 208473 (4), 49–50 mm SL, Misaki, 31 May 1911; USNM 296482 (2), 54–56 mm SL, Misaki, 31 May 1911.

Family Chaenopsidae

****Neoclinus bryope*** (Jordan & Snyder, 1902) [Jn.: Kokeginpo]

(Fig. 4B)

Material. USNM 50296 (6), 50–71 mm SL, paratypes of *Zacalles bryope*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown; USNM 71529 (80), 32–78 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Suborder Gobiosocoidei

Family Gobiosocidae

Aspasma minima (Döderlein in Steindachner & Döderlein, 1887) [Jn.: Ubaao]

Material. USNM 71393 (14), 16–26 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 74679 (1), 27 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Lepadichthys frenatus Waite, 1904 [Jn.: Misakiubauo]

Material. USNM 71394 (4), 36–52 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 74680 (1), 41 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Suborder Callionymoidei

Family Callionymidae

Repomucenus lunatus (Temminck & Schlegel, 1845) [Jn.: Numerigochi]

Material. USNM 151762 (1), 121 mm SL, Misaki, Aoki, K., October–November 1922.

Suborder Gobioidae

Family Gobiidae

****Astrabe lactisella*** Jordan & Snyder, 1901 [Jn.: Shirokurahaze]

Material. USNM 71533 (4), 25–40 mm SL, Misaki, *Albatross*, Snyder, J. O. and Sindo, M., 1906 (exact date unknown).

****Bathygobius fuscus*** (Rüppell, 1830) [Jn.: Kumohaze]

(Fig. 4C)

Material. USNM 49919 (1), 22 mm SL, paratype of *Gobius poecilichthys*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown; USNM 49919 (1), 22 mm SL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown; USNM 71496 (2), 44–57 mm SL, Misaki, *Albatross*, Jordan, D. S., Snyder, J. O. and Sindo, M., 1906 (exact date unknown).

Remarks. *Gobius poecilichthys* Jordan & Snyder, 1901 is a junior synonym of this species (Prince Akihito and Meguro, 1980).

****Chaenogobius gulosus* (Sauvage, 1882) [Jn.: Dorome]**

(Fig. 4D)

Material. USNM 40709 (3), 78–89 mm SL, paratypes of *Chasmias misakius*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown; USNM 49948 (13), 31–92 mm SL, paratypes of *C. misakius*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

Remarks. *Chasmias misakius* Jordan & Snyder, 1901, is a junior synonym of this species (Stevenson, 2002).

***Clariger cosmurus* Jordan & Snyder, 1901 [Jn.: Sejirohaze]**

Material. USNM 71392 (14), 14–25 mm SL, Misaki, *Albatross*, 1906 (exact date unknown), Jordan, D. S., Snyder, J. O. and Sindo, M., date unknown.

****Eviota abax* (Jordan & Snyder, 1901) [Jn.: Isohaze]**

(Fig. 4E)

Material. USNM 49917 (2), 28–30 mm SL, paratypes of *Asterropteryx abax*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

***Favonigobius gymnauchen* (Bleeker, 1960) [Jn.: Himehaze]**

Material. USNM 49876 (1), 34 mm SL, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

****Luciogobius ama* (Snyder, 1909) [Jn.: Amahaze]**

(Fig. 4F)

Material. USNM 62956 (1), 34 mm SL, holotype of *Inu ama*, Misaki, *Albatross*, Jordan, D. S., Snyder, J. O. and Sindo, M., 1906 (exact date unknown).

***Luciogobius guttatus* Gill, 1859 [Jn.: Mimizuhaze]**

Material. USNM 106539 (1), 34 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

****Luciogobius koma* (Snyder, 1909) [Jn.: Komahaze]**

(Fig. 4G)

Material. USNM 62955 (1), 33 mm SL, holotype of *Inu koma*, Misaki, *Albatross*, Jordan, D. S., Snyder, J. O. and Sindo, M., 1906 (exact date unknown).

****Luciogobius parvulus* (Snyder, 1909) [Jn.: Nansenhaze]**

(Fig. 4H)

Material. USNM 62945 (1), 31 mm SL, holotype of *Exopedio parvulus*, Misaki, *Albatross*, Jordan, D. S., Snyder, J. O. and Sindo, M., 1906 (exact date unknown).

***Pterogobius elapoides* (Günther, 1872) [Jn.: Kinubari]**

Material. USNM 71431 (7), 70–94 mm SL, Misaki, *Albatross*, Jordan, D. S., Snyder, J. O. and

Sindo, M., 1906 (exact date unknown).

Pterogobius virgo (Temminck & Schlegel, 1845) [Jn.: Nishikihaze]

(Fig. 5D)

Material. USNM 22573 (1), 172 mm SL, Miura-misaki Peninsula, 25 April 1878; USNM 71425 (1), 126 mm SL, Misaki, *Albatross*, Jordan, D. S., Snyder, J. O. and Sindo, M., 1906 (exact date unknown).

**Pterogobius zonoleucus* Jordan & Snyder, 1901 [Jn.: Chagara]

(Fig. 4I)

Material. USNM 49918 (1), 43 mm SL, paratype of *Pterogobius zonoleucus*, Misaki, Jordan, D. S. and Snyder, J. O., date unknown.

**Priolepis boreus* (Snyder, 1909) [Jn.: Misakisujihaze]

(Fig. 4J)

Material. USNM 62953(1), 27 mm SL, holotype of *Zonogobius boreus*, Misaki, *Albatross*, Jordan, D.S., Snyder, J.O. and Sindo, M., 1906 (exact date unknown).

Sagamia geneionema (Hilgendorf, 1879) [Jn.: Sabihaze]

Material. USNM 71495 (1), 59 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

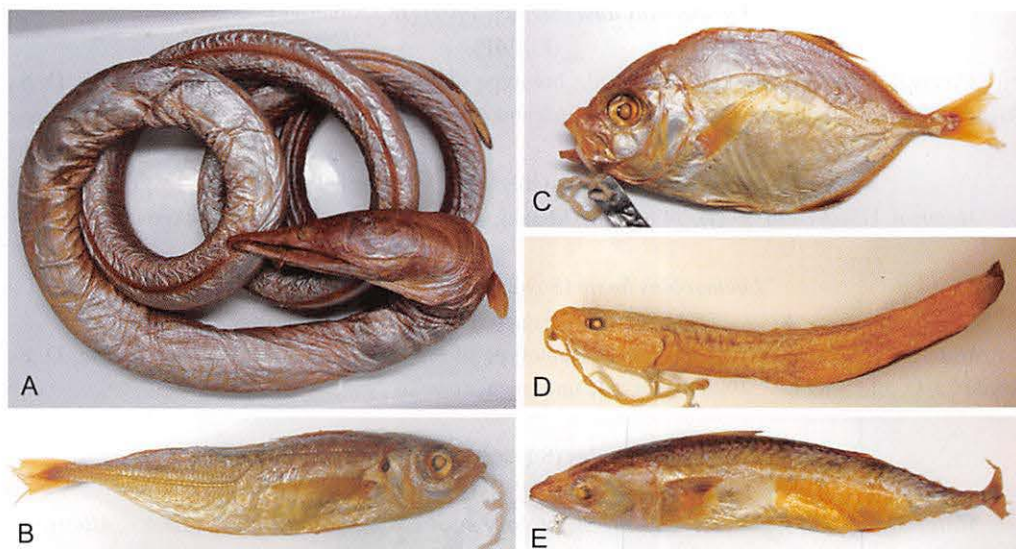


Fig. 5. Oldest fish specimens from the Sagami Sea. A, *Ophisurus macrorhynchus* (USNM 22600, >2400 mm TL, 19 April 1878); B, *Trachurus japonicus* (USNM 22590, 181+ mm SL, 6 May 1878); C, *Carangoides equula* (USNM 22587, 114 mm SL, 5 June 1878); D, *Pterogobius virgo* (USNM 22573, 173 mm SL, 25 April 1878); E, *Scomber japonicus* (USNM 22503, ca. 370 mm SL, 21 May 1878).

**Tridentiger trigonocephalus* (Gill, 1859) [Jn.: Akaobishimahaze]

(Fig. 4K)

Material. USNM 49902 (4), 61–71 mm SL, paratypes of *Tridentiger bucco*, Misaki, Jordan, D. S. and Snyder, J. O., 1900 (exact date unknown).

Remarks. *Tridentiger bucco* Jordan & Snyder, 1901 is a junior synonym of this species (Berg, 1949).

Family Ptereleotridae

Ptereleotris hanae (Jordan & Starks, 1901) [Jn.: Hanahaze]

Material. USNM 196662 (1), 77 mm SL, Misaki, Aoki, K., date unknown.

Suborder Acanthuroidei

Family Acanthuridae

Prionurus scalprum Valenciennes in Cuvier & Valenciennes, 1835 [Jn.: Nizadai]

Material. USNM 70753 (17), 28–45 mm SL, Misaki, *Albatross*, Snyder, J. O. and Sindo, M., 1906 (exact date unknown).

Suborder Scombroidei

Family Scombridae

Scomber japonicus Houttuyn, 1782 [Jn.: Masaba]

(Fig. 5E)

Material. USNM 22503 (1), 405+ mm TL, Miura-misaki Peninsula, 21 May 1878.

Order Pleuronectiformes

Family Paralichthyidae

Pseudorhombus oculocirris Amaoka, 1969 [Jn.: Heraganzoubirame]

Material. USNM 151744 (1), 108 mm SL, Misaki, Aoki, K. October–November 1922.

Family Pleuronectidae

Pleuronichthys sp. [Jn.: Nagaremeitagarei]

Material. USNM 152541 (1), 102 mm SL, Misaki, K. Aoki, 1922 (exact date unknown).

Remarks. This specimen is identical with *Pleuronichthys* sp. (*sensu* Nakabo, 2002b).

Tanakius kitaharai (Jordan & Starks, 1904) [Jn.: Yanagimushigarei]

Material. USNM 77161 (3), 135–151 mm SL, Uraga Strait near Joga-shima Island, 88 fathoms, *Albatross* Station 5094 (35°4'42"N, 139°38'20"E), 26 October 1906 (13:57–14:12); USNM 77163 (4), 130–153 mm SL, Uraga Strait, 77 fathoms, *Albatross* Station 5092 (35°4'50"N, 139°38'18"E), 26 October 1906 (10:40–10:55); USNM 77166 (2), 133–149 mm SL, Uraga Strait near Joga-shima Island, 88 fathoms, *Albatross* Station 5094 (35°4'42"N, 139°38'20"E), 26 October 1906 (13:57–14:12).

Family Soleidae

Zebrias zebrinus (Temminck & Schlegel, 1846) [Jn.: Shimaushinoshita]

Material. USNM 72065 (1), 116 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Order Tetraodontiformes

Family Monacanthidae

Aluterus monoceros (Linnaeus, 1758) [Jn.: Usubahagi]

Material. USNM 71740 (1), 91 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

**Rudarius ercodes* Jordan & Fowler, 1902 [Jn.: Amimehagi]

(Fig. 4L)

Material. USNM 231816 (10), 17–43 mm SL, paratypes of *Rudarius ercodes*, Misaki, Jordan, D. S. and Snyder, J. O., 1900 (exact date unknown).

Stephanolepis cirrhifer (Temminck & Schlegel, 1850) [Jn.: Kawahagi]

Material. USNM 71001 (1), 198 mm SL, Misaki, *Albatross*, date unknown; USNM 71531 (40), 27–128 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 151743 (1), 93 mm SL, Misaki, Aoki, K., date unknown.

Family Ostraciidae

Subfamily Aracaninae

Kentrocapros aculeatus (Houttuyn, 1782) [Jn.: Itomakifugu]

Material. USNM 50812 (2), 77–108 mm SL, Sagami Bay, *Albatross*, date unknown.

Subfamily Ostraciidae

Lactoria diaphana (Bloch & Schneider, 1801) [Jn.: Umisuzume]

Material. USNM 71546 (1), 71547 (1), 71548 (1), 71549 (1), 71550 (1), 94–125 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Remarks. These five specimens were found in a single jar with no indication of which catalog numbers were associated with each of the specimens.

**Tetrosomus concatenatus* (Bloch, 1875) [Jn.: Hamafugu]

(Fig. 4M)

Material. USNM 68235 (1), 62 mm SL, holotype of *Lactophrys tritropis*, Misaki, *Albatross*, Aoki, K., 1906 (exact date unknown).

Remarks. *Lactophrys tritropis* Snyder, 1911 is a junior synonym of this species (Randall *et al.*, 1990).

Family Tetraodontidae

Canthigaster janthinoptera (Bleeker, 1855) [Jn.: Shiborikinchakufugu]

Material. USNM 71236 (2), 27–28 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Remarks. These specimens indicate the northernmost collection records of the species. Previously it had been known from the Indo-West Pacific including Hachijo-jima Island and the Ryukyu Islands of Japan (Yamada, 2002).

Takifugu chrysops (Hilgendorf, 1879) [Jn.: Akamefugu]

Material. USNM 71571 (3), 125–178 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Takifugu exascurus (Jordan & Snyder, 1901) [Jn.: Mushifugu]

Material. USNM 71691 (1), 130 mm SL, *Albatross*, 1906 (exact date unknown).

Takifugu niphobles (Jordan & Snyder, 1901) [Jn.: Kusafugu]

Material. USNM 71099 (4), 39–85 mm SL, Misaki, *Albatross*, 1906 (exact date unknown).

Takifugu pardalis (Temminck & Schlegel, 1850) [Jn.: Higanfugu]

Material. USNM 71266 (3), 47–60 mm SL, Misaki, *Albatross*, 1906 (exact date unknown); USNM 152531 (1), 103 mm SL, Misaki, Aoki, K., date unknown; USNM 49848 (3), 52–122 mm SL, Misaki, *Albatross*, date unknown.

Takifugu snyderi (Abe, 1988) [Jn.: Shosaifugu]

Material. USNM 71280(1), 82 mm SL, Misaki, *Albatross*, date unknown.

Family Diodontidae

Diodon holocanthus Linnaeus, 1758 [Jn.: Harisenbon]

Material. USNM 148793 (1), 57 mm SL, Oshima Island, *Albatross*, 29 August 1906.

Diodon hystrix Linnaeus, 1758 [Jn.: Nezumifugu]

Material. USNM 71985 (1), 213 mm SL, Misaki, *Albatross*, date unknown.

Acknowledgments

We thank Hiroshi Namikawa (National Science Museum, Tokyo) for providing geographic information about the Sagami Sea and Lynne R. Parenti (USNM) for providing literature. Special thanks go to David G. Smith (USNM), Hiromitsu Endo (Kochi University) and Keiichi Matsuura (National Science Museum, Tokyo) for taxonomic information on the Congridae, Macrouridae and Tetraodontidae, respectively.

要 約

1870年代から1920年代にかけて相模灘で採集され、米国国立自然史博物館に所蔵されている魚類標本を調査し、そのリストを作成した。その結果、22目71科152種が確認され、そのコレクションは100個体の模式標本を含んでいた。またこれらの標本のうち99種734個体は米国水産局調査船アルバトロス号が持ち帰ったものであった。同館にある最古の相模灘産標本は1878年に採集されたダイナンウミヘビ、マアジ、カイワリ、ニシキハゼおよびマサバであった。

References

- Allen, G. R., 1991. *Damselfishes of the World*. 271 pp. Mergus, Melle.
Anderson, M. E. & V. V. Fedorov, 2004. Family Zoarcidae Swainson 1839-eelpouts. *Calif. Acad. Sci. Annotated Checklists of Fishes*, (34): 1–58.
Berg, L. S., 1949. Fresh-water fishes of Soviet Union and adjacent countries. III. *Freshw. Fish. USSR. Guide Fauna USSR*, (30): 927–1382.
Brittan, M. R., 1997. The Stanford school of ichthyology: eighty years (1891–1970) from Jordan (1851–1931) to Myers (1905–1985). In: Pietsch T. W. & W. D. Anderson, Jr. (eds.), *Collection Building in Ichthyology and Herpetology*. pp. 233–263. Allen Press Inc., Lawrence.
Burgess, W. E., 1978. *Butterflyfishes of the World*. 832 pp. T.F.H. Publ., Neptune City.

- Dunn, J. R., 1997. Charles Henry Gilbert (1859–1928): pioneer ichthyologist of the American West. In: Pietsch T. W. and W. D. Anderson, Jr. (eds.), *Collection Building in Ichthyology and Herpetology*. pp. 265–277. Allen Press Inc., Lawrence.
- Mohr, E., 1937. Revision der Centriscidae (Acanthopterygii Centrisciformes). *Dana Rep.*, **13**: 1–70, pls 1–2.
- Nakabo, T. (ed.), 2002a. *Fishes of Japan with Pictorial Keys to the Species, English Edition*. lxi+1749 pp. Tokai Univ. Press, Tokyo.
- Nakabo, T., 2002b. Pleuronectidae. In: Nakabo, T. (ed.), *Fishes of Japan with Pictorial Keys to the Species, English Edition*. pp. 1371–1379, 1628–1629. Tokai Univ. Press, Tokyo.
- Nelson, J. S., 1994. *Fishes of the World, 3rd Edition*. 600 pp. John Wiley & Sons, New York.
- Pietsch, T. W. & D. B. Grobecker, 1987. *Frogfishes of the World: Systematics, Zoology, and Behavioral Ecology*. xxii + 420 pp. Stanford Univ. Press, Stanford.
- Prince Akihito & K. Meguro, 1980. On the six species of the genus *Bathygobius* found in Japan. *Jpn. J. Ichthyol.*, **27**: 215–236. (In Japanese with English abstract.)
- Tominaga, Y., 1963. A review of the fishes of the family Pempheridae of Japan. *J. Fac. Sci., Univ. Tokyo*, **10**: 269–290.
- Snyder, J. O., 1912. Japanese shore fishes collected by the United States Bureau of Fisheries steamer "Albatross" expedition of 1906. *Proc. U. S. Natl. Mus.*, **42**: 399–450, pls. 51–61.
- Stevenson, D.E., 2002. Systematics and distribution of fishes of the Asian goby genera *Chaenogobius* and *Gymnogobius* (Osteichthyes: Perciformes: Gobiidae), with the description of a new species. *Species Diversity*, **7**: 251–312.
- Yamada, U., 2002. Triglidae, Tetraodontidae. In: Nakabo, T. (ed.), *Fishes of Japan with Pictorial Keys to the Species, English Edition*. pp. 604–613, 1418–1431, 1522, 1632. Tokai Univ. Press, Tokyo.