

Specimens of Platyrrhinidae and Myliobatiformes deposited in the Department of Zoology, The University Museum, The University of Tokyo

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Abstract

An investigation of specimens representing the family Platyrrhinidae (Torpediniformes) and order Myliobatiformes deposited in the Department of Zoology, The University Museum, The University of Tokyo (ZUMT), the oldest fish specimen collection institution in Japan, recognized one platyrrhinid species, and five families, including nine genera and 12 species belonging to Myliobatiformes, collected in waters around Japan. However, the latter total represented only 34.3% of the total number of Myliobatiformes (35 species in 20 genera, representing nine families), that have been recorded from Japan. Including collections made elsewhere, ZUMT myliobatiforme specimens totaled 20 species in 12 genera, also representing five families.

Introduction

Globally, the fanray family Platyrrhinidae comprises two genera, with *Platyrrhina* (including four species) occurring in Asia. Two of the four species are known from Japan (Iwatsuki et al., 2011; Last et al., 2016). Nine families, including 20 genera and 35 species of the order Myliobatiformes, one species of them having as yet unresolved taxonomy (Furumitsu and Yamaguchi, 2010, 2015; Nakabo, 2013; Ishihara et al., 2018, 2019; Hata and Motomura, 2024; Motomura, 2024), occurring in Japanese water.

The present investigation and re-identification of specimens representing the family Platyrrhinidae and order Myliobatiformes, deposited in the Department of Zoology, The University Museum, The University of Tokyo (ZUMT), resulted in a newly revised catalogue of the specimens, which is provided herein.

Material and Methods

Identifications of ZUMT specimens and scientific nomenclature generally followed Furumitsu and Yamaguchi (2010, 2015), Iwatsuki et al. (2011), Nakabo (2013), White et al. (2015a, b), Last et al. (2016), Ishihara et al. (2018) and Hata and Motomura (2024).

Disc widths, expressed as DW (Myliobatiformes), were measured at the greatest distance. Total lengths, expressed as TL (Platyrrhinidae) were measured from head tip to tail tip. Sex was determined by the presence or absence of claspers. Disc widths of specimens were generally measured for each specimen, although only of the largest and smallest specimens when a large number were included in a single lot.

The following list includes ZUMT number, number of specimens in parentheses when two or more, DW, sex, collection locality, collection date, collector or donator and affiliation, collection method, and remarks when applicable. Collection data of specimens are omitted if the same as that for the previous specimen. In this list, ZUMT specimens are enumerated as “ZUMT XXXX”, those of the “ABE collection”, accumulated by Dr. Tokiharu ABE (阿部宗明) but not formally registered as part of the ZUMT collection, being enumerated as “ZUMT ABE XXXX.”

Results and Discussion

Re-identifications of specimen deposited in ZUMT revealed only one Japanese species of the family Platyrhinidae and 12 Japanese species (nine genera in five families) of the order Myliobatiformes. The latter represented only 34.3% of the total number of Myliobatiformes (35 species in 20 genera, representing nine families), that have been recorded from Japan. Such limited result may have been related to the difficulty of keeping larger myliobatiforme specimens, as well as the generally low commercial value of such fishes, resulting in discarded bycatch.

Torpediniformes シビレエイ目

Platyrhinidae ウチワザメ科

Platyrhina Müller and Henle, 1838 ウチワザメ属

Platyrhina tangi Iwatsuki, Zhang and Nakaya, 2011 ウチワザメ

ZUMT 2551: 117.8 mm TL, female, Nagasaki Prefecture, Japan, 3 Oct. 1909.

Remarks: Cloth tag “156 dialect locality Nagasaki, 3. 10. 42 [= 42 year of Meiji era (1909)]” (156 方言 産地 長崎 採時 3. 10. 42) .

ZUMT 13903: 171.6 mm TL, male, Ariake Sea, Japan, 14 Dec. 1924, Morie Kinoshita (木下盛枝).

ZUMT 19436: 242.5 mm TL, female, Mitsune (三根), Hachijo-jima island, Izu Islands, Japan, July 1929, Yoshio Osizu (押津義雄).

ZUMT 35682: 132.8 mm TL, male, Okibata (沖端), Yanagawa (柳川), Fukuoka Prefecture, Ariake Sea, Japan, Oct. 1931.

Remarks: Local name “Chongame (チョンガメ)”.

ZUMT 40672: 161.3 mm TL, female, locality unknown (probably Japan), before 1952.

ZUMT 45934: 192.0 mm TL, male, locality unknown (probably Ariake Sea, Japan), before 1952, Ichiro Tomiyama (冨山一郎).

Remarks: Cloth tag “106”.

ZUMT 46658: 163.8 mm TL, female, Namerikawa (滑川), Toyama Bay, Toyama Prefecture, Japan, before 1952.

Remarks: Cloth tag “154”.

ZUMT 46659: 162.0 mm TL, female, Namerikawa (滑川), Toyama Bay, Toyama Prefecture, Japan, before 1952.

Remarks: Cloth tag “153”.

ZUMT 68404: 214.8 mm TL, male, locality unknown (probably Japan).

Remarks: New registration number (previously unregistered).

Myliobatiformes トビエイ目

Urolophidae ヒラタエイ科

Urolophus Müller and Henle, 1837 ヒラタエイ属

Urolophus aurantiacus Müller and Henle, 1841 ヒラタエイ

ZUMT 19572: 164.6 mm DW, female, Kochi (高知), Tosa Bay, Kochi Prefecture, Japan, 29 Oct. 1929, Toshiji Kamohara (蒲原稔治).

Remarks: Cloth tag “64”.

ZUMT 20635: 102.9 mm DW, female, **ZUMT 20716:** 115.5 mm DW, male, **ZUMT 20782:** 96.0 mm DW, female, Misaki (三崎), Miura (三浦), Sagami Bay, Kanagawa Prefecture, Japan, about 1930.

ZUMT 30750: 92.9 mm DW, female, Nagasaki Prefecture, Japan, trawl, about 1935, Tomisaburo Awajiya Glover (倉場富三郎).

ZUMT 31170: 177.1 mm DW, female, Matsue (松江), Shimane Prefecture, Japan, about 1935, Ryuichi Yanai (柳井隆一).

Remarks: Cloth tag “80”.

ZUMT 31603: 169.8 mm DW, male, Kagoshima Prefecture, Japan, about 1936, Yasunori Miyoshi (三好保徳).

ZUMT 31610: 145.8 mm DW, female, Kagoshima Prefecture, Japan, about 1936, Yasunori Miyoshi (三好保徳).

Remarks: Cloth tag “58”.

ZUMT 47863: 192.2 mm DW, female, Tamanoura (玉之浦), Fukue-jima island, Goto Islands, Nagasaki Prefecture, Japan, 23 May 1953, Ichiro Tomiyama (冨山一郎).

ZUMT 49656: 100.1 mm DW, male, Maruyama-dashi (丸山出し: local fishing spot), Hayama (葉山), Sagami Bay, Kanagawa Prefecture, Japan, 11 Feb. 1958, donation from Imperial Household Agency Institute of Biology (宮内庁生物學研究所).

ZUMT 49662: 138.8 mm DW, female, Kannon-zuka (観音塚: local fishing spot), Hayama (葉山), Sagami Bay, Kanagawa Prefecture, Japan, 60–80 m depth, 15 July 1957, donation from Imperial Household Agency Institute of Biology (宮内庁生物學研究所).

ZUMT 49810: 151.4 mm DW, male, sea near Fukuoka Prefecture, Japan, July 1959, purchased at Fukuoka Fish Market (福岡魚市場).

ZUMT 49896: 127.2 mm DW, male, Fukue-jima island, Goto Islands, Nagasaki Prefecture, Japan, 10 June 1953.

ZUMT 50444: 156.4 mm DW, female, Miura (三浦), Sasebo (佐世保), Nagasaki Prefecture, Japan, 30 Oct. 1953.

ZUMT 50956: 131.0 mm DW, male, Maruyama-dashi (丸山出し: local fishing spot), Hayama (葉山), Sagami Bay, Kanagawa Prefecture, Japan, 60–65 m depth, 17 July 1959.

ZUMT 68403: tail only (99.7 mm), Japan (details unknown).

Remarks: Paper tag “red pot lid, No 1 (赤ナベフタ No 1)”. New registration number (previously unregistered).

Dasyatidae アカエイ科
Bathytoshia Whitley, 1933 ホシエイ属
Bathytoshia brevicaudata (Hutton, 1875) ホシエイ

ZUMT 68400: 407.0 mm DW, female, sea near Tokyo, Japan, 13 July 1917, purchased at Tokyo Market (東京市場).

Remarks: Cloth tag “a species of *Urolophus*, Taisho 6 (=1917), 13, 7, Tokyo (ヒラタエイ一種 大正六年. 七一三 東京)”. New registration number (previously unregistered).

Hemirhynchus Müller and Henle, 1838 アカエイ属
Hemirhynchus akajei (Bürger, 1841) アカエイ

ZUMT 13040: 151 mm DW, male, Miyako Bay, Iwate Prefecture, Japan, before 1911, Sadao Tanabe (田辺貞夫).
Remarks: Cloth tag “18”, local name “Gara-gara (ガラガラ)” or “Eo (エオ)”.

ZUMT 13227: 167.8 mm DW, male, Nara-gyojo (奈良漁場; details unknown), Tohoku Region, Japan, set net, 28 Oct. 1937, Sadao Tanabe (田辺貞夫).

Remarks: Cloth tag “34. Shark”.

ZUMT 13228: 173.1 mm DW, male, Nara-gyojo (奈良漁場; details unknown), Tohoku Region, Japan, set net, 28 Oct. 1937, Sadao Tanabe (田辺貞夫).

ZUMT 18237: 196 mm DW, female, Asamushi (浅虫), Aomori Prefecture, Japan, before 1928, Sadao Tanabe (田辺貞夫).

ZUMT 18311: 123.8 mm DW, male, Fukushima Prefecture, Japan, about 1928 (at least before 31 Aug. 1928, Fukushima Prefectural Research Institute of Fisheries (福島県水産試験場)). Lacking part of head. (Fig. 1).

ZUMT 23966: 138.1 mm DW, female, Shibushi (志布志), Osumi Peninsula, Kagoshima Prefecture, Japan, about 1931.

Remarks: Local name “Akai (アカイ)”.

ZUMT 31497: 323 mm DW, female, Shimane Prefecture, Japan, about 1935.

Remarks: Cloth tag “・T60”.

ZUMT 33526: tail only (364.4 mm), locality unknown (probably Japan), about 1936.

ZUMT 37588: 164.3 mm DW, female, **ZUMT 37589:** 183.5 mm DW, male, Japan (Sagami Bay or Okayama Prefecture), about 1937, Shin Miyoshi (三好晋).

ZUMT 38072: 153.3 mm DW, male, Takasu (鷹巣), Sakai (坂井), Fukui Prefecture, Japan, 24 Sept. 1937.
 Remarks: Lacking part of pectoral fin (malformed specimen).
ZUMT 46553: (15 specimens): 70.5–80.3 mm DW, 8 male specimens, 7 female specimens, locality unknown (probably Japan), before 1952.
ZUMT 47029: 173.2 mm DW, male, Tosa Bay, Kochi Prefecture, Japan, before 1952.
ZUMT 47934: 174.8 mm DW, female, Mitsuiraku (三井楽), Fukue-jima island, Goto Islands, Nagasaki Prefecture Japan, 22 May 1953.
ZUMT 48001: 173.6 mm DW, female, Hirado (平戸), Nagasaki Prefecture, Japan, 29 May 1953.
ZUMT 49813: 219 mm DW, female, sea near Fukuoka Prefecture, Japan, July 1959, purchased at Fukuoka Fish Market (福岡魚市場).
ZUMT 51652: 190.8 mm DW, female, East China Sea (30°30'N, 124°15'E), 4 Aug. 1959.
ZUMT 68396: 229.0 mm DW, male, Japan (details unknown), about 1970, Torao Sato (佐藤寅夫).
ZUMT 68398: 94.5 mm DW, male, **ZUMT 68399:** 108.3 mm DW, female, Japan (details unknown), about 1970, Torao Sato (佐藤寅夫).
 Remarks: Specimens reregistered, due to double numbering (50175 to 68398; 50176 to 68399)
ZUMT 68401: 158.5 mm DW, female, Banda (坂田), Tateyama (館山), Chiba Prefecture, Japan, 13 July 1933, Tokiharu Abe (阿部宗明).
ZUMT 68690: 144.4 mm DW, female, Hota River, Hota (保田), Kyonan (鋸南), Awa (安房), Chiba Prefecture, Japan (35°08'12.3"N 139°50'25.1"E), 26 Oct. 2024, hand net, Tomoaki Maruyama, Mai Maruyama, Naoto Inui and Daichi Oyama (丸山智朗・丸山 舞・乾 直人・尾山大知).

Hemitrygon izuensis (Nishida and Nakaya, 1988) イズヒメエイ

ZUMT 26267: 274.2 mm DW, female, Atsuda (熱田), Nagoya (名古屋), Ise Bay, Aichi Prefecture, Japan, 26 Oct. 1936, Soichi Yoshikane (吉兼宗一).

Himantura Müller and Henle, 1837 アミメオトメエイ属

Himantura uarnak (Gmelin, 1789) アミメオトメエイ

ZUMT 67493: 261.2 mm DW, male, Hainan Island, China, Sept. 1939.

Neotrygon Castelnau, 1873 ヤッコエイ属

Neotrygon orientalis Last, White and Serét, 2016

ZUMT 12653: 176.4 mm DW, female, **ZUMT 12676:** 160.8 mm DW, female, **ZUMT 12683:** 192.0 mm DW, female, Sulu Islands, the Philippines, Umejiro Yamamura and Yaeko Yamamura (山村樗次郎・山本八重子).

Neotrygon yakkoiei Hata and Motomura, 2024 ヤッコエイ

ZUMT 16935: 127.7 mm DW, male, **ZUMT 16936:** 121.0 mm DW, male, Itoman (糸満), Okinawa-jima island, Ryukyu Islands, Japan, before 1926, Sadao Tanabe (田辺貞夫).
ZUMT 19141: 321.0 mm DW, male, **ZUMT 19142:** 329.0 mm DW, male, **ZUMT 19143:** 310.8 mm DW, male, Mitsune (三根), Hachijo-jima island, Izu Islands, Japan, 4 July 1929, Shiro Otsuki (大槻洋四郎).
ZUMT 19251: 311.6 mm DW, male **ZUMT 19275:** 240.7 mm DW, female, **ZUMT 19276:** 271.0 mm DW, male, **ZUMT 19277:** 265.5 mm DW, male, **ZUMT 19278:** 266.0 mm DW, male, **ZUMT 19323:** 305.0 mm DW, male, **ZUMT 19324:** 357.0 mm DW, female, **ZUMT 19325:** 278.0 mm DW, female, **ZUMT 19401:** 245.0 mm DW, female, **ZUMT 19434:** 249.2 mm DW, male, **ZUMT 19499:** 260.0 mm DW, male, Mitsune (三根), Hachijo-jima

island, Izu Islands, Japan, July 1929, Yoshio Osizu (押津義雄).

ZUMT 68395 tail only (215.0 mm), Japan (details unknown, but probably Hachijo-jima island), 7 m depth

Remarks: Paper tag “white pot lid, white and black spots, 7 m depth, No 2 (白ナベフタ 白、黒のハンテン 深海 7 m No 2)”. New registration number (previously unregistered).

ZUMT 68397: 196.0 mm DW, male, locality unknown (probably Japan).

Remarks: New registration number (previously unregistered).

Potamotrygon Garman, 1877

Potamotrygon falkneri Castex and Maciel, 1963

ZUMT 66567: 274.6 mm DW, female, locality unknown.

Remarks: Obtained from ornamental fish store.

Potamotrygon leopoldi Castex and Castello, 1970

ZUMT 66564: 111.8 mm DW, male, locality unknown.

Remarks: Obtained from ornamental fish store.

***Potamotrygon* sp.**

ZUMT 66565: 146.1 mm DW, female, locality unknown.

ZUMT 66566: 200.8 mm DW, male, locality unknown.

Remarks: Obtained from ornamental fish store. It is a popular ornamental fish commercially called as “Crocodile stingray”, and its scientific name has not been determined.

Pteroplatytrygon Fowler, 1910 カラスエイ属

Pteroplatytrygon violacea (Bonaparte, 1832) カラスエイ

ZUMT 48384: 405 mm DW, female, south of Hawaii, USA, 18 Aug. 1955, Sho Shinohara (篠原 勝).

ZUMT 48763: 62.7 mm DW, male, **ZUMT 48764**: 61.2 mm DW, female, south of Tapiwa, Kiribati (01°26'42"S 169°24'00"E), 3 Apr. 1956, Zenshiro Maekawa and Teijiro Suzuki (前川善四郎・鈴木貞次郎).

Telatrygon Last, Naylor and Manjaji-Matsumoto, 2016 ズグエイ属

Telatrygon zugei (Bürger, 1841) ズグエイ

ZUMT 46015: 170.9 mm DW, male, Yanagawa (柳川), Fukuoka Prefecture, Ariake Sea, Japan, before 1952.

Gymnuridae ツバクロエイ科

Gymnura van Hasselt, 1823 ツバクロエイ属

Gymnura japonica (Temminck and Schlegel, 1850) ツバクロエイ

ZUMT 18710: 286.0 mm DW, female, Susaki (須崎), Tosa Bay, Kochi Prefecture, Japan, 20 Aug. 1925, Toshiji Kamohara (蒲原稔治).

ZUMT 25805: 479.0 mm DW, male, **ZUMT 25806**: 463.0 mm DW, female, Toyama Prefecture, Japan, about 1933 (at least before 22 July 1933) Kanzaemon Kikuchi (菊池勘左衛門).

ZUMT 37590: 338.0 mm DW, male, Japan (Sagami Bay or Okayama Prefecture), about 1937, Shin Miyoshi (三好 晋).

ZUMT 49811: 280.0 mm DW, female, **ZUMT 49812:** 293.7 mm DW, female, sea near Fukuoka Prefecture, Japan, July 1959, purchased at Fukuoka Fish Market (福岡魚市場).

Gymnura poecilura (Shaw, 1804) オナガツバクロエイ

ZUMT 51394: 160.6 mm DW, female, East China Sea (36°15'N, 121°45'E), 31 Oct. 1959.

ZUMT 67494: 380.0 mm DW, male, Hainan Island, China, Sept. 1939.

Myliobatidae トビエイ科

Aetomylaeus Garman, 1908 アオスジトビエイ属

Aetomylaeus nichofii (Bloch and Schneider, 1801) アオスジトビエイ

ZUMT 62640: 210.4 mm DW, male, sea near Sarawak, Borneo, collection date unknown (before 1960), donated by Tom Harrisson (Sarawak Museum).

Myliobatis Cuvier, 1816 トビエイ属

Myliobatis hamlyni Ogilby, 1911 スミレトビエイ

ZUMT 25242: 210.5 mm DW, male, Yamaguchi Prefecture, Japan, about 1933, Miharū Nagatomi (永富三治).

Myliobatis tobijei Bleeker, 1854 トビエイ

ZUMT 48882: 254.7 mm DW, female, off Hayama (葉山), Sagami Bay, Kanagawa Prefecture, Japan, trawl, 20 Jan. 1957, donation from Imperial Household Agency Institute of Biology (宮内庁生物学研究所).

ZUMT 50590: 313.0 mm DW, male, sea near Fukuoka Prefecture, Japan, Aug. 1959, purchased at Fukuoka Fish Market (福岡魚市場).

ZUMT 63893: 297.0 mm DW, male, locality unknown.

Myliobatis sp. トビエイ属の一種

ZUMT 25251: 259.0 mm DW, male, Toyama Prefecture, Japan, about 1933.

Remarks: Head and pectoral fins separated (malformed specimen) (Fig. 2). Since it is a malformed specimen and its tail cut off, it could not be identified in this study.

Aetobatidae マダラトビエイ科

Aetobatus Blainville, 1816 マダラトビエイ属

Aetobatus narutobiei White, Furumitsu and Yamaguchi, 2013 ナルトビエイ

ZUMT 25240: 307.0 mm DW, female, Yamaguchi Prefecture, Japan, about 1933, Miharū Nagatomi (永富三治).

ZUMT 42364: 494.0 mm DW, female, Basilan Islands, the Philippines, 1926, Umejiro Yamamura and Yaeko Yamamura (山村樸次郎・山本八重子).

ZUMT 68402: 610.0 mm DW, female, locality unknown (probably Japan).

Remarks: New registration number (previously unregistered).

ZUMT ABE 3851: 544.0 mm DW, male, Palau, 1936, Tokiharu Abe (阿部宗明).

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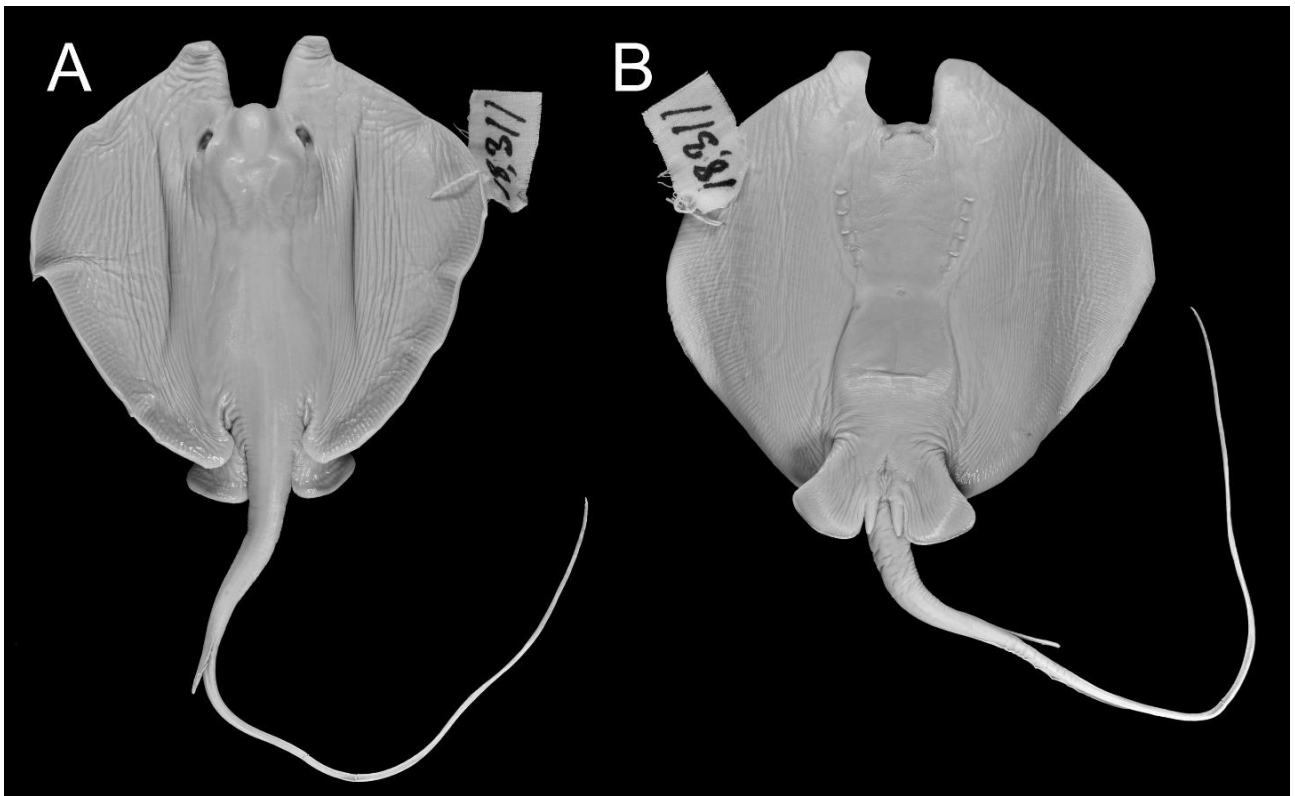


Figure 1. Preserved malformed specimen of *Hemitrygon akajei*, ZUMT 18311, 123.8 mm DW, male, lacking part of head. A: dorsal view; B: ventral view.

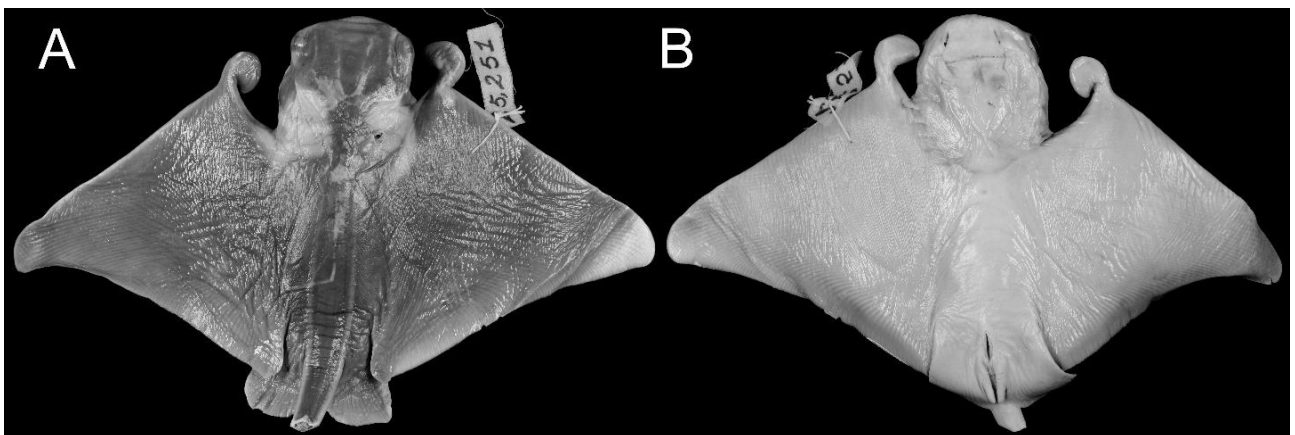


Figure 2. Preserved malformed specimen of *Myliobatis* sp., ZUMT 25251, 259.0 mm DW, male, Head and pectoral fins separated. A: dorsal view; B: ventral view.