

## Specimens of the order Albuliformes (Actinopterygii: Teleostei) deposited in the Department of Zoology, The University Museum, The University of Tokyo

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### Abstract

Twenty-six single specimen lots of the order Albuliformes (Teleostei), deposited in the Department of Zoology, The University Museum, The University of Tokyo, were examined and found to represent four species in two genera. An example of *Albula oligolepis* Hidaka, Iwatsuki & Randall, 2008, collected from Taiwan, represented the first record of the species from the South China Sea. No types for the order were known.

### Introduction

Fish species in the order Albuliformes, globally distributed in warm seas, and characterized by a leptocephalus larval stage, are included in the single family Albulidae, comprising two subfamilies (Nelson et al. 2016).

The subfamily Albulinae includes the single genus *Albula* (Nelson et al. 2016). Although the taxonomy of species in the genus have long been confused, it is gradually being resolved by recent studies (e.g., Pfeiler et al. 2006, 2008, 2011; Pfeiler, 2008; Hidaka et al. 2008; Kwun and Kim 2011; Kim et al. 2019). In addition, doubts have persisted regarding the number of species distributed in Japanese waters, and their applicable names (Aizawa and Doiuchi 2013a). However, Matsunuma et al. (2022) reviewed the taxonomy of northwestern Pacific species of the genus, indicating that at least four species were distributed off Japan, and giving the applicable scientific and Japanese names for each. Species of *Albula* typically inhabit sand or mud bottoms of shallow coastal waters, sometimes invading estuaries. Although sometimes marketed, their value as edible fish is not high due to their numerous fine intramuscular bones (Smith 1977, 1986; Smith and Randall, 1999; Chiang et al. 2014; Smith 2002; Koeda 2019; Hata 2020; Heemstra 2022). Nevertheless, albulinid species are popular targets of sport-fishing, being regarded as “bonefish” (Smith 1977, 1986, 2016a). Some species are threatened because of habitat loss or degradation, and overfishing (Adams et al. 2012a, b).

The subfamily Pterothrissinae, sometimes regarded as a separate family (Pterothrissidae) (Berg 1940; Matsubara 1955; Aizawa and Doiuchi 2013b; Smith 2016b), includes two species, *Nemoosis belloci* (Cadenat, 1937) (distributed in the eastern Atlantic) and *Pterothrissus gissu* Hilgendorf, 1877 (northwestern Pacific). Although often treated as representing a single genus (e.g., Matsubara, 1955; Smith 1986), the two species were clearly shown to be generically distinct by Hidaka et al. (2017). Pterothrissinids inhabit deep sea waters (*N. belloci* in 50–500 m depth, *P. gissu* in 200–1000 m depth; Sato 1997; Smith 2016; Hidaka et al. 2017). The latter species is caught mainly by trawl or long-line in the East China Sea, and used commercially in the preparation of fishballs (Tameka 1982; Machida 1984). Despite the recent studies of both subfamilies, the albuliform fishes are still taxonomically confused, with the distributional range of each species still incompletely known. A list of Albuliformes specimens deposited in the Department of Zoology, The University Museum, The University of Tokyo is provided below.

### Materials and Methods

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

(abbreviated as ZUMT) were identified during the present study, using following references: *Albula*: Hidaka et al. (2008) and Matsunuma et al. (2022); *Pterothrissus*: Aizawa and Doiuchi (2013b) and Hidaka et al. (2017). Parentheses following registration numbers include standard length, collection locality, collection date, and collector. Collection data of specimens are omitted if the same as that for the previous specimen. The collection year and collector for some specimens were estimated following Koeda et al. (2022).

The ZUMT specimens listed herein were primarily stored in Room 406 (specimen storage room) in the museum building. Most were stored in shelved containers, although some larger specimens were stored in a glass tank in the same room, with the glass lid sealed with a silicon adhesive (as of July 2022). Although some of the ZUMT specimens, collected by Dr. Tokiharu Abe, had not been registered into the ZUMT collection, with the collection data of most missing, they are listed herein together with their ZUMT ABE number (number with underbar written on the specimen label), in the hope that Dr Abe's catalog books with collection data will be rediscovered in the future.

## Results

As a result of the survey, 10 specimens representing species of the genus *Albula*, and 16 specimens of *Pterothrissus gissu* Hilgendorf, 1877 were confirmed. No specimens of *Nemoossis* or types for the order were known.

## Species accounts

**Family Albulidae** ソトイワシ科  
***Albula argentea* (Forster, 1801)** ソトイワシ

### JAPAN

ZUMT 17126 (138.1 mm), ZUMT 17127 (147.2 mm), ZUMT 17128 (150.3 mm), ZUMT 17129 (130.3 mm); Baten, Nanjo City, Okinawa-jima Island, Ryukyu Archipelago; 1920's; coll. by S. Tanabe)

***Albula glossodonta* (Forsskål, 1775)** マルクチソトイワシ

### PHILIPPINES

ZUMT 12674 (372.7 mm; Philippines; 1920's; coll. by U. Yamamura)

***Albula oligolepis* Hidaka, Iwatsuki & Randall, 2008** アラメソトイワシ

### TAIWAN

ZUMT 14930 (217.2 mm; Tainan; 1920's; coll. by T. Aoki)

### LOCALITY UNKNOWN

ZUMT 44635 (46.2 mm), ZUMT 44636 (68.2 mm), ZUMT 44637 (52.0 mm), ZUMT ABE 61-848 (327.4 mm; no data)

**Remarks.** Although Matsunuma et al. (2022) showed that this species is widely distributed in the Indo-West Pacific, *A. oligolepis* had not been previously recorded from the South China Sea. ZUMT 14930 therefore represents the first record of the species from that area.

*Pterothrissus gissu* Hilgendorf, 1877 ギス

**JAPAN**

- ZUMT 13857 (329.1 mm; Kesen District, Iwate Pref.; 5 Jan. 1925; coll. by G. Toba)  
ZUMT 14205 [344.5 mm; probably from Hokkaido; 1910's to 1920's coll. by S. Katsuki (Muroran Branch of Hokkaido Prefectural Fisheries Experimental Station)]  
ZUMT 18395 (252.3 mm; obtained at Tokyo Market, Tokyo Met.)  
ZUMT 20102 (137.4 mm; Misaki, Miura City, Kanagawa Pref.)  
ZUMT 39400 (approx. 383.7 mm, caudal fin detached; Hachijo-jima Island, Izu Islands; coll. by M. Uchiyama)  
ZUMT 46251 (316.7 mm; probably from Uozu or Namerikawa, Toyama Pref.)  
ZUMT 48904 (367.5 mm; off Aburatsubo, Misaki, Miura City, Kanagawa Pref.; 11 Mar. 1957; coll. by I. Tomiyama)  
ZUMT 59319 (168.6 mm), ZUMT 59320 (134.6 mm; off Nakaminato, Hitachinaka City, Ibaraki Pref., 200–220 m depth; 31 Oct. 1988; coll. by trawl)  
ZUMT 59401 (128.1 mm), ZUMT 59402 (195.3 mm), ZUMT 59403 (98.5 mm; off Nakaminato, Hitachinaka City, Ibaraki Pref., 230 m depth; 5 Nov. 1988; coll. by trawl)  
ZUMT 64313 (320.5 mm), ZUMT 64314 (331.0 mm; off Esan, Hakodate City, Hokkaido; Feb. 1928)

**LOCALITY UNKNOWN**

- ZUMT 62049 (360.4 mm; no data)

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