

## Specimens of the monotypic family Scombrobracidae (Actinopterygii: Teleostei) deposited in the Department of Zoology, The University Museum, The University of Tokyo

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### Abstract

A list of specimens of the monotypic family Scombrobracidae deposited in the Department of Zoology, The University Museum, The University of Tokyo is provided, eight examples of *Scombrobrax heterolepis* being confirmed.

### Introduction

The monotypic family Scombrobracidae (longfin esocars) comprises the single species *Scombrobrax heterolepis* Roule, 1921 (Bond and Uyeno 1981; Nelson et al. 2016), which inhabits continental shelves and slopes at depths between 100 and 900 m (Nakabo and Doiuchi 2013). Although *S. heterolepis* is widely distributed in circumtropical waters, except in the eastern Pacific and southeastern Atlantic oceans, the species is rarely caught by trawl (Roule 1921; Arté 1952; Grey 1960; Fujii 1983; Nakamura and Parin 2001, 2002, 2016; Hidaka 2016; Hata 2019, 2020). As a result, the biology of the species is very poorly known, although specimens are sometimes found in the stomachs of tunas and swordfishes (Higgins et al. 1970). Although *S. heterolepis* resembles species included in Scombridae and Gempylidae, the former is distinguishable from them by its large eye (diameter equal to snout length vs. eye diameter less than half snout length in gempylids), the lateral line closely following the dorsal contour (vs. running along mid-lateral surface of body or absent in gempylids), body uniformly dark brown (vs. dorsum blue and lateral/ventral body surface silver in scombrids) and lack of keels on the caudal peduncle (vs. keels present in scombrids) (Nakamura and Parin 2001, 2002, 2016). Scombrobracidae is also characterized by bullae on the first to twelfth vertebrae, which accommodate bubble-like evaginations of the swimbladder dorsal surface. Such a character has not been reported in any other fish species (Bond and Uyeno 1981).

Scombrobracidae has long been suggested as related to Scombridae, Gempylidae, and Trichiuridae (Grey 1960; Potthoff et al. 1980), and, although sometimes included in the suborder Scombroidei (e.g., Gosline 1968), has frequently been placed in the monotypic suborder Scombrobracoidei (e.g., Roule 1921; Bond and Uyeno 1981; Nakamura and Parin 2001, 2002, 2016; Nakabo and Doiuchi 2013) or the monotypic order Scombrobracoiformes (Nelson et al. 2016), due to its unique characters. However, Johnson (1986) suggested a close relationship between *S. heterolepis* and *Pomatomus saltatrix* (Linnaeus, 1766) (bluefish), and while recent molecular phylogenetic studies (Miya et al. 2013; Betancur-R et al. 2017) have shown that Scombrobracidae is distantly related to Scombridae and Pomatomidae, it is closer to Centrolophidae (jellyfishes). The specific phylogenetic position of *Scombrobrax* remains unclear. While seemingly uncommon throughout its range, *S. heterolepis* has recently been reported for the first time from Taiwanese waters (Hata et al. 2019). The following list of specimens of Scombrobracidae deposited in the Department of Zoology, The University Museum, The University of Tokyo includes additional valuable distribution records.

### Materials and Methods

Specimens of Scombrobracidae in the Department of Zoology, The University Museum, The University of

Tokyo (abbreviated as ZUMT) were identified during the present study, following Nakamura and Parin (2001, 2002, 2016) and Nakabo and Doiuchi (2013). Parentheses following registration numbers include standard length, collection locality, collection date, and collector. The collection year and collector for some specimens were estimated following Koeda et al. (2022).

The ZUMT specimens listed herein were stored in shelved containers in Room 406 (specimen storage room) in the museum building (as of July 2022). Although one of the ZUMT specimens collected by Dr. Tokiharu Abe had not been registered into the ZUMT collection, it is included herein, together with its 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

Eight specimens of *Scombrobrax heterolepis*, widely collected from the Pacific and eastern Atlantic oceans, were confirmed in the ZUMT collection. No type specimens for the family were found in the collection.

## Species accounts

**Family Scombrobracidae ムカシクロタチ科**  
***Scombrobrax heterolepis* Roule, 1921 ムカシクロタチ**

### PALAU

ZUMT ABE 4156 (176.5 mm; Palau) [collected between 1936 and 1937 (Koeda et al. 2022)].

### INDONESIA

ZUMT 48727 [78.0 mm; Banda Sea, approx. 50 km north of Molu Island (6°15'S, 131°24'E); 29 Jan. 1956; coll. by Z. Maekawa and T. Suzuki]

ZUMT 48706 [84.5 mm; Banda Sea, approx. 200 km south of Ambon (5°34'S 128°35'E); 20 Jan. 1956; coll. by Z. Maekawa and T. Suzuki]

### NEW GUINEA

ZUMT 63132 (78.5 mm; New Guinea; coll. by T. Abe)

### KIRIBATI

ZUMT 48970 [60.8 mm; approx. 280 km northwest of Tabuaeran (5°12'N, 157°04'W); 5 Oct. 1956; coll. by Z. Maekawa and T. Suzuki]

### SURINAME

ZUMT 63235 [138.5 mm; approx. 270 km northeast of Suriname (7°22'N 52°05'W), 740 m depth; 27 Jan. 1981; coll. by *CV Nisshin-maru*]

### LOCALITY UNKNOWN

ZUMT 63234 (147.2 mm; no data)

ZUMT 63236 (81.1 mm locality unknown; collected between June and Aug., 1960)

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