

Specimens of the families Lactariidae and Latidae (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 families Lactariidae and Latidae deposited in the Department of Zoology, The University Museum, The University of Tokyo is provided. Eight specimens of each family included *Lactarius lactarius* (Bloch & Schneider, 1801), the sole species of Lactariidae, and all three latid species distributed in the Pacific region. However, no examples were found of the genus *Centropomus* which is sometimes included together with Latidae in the family Centropomidae.

Introduction

Lactarius lactarius (Bloch & Schneider, 1801), the only species included within the family Lactariidae, is widely distributed in the Indo-West Pacific, from the Persian Gulf to Taiwan and Fiji (Leis 1999; Nelson et al. 2016). As indicated by its English common name "false trevally", the species resembles those of Carangidae, but *L. lactarius* can be distinguished from carangids by the lack of scutes on the lateral line and no detached anal fin spines (Leis 1999). *Lactarius lactarius* forms schools in coastal waters shallower than 100m depth, and is abundantly caught and marketed in tropical areas of the Indo-Pacific (Leis 1999; Motomura 2018). During the 1960's, the species contributed 0.43–2.37% of India's total annual marine catch (Talwar and Kacker 1984). Although *L. lactarius* has at no time been recorded from Japanese waters, it is sometimes called by the Japanese name “アクタウオ” (Matsubara 1955; Shogakukan 2003).

The family Latidae (lates perches), distributed in the Indo-West Pacific and freshwaters on the African Continent, includes 13 species in three genera (Nelson et al. 2016). Although the family had been frequently regarded as a primitive clade of Perciformes, it has recently been suggested as closely related to Carangidae, and placed in Carangiformes together with several other families, including Lactariidae (Mirande 2016; Girard et al. 2020). However, Latidae is morphologically similar to the genus *Centropomus* (snooks), inhabiting tropical areas of the Americas, many other studies regarding them as a single family Centropomidae (Greenwood 1976; Larson 1999), with some [molecular phylogenetic studies, including Betancur-R. et al. (2017)] having further suggested that Centropomidae has a close relationship with the order Pleuronectiformes.

Due to their large body size, latid fishes are eaten all over the world, in particular Barramundi, *Lates calcarifer* (Bloch, 1790), which is abundantly fished and aquacultured in Southeast Asia, where it is an important fisheries resource (Copland and Grey 1987; Larson 1999; Koeda 2019). Moreover, Nile Perch, *Lates niloticus* (Linnaeus 1758), originally distributed in major rivers in tropical Africa, were introduced into eastern African lakes, such as Lake Victoria, as a food resource. Although subsequently becoming an important fisheries resource, the latter introduction has resulted in major ecological problems for local fishes, including endemic cichlids in the lake (GISD 2022)

On the other hand, the endemic Japanese lates perch, *Lates japonicus* Katayama & Taki, 1984, is designated as “Vulnerable (VU)” in the IUCN Red List and an “Endangered species (EN)” in the Red List of the Ministry of the Environment, Government of Japan, because it inhabits the estuaries of large rivers and is easily impacted by

economic developments, and the pressures of both commercial and recreational fishing (Senou 2015; Watanabe et al. 2019).

A list of specimens of the families Lactariidae and Latidae deposited in the Department of Zoology, The University Museum, The University of Tokyo is provided below.

Materials and Methods

Specimens of Lactariidae and Latidae in the Department of Zoology, The University Museum, The University of Tokyo (abbreviated as ZUMT) were identified during the present study, following Leis (1999) and Katayama and Taki (1984), Harrison (1991), Larson (1999), and Pethiyagoda and Gill (2012), respectively. 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. Information of some specimens were referred from Koeda et al. (2022). The ZUMT specimens listed herein were stored in shelved containers (as of July 2022) in Room 406 (specimen storage room) in the museum building. Although one of the ZUMT specimens, collected by Dr. Tokiharu Abe, had not been registered into the ZUMT collection, with only partial collection data, it is listed herein together with the 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

Examples of all three latid species known from the Pacific Region, numbering Eight specimens, and five specimens of *Lactarius lactarius* were confirmed in the ZUMT collection. No types for the families were found. Moreover, no ZUMT specimens or ZUMT ledger registrations of specimens of the genus *Centropomus* were found, although the ZUMT ledgers included 11 specimens registered under generic names included in Latidae and Centrolophidae by Nelson et al. (2016). Not only were more than 22% of specimens originally registered unable to be accounted for, but also many ledger entries referred to lot numbers only (lacking species names), which suggests an even greater loss of ZUMT specimens.

Species accounts

Family Lactariidae

Lactarius lactarius (Bloch & Schneider, 1801)

TAIWAN

ZUMT 14985 (149.3 mm; Tainan; coll. by T. Aoki)

THAILAND

ZUMT 59696 (177.5 mm; obtained at fish market in Phuket; 15 Nov. 1986)

ZUMT ABE 64-1998 (149.3 mm; Thailand; 14 Sept. 1964)

MALAYSIA

ZUMT 62709 [104.9 mm; probably Sarawak State; tagged as "P2869"; donated in 1960 by Tom Harrison (Sarawak Museum) to I. Tomiyama]

ZUMT 62710 [120.2 mm; probably Sarawak State; tagged as "P4321"; donated in 1960 by Tom Harrison (Sarawak Museum) to I. Tomiyama]

Family Latidae アカメ科

Lates calcarifer (Bloch, 1790)

TAIWAN

ZUMT 14958 (225.1 mm; Tainan; coll. by T. Aoki)

ZUMT 21777 (219.1 mm; probably collected from Taiwan)

PHILIPPINES

ZUMT 40973 (98.0 mm; Jolo Island; Feb. 1909; coll. by I. Iijima and K. Aoki)

Remarks. The collection locality of ZUMT 21777 was recorded in the ZUMT ledger as “probably Taiwan or Miyazaki Prefecture”. However, *L. calcarifer* has at no time been unequivocally recorded from Japanese waters (Suzuki et al. 1995), and the specimen is here considered to have been most likely collected from Taiwan.

Lates japonicus Katayama & Taki, 1984 アカメ

JAPAN

ZUMT 9333 (85.0 mm), ZUMT 40169 (68.8 mm; probably collected from Miyazaki Pref. coll. by K. Tashiro, Miyazaki Prefectural Fisheries Experimental Station)

ZUMT 10437 (228.4 mm; obtained at Kochi Fish Market, Kochi Pref.; Aug. 1904; coll. by S. Tanaka)

Remarks. ZUMT 10437, the sole example of the species located in this study, was described in detail by Tanaka (1922).

Psammoperca waigiensis (Cuvier, 1828) アカメモドキ

JAPAN

ZUMT 11150 (214.8 mm; probably from Okinawa-jima Island, Ryukyu Islands; coll. by S. Sakaguchi, Okinawa Prefectural Daiichi Junior High School)

PHILIPPINES

ZUMT 54647 (194.6 mm; obtained at fish market in Puerto Princesa, Palawan; 8 Feb. 1985; coll. by M. Aizawa)

Specimens of Latidae recorded in the ZUMT specimen ledger, but not found

ZUMT 4880 [as “*Lates*”; estuary of Oyodo-gawa River, Miyazaki City, Miyazaki Pref., Japan; collected on July 1899; donated from G. Ogura, Miyazaki Junior High School, 6 Nov. 1900, local common name “マルカ (maruka)”]

ZUMT 13518 [as “*Psammoperca waigiensis*” and “young”; donation from Miyazaki Prefectural Fisheries Experimental Station]

ZUMT 18873 (as “*Psammoperca waigiensis*”; obtained at Kochi Market, Kochi Pref., Japan; 22 Jan, 1928; coll. by T. Kamohara, Kochi High School)

ZUMT 21776, ZUMT 21778 (as “*Psammoperca waigiensis*” but probably *L. calcarifer*; locality unknown, as “Taiwan or Miyazaki Prefecture” but probably Taiwan)

Remarks. ZUMT 4880, 13518, and 18873 are considered to have been *Lates japonicus*, based on the distributional range of the species (Pacific coast of temperate Japan from Shizuoka Pref. to Osumi Islands, from which no other latid species have been recorded; Hagiwara and Shimamura 2013; Hatooka 2013; Motomura 2020). ZUMT 21776 and ZUMT 21778 were probably *L. calcarifer*, since ZUMT 21777 has been identified as that species (see above).

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