

## An updated checklist of the gobioid fishes of Singapore

Helen K. Larson<sup>1\*</sup>, Zeehan Jaafar<sup>2</sup> & Kelvin K. P. Lim<sup>3</sup>

**Abstract.** 164 species of gobioid fishes are presently recorded from Singapore, an increase of 15 species since the last compilation in 2008. Seven of these are recent records from literature, while the present list provides eight new records. Seven of them are based on specimens preserved in museum collections: *Trypauchen pelaeos*, *Trypauchenichthys sumatrensis*, *Trypauchenichthys typus*, *Bryaninops loki*, *Gobiodon quinquestrigatus*, *Oplopomus caninoides*, *Parachaeturichthys polynema*, and one, *Valenciennea puellaris*, is based on a sighting.

**Key words.** Checklist, Gobioidae, Singapore

### INTRODUCTION

Gobioid fishes are found almost everywhere worldwide, in shallow inland and coastal waters. Of the estimated 2000 or so species, over a hundred have been recorded from Singapore. The first publication on Singapore fishes was by Bleeker (1852a), which referred to just three species of gobies. In contrast, Bleeker's summary (1861) of Singapore fishes included 35 species of gobies. Lim & Larson (1994) presented a preliminary checklist of Singapore gobiids as a symposium paper, while Larson et al. (2008) presented an annotated checklist of all gobioid species known from Singapore, in which 149 species were listed. Of these, 37 species had not been recently reported, not substantiated by specimens, or may be erroneous records. Larson & Lim's (2005) colour guidebook to gobioid fishes of Singapore was intended as a companion to the 2008 checklist.

Singapore is sheltered along its northern coastline by the Malay Peninsula. The salinity of the waters around Singapore is quite low, about 26–28 ppt, due to the many freshwater rivers and streams from the Malay Peninsula and Singapore. Currents around Singapore are generated mainly by monsoonal winds. With these wind-driven currents, and the sheltering effect of the land masses around it, Singapore's protected coast enables mangroves to develop. The southern coastline is sheltered to a lesser degree by the Riau Islands of Indonesia. Consequently, the southern coastal areas and

islands south of mainland Singapore typically receive higher wave action than the northern areas and mangroves are more patchily distributed. Conditions encourage simultaneous growth of adjacent patches of coral reefs, seagrass meadows and mangrove forests, depending on small-scale differences in environmental factors.

Extensive and persistent reclamation projects throughout the past several decades have resulted in substantial losses of these natural marine ecosystems. Presently, only a fraction of Singapore's coastline remains in its original condition (Chou, 2006; Yee et al., 2010; Yaakub et al., 2014). For example, the extensive mangroves that once dominated the northern coastline of Singapore are now reduced to a few patches at Mandai, Sungei Buloh and Pasir Ris (Yee et al., 2010). High sediment loading of the waters from reclamation activities, anthropogenic pollution and boat traffic smother corals and other sessile organisms. Both mangrove and coral reef ecosystems harbour high diversities of gobioid fish species. Further impact to these imperiled ecosystems may in turn affect many gobioid species.

The purpose of this paper is to update the checklist of Larson et al. (2008) with new records, taxonomic revisions and, for species without recent records, confirmation of occurrence. Some preserved gobioid material previously unknown to the authors, but recently discovered at the Natural History Museum in London and the Bishop Museum in Hawai'i, and found to represent taxa previously unrecorded from Singapore, are included. Also included are noteworthy gobioid species collected during the Comprehensive Marine Biodiversity Survey (CMBS) organised by the National Parks Board and the National University of Singapore to document marine flora and fauna from Singapore territorial waters. Two phases of the survey have been conducted—one in the Johor Straits in October 2012 and the other in the Singapore Strait in May 2013.

<sup>1</sup>Museum & Art Gallery of the Northern Territory, PO Box 4646, Darwin, NT 0801, AUSTRALIA; Museum of Tropical Queensland, Townsville, Queensland 4810, Australia; School of Marine and Tropical Biology, James Cook University, Townsville, Queensland 4811, Australia; Email: helen.larson@nt.gov.au (\*corresponding author)

<sup>2</sup>Department of Biological Sciences, National University of Singapore, 14 Science Drive 4, Singapore 117543; Email: dbszj@nus.edu.sg

<sup>3</sup>Lee Kong Chian Natural History Museum, National University of Singapore, 2 Conservatory Drive, Singapore 117377; Email: nhmlimpk@nus.edu.sg

## MATERIAL AND METHODS

The present document is a compilation of taxa, nomenclatural changes and status updates that are not found in the Singapore gobioid checklist (Larson et al., 2008). Each new record for Singapore is listed, as are any available literature records not mentioned in Larson et al. (2008). Gobioid records recognised herein as new for Singapore, including those based on old museum material, are marked with \*\*\* after the author name. Species recorded in Singapore after the publication of the previous checklist (Larson et al., 2008) are marked with \*\*. Species with an unconfirmed occurrence in Singapore, but substantiated here with recent material, are marked with \*. Names in bold print indicate that the species is extant in Singapore at the time of publication, based on specimens observed in museum collections, in photographs or individuals in the wild. Names in normal print are of species for which their occurrence in Singapore is not confirmed with recent material.

The catalogue number of verified material deposited at the Zoological Reference Collection (ZRC) of the Lee Kong Chian Natural History Museum (formerly Raffles Museum of Biodiversity Research) at the National University of Singapore is provided. Also included are additional materials recently found in the collections of the Natural History Museum of London (BMNH) and the Bishop Museum in Hawai'i, USA (BPBM).

## THE CHECKLIST

## FAMILY ELEOTRIDAE

## SUBFAMILY BUTINAE

*Bostrychus scalaris* Larson

*Bostrychus scalaris* Larson, 2008: 149 (Singapore).

**Remarks.** This record is based upon a watercolour painting (number 607; unidentified to genus) by the French naturalist F. L. de Castelnau, in a notebook that he compiled in Singapore between 1858 and 1862 (see Larson 2008: fig. 6). His notebooks are kept at the Zoological Museum of the University of Liège in Belgium (Russell et al. 2010). The species has not been observed in Singapore since.

*Bostrychus sinensis* Lacepède

*Bostrychus sinensis* – Larson et al., 2008: 136 (Serangoon); Ng et al., 2015: 310 (eastern Johor Strait).

*Butis amboinensis* (Bleeker)

*Butis amboinensis* – Larson et al., 2008: 136; Ng et al., 2015: 311 (eastern Johor Strait).

**Remarks.** No recent material observed.

*Butis butis* (Hamilton)

*Butis butis* – Larson et al., 2008: 136; Ng & Tan, 2013: 21 (Punggol and Serangoon estuaries); Ng et al., 2015: 311 (eastern Johor Strait).

*Butis gymnopomus* (Bleeker)

*Butis gymnopomus* – Larson et al., 2008: 137.

**Remarks.** No recent material observed.

*Butis humeralis* (Valenciennes)

*Butis humeralis* – Larson et al., 2008: 1387; Ng. & Tan, 2013: 21 (Punggol and Serangoon estuaries); Ng et al., 2015: 311 (eastern Johor Strait).

*Butis koilomatodon* (Bleeker)

*Butis koilomatodon* – Larson et al., 2008: 138; Ng et al., 2015: 311 (eastern Johor Strait).

*Odonteleotris canina* (Bleeker)

*Odonteleotris canina* – Larson et al., 2008: 138.

**Remarks.** No recent material observed.

*Ophiocara porocephala* (Valenciennes)

*Ophiocara porocephala* – Larson et al., 2008: 138; Ng et al., 2015: 311 (eastern Johor Strait).

## SUBFAMILY ELEOTRIDINAE

*Eleotris fusca* (Forster in Bloch & Schneider)

*Eleotris fusca* – Larson et al., 2008: 138.

**Remarks.** No recent material observed.

*Eleotris melanosoma* Bleeker

*Eleotris melanosoma* – Larson et al., 2008: 138.

**Remarks.** No recent material observed.

*Hypseleotris leuciscus* (Bleeker)

*Hypseleotris leuciscus* – Larson et al., 2008: 138.

**Remarks.** No recent material observed.

*Giuris margaritaceus* (Valenciennes)

*Giuris margaritacea* – Larson et al., 2008: 138; Ng et al., 2015: 311 (eastern Johor Strait).

**Remarks.** No recent material observed.

***Oxyeleotris marmorata* (Bleeker)**

*Oxyeleotris marmorata* – Larson et al., 2008: 138; Kwik et al., 2013: 241 (Pangsua, Woodland and Yishun Ponds); Lim et al., 2013: 60 (Kranji marsh); Ng & Tan, 2013: 21 (Punggol and Serangoon reservoirs); Tan et al., 2013: 235 (Bukit Brown); Low, 2014: 271 (Holland woods).

***Oxyeleotris urophthalmus* (Bleeker)**

*Oxyeleotris urophthalmus* – Larson et al., 2008: 138; Ng et al., 2015: 311 (eastern Johor Strait).

**FAMILY GOBIIDAE**

**SUBFAMILY AMBLYOPINAE**

***Brachyamblyopus brachysoma* (Bleeker)**

*Brachyamblyopus brachysoma* – Larson et al., 2008: 139; Tan et al., 2010: 140 (Marina Basin).

*Odontamblyopus rubicundus* (Hamilton)

*Odontamblyopus rubicundus* – Larson et al., 2008: 139.

**Remarks.** No recent material observed.

***Paratrypauchen microcephalus* (Bleeker)**

*Ctenotrypauchen microcephalus* – Larson et al., 2008: 139.  
*Paratrypauchen microcephalus* – Murdy, 2008: 119 (Singapore); Ng et al., 2015: 315 (eastern Johor Strait).

***Taenioides gracilis* (Valenciennes)**

*Taenioides gracilis* – Larson et al., 2008: 139; Tan et al., 2010: 140 (Marina Basin).

***Trypauchen pelaeos* Murdy\*\*\***

*Trypauchen pelaeos* Murdy, 2006: 65 (south of Pu Kendi Island, south of Penang, Malaysia).

*Trypauchen vagina* (non Bloch & Schneider) – Larson et al., 2008: 139 (in part); Tan et al., 2010: 141 (Marina Basin); Ng et al., 2015: 316 (eastern Johor Strait).

**Remarks.** This is a new record for Singapore. Some of the museum material from Singapore reported as *Trypauchen vagina* and examined by us, have been re-identified as *Trypauchen pelaeos*.

*Trypauchen vagina* (Bloch & Schneider)

*Trypauchen vagina* – Larson et al., 2008: 139 (in part).

**Remarks.** Some of these specimens have now been identified as *Trypauchen pelaeos*.

***Trypauchenichthys sumatrensis* Hardenberg\*\*\***

*Trypauchenichthys sumatrensis* Hardenberg, 1931: 417 (Sumatra, Indonesia).

**Material.** ZRC 53927 (outside Marine Barrage, Singapore, 1°16'415N, 103°52'838E, coll. S.C. Lim et al., 22 May 2013).

**Remarks.** This is a new record for Singapore.

***Trypauchenichthys typus* Bleeker\*\*\***

*Trypauchenichthys typus* Bleeker, 1860: 63 (Borneo, Indonesia).

**Material.** ZRC 39323 (eastern Johor Strait off Pulau Sajahat).

**Remarks.** This is a new record for Singapore.

**SUBFAMILY OXUDERCINAE**

***Apocryptodon madurensis* (Bleeker)**

*Apocryptodon madurensis* – Larson et al., 2008: 139; Ng et al., 2015: 314 (eastern Johor Strait).

***Boleophthalmus boddarti* (Pallas)**

*Boleophthalmus boddarti* – Larson et al., 2008: 139; Ng et al., 2015: 314 (eastern Johor Strait).

*Oxuderces dentatus* Eydoux & Souleyet

*Oxuderces dentatus* – Larson et al., 2008: 139.

**Remarks.** No recent material observed.

***Parapocryptes serperaster* (Richardson)**

*Parapocryptes serperaster* – Larson et al., 2008: 139; Ng et al., 2015: 315 (eastern Johor Strait).

***Periophthalmodon schlosseri* (Pallas)**

*Periophthalmodon schlosseri* – Larson et al., 2008: 139; Tan et al., 2010: 141 (Marina Basin); Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries, Punggol and Serangoon reservoirs); Ng et al., 2015: 315 (eastern Johor Strait).

***Periophthalmus argentilineatus* Valenciennes**

*Periophthalmus argentilineatus* – Larson et al., 2008: 139; Tan et al., 2010: 141 (Marina Basin); Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries); Ng et al., 2015: 315 (eastern Johor Strait).

***Periophthalmus chrysospilos* Bleeker**

*Periophthalmus chrysospilos* – Larson et al., 2008: 139; Ng et al., 2015: 315 (eastern Johor Strait).

***Periophthalmus gracilis* Eggert**

*Periophthalmus gracilis* – Larson et al., 2008: 140; Ng et al., 2015: 315 (eastern Johor Strait).

***Periophthalmus malaccensis* Eggert**

*Periophthalmus malaccensis* – Larson et al., 2008: 140.

**Remarks.** No recent material from Singapore observed.

***Periophthalmus variabilis* Eggert**

*Periophthalmus novemradiatus* (non-Hamilton) – Larson et al., 2008: 140.

*Periophthalmus variabilis* – Jaafar et al., 2009: 311 (Khatib Bongsu, Simpang South, Simpang North, Seletar Island, Singapore); Tan et al., 2010: 141 (Marina Basin); Ng et al., 2015: 315 (eastern Johor Strait).

***Periophthalmus walailakae* Darumas & Tantichodok**

*Periophthalmus walailakae* – Jaafar et al., 2006: 1044 (Changi Beach, Changi Point, Sungei Kranji, Sungei Buloh, Pulau Ubin, Pasir Ris, Simpang South, Khatib Bongsu, Sungai Simpang Kanan, Seletar Island); Larson et al., 2008: 140; Tan et al., 2010: 141 (Marina Basin); Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries); Ng et al., 2015: 315 (eastern Johor Strait).

***Pseudapocryptes borneensis* (Bleeker)**

*Pseudapocryptes borneensis* – Larson et al., 2008: 140.

**Remarks.** No recent material from Singapore observed.

***Pseudapocryptes elongatus* (Cuvier)**

*Pseudapocryptes elongatus* – Larson et al., 2008: 140; Ng et al., 2015: 315 (eastern Johor Strait).

***Scartelaos histophorus* (Valenciennes)**

*Scartelaos histophorus* – Larson et al., 2008: 141; Ng et al., 2015: 316 (eastern Johor Strait).

**SUBFAMILY GOBIONELLINAE**

***Brachygobius doriae* (Günther)**

*Brachygobius doriae* – Larson et al., 2008: 141.

**Remarks.** The only record for this species is based upon specimens that were likely bought, not collected, in Singapore (Larson, 2001).

***Brachygobius kabiliensis* Inger**

*Brachygobius kabiliensis* – Larson et al., 2008: 141; Ng & Tan, 2013: 21 (Punggol and Serangoon estuaries); Ng et al., 2015: 314 (eastern Johor Strait).

***Brachygobius sabanus* Inger\*\***

*Brachygobius sabanus* Inger, 1958: 113, fig. 20 (Lamag, Kinabatangan District, Sabah, Borneo).

*Brachygobius sabanus* – Lim & Tan, 2012: 70 (Poyan Reservoir; Kranji Reservoir; marsh ponds off Neo Tiew Lane; Sungei Buloh; Lorong Banir stream, Seletar); Tan et al., 2014: 185 (Upper Seletar Reservoir).

**Remarks.** This non-native species is now well-established in Singapore's freshwaters (Lim & Tan, 2012).

***Eugnathogobius illotus* (Larson)**

*Calamiana illota* – Larson et al., 2008: 141.

*Eugnathogobius illotus* – Larson, 2009: 132–133 (Singapore); Ng et al., 2015: 314 (eastern Johor Strait).

*Callamiana* [sic] *illota* – Tan et al., 2010: 140 (Marina Basin).

***Eugnathogobius polylepis* (Wu & Ni)**

*Calamiana polylepis* – Larson et al., 2008: 141.

*Eugnathogobius polylepis* – Larson, 2009: 143 (Pulau Tekong; Pasir Ris mangrove).

*Wuhanlinigobius malayensis* – Ng et al., 2015: 316 (eastern Johor Strait).

***Eugnathogobius siamensis* (Fowler)**

*Pseudogobiopsis siamensis* – Larson et al., 2008: 143.

***Eugnathogobius variegatus* (Peters)**

*Calamiana variegata* – Larson et al., 2008: 141; Ng & Tan, 2013: 21 (Punggol and Serangoon estuaries).

*Eugnathogobius variegatus* – Larson, 2009: 132 (Singapore); Ng et al., 2015: 314 (eastern Johor Strait).

***Gnatholepis anjerensis* (Bleeker)**

*Gnatholepis anjerensis* – Larson et al., 2008: 141.

**Remarks.** No recent material known from Singapore.

***Gnatholepis cauerensis* (Bleeker)**

*Gnatholepis cauerensis* – Larson et al., 2008: 141.

**Remarks.** No recent material known from Singapore.

***Gobiopterus birtwistlei* (Herre)**

*Gobiopterus birtwistlei* – Larson et al., 2008: 141; Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries); Ng et al., 2015: 314 (eastern Johor Strait).

***Gobiopterus brachypterus* (Bleeker)**

*Gobiopterus brachypterus* – Larson et al., 2008: 141; Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries).

***Gobiopterus panayensis* (Herre)**

*Gobiopterus panayensis* – Larson et al., 2008: 141; Ng et al., 2015: 314 (eastern Johor Strait).

***Hemigobius hoeveni* (Bleeker)**

*Hemigobius hoeveni* – Larson et al., 2008: 142; Tan et al., 2010: 141 (Marina Basin); Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries); Ng et al., 2015: 314 (eastern Johor Strait).

***Hemigobius melanurus* (Bleeker)**

*Gobius melanurus* Bleeker, 1849: 31 (Java, Indonesia).  
*Hemigobius mingi* – Larson et al., 2008: 142.  
*Hemigobius melanurus* – Kottelat, 2013: 411; Ng et al., 2015: 314 (eastern Johor Strait).

***Mugilogobius chulae* (Smith)**

*Mugilogobius chulae* – Larson et al., 2008: 142; Tan et al., 2010: 141 (Marina Basin); Ng et al., 2015: 314 (eastern Johor Strait).

***Mugilogobius fasciatus* Larson**

*Mugilogobius fasciatus* – Larson et al., 2008: 142.

***Mugilogobius mertoni* (Weber)**

*Mugilogobius mertoni* – Larson et al., 2008: 142.

***Mugilogobius platystomus* (Günther)**

*Mugilogobius platystomus* – Larson et al., 2008: 142; Ng et al., 2015: 314 (eastern Johor Strait).

**Remarks.** There is no recent material identified as this species known from Singapore. This species-complex is under further study.

***Mugilogobius rambaiae* (Smith)**

*Mugilogobius rambaiae* – Larson et al., 2008: 142; Ng et al., 2015: 314 (eastern Johor Strait).

***Mugilogobius tigrinus* Larson**

*Mugilogobius tigrinus* – Larson et al., 2008: 142; Ng et al., 2015: 315 (eastern Johor Strait).

***Oligolepis acutipennis* (Valenciennes)**

*Oligolepis acutipennis* – Larson et al., 2008: 142.

**Remarks.** No recent material known from Singapore.

***Oxyurichthys auchenolepis* Bleeker\***

*Oxyurichthys auchenolepis* – Larson et al., 2008: 143; Pezold & Larson, 2015: 18.

**Material.** BMNH 1984.1.13.92–93 [1], Singapore Straits off Bedok; BMNH 1984.1.13.94 [3], Singapore Straits off Angler’s Buoy.

**Remarks.** This is the first verified record of this species in recent years.

***Oxyurichthys longicauda* (Steindachner)**

*Gobius longicauda* Steindachner, 1893: 151 (Swatow, Guangdong Province, China).

*Oxyurichthys uronema* – Larson et al., 2008: 143; Tan et al., 2010: 141 (Marina Basin); Ng et al., 2015: 315 (eastern Johor Strait); Pezold & Larson, 2015: 84.

**Remarks.** *Gobius longicauda* is regarded as a synonym of *Oxyurichthys uronema* by Pezold & Larson (2015: 81). They incorrectly assumed that Steindachner’s *Gobius longicauda* was a primary homonym of *Gobius longicaudus* Jenkins and Evermann (Larson & Pezold, 2016).

***Oxyurichthys microlepis* (Bleeker)**

*Oxyurichthys microlepis* – Larson et al., 2008: 143; Ng et al., 2015: 315 (eastern Johor Strait); Pezold & Larson, 2015: 40.

***Oxyurichthys papuensis* (Valenciennes)**

*Oxyurichthys papuensis* – Larson et al., 2008: 143.

**Remarks.** No recent material of this species known from Singapore.

***Pandaka rouxi* (Weber)**

*Gobius rouxi* Weber, 1911: 40, fig. 9 (Aru Island, Indonesia).  
*Pandaka* cf. *pygmaea* – Larson et al., 2008: 143.  
*Pandaka pygmaea* – Allen & Erdmann, 2012: 927 (Singapore); Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries); Ng et al., 2015: 315 (eastern Johor Strait).

**Remarks.** The Singapore population agrees with *Pandaka rouxi* (Larson, in prep.). As Weber’s syntype material contains two species, a lectotype will be chosen.

***Pseudogobiopsis oligactis* (Bleeker)**

*Pseudogobiopsis oligactis* – Larson et al., 2008: 143; Tan et al., 2010: 141 (Marina Basin); Tan & Lim, 2011: 363 (stream near Lorong Banir, Bedok and Poyan Reservoirs).

**Remarks.** This species was thought to be extinct by Larson et al. (2008) but was rediscovered in 2011 at three sites (Tan & Lim, 2011).

***Pseudogobius avicennia* (Herre)**

*Pseudogobius avicennia* – Larson et al., 2008: 143; Ng et al., 2015: 315 (eastern Johor Strait).

***Pseudogobius javanicus* (Bleeker)**

*Pseudogobius javanicus* – Larson et al., 2008: 143; Tan et al., 2010: 141 (Marina Basin); Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries, Punggol and Serangoon reservoirs); Ng et al., 2015: 315 (eastern Johor Strait).

***Pseudogobius melanostictus* (Day)**

*Pseudogobius melanostictus* – Larson et al., 2008: 144; Ng et al., 2015: 316 (eastern Johor Strait).

***Redigobius bikolanus* (Herre)**

*Redigobius isognathus* (Bleeker) – Larson et al., 2008: 144; Ng et al., 2015: 316 (eastern Johor Strait).

*Redigobius bikolanus* – Larson, 2010: 135, 140, fig. 6 (Pulau Seletar).

***Rhinogobius giurinus* (Rutter)**

*Rhinogobius giurinus* – Larson et al., 2008: 144; Ng & Tan, 2010: 112 (Jurong Lake, Lower Peirce, Lower Seletar, Murai, Poyan, Tengoh, Upper Peirce and Upper Seletar reservoirs); Lim et al., 2013: 60 (Kranji marsh); Tan, 2014a: 94 (Upper Seletar Reservoir); Tan, 2014b: 173, fig. 3 (Lorong Banir).

**Remarks.** A well established non-native species.

***Stigmatogobius borneensis* (Bleeker)**

*Stigmatogobius borneensis* – Larson et al., 2008: 144.

**Remarks.** No recent material known from Singapore.

***Stigmatogobius pleurostigma* (Bleeker)**

*Stigmatogobius pleurostigma* – Larson et al., 2008: 144; Tan et al., 2010: 141 (Marina Basin); Ng et al., 2015: 316 (eastern Johor Strait).

***Stigmatogobius sadanundio* (Hamilton)**

*Stigmatogobius sadanundio* – Larson et al., 2008: 144; Tan et al., 2010: 141 (Marina Basin); Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries); Ng et al., 2015: 316 (eastern Johor Strait).

***Stigmatogobius sella* (Steindachner)**

*Stigmatogobius sella* – Larson et al., 2008: 144.

**Remarks.** No recent material known from Singapore.

**SUBFAMILY GOBIINAE**

***Acentrogobius caninus* (Valenciennes)**

*Acentrogobius caninus* – Larson et al., 2008: 145; Tan et al., 2010: 140 (Marina Basin); Ng & Tan, 2013: 21 (Punggol and Serangoon estuaries); Ng et al., 2015: 311 (eastern Johor Strait).

***Acentrogobius cyanomos* (Bleeker)**

*Acentrogobius cyanomos* – Larson et al., 2008: 145; Ng et al., 2015: 311 (eastern Johor Strait).

***Acentrogobius janthinopterus* (Bleeker)**

*Acentrogobius janthinopterus* – Larson et al., 2008: 145; Tan et al., 2010: 140 (Marina Basin); Ng & Tan, 2013: 21 (Punggol and Serangoon estuaries); Ng et al., 2015: 311 (eastern Johor Strait); Tan, 2015b: 34 (West Coast marsh pond).

***Acentrogobius viridipunctatus* (Valenciennes)**

*Acentrogobius viridipunctatus* – Larson et al., 2008: 145; Tan et al., 2010: 140 (Marina Basin); Ng & Tan, 2013: 21 (Punggol and Serangoon estuaries, Punggol and Serangoon reservoirs); Ng et al., 2015: 311 (eastern Johor Strait).

***Amblyeleotris fontanesii* (Bleeker)**

*Amblyeleotris fontanesii* – Larson et al., 2008: 146.

***Amblyeleotris gymnocephala* (Bleeker)**

*Amblyeleotris gymnocephala* – Larson et al., 2008: 146.

***Amblyeleotris periophthalma* (Bleeker)**

*Amblyeleotris periophthalma* – Larson et al., 2008: 146.

***Amblyogobius buanensis* Herre**

*Amblyogobius perpusillus buanensis* Herre, 1927: 230 (Puerto Princessa, Palawan, Buan Island, off eastern coast of Tawitawi, Philippines).

*Amblyogobius decussatus* (non-Bleeker) – Larson et al., 2008: 148 (Singapore).

**Material.** BPBM 22054 [2], Salu Island.

**Remarks.** Examples from Singapore were previously reported as *Amblyogobius decussatus*.

***Amblyogobius phalaena* (Valenciennes)\***

*Amblyogobius phalaena* – Larson et al., 2008: 146; Low et al. 2009: 80 (Pulau Hantu); Tan & Lim, 2014: 241 (Semakau Landfill).

**Material.** ZRC 54593 [1] Semakau Landfill.

**Remarks.** The above-mentioned specimen and photograph of a specimen from Pulau Hantu (Low et al., 2009) confirm the presence of this species in Singapore waters.

***Amblyogobius sphynx* (Valenciennes)**

*Amblyogobius sphynx* – Larson et al., 2008: 146; Ng et al., 2015: 312 (eastern Johor Strait).

**Materials.** No recent material from Singapore observed.

***Amblygobius stethophthalmus* (Bleeker)**

*Amblygobius stethophthalmus* – Larson et al., 2008: 146; Allen & Erdmann, 2012: 958 (Singapore); Ng et al., 2015: 312 (eastern Johor Strait).

*Amblygobius stethophthalmus* [sic] – Tan & Lim, 2014: 241 (Semakau Landfill).

***Amoya gracilis* (Bleeker)**

*Acentrogobius gracilis* – Larson et al., 2008: 145.

*Amoya gracilis* – Ng et al., 2015: 312 (eastern Johor Strait).

***Amoya moloanus* (Herre)**

*Acentrogobius moloanus* – Larson et al., 2008: 145.

***Arcygobius baliurus* (Valenciennes)**

*Arcygobius baliurus* – Larson et al., 2008: 146; Tan et al., 2010: 140 (Marina Basin); Ng et al., 2015: 312 (eastern Johor Strait).

***Asterropteryx semipunctatus* Rüppell**

*Asterropteryx semipunctata* – Larson et al., 2008: 146.

**Remarks.** No recent material from Singapore observed.

***Aulopareia unicolor* (Valenciennes)**

*Aulopareia unicolor* – Larson et al., 2008: 146.

**Remarks.** No recent material from Singapore observed.

***Bathygobius fuscus* (Rüppell)**

*Bathygobius fuscus* – Larson et al., 2008: 146; Tan & Lim, 2014: 241 (Semakau Landfill); Ng et al., 2015: 312 (eastern Johor Strait).

***Bathygobius meggitti* (Hora & Mukerji)**

*Bathygobius meggitti* – Larson et al., 2008: 147.

***Bryaninops amplus* Larson**

*Bryaninops amplus* – Larson et al., 2008: 147.

***Bryaninops loki* Larson\*\*\***

*Bryaninops loki* Larson, 1985: 81 (Lizard Island, Great Barrier Reef, Australia).

**Material.** ZRC 50759 [1], Lazarus Island east.

**Remarks.** A new record for Singapore.

***Callogobius hasseltii* (Bleeker)**

*Callogobius hasseltii* – Larson et al., 2008: 147.

***Callogobius maculipinnis* (Fowler)**

*Callogobius maculipinnis* – Larson et al., 2008: 147; Tan & Lim, 2014: 241 (Semakau Landfill).

***Cryptocentroides insignis* (Seale)**

*Cryptocentroides insignis* – Larson et al., 2008: 147.

***Cryptocentrus albidorsus* (Yanagisawa)\*\***

*Mars albidorsus* Yanagisawa, 1978: 282 (Sonai, Iriomote Island, Ryukyu Islands, Japan).

*Cryptocentrus albidorsus* – Allen & Erdmann, 2012: 869 (Singapore).

***Cryptocentrus caeruleomaculatus* (Herre)**

*Cryptocentrus caeruleomaculatus* – Larson et al., 2008: 147.

***Cryptocentrus cinctus* (Herre)**

*Cryptocentrus cinctus* – Larson et al., 2008: 147.

***Cryptocentrus cyanospilotus* Allen & Randall**

*Cryptocentrus cyanospilotus* Allen & Randall, 2011: 556 (Ngargol Island, Palau).

*Cryptocentrus* new species 2 – Larson et al., 2008: 138 (Singapore).

***Cryptocentrus cyanotaenia* (Bleeker)**

*Cryptocentrus cyanotaenia* – Larson et al., 2008: 147; Ng et al., 2015: 312 (eastern Johor Strait); Tan & Lim, 2014: 334 (Pulau Sekudu).

***Cryptocentrus inexplicatus* (Herre)**

*Cryptocentrus inexplicatus* – Larson et al., 2008: 147; Allen & Erdmann, 2012: 872 (Singapore).

***Cryptocentrus leptocephalus* Bleeker**

*Cryptocentrus leptocephalus* – Larson et al., 2008: 147 (in part); Ng et al., 2015: 312 (in part, eastern Johor Strait).

***Cryptocentrus maudae* Fowler**

*Cryptocentrus maudae* – Larson et al., 2008: 147; Tan & Lim, 2014: 241 (Semakau Landfill).

***Cryptocentrus melanopus* (Bleeker)**

*Cryptocentrus leptocephalus* – Larson et al., 2008: 147 (in part; Singapore).

*Cryptocentrus melanopus* – Larson et al., 2008: 147 (Singapore); Allen & Erdmann, 2012: 874 (Singapore).

**Material.** BMNH 1937.9.22.5 [1], paratype of *Smilogobius singaporensis*; BMNH 1984.1.18.223-7 [5], Serangoon river; ZRC 47637 [1], Punggol; ZRC 50432 [8], Pulau Hantu.

**Remarks.** Bleeker based the description of this species on a drawing by Castelnau. Confusion on the identity of this taxon stemmed from the fact that the illustrations by Castelnau had not been seen for many years. These drawings were recently discovered at the Zoological Museum, University of Liège, and the paintings made available for examination (Russell et al., 2010). Hoese et al. (2011: 170–171) separated *Cryptocentrus melanopus* from *Cryptocentrus leptocephalus*.

***Cryptocentrus pavoninoides* (Bleeker)**

*Cryptocentrus pavoninoides* – Larson et al., 2008: 147; Allen & Erdmann, 2012: 875 (Singapore); Ng et al., 2015: 312 (eastern Johor Strait).

***Cryptocentrus sericus* Herre**

*Cryptocentrus sericus* Herre, 1932: 440 (market in Guangdong, China).

*Cryptocentrus sericus* – Hoese et al., 2011: 164 (Singapore); Heng & Lim, 2013: 67, fig. 5 (Pulau Hantu); Toh, 2014: 299 (Pulau Hantu west).

*Cryptocentrus* new species 1 – Larson et al., 2008: 148 (Singapore).

**Remarks.** Hoese et al. (2011) confirmed the identity of this species.

***Cryptocentrus strigiliceps* (Jordan & Seale)**

*Cryptocentrus strigiliceps* – Larson et al., 2008: 147.

***Dotsugobius bleekeri* (Popta)**

*Lophogobius bleekeri* Popta, 1921: 207 (Raha in Muna, Sunda Island, Indonesia).

*Lophogobius bleekeri* – Lim & Larson, 1994: 259 (Singapore).

**Remarks.** No recent material of this species observed from Singapore. This species was inadvertently omitted from Larson et al. (2008).

***Drombus globiceps* (Hora)**

*Drombus globiceps* – Larson et al., 2008: 148; Tan et al., 2010: 140 (Marina Basin); Ng & Tan, 2013: 21 (Punggol and Serangoon estuaries); Ng et al., 2015: 312 (eastern Johor Strait).

***Drombus ocyurus* (Jordan & Seale)**

*Drombus ocyurus* – Larson et al., 2008: 148; Tan et al., 2010: 140 (Marina Basin); Ng et al., 2015: 312 (eastern Johor Strait).

***Drombus triangularis* (Weber)**

*Drombus triangularis* – Larson et al., 2008: 148; Tan & Lim, 2014: 241 (Semakau Landfill); Ng et al., 2015: 312 (eastern Johor Strait).

***Eviota queenslandica* Whitley**

*Eviota queenslandica* – Larson et al., 2008: 148; Ng et al., 2015: 312 (eastern Johor Strait).

***Eviota storthynx* Rofen**

*Eviota storthynx* – Larson et al., 2008: 148.

***Exyrias belissimus* (Smith)**

*Exyrias belissimus* – Larson et al., 2008: 148.

***Exyrias puntang* (Bleeker)**

*Exyrias puntang* – Larson et al., 2008: 148; Tan et al., 2010: 140 (Marina Basin); Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries, Punggol and Serangoon reservoirs); Ng et al., 2015: 312 (eastern Johor Strait).

***Favonigobius melanobranchus* (Fowler)**

*Favonigobius melanobranchus* – Larson et al., 2008: 148.

*Papillogobius melanobranchus* – Ng et al., 2015: 313 (eastern Johor Strait).

**Remarks.** *Papillogobius* is here accepted as a junior synonym of *Favonigobius* as per Hoese & Larson (2006); other opinions exist (e.g., Kovacic & Bogorodksy, 2013). Work remains to be done on this group.

***Favonigobius opalescens* (Herre)**

*Favonigobius opalescens* – Larson et al., 2008: 148; Tan & Lim, 2014: 241 (Semakau Landfill).

***Favonigobius reichei* (Bleeker)**

*Favonigobius reichei* – Larson et al., 2008: 148; Tan et al., 2010: 140 (Marina Basin).

*Papillogobius reichei* – Ng et al., 2015: 313 (eastern Johor Strait).

***Glossogobius aureus* Akihito & Meguro**

*Glossogobius aureus* – Larson et al., 2008: 149; Tan et al., 2010: 141 (Marina Basin); Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries, Punggol and Serangoon reservoirs); Ng et al., 2015: 312 (eastern Johor Strait).

? *Glossogobius* sp. – Thomas et al., 2014 (channel between Upper Peirce and MacRitchie Reservoirs).

***Glossogobius circumspectus* (Macleay)**

*Glossogobius circumspectus* – Larson et al., 2008: 149; Tan et al., 2010: 141 (Marina Basin); Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries); Ng et al., 2015: 312 (eastern Johor Strait).

**Remarks.** According to Kottelat (2013: 408), *Glossogobius sandakanensis* Inger may be the correct name for the populations in Southeast Asia; no reason provided.

***Glossogobius giuris* (Hamilton)**

*Glossogobius giuris* – Larson et al., 2008: 149; Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries); Ng et al., 2015: 312 (eastern Johor Strait).





Fig. 1. *Gobiodon quinquestrigatus* (ZRC 54674) of about 25 mm total length. Photograph courtesy of the Comprehensive Marine Biodiversity Survey.

***Glossogobius sparsipapillus* Akihito & Meguro**

*Glossogobius sparsipapillus* – Larson et al., 2008: 149; Ng & Tan, 2013: 22 (Punggol and Serangoon estuaries, Punggol and Serangoon reservoirs); Ng et al., 2015: 313 (eastern Johor Strait).

***Gobiodon citrinus* (Rüppell)**

*Gobiodon citrinus* – Larson et al., 2008: 149.  
*Gobiodon fulvus* – Larson et al., 2008: 149.

**Remarks.** The identity of *Gobiodon fulvus* Herre has been confused and needs further study. There is no recent material of this species from Singapore.

***Gobiodon heterospilos* Bleeker**

*Gobiodon heterospilos* Bleeker, 1856: 409 (Kajeli, Buru Island, Moluccas, Indonesia).  
*Gobiodon heterospilos* – Allen & Erdmann, 2012: 898 (Singapore).  
*Gobiodon albofasciatus* – Larson et al., 2008: 149 (Pulau Hantu).

**Remarks.** *Gobiodon albofasciatus* may be a junior synonym of this species (Allen & Erdmann, 2012: 898; Shibukawa et al., 2013: 144).

***Gobiodon histrio* (Valenciennes)**

*Gobiodon histrio* – Larson et al., 2008: 149.

***Gobiodon micropus* Günther**

*Gobiodon micropus* – Larson et al., 2008: 149.

**Remarks.** No recent material of this species from Singapore.

***Gobiodon quinquestrigatus* (Valenciennes)\*\*\***

*Gobiodon quinquestrigatus* Valenciennes, 1837 (Tongatapu, Tonga Islands, South Pacific).

**Material.** ZRC 54674 / CMBS SS-4445 [1] Pulau Jong.

**Remarks.** The specimen collected off Pulau Jong in the Singapore Strait on 4 June 2013 (Fig. 1) represents a new record for Singapore.

***Gobiodon* sp. 11**

*Gobiodon* sp. 11 – Larson et al., 2008: 149.

**Remarks.** The identity of this species has not yet been confirmed. The taxonomy of many *Gobiodon* species is unresolved.

***Gobiopsis macrostoma* (Steindachner)**

*Gobiopsis macrostoma* – Larson et al., 2008: 149; Tan et al., 2010: 141 (Marina Basin); Ng et al., 2015: 313 (eastern Johor Strait).

***‘Gobius’ bontii* Bleeker**

*‘Gobius bontii’* – Larson et al., 2008: 149.

**Remarks.** The identity of this species has not been resolved; it may be a valid species of *Drombus*. No recent material has been obtained.

***Istigobius decoratus* (Herre)\***

*Istigobius decoratus* – Larson et al., 2008: 149.



Fig. 2. *Istigobius decoratus* of about 3 cm total length, off Pulau Hantu (Photograph by: Toh Chay Hoon).

**Remarks.** The presence of this species in Singapore waters is recently confirmed by a photographic record by Toh Chay Hoon from the Singapore Strait, on a coral reef off west side of Pulau Hantu, on 26 July 2015, at around 12 m depth (Fig. 2).

***Istigobius diadema* (Steindachner)**

*Istigobius diadema* – Larson et al., 2008: 149; v (Singapore); Ng et al., 2015: 313 (eastern Johor Strait).

*Istigobius dianema* [sic] – Tan et al., 2010: 141 (Marina Basin).

***Istigobius goldmanni* (Bleeker)**

*Istigobius goldmanni* – Larson et al., 2008: 149; Tan & Lim, 2014: 241 (Semakau Landfill); Ng et al., 2015: 313 (eastern Johor Strait).

***Istigobius ornatus* (Rüppell)**

*Istigobius ornatus* – Larson et al., 2008: 149; Tan & Lim, 2014: 241 (Semakau Landfill); Ng et al., 2015: 313 (eastern Johor Strait).

***Lubricogobius ornatus* Fourmanoir\*\***

*Lubricogobius ornatus* Fourmanoir, 1966: 958 (Nha-Trang market, Vietnam).

*Lubricogobius ornatus* – Tan & Jaafar, 2015: 53 (Pulau Hantu west).

***Macrodontogobius wilburi* Herre**

*Macrodontogobius wilburi* – Larson et al., 2008: 150; Tan & Lim, 2014: 242 (Semakau Landfill); Ng et al., 2015: 313 (eastern Johor Strait).

***Mahidolia mystacina* (Valenciennes)**

*Mahidolia mystacina* – Larson et al., 2008: 150; Ng et al., 2015: 313 (eastern Johor Strait).

***Myersina adonis* Shibukawa & Satapoomin\*\***

*Myersina adonis* Shibukawa & Satapoomin, 2006: 30 (east coast of Libong Island, Trang Province, Thailand).

*Myersina adonis* – Allen & Erdmann, 2012: 879 (Singapore).

**Material.** ZRC 50440, [1], Lazarus Island; ZRC 50443 [3], Lazarus Island.

**Remarks.** Kottelat (2013) use the name *Paragobius* for *Myersina*, and Ng et al. (2015) follow. As the status of *Gobius filifer* Valenciennes (senior synonym of *Gobius knutteli*, and the type species of *Paragobius*) is still unresolved, we continue to use the genus *Myersina* in this article.

***Myersina crocatus* (Wongratana)**

*Myersina nigrivirgata* – Larson et al., 2008: 150 (Singapore).

**Remarks.** ZRC 50439 [3], Lazarus Island; ZRC 50442 [1], Lazarus Island.

***Myersina filifer* (Valenciennes)**

*Myersina filifer* – Larson et al., 2008: 150; Allen & Erdmann, 2012: 880 (Singapore).

**Remarks.** No recent material from Singapore observed.

***Myersina macrostoma* (Herre)**

*Myersina macrostoma* – Larson et al., 2008:150; Hou et al., 2013 (Pasir Ris beach, in cleaning symbiosis with snapping shrimp *Alpheus rapax*).

*Paragobius macrostomus* – Ng et al., 2015: 313 (eastern Johor Strait).

***Oplopomops diacanthus* (Schultz)**

*Oplopomops diacanthus* – Larson et al., 2008: 150 (Raffles Lighthouse).

***Oplopomus caninoides* (Bleeker)\*\*\***

*Gobius caninoides* Bleeker, 1852b: 274 (Ambon, Molucca Islands, Indonesia).

**Material.** ZRC 50419 [4], Terumbu Bayan; ZRC 50777 [5], Changi Beach.

**Remarks.** This species is a new record for Singapore.

***Oplopomus oplopomus* (Valenciennes)**

*Oplopomus oplopomus* – Larson et al., 2008: 150; Ng et al., 2015: 313 (eastern Johor Strait).

***Palutrus scapulopunctatus* (de Beaufort)**

*Palutrus scapulopunctatus* – Larson et al., 2008: 150.

**Remarks.** No recent material of this species observed from Singapore.

***Parachaeturichthys polynema* (Bleeker)\*\*\***

*Chaeturichthys polynema* Bleeker, 1853: 44, Figs. 4a and 4b (Fuchal Bay, Madeira).

**Material.** BMNH 1984.1.13.91 [1], Singapore Strait off Bedok.

**Remarks.** New record for Singapore. The material at the Natural History Museum in London had not previously been reported.

***Paragobiodon echinocephalus* (Rüppell)**

*Paragobiodon echinocephalus* – Larson et al., 2008: 142 (Singapore Straits).

***Priolepis nuchifasciata* (Günther)**

*Priolepis nuchifasciata* – Larson et al., 2008: 150; Ng et al., 2015: 313 (eastern Johor Strait); Tan, 2015a: 22 (Terumbu Berkas, Singapore Strait).

***Priolepis semidoliata* (Valenciennes)**

*Priolepis semidoliata* – Larson et al., 2008: 150.

***Psammogobius biocellatus* (Valenciennes)**

*Psammogobius biocellatus* – Larson et al., 2008: 150; Tan et al., 2010: 141 (Marina Basin); Ng et al., 2015: 313 (eastern Johor Strait).

***Silhouettea cf. nuchipunctata* (Herre)**

*Silhouettea cf. nuchipunctata* – Larson et al., 2008: 150.

*Silhouettea cf. nuchipunctatus* – Ng et al., 2015: 313 (eastern Johor Strait).

***Tomiyamichthys russus* (Cantor)\***

*Cryptocentrus russus* – Larson et al., 2008: 147.

*Tomiyamichthys russus* – Ng et al., 2015: 313 (eastern Johor Strait).

**Material.** ZRC 50775 [1], Changi Beach; ZRC 50787 [1], Changi Beach.

**Remarks.** Generic assignment follows Allen & Erdmann (2012: 885). The identity of *Tomiyamichthys russus* has not been satisfactorily resolved, and the specimens herein mentioned are not conspecific with this species.

***Valenciennesa muralis* (Valenciennes)**

*Valenciennesa muralis* – Larson et al., 2008: 150; Tan & Lim, 2014: 242 (Semakau Landfill).

***Valenciennesa puellaris* (Tomiyama)\*\*\***

*Eleotriodes puellaris* Tomiyama, 1956: 1136, Pl. 224, Fig. 575 (Kiragawa, Koichi Prefecture, Japan).

**Remarks.** This new Singapore record is based on a visual sighting by Zeehan Jaafar in January 2007 off western Lazarus Island. No material of this species has been collected yet.

***Valenciennesa strigata* (Valenciennes)**

*Valenciennesa strigata* – Larson et al., 2008: 151.

**Remarks.** No recent material of this species observed from Singapore.

***Yongeichthys madraspatensis* (Day)**

*Acentrogobius madraspatensis* – Larson et al., 2008: 145.

*Yongeichthys madraspatensis* – Ng et al., 2015: 314 (eastern Johor Strait).

***Yongeichthys nebulosus* (Forsskål)**

*Acentrogobius nebulosus* – Larson et al., 2008: 145; Tan et al., 2010: 140 (Marina Basin); Ng & Tan, 2013: 21 (Punggol and Serangoon estuaries).

*Yongeichthys nebulosus* – Ng et al., 2015: 313 (eastern Johor Strait).

***Yongeichthys virgatus* (Jordan & Snyder)**

*Ctenogobius virgatus* Jordan & Snyder, 1901: 63 (Misaki, Kanagawa Prefecture, Sagami Sea, Japan).  
*Acentrogobius* cf. *caninus* – Larson et al., 2008: 151.  
*Yongeichthys virgatus* – Ng et al., 2015: 314 (eastern Johor Strait).

**Remarks.** This species is not native to Singapore. It was most probably transported in the ballast water of ships from the coastal seas of East Asia (Jaafar et al., 2012).

**SUBFAMILY SICYDIINAE*****Sicyopterus macrostetholepis* (Bleeker)**

*Sicyopterus macrostetholepis* – Larson et al., 2008: 151.

**Remarks.** No recent material known from Singapore.

**FAMILY PTERELEOTRIDAE****?*Oxymetopon amblyopinus* (Kner)**

?*Oxymetopon amblyopinus* – Larson et al., 2008: 151.

**Remarks.** No recent material known from Singapore. The identity of this species remains uncertain.

***Oxymetopon compressus* Chan\*\***

*Oxymetopon compressus* Chan, 1966: 2 (Taitam Bay, Lemma Channel, Hong Kong).

*Oxymetopon compressus* – Goh & Tan, 2015: 1–2, Fig. 1-3 (Pulau Hantu west).

***Parioglossus palustris* (Herre)**

*Parioglossus palustris* – Larson et al., 2008: 151; Ng et al., 2015: 316 (eastern Johor Strait).

***Ptereleotris hanae* (Jordan & Snyder)\*\***

*Vireosa hanae* Jordan & Snyder, 1901: 38, fig. 1 (off Misaki, Japan).  
*Ptereleotris hanae* – Jaafar & Ng, 2012: 369 (Pulau Hantu); Toh, 2014: 299 (Pulau Hantu west).

**DISCUSSION**

The previously published checklist of Singapore gobioid species recorded by Larson et al. (2008) reported 149 species. This new checklist has 164 species, an increase of 15 species. Seven literature records have been reported since 2008: *Bostrychus scalaris* (cited by Larson, 2008), *Brachygobius sabanus* (an introduced species recorded by Lim & Tan, 2012), *Cryptocentrus albidorsus* (cited by Allen & Erdmann, 2012), *Lubricogobius ornatus* (photographic record by Tan & Jaafar, 2015), *Myersina adonis* (cited by Allen & Erdmann, 2012), *Oxymetopon compressus* (photographic record by Goh & Tan, 2015) and *Ptereleotris hanae* (photographic record by Jaafar & Ng, 2012). There are eight new records provided in this present list: *Trypauchen*

*pelaos*, *Trypauchenichthys sumatrensis*, *Trypauchenichthys typus*, *Bryaninops loki*, *Gobiodon quinquestrigatus*, *Oplopomus caninoides*, *Parachaeturichthys polynema* and *Valenciennes puellaris*; except for *Valenciennes puellaris*, based on a sighting, all records are represented by preserved specimens in BMNH and ZRC.

Ng et al. (2015) recorded 81 gobioid species from the Johor Strait, based on the CMBS Phase I survey and past records. Their summary of Johor Strait gobioid fishes is couched in an alternate classification and some of the names used are different to those we recognise. Although not mentioned in the acknowledgements, many of the gobioid specimens for that report were identified by HKL.

One species, '*Lophogobius*' *bleekeri*, inadvertently overlooked by Larson et al. (2008), is herein reinstated as *Dotsugobius bleekeri*. And the freshwater goby, *Pseudogobiopsis oligactis*, regarded as locally extinct by Larson et al. (2008) has been rediscovered (Tan & Lim, 2011). One hundred and twenty-eight species of gobioid fishes are herein regarded as extant in Singapore from observations and specimens obtained over the past 50 years. Some species have not been observed since the original record (e.g., many of the eleotrids). With ongoing observations by divers, the advent of social media and use of "citizen science", as well as further scientific surveys, it is hoped that more work will be carried out on this group of very diverse but often-overlooked fishes.

**ACKNOWLEDGEMENTS**

The Johor Strait marine biodiversity workshop on Pulau Ubin, Singapore, was organised by the National Parks Board and National University of Singapore and held from 15 October to 2 November 2012 at Outward Bound School. The Singapore Strait marine biodiversity workshop was held on St. John's Island, Singapore, from 20 May to 7 June 2013, and was likewise organised by the National Parks Board and National University of Singapore. The two workshops, as part of the Comprehensive Marine Biodiversity Survey (CMBS) benefited greatly from generous contributions provided by Asia Pacific Breweries Singapore, Care-for-Nature Trust Fund, Keppel Care Foundation, Shell Companies in Singapore and The Air Liquide Group. The surveys provided much-appreciated support in providing specimens. We would like to thank our colleagues and all the CMBS volunteers who cheerfully helped us both in the field and in many other ways.

**LITERATURE CITED**

- Allen GR & Randall JE (2011) Two new species of shrimp-associated gobies (Gobiidae: *Cryptocentrus*) from the western Pacific. *Marine Biology Research*, 7(6): 554–564.  
 Allen GR & Erdmann MV (2012) Reef Fishes of the East Indies – Volume III. *Tropical Reef Research*, Perth, Australia. pp. 857–1292.  
 Bleeker P (1849) Bijdrage tot de kennis der Blennioïden en Gobioiden van den Soenda-Molukschen archipel, met beschrijving van 42 nieuwe species. *Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen*, 22(6): 1–40.

- Bleeker P (1852a) Bijdrage tot de kennis der ichthyologische fauna van Singapore. *Natuurkundig Tijdschrift voor Nederlandsche Indië*, 3: 51–86.
- Bleeker P (1852b) Bijdrage tot de kennis der ichthyologische fauna van de Moluksche Eilanden. *Visschen van Amboina en Ceram*. *Natuurkundig Tijdschrift voor Nederlandsch Indië*, 3: 229–309.
- Bleeker P (1853) Nalezingen op de ichthyologie van Japan. *Verhandelingen van het Bataviaasch Genootschap van Kunsten en Wetenschappen*, 25(7): 1–56.
- Bleeker P (1856) Bijdrage tot de kennis der ichthyologische fauna van het eiland Boeroe. *Natuurkundig Tijdschrift voor Nederlandsch Indië*, 11: 383–414.
- Bleeker P (1861) Mededeeling omtrent vischsoorten, nieuw voor de kennis der fauna van Singpoera. *Verslagen en Mededeelingen der Koninklijke Akademie van Wetenschappen, Letterkunde, en Schoone Kunsten te Amsterdam*, (1)12: 28–63.
- Chan WL (1966) *Oxymetopon compressus*, a new eleotrid fish from Hong Kong. *Japanese Journal of Ichthyology*, 14(1–3): 1–3.
- Chou LM (2006) Marine habitats in one of the world's busiest harbours. In: Wolanski E (ed) *The Environment in Asia Pacific Harbours*. Springer, Netherlands. Pp. 377–391.
- Fourmanoir P (1966) Trois nouvelles espèces de poissons du Vietnam: *Sicyodon albus* nov. gen., nov. sp., et *Lubricogobius ornatus*, nov. sp. (Gobiidae) et *Parupeneus aurantius* nov. sp. (Mullidae). *Bulletin Museum National Histoire Naturelle, (Sér. 2)* 37(6): 956–961.
- Goh J & Tan G (2015) New record of robust ribbon-goby in Singapore. *Singapore Biodiversity Records*, 2015: 1–2.
- Hardenberg JDF (1931) Some new or rare fishes of the Indo-Australian Archipelago. *Treubia*, 13(3–4): 411–419.
- Heng PY & Lim KKP (2013) Some noteworthy reef fishes at Pulau Hantu. *Singapore Biodiversity Records*, 2013: 65–67.
- Herre AWCT (1927) Gobies of the Philippines & the China Sea. *Monographs of the Philippine Bureau of Science, Manila, Philippine Islands, Monograph 23*: 1–352.
- Herre AWCT (1932) Fishes from Kwangtung Province and Hainan Island, China. *Lingnan Science Journal, Canton*, 11(3): 423–443.
- Hoese DF & Larson HK (2006) Gobiidae. Gobies. In: Beesley PL & Wells A (eds) *Zoological Catalogue of Australia*. Volume 35. Parts 1–3. ABRIS & CSIRO Publishing, Canberra. Pp 1612–1697.
- Hoese DH, Shibukawa K & Sakaue K (2011) A redescription of the gobiid fish *Cryptocentrus sericus* Herre, with clarification of *Cryptocentrus leptocephalus* and *C. melanopus*. *Aqua, International Journal of Ichthyology*, 17(3): 163–172.
- Hou Z, Liew J & Jaafar Z (2013). Cleaning symbiosis in an obligate goby-shrimp association. *Marine Biology*, 160: 2775–2779.
- Inger RF (1958) Notes on fishes of the genus *Brachygobius*. *Fieldiana Zoology*, 39(14): 107–117.
- Jaafar Z, Lim KKP & Chou LM (2006) Taxonomical and morphological notes on two species of mudskippers, *Periophthalmus walailakae* and *Periophthalmodon schlosseri* (Teleostei: Gobiidae) from Singapore. *Zoological Science*, 23: 1043–1047.
- Jaafar Z, Perrig M & Chou LM (2009) *Periophthalmus variabilis* (Teleostei: Gobiidae: Oxudercinae), a valid species of mudskipper, and a re-diagnosis of *Periophthalmus novemradiatus*. *Zoological Science*, 26: 309–314.
- Jaafar Z & Ng D (2012) New record of the blue-tailed dartfish, *Ptereleotris hanae* (Teleostei: Ptereleotridae) in Singapore. *Nature in Singapore*, 5: 369–371.
- Jaafar Z, Yeo DCJ, Tan HH & O'Riordan RM (2012) Status of estuarine and marine non-indigenous species in Singapore. *Raffles Bulletin of Zoology, Supplement 25*: 79–92
- Jordan DS & Snyder JO (1901) A review of the gobioid fishes of Japan, with descriptions of twenty-one new species. *Proceedings of the United States National Museum*, 24(1244): 33–132.
- Kottelat M (2013) The fishes of the inland waters of Southeast Asia: a catalogue and core bibliography of the fishes known to occur in freshwaters, mangroves and estuaries. *The Raffles Bulletin of Zoology, Supplement 27*: 1–663.
- Kovačić M & Bogorodsky S (2013) *Silhouettea chaimi* Goren, 1978, a junior synonym of *Papillogobius melanobranchus* (Fowler, 1934) (Teleostei: Gobiidae). *Zootaxa*, 3613(4): 369–379.
- Kwik JTB, Kho ZY, Quek BS, Tan HH & Yeo DCJ (2013) Urban stormwater ponds in Singapore: potential pathways for spread of alien freshwater fishes. *BioInvasions Records*, 2(3): 239–245.
- Larson HK (1985) A revision of the gobiid genus *Bryaninops* (Pisces), with a description of six new species. *The Beagle, Occasional Papers of the Northern Territory Museum of Arts and Sciences*, 2(1): 57–93.
- Larson HK (2001) A revision of the gobiid fish genus *Mugilogobius* (Teleostei: Gobioidae), with discussion of its systematic placement. *Records of the Western Australian Museum, Supplement 62*: 1–233.
- Larson HK (2008) A new species of the gudgeon *Bostrychus* (Teleostei: Gobioidae: Eleotridae), from peninsular Malaysia. *The Beagle, Records of the Museums and Art Galleries of the Northern Territory*, 24: 147–150.
- Larson HK (2009) Review of the gobiid fish genera *Eugnathogobius* and *Pseudogobiopsis* (Gobioidae: Gobioidae: Gobionellidae), with descriptions of three new species. *The Raffles Bulletin of Zoology*, 57(1): 127–181.
- Larson HK (2010) A review of the gobiid fish genus *Redigobius* (Teleostei: Gobionellinae), with descriptions of two new species. *Ichthyological Exploration of Freshwaters*, 21(2): 123–191.
- Larson HK & Lim KKP (2005) *A Guide to Gobies of Singapore*. National Science Centre, Singapore, 164 pp.
- Larson HK & Pezold FP (2016) The correct name for *Oxyurichthys longicauda* Steindachner and a few other errors. *Zootaxa*, 4066: 171–172.
- Larson HK, Jaafar Z & Lim KKP (2008) An annotated checklist of the gobioid fishes of Singapore. *The Raffles Bulletin of Zoology*, 56(1): 135–155.
- Lim KKP & Larson HK (1994) A preliminary checklist of the gobiid fishes of Singapore. In: Sudara S, Wilkinson CR & Chou LM (eds.) *Proceedings, Third ASEAN-Australian Symposium on Living Coastal Resources, Vol. 2: Research Papers*. Chulalongkorn University, Bangkok.
- Lim KKP & Tan HH (2012) Addition of the fish species to the established alien fauna of Singapore: *Amblypharyngodon chulabhornae* and *Brachygobius sabanus*. *Nature in Singapore*, 2012(5): 69–72.
- Lim KKP, Baker N & Yeo SH (2013) Fishes of Kranji Marsh. *Singapore Biodiversity Records*, 2013: 60–61.
- Low JKY, Tanzil JIT & Jaafar Z (2009) Some note-worthy fishes observed in the Singapore Straits. *Nature in Singapore*, 2: 77–82
- Low M-R (2014) Marbled gudgeon at Holland Woods. *Singapore Biodiversity Records*, 2014: 271.
- Murdy EO (2006) A revision of the gobiid fish genus *Trypauchen* (Gobiidae: Amblyopinae). *Zootaxa*, 1343: 55–68.
- Murdy EO (2008) *Paratrypauchen*, a new genus for *Trypauchen microcephalus* Bleeker, 1860, (Perciformes: Gobiidae: Amblyopinae) with a redescription of *Ctenotrypauchen chinensis* Steindachner, 1867, and a key to 'Trypauchen' group of genera. *aqua, International Journal of Ichthyology*, 14(3): 115–128.
- Ng HH & Tan HH (2010) An annotated checklist of the non-native freshwater fish species in the reservoirs of Singapore. *COSMOS*, 6(1): 95–116.
- Ng HH, Tan HH, Lim KKP, Ludt WB & Chakrabarty (2015) Fishes of the eastern Johor Strait. *Raffles Bulletin of Zoology, Supplement 31*: 303–337.

- Ng PX & Tan HH (2013) Fish diversity before and after construction of the Punggol and Serangoon Reservoirs, Singapore. *Nature in Singapore*, 6: 19–24.
- Pezold FL & Larson HK (2015) A revision of the gobiid fish genus *Oxyurichthys* (Gobiidae, Gobionellinae) with description of three new species and redescription of 16 species. *Zootaxa*, 3988: 1–95.
- Popta CML (1921) Dritte Fortsetzung der Beschreibung von neuen Fischarten der Sunda-Expedition. *Zoologische Mededelingen*, 6: 203–214.
- Russell BC, Fraser TH & Larson HK (2010) Castelnau's collection of Singapore fishes described by Pieter Bleeker. *Raffles Bulletin of Zoology*, 58(1): 93–102.
- Shibukawa K & Satapoomin U (2006) *Myersina adonis*, a new species of shrimp-associated goby (Pisces, Perciformes, Gobiidae) from the Andaman Sea. *Bulletin of the National Science Museum, Tokyo, Series A (Zoology)* 32(1): 29–37.
- Shibukawa K, Suzuki T & Aizawa M (2013) *Gobiodon aoyagii*, a new coral goby (Actinopterygii, Gobiidae, Gobiinae) from the West Pacific, with redescription of a similarly colored congener *Gobiodon erythrospilus* Bleeker, 1875. *Bulletin of the National Museum of Natural Science, Series A*, 39(3): 143–165.
- Steindachner F (1893) Ichthyologische Beiträge (XVI). *Anzeiger der Akademie der Wissenschaften in Wien*, 30(14): 150–152.
- Tan HH (2014) Congregation of Oriental river gobies at Upper Seletar Reservoir. *Singapore Biodiversity Records*, 2014: 94–95.
- Tan HH & Lim KKP (2011) Rediscovery of the bigmouth stream goby, *Pseudogobiopsis oligactis* (Actinopterygii: Gobiiformes: Gobionellidae) in Singapore. *Nature in Singapore*, 4: 363–367.
- Tan HH, Low BW & Ho J (2014) Lesser bumblebee goby in Upper Seletar Reservoir. *Singapore Biodiversity Records*, 2014: 185.
- Tan HH, Low MEY & Lim KKP (2010) Fishes of the Marina Basin, Singapore, before the erection of the Marina Barrage. *The Raffles Bulletin of Zoology*, 58(1): 137–144.
- Tan HH (2014a) Congregation of Oriental river gobies at Upper Seletar Reservoir. *Singapore Biodiversity Records*, 2014: 94–95.
- Tan HH (2014b) Three non-native fishes in stream at Lorong Banir. *Singapore Biodiversity Records*, 2014: 173–174.
- Tan HH (2015a) Nape-banded coral goby from Terumbu Berkas. *Singapore Biodiversity Records*, 2015: 22.
- Tan HH (2015b) Green-spotted goby at West Coast marsh pond. *Singapore Biodiversity Records*, 2015: 34.
- Tan HH & Lim KKP (2014) A collection of fishes from a lagoon at Semakau Landfill. *Singapore Biodiversity Records*, 2014: 241–247.
- Tan JYH, Tan LHC, Quek G, Lim VSF & Tan HH (2013) The fish fauna of Bukit Brown, Singapore. *Nature in Singapore*, 6: 229–237.
- Tan R & Lim KKP (2014) Lagoon shrimp-goby at eastern Johor Straits. *Singapore Biodiversity Records*, 2014: 334.
- Thomas N, Baker N & Lim KKP (2014) Flathead goby at Rifle Range forest. *Singapore Biodiversity Records*, 2014: 177.
- Toh CH (2014) Blue-tailed dartfish sharing burrow with shrimp and goby. *Singapore Biodiversity Records*, 2014: 299–300.
- Tomiyama I & Abe T (1956) Figures and descriptions of the fishes of Japan (a continuation of Dr. Shigeo Tanaka's work). Tokyo. Volume 55: 1115–1140, pls. 220–224.
- Valenciennes A (1837) In: Cuvier GL & Valenciennes A *Histoire Naturelle des Poissons*. Levrault, Paris. Vol. 12.
- Weber M (1911) Die Fische der Aru- und Kei-Inseln. Ein Beitrag zur Zoographie dieser Inseln. *Abhandlungen der Senckenbergischen Naturforschenden Gesellschaft in Frankfurt am Main*, 34: 1–49, pls. 1–2.
- Yaakub SM, McKenzie LJ, Erfteimeijer PL, Bouma T & Todd PA (2014) Courage under fire: Seagrass persistence adjacent to a highly urbanised city-state. *Marine Pollution Bulletin*, 83(2): 417–424.
- Yanagisawa Y (1978) Studies on the interspecific relationship between gobiid fishes and snapping shrimp. I. Gobiid fishes associated with snapping shrimps in Japan. *Publications of the Seto Marine Biology Laboratory*, 24(4/6): 269–325.
- Yee ATK, Ang WF, Teo S, Liew SC & Tan HTW (2010) The present extent of mangrove forests in Singapore. *Nature in Singapore*, 3: 139–145.