

Taxonomic Research of the Gobioid Fishes (Perciformes: Gobioidae) in China

By Han-Lin Wu, Jun-Sheng Zhong^{1,*} and I-Shiung Chen²

Ichthyological Laboratory, Shanghai Ocean University, 999 Hucheng Ring Rd., 201306 Shanghai, China

¹Ichthyological Laboratory, Shanghai Ocean University, 999 Hucheng Ring Rd., 201306 Shanghai, China

²Institute of Marine Biology, National Taiwan Ocean University, Keelung 202, Taiwan

ABSTRACT The taxonomic research based on extensive investigations and specimen collections throughout all varieties of freshwater and marine habitats of Chinese waters, including mainland China, Hong Kong and Taiwan, which involved accounting the vast number of collected specimens, data and literature (both within and outside China) were carried out over the last 40 years. There are totally 361 recorded species of gobioid fishes belonging to 113 genera, 5 subfamilies, and 9 families. This gobioid fauna of China comprises 16.2% of 2211 known living gobioid species of the world. This report represents a summary of previous researches on the suborder Gobioidae. A recently diagnosed subfamily, Polyspondylogobiinae, were assigned from the type genus and type species: *Polyspondylogobius sinensis* Kimura & Wu, 1994 which collected around the Pearl River Delta with high extremity of vertebral count up to 52-54. The undated comprehensive checklist of gobioid fishes in China will be provided in this paper.

Key words : Gobioid fish, fish taxonomy, species checklist, China, Hong Kong, Taiwan

INTRODUCTION

The fishes of suborder Gobioidae belong to the largest group of those in present living Perciformes. There are about 2211 nominal species belonging to 270 genera of 9 families in the world (Nelson, 2006) in the suborder. They are distributed over the marine and freshwater waters throughout the temperate, subtropical to tropical climate zone of Asia, Australia, Africa, Europe, North and even South America.

China which is actually located at the eastern part of Asia and crossed over the climate zones of tropical, subtropical and temperate regions, possesses highly complicated physical topographical structures. The structures serve as a great variety of habitats including the coral reefs, rocky shores, rubble shores, and mudflats for marine habitats, and also thousands of rivers, streams, estuarine and lakes for freshwater and brackish habitats and represents the very abundant ecological niches as well as many isolated, insular habitats for mostly small-size

benthic perciforms: gobioid fishes to evolve and actively radiate.

The gobioid fishes in China have long received little attention in researches due to their small size with many cryptic species, usually low population numbers, and lack of economic value until recent 10 years. Although ichthyologists of China have begun to study and document on the Gobioid fishes as early as the 30s~40s of this century, various constraints have restricted specimen collections and reports to limited geographical areas, and there was no investigation or systematic research on a wider scope.

Around 50s, Prof. B.S. Zheng, conducted more systematic work and through investigations and specimen collections on the gobioid fishes from the Yellow Sea, Bo-hai Sea and South China Sea. His results were published in [The Report on the investigation on the fishes of Yellow and Bo-hai Sea] comprising 23 species of Gobioid reported in 1955. A few years later, his further work, [Fishes of the South China Sea] comprising 51 species were recorded in 1962.

From the late 50s to the early 60s, a famous Chinese ichthyologist, Prof. Y.T. Chu (=Y.T. Zhu) with senior

*Corresponding author: Jun-Sheng Zhong Tel: 86-21-6190-0286,
Fax: 86-21-6190-0286, E-mail: jszhong@shou.edu.cn

author (HLW) started a comparative systematic study and specimen collection on the gobioid fishes of the East China Sea. After several years of data compilation, the results were published as the section for “suborder Gobioidae” in [The Fishes of the East China Sea] in 1963, which documented 30 species of gobioid fishes.

In the 70s, senior author (HLW) investigated gobioid specimens collected from Fujian Province and published [The Fishes of the Fujian Province] in 1985 documenting 43 species of gobioid fishes. In 1977, senior author (HLW) conducted further research on the gobioid fishes from the islands of the South China Sea and published [The fishes of the Islands of South China Sea] in 1979 comprising 19 species of gobioid fishes.

From 1983 to 1987, senior author (HLW) investigated on the freshwater and estuarine gobioid fishes of Hainan and Guangdong Provinces and published [The freshwater and estuaries fishes of Hainan Island] in 1986 comprising 36 gobioid species. In 1991, he published [The freshwater fishes of Guangdong Province] comprising 46 gobioid species.

In 1987, senior author (HLW) investigated specimens collected the gobioid fishes from Chinese coasts and reported [Systematic Synopsis of Chinese Fishes] comprising 164 species (of 66 genera, 5 families) of gobioid fishes.

In 1994 and 1999, senior author (HLW) was invited by Taiwanese ichthyologists to collect and examine the fish specimens around the fresh waters and coastal waters of Taiwan. He and his team with the third author (ISC) enriched the fauna list of gobioids up to 307 species. After the extensive investigations and specimen collections of gobioid fishes over Chinese waters including mainland China, Hong Kong and Taiwan for over the last 40 years, China becomes one of the places with highest number of gobioid fishes in the world. In 2008, senior author (HLW) chiefly edited and published [FAUNA SINICA Ostichthyes Perciformes (V), Gobioidae] with several Chinese ichthyologists comprising 307 gobioid species of 106 genera, 5 subfamilies and 9 families.

More recently, Shao *et al.* (2008) provided collection records of marine fishes, which is a very good review of literature for fish taxonomic studies in the Southern Taiwan and Northern South China Sea (including Spratly Islands). A total of 2,133 species of fishes were included. Among them, 167 species were gobioid fishes and most of them were from inshore habitats.

The authors revised all the recently published information, data, research papers, museum specimens and literatures of gobioids after the main publication of Wu *et al.* (2008). In this research, the authors will provide the rather updated total fauna list of gobioid fishes of Chinese waters and up to 361 species of gobioid fishes were included.

The aim of this paper is to recompile taxonomical and distributional records of the gobioid fish fauna from Chinese waters and provide the current comprehensive fauna list of gobioids.

MATERIALS AND METHODS

The fish materials identified were collected using commercial bottom trawlers, drift nets, long-lines, hand-nets and purse nets in Chinese waters. The majority of specimens were collected from either coasts of China Seas, coral reef areas, the atolls of the south and intertidal pools or rivers, streams and lakes of the continent. All counts and measurements were made from gobioid specimens preserved in 70% ethanol. Morphometric methods follow Miller (1988) and meristic methods follow Akihito (1984).

Thousands of gobioid specimens were examined by us in the last 40 years and the fish collections including freshwater, brackish and marine species appeared in the checklist are deposited in the following Institutions: **China:** Shanghai Ocean University, Shanghai; Institute of Oceanology, Chinese Academy of Sciences, Qindao; Institute of Zoology, Chinese Academy of Sciences, Kuming; Institute of Hydrobiology, Chinese Academy of Sciences, Wuhan; East China Sea Fisheries Research Institute, Chinese Academy of Fisheries Science, Shanghai South China Sea Fisheries Institute, Chinese Academy of Fisheries Science, Guangzhou; Pearl River Fisheries Research Institute, Chinese Academy of Fisheries Science, Guangzhou; **Taiwan:** Biodiversity Research Centre, Academia Sinica, Taipei; National Taiwan University, Taipei; National Sun Yat-Sen University, Kaohsiung; National Taiwan Ocean University, Keelung; and National Tsing Hua University, Shinchu; **Japan:** Biological Laboratory, Imperial Household, Tokyo; National Science Museum, Tokyo; University Museum, University of Tokyo, Tokyo; Kochi University, Kochi; and Prefectural University of Mei, Tsu; **Singapore:** National University of Singapore; **Canada:** Royal Ontario Museum, Ontario; **UK:** University of Bristol, Bristol; and British Natural History Museum, London; and **USA:** American Museum of Natural History, New York.

RESULTS AND DISCUSSION

Suborder Gobioidae comprises the most species fish diversity in the Order Perciformes. They are widely distributed over the regions from freshwater to marine habitats of temperate to tropical waters in and around the continents. Among them, total 361 species of gobioid fish have been recorded, belonging to 113 genera, 5 subfamilies, and 9 families which collected and examined

from the coastal waters as well as terrestrial basins and lakes of China. This updated checklist list contributes 16.2% of 2211 known gobioid species of the world.

Gobiidae is the most diverse family in the Suborder Gobioidei, whereas families Rhyacichthyidae, Microdesmidae, Kraemeriidae and Xenisthmidae are the least diverse, with each comprising only one species. Except the most of endemism for fluvial species, most marine species are also known to occur in India, the Philippines, Indonesia, the waters of North-East Atlantic and Southern Japan.

Moreover, the discovery of the species of *Periophthalmus magnuspinnatus* from coasts of China, *Pandaka* and Kraemeriidae from Hainan Island, some newly recorded gobiid genera (eg. *Flabelligobius*) and gobies of Microdesmidae, Xenisthmidae from Taiwan, and Schindleriidae have also been recorded from the Spratly Islands (Nansha Islands) represented a valuable scientific record.

The genus of *Rhinogobius* Gill, 1859, is one of the most diverse freshwater gobies, rather widely distributed in the rivers of continental Asia, including Japan, Taiwan, Hainan and the Philippines and also in Russia, Korea, China, Vietnam, Laos, Cambodia, and Thailand. At present, the third author (ISC) estimates that at least over 85 species are known in East and Southeast Asia (Yang *et al.*, 2008 and Chen, pers. cumm.). In China, the spe-

cies of *Rhinogobius* more than any one of the neighboring countries or geographical areas. There are at least 42 nominal species of *Rhinogobius* were distributed in the rivers, streams, lakes and ponds of mainland China, Taiwan and Hainan Islands. Among them, more than 39 species of *Rhinogobius* were endemic to China. The authors infer that the southern China is the place of original evolution center of *Rhinogobius*.

A recently diagnosed subfamily, Polyspondylogobi-

Table 1. The checklist of gobioid fishes in China

Classification of Gobioid fishes of China		
Gobioidei:	1 Rhyacichthyidae	(1 genus, 1 species)
	2 Odontobutidae	(5 genera, 9 species)
	3 Eleotridae	(9 genera, 15 species)
	4 Gobiidae:	
	(1) Gobiinae	(73 genera, 289 species)
	(2) Oxudercinae	(7 genera, 12 species)
	(3) Sicydiinae	(3 genera, 6 species)
	(4) Amblyopinae	(6 genera, 10 species)
	(5) Polyspondylogobiinae (new subfamily)	(1 genus, 1 species)
	5 Microdesmidae	(1 genus, 1 species)
	6 Ptereleotridae	(4 genera, 13 species)
	7 Kraemeriidae	(1 genus, 1 species)
	8 Xenisthmidae	(1 genus, 1 species)
	9 Schindleriidae	(1 genus, 2 species)

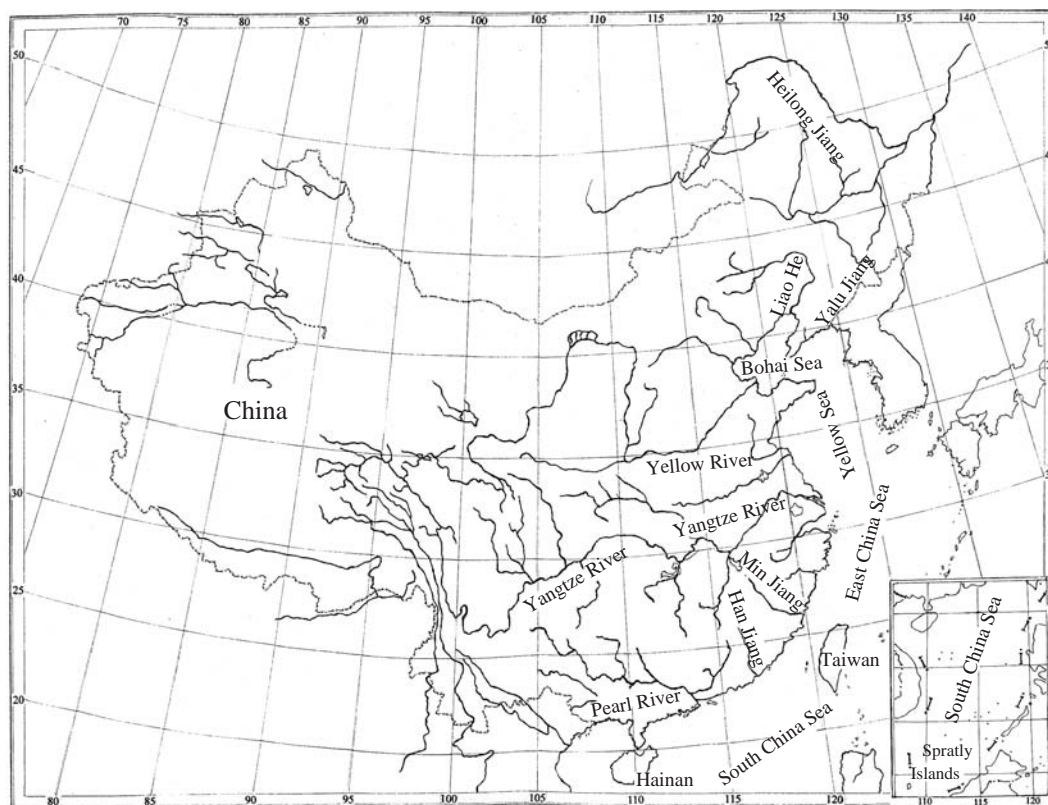


Fig. 1. Map of China seas and rivers.

nae, were assigned from the type genus and also type species: *Polyspondylogobius sinensis* Kimura & Wu, 1994 (Wu in Wu *et al.*, 2008) collected around the Pearl River Delta with high extremity of vertebral count up to 52~54. This subfamily can be well distinguished from all other gobioid genera which are no more than vertebral count of 42.

The hierarchy of taxonomical system of gobioid fish checklist in this paper (Table 1) was generally followed on Akihito *et al.* (2002) although several different views have been proposed for higher taxonomic levels for gobioids by different ichthyologists. The suborder Gobioidae has been classified into the following 5 subfamilies (with recently diagnosed subfamily, Polyspondylogobiinae) and 9 families.

ABBREVIATIONS

1. Habitats types

CS=coastal shore fishes (includes estuarine, sandy shores, and shallow soft bottoms); SR=shallow reef fishes (to about 60 m); and FW=fresh-water fishes.

2. Geographical regions (Fig. 1)

SCS=South China Sea (includes Spratly Islands) HN=Hainan Island; TW=Taiwan; ECS=East China Sea; YS=Yellow Sea and Bohai Sea; PR=Pearl River and Han Jiang River; MR=Min Jiang River; YZR=Yangtze River; YR=Yellow River; LH=Liao He River and Yalu Jiang River; HJ=Heilong Jiang River (Amur River)

3. Other remark

*=endemic to China.

GOBIOIDEI

Rhyacichthyidae

- 1 *Rhyacichthys aspro* (Valenciennes, 1837)/FW/TW

Odontobutidae

- 2 *Micropercops swinhonis* (Günther, 1873)
/FW/HN/PR/YZR/YR/LH
- 3 **Neodontobutis hainanensis* Chen, 1985/FW/HN
- 4 **Odontobutis haifengensis* Chen, 1985/FW/PR
- 5 **Odontobutis potamophila* (Günther, 1861)/FW/YZR/YR
- 6 **Odontobutis sinensis* Wu, Chen & Chong, 2002
/FW/HN/PR/YZR
- 7 *Odontobutis yaluensis* Wu, Wu & Xie, 1993/FW/LH
- 8 *Percottus glenii* Dybowski, 1877/FW/LH/HJ
- 9 **Sineleotris chalmersi* (Nichols & Pope, 1927)/FW/HN/PR
- 10 **Sineleotris saccharae* Herre, 1940/FW/PR

Eleotridae

- 11 *Bostrychus sinensis* Lacepède, 1801/CS/SCS/TW/ECS/YS
- 12 *Bunaka gyrinoides* (Bleeker, 1853)/FW/TW

- 13 *Butis amboinensis* (Bleeker, 1853)/CS/SCS/TW
- 14 *Butis gymnopomus* (Bleeker, 1853)/CS/TW
- 15 *Butis koilomatodon* (Bleeker, 1849)/CS/SCS/TW/ECS
- 16 *Butis melanostigma* (Bleeker, 1849)/CS/SCS/TW
- 17 *Calumia godeffroyi* (Günther, 1877)/CS/SCS/TW
- 18 *Eleotris acanthopoma* Bleeker, 1853/FW/HN
- 19 *Eleotris fusca* (Bloch & Schneider, 1801)/FW/PR/TW
- 20 *Eleotris melanosoma* Bleeker, 1852/FW/HN/PR/TW
- 21 *Eleotris oxycephala* Temminck & Schlegel, 1845
/FW/HN/PR/TW
- 22 *Hypseleotris cyprinoides* (Valenciennes, 1837)/FW/TW
- 23 *Ophieleotris aporos* (Bleeker, 1854)/FW/TW
- 24 *Ophiocara porocephala* (Valenciennes, 1837)/CS/SCS/TW
- 25 *Oxyeleotris marmorata* (Bleeker, 1852)/CS/TW

Gobiidae

Gobiinae

- 26 *Acanthogobius elongata* (Fang, 1942)/CS/ECS/YS
- 27 *Acanthogobius flavimanus* (Temminck & Schlegel, 1845)
/CS/ECS/YS/LH
- 28 *Acanthogobius lactipes* (Hilgendorf, 1879)/CS/YS/LH
- 29 *Acanthogobius luridus* Ni & Wu, 1985
/CS/SCS/TW/ECS/YS
- 30 *Acanthogobius ommaturus* (Richardson, 1845)
/CS/SCS/TW/ECS/YS/LH
- 31 **Acanthogobius stigmatonotus* (Richardson, 1845)/CS/SCS
- 32 *Acentrogobius ocyurus* (Jordan & Seale, 1907)/CS/SCS/TW
- 33 *Acentrogobius viganensis* (Steindachner, 1893)/CS/TW
- 34 *Acentrogobius viridipunctatus* (Valenciennes, 1837)
/CS/SCS/TW
- 35 *Amblychaeturichthys hexanema* (Bleeker, 1853)
/CS/SCS/TW/ECS/YS
- 36 *Amblyeleotris bleekeri* Chen, Shao & Chen, 2006/SR/SCS
- 37 *Amblyeleotris fontanesii* (Bleeker, 1852)/SR/TW
- 38 *Amblyeleotris guttatus* (Fowler, 1938)/SR/TW
- 39 *Amblyeleotris japonicus* Takagi, 1957/SR/TW
- 40 *Amblyeleotris ogasawarenensis* Yanagisawa, 1978/SR/TW
- 41 *Amblyeleotris periopthalma* (Bleeker, 1853)/SR/TW
- 42 *Amblyeleotris randalli* Hoese & Steene, 1978/SR/SCS
- 43 *Amblyeleotris steinitzi* (Klausewitz, 1974)/SR/SCS/TW
- 44 *Amblyeleotris taipinensis* Chen, Shao & Chen, 2006/SR/SCS
- 45 *Amblyeleotris wheeleri* (Polunin & Lubbock, 1977)/SR/SCS
- 46 *Amblyeleotris yanoi* Aonuma & Yashino, 1996/SR/TW
- 47 *Amblygobius albimaculatus* (Rüppell, 1830)/SR/TW
- 48 *Amblygobius bynoensis* (Richardson, 1844)/SR/SCS
- 49 *Amblygobius hectori* (Smith, 1957)/SR/TW
- 50 *Amblygobius nocturnus* (Herre, 1945)/SR/TW
- 51 *Amblygobius phalaena* (Valenciennes, 1837)/SR/SCS/TW
- 52 *Amblygobius rainfordi* (Whitley, 1940)/SR/SCS
- 53 **Amoya brevirostris* (Günther, 1861)/CS/SCS/ECS
- 54 *Amoya caninus* (Valenciennes, 1837)/CS/SCS/TW/ECS
- 55 *Amoya chlorostigmatoides* (Bleeker, 1849)
/CS/SCS/TW/ECS
- 56 **Amoya chusanensis* (Herre, 1940)/CS/ECS
- 57 *Amoya janthinopterus* (Bleeker, 1852)/CS/SCS/TW
- 58 *Amoya madraspatensis* (Day, 1868)/CS/SCS
- 59 **Amoya microps* (Chu & Wu, 1963)/CS/ECS
- 60 *Amoya moloanus* (Herre, 1927)/CS/TW
- 61 *Amoya pflaumi* (Bleeker, 1853)/CS/SCS/TW/ECS/YS/LH
- 62 *Asterropteryx semipunctatus* Rüppell, 1830/SR/SCS/TW
- 63 *Asterropteryx spinosa* (Goren, 1981)/SR/TW
- 64 *Austrolethops wardi* Whitley, 1935/SR/TW
- 65 *Awaous melanocephalus* (Bleeker, 1849)/FW/HN/TW
- 66 *Awaous ocellaris* (Broussonet, 1782)/FW/TW
- 67 *Barbuligobius boehlkei* Lachner & McKinney, 1974/CS/TW

- 68 *Bathygobius coalitus* (Bennett, 1832)/SR/SCS/TW
69 *Bathygobius cocosensis* (Bleeker, 1854)/SR/TW
70 *Bathygobius cotticeps* (Steindachner, 1879)/SR/TW
71 *Bathygobius crassiceps* (Jordan & Seale, 1906)/CS/TW
72 *Bathygobius cyclopterus* (Valenciennes, 1837)/SR/SCS/TW
73 *Bathygobius fuscus* (Rüppell, 1830)/SR/SCS/TW
74 *Bathygobius laddi* Fowler, 1931/SR/SCS
75 *Bathygobius meggetti* (Hora & Mukerji, 1936)/SR/SCS
76 *Bathygobius padangensis* (Bleeker, 1851)/CS/SCS/TW
77 *Bryaninops loki* Larson, 1985/SR/TW
78 *Bryaninops natans* Larson, 1985/SR/TW
79 *Bryaninops yongei* (Davis & Cohen, 1969)/SR/TW
80 *Callogobius clitellus* McKinney & Lachner, 1978/SR/TW
81 *Callogobius hasseltii* (Bleeker, 1851)/SR/SCS/TW
82 **Callogobius nigromarginatus* Chen & Shao, 2000/CS/TW
83 *Callogobius okinawae* (Snyder, 1908)/SR/CS/TW
84 *Callogobius sclateri* (Steindachner, 1879)/SR/SCS/TW
85 *Callogobius sheni* Chen, Chen & Fang, 2006/CS/TW
86 *Callogobius snelli* Koumans, 1953/SR/TW
87 *Callogobius tanegasimae* (Snyder, 1908)/SR/TW
88 *Caragobius urolepis* (Bleeker, 1852)/CS/TW
89 *Chaenogobius gulosus* (Sauvage, 1882)/CS/YS
90 *Chaeturichthys stigmatias* Richardson, 1844
/CS/SCS/TW/ECS/YS
91 *Cristatogobius nonatoae* (Ablan, 1940)/CS/SCS/TW
92 *Cryptocentroides insignis* (Seale, 1910)/SR/SCS
93 *Cryptocentrus albidorsus* (Yanagisawa, 1978)/SR/SCS/TW
94 **Cryptocentrus cephalotaenius* Ni, 1989/SR/SCS
95 *Cryptocentrus cryptocentrus* (Valenciennes, 1837)/SR/TW
96 *Cryptocentrus cyanotaenius* (Bleeker, 1853)/SR/SCS
97 *Cryptocentrus filifer* (Valenciennes, 1837)
/SR/SCS/TW/ECS/YS
98 *Cryptocentrus gymnocephala* (Bleeker, 1853)/SR/SCS
99 *Cryptocentrus nigrocellatus* (Yanagisawa, 1978)/SR/TW
100 *Cryptocentrus papuanus* (Peters, 1876)/SR/SCS/TW
101 *Cryptocentrus pavoninoides* (Bleeker, 1849)/SR/SCS
102 **Cryptocentrus pretiosus* Rendahl, 1924/SR/SCS
103 *Cryptocentrus russus* (Cantor, 1849)/SR/SCS/TW
104 *Cryptocentrus strigilliceus* (Jordan & Seale, 1906)/SR/TW
105 **Cryptocentrus yatsui* (Tomiya, 1936)/SR/TW
106 *Ctenogobiops aurocingulus* (Herre, 1935)/SR/TW
107 *Ctenogobiops crocineus* Smith, 1959/SR/TW
108 *Ctenogobiops feroculus* Lubbock & Polunin, 1977
/SR/SCS/TW
109 **Ctenogobiops fomosa* Randall, Shao & Chen, 2003/SR/TW
110 *Ctenogobiops mitodes* Randall, Shao & Chen, 2007/SR/SCS
111 *Ctenogobiops pomastictus* Lubbock & Polunin, 1977
/SR/TW
112 *Ctenogobiops tangaroai* Lubbock & Polunin, 1977/SR/TW
113 *Drombus triangularis* (Weber, 1909)/CS/SCS
114 *Egglestonichthys patriciae* Miller & Wangrat, 1979
/CS/SCS/TW
115 *Eutaeniichthys gilli* Jordan & Snyder, 1901/CS/YS
116 *Eviota abax* (Jordan & Snyder, 1901)/SR/SCS/TW
117 *Eviota afelei* Jordan & Seale, 1906/SR/SCS/TW
118 *Eviota albolineata* Jewett & Lachner, 1983/SR/SCS/TW
119 *Eviota cometa* Jewett & Lachner, 1983/SR/SCS
120 *Eviota lacrimae* Sunobe, 1988/SR/SCS
121 *Eviota latifasciata* Jewett & Lachner, 1983/SR/SCS
122 *Eviota melasma* Lachner & Karnella, 1980/SR/SCS
123 *Eviota pellucida* Larson, 1976/SR/SCS
124 *Eviota prasina* (Klunzinger, 1871)/SR/SCS/TW
125 *Eviota prasites* Jordan & Seale, 1906/SR/SCS
126 *Eviota queenslandica* Whitley, 1932/SR/SCS/TW
127 *Eviota saipanensis* Fowler, 1945/SR/TW
128 *Eviota sebreei* Jordan & Seale, 1906/SR/SCS/TW
129 *Eviota sigillata* Jewett & Lachner, 1983/SR/SCS
130 *Eviota spilota* Lachner & Karnella, 1980/SR/SCS
131 *Eviota storthynx* (Rofen, 1959)/SR/SCS
132 *Eviota zebrina* Lachner & Karnella, 1978/SR/SCS
133 *Exyrias puntang* (Bleeker, 1851)/SR/SCS/TW
134 *Favonigobius gymnauchen* (Bleeker, 1860)
/CS/SCS/TW/ECS/YS
135 **Flabelligobius smithi* Chen & Fang, 2003/CS/TW
136 *Fusigobius duospilus* Hoesé & Reader, 1985
/SR/SCS/TW
137 *Fusigobius humeralis* (Randall, 2001)/SR/TW
138 *Fusigobius inframaculatus* (Randall, 1994)/SR/TW
139 *Fusigobius longispinus* Goren, 1978/SR/SCS/TW
140 *Fusigobius maximus* (Randall, 2001)/SR/TW
141 *Fusigobius neophytus* (Günther, 1877)/SR/SCS/TW
142 *Fusigobius signipinnis* Hoesé & Obika, 1988/SR/SCS
143 *Gladiogobius ensifer* Herre, 1933/CS/SCS
144 *Glossogobius aureus* Akihito & Meguro, 1975/CS/SCS/TW
145 *Glossogobius bicirrhosus* (Weber, 1894)/CS/SCS/TW
146 *Glossogobius biocellatus* (Valenciennes, 1837)/CS/SCS/TW
147 *Glossogobius brunnoideus* (Nichols, 1951)/CS/TW
148 *Glossogobius celebius* (Valenciennes, 1837)/CS/SCS/TW
149 *Glossogobius circumspectus* (Macleay, 1883)/CS/TW
150 *Glossogobius giuris* (Hamilton, 1822)/CS/SCS/TW/ECS
151 *Glossogobius olivaceus* (Temminck & Schlegel, 1845)
/CS/SCS/TW/ECS/YS
152 *Gnatholepis anjerensis* (Bleeker, 1851)/SR/SCS/TW
153 *Gnatholepis davaoensis* Seale, 1910/SR/TW
154 *Gnatholepis deltoides* (Seale, 1901)/SR/TW
155 *Gnatholepis scapulo stigma* Herre, 1953/SR/TW
156 *Gobiodon citrinus* (Rüppell, 1838)/SR/SCS/TW
157 *Gobiodon erythrospilus* Bleeker, 1875/SR/SCS
158 *Gobiodon fulvus* Herre, 1927/SR/TW
159 *Gobiodon histrio* (Valenciennes, 1837)/SR/SCS
160 *Gobiodon multilineatus* Wu, 1979/SR/SCS/TW
161 *Gobiodon oculolineatus* Wu, 1979/SR/SCS/TW
162 *Gobiodon okinawae* Sawada, Arai & Abe, 1972
/SR/SCS/TW
163 *Gobiodon quinquestrigatus* (Valenciennes, 1837)
/SR/SCS/TW
164 *Gobiodon unicolor* (Castelnau, 1873)/SR/SCS/TW
165 *Gobiopsis arenarius* (Snyder, 1908)/CS/SCS/TW
166 *Gobiopsis macrostomus* Steindachner, 1861/CS/SCS
167 *Gobiopsis quinquecincta* (Smith, 1931)/CS/TW
168 *Gobiopterus macrolepis* Cheng, 1965/FW/PR
169 *Gymnogobius castaneus* (O' Shaughnessy, 1875)/FW/LH
170 *Gymnogobius heptacanthus* (Hilgendorf, 1878)/CS/YS
171 *Gymnogobius laevis* (Steindachner, 1879)/FW/LH
172 *Gymnogobius macrogathus* Bleeker, 1860/CS/YS
173 *Gymnogobius mororanus* (Jordan & Snyder, 1901)/CS/YS
174 *Gymnogobius taranetzi* Pinchuk, 1978/FW/LH
175 *Gymnogobius transversefasciatus* (Wu & Zhou, 1990)
/FW/YZR
176 *Gymnogobius urotaenia* (Hilgendorf, 1879)/FW/LH
177 *Hazeus otakii* Jordan & Snyder, 1901/CS/TW
178 *Hemigobius hoevenii* (Bleeker, 1851)/CS/SCS/TW
179 *Heteroleotris poecila* (Fowler, 1946)/CS/TW
180 *Istigobius campbelli* (Jordan & Snyder, 1901)
/CS/SCS/TW/ECS/YS
181 *Istigobius decoratus* (Herre, 1927)/CS/SCS/TW
182 *Istigobius goldmanni* (Bleeker, 1852)/CS/SCS/TW
183 *Istigobius hoshinonis* (Tanaka, 1917)/CS/SCS/TW
184 *Istigobius nigroocellatus* (Günther, 1873)/CS/SCS
185 *Istigobius ornatus* (Rüppell, 1830)/CS/SCS/TW

- 186 *Istigobius rigillius* (Herre, 1953)/CS/SCS
 187 *Lentipes armatus* Sakai & Nakamura, 1979/CS/TW
 188 *Leucopsarion petersii* Hilgendorf, 1880/CS/SCS
 189 *Lophiogobius ocellicauda* Günther, 1873/CS/ECS/YS/LH
 190 *Lotilia graciliosa* Klausewitz, 1960/SR/TW
 191 *Lubricogobius exiguus* Tanaka, 1915/SR/SCS
 192 *Luciogobius guttatus* Gill, 1859/SR/SCS/TW/ECS/YS
 193 *Luciogobius platycephalus* Shioyaki & Dotsu, 1976
 /SR/SCS
 194 *Luciogobius saikaiensis* Dotu, 1957/SR/TW
 195 *Luposicya lupus* Smith, 1959/SR/TW
 196 *Mahidolia mystacina* (Valenciennes, 1837)/CS/TW
 197 *Mangarinus waterousi* Herre, 1943/CS/SCS
 198 *Mugilogobius abei* (Jordan & Snyder, 1901)
 /CS/SCS/TW/ECS/YS
 199 *Mugilogobius cavifrons* (Weber, 1909)/CS/SCS/TW
 200 *Mugilogobius chulae* (Smith, 1932)/CS/SCS/TW
 201 **Mugilogobius myxodermis* (Herre, 1935)/FW/PR/YZR
 202 **Mugilogobius polylepis* (Wu & Ni, 1985)/CS/SCS/ECS
 203 **Myersina fasciatus* (Wu & Lin, 1983)/CS/ECS
 204 **Myersina yangii* (Chen, 1960)/CS/TW
 205 *Oligolepis acutipennis* (Valenciennes, 1837)/CS/SCS/TW
 206 *Oligolepis stomias* (Smith, 1941)/CS/SCS/TW
 207 *Oplopomus oplopomus* (Valenciennes, 1837)/CS/SCS/TW
 208 **Oxyurichthys amabilis* Seale, 1914/CS/SCS/TW
 209 *Oxyurichthys auchenolepis* Bleeker, 1876/CS/HN
 210 *Oxyurichthys cornutus* McCulloch & Waite, 1918/SR/TW
 211 **Oxyurichthys macrolepis* Chu & Wu, 1963/SR/ECS
 212 *Oxyurichthys microlepis* (Bleeker, 1849)/SR/SCS/TW/ECS
 213 *Oxyurichthys oculomirus* Herre, 1927/CS/SCS/ECS
 214 *Oxyurichthys ophthalmonemus* (Bleeker, 1856)
 /CS/SCS/TW
 215 *Oxyurichthys papuensis* (Valenciennes, 1837)
 /CS/SCS/TW
 216 *Oxyurichthys tentacularis* (Valenciennes, 1837)
 /CS/SCS/TW
 217 *Oxyurichthys visayamus* Herre, 1927/CS/SCS/TW
 218 **Pandaka bipunctata* Chen, Wu, Zhong & Shao FW/HN
 219 *Papillogobius rechei* (Bleeker, 1853)/CS/SCS/TW
 220 *Parachaeturichthys polynema* (Bleeker, 1853)
 /CS/SCS/TW/ECS/YS
 221 *Paragobiodon echinocephalus* (Rüppell, 1830)
 /SR/SCS
 222 *Paragobiodon lacunicolus* Kendall & Goldsborough, 1911/
 SR/SCS/TW
 223 *Paragobiodon melanosomus* (Bleeker, 1852)/SR/SCS
 224 *Paragobiodon modestus* (Regan, 1908)/SR/SCS/TW
 225 *Paragobiodon xanthosomus* (Bleeker, 1852)/SR/SCS/TW
 226 *Pleurosicya bilobata* (Koumans, 1941)/SR/SCS
 227 *Pleurosicya mossambica* Smith, 1959/SR/TW
 228 *Priolepis boreus* (Snyder, 1909)/SR/TW
 229 *Priolepis cinctus* (Regan, 1908)/SR/SCS/TW
 230 *Priolepis fallacincta* Winterbottom & Burridge, 1992
 /SR/TW
 231 *Priolepis inhaca* (Smith, 1949)/SR/SCS
 232 *Priolepis kappa* Winterbottom & Burridge, 1993/SR/TW
 233 *Priolepis latifascima* Winterbottom & Burridge, 1993
 /SR/TW
 234 *Priolepis nuchifasciatus* (Günther, 1873)/SR/SCS
 235 *Priolepis semidoliatus* (Valenciennes, 1837)/SR/SCS/TW
 236 **Pseudogobioptis wuhanlini* Zhong & Chen, 1997
 /SR/SCS/ECS
 237 *Pseudogobius javanicus* (Bleeker, 1856)
 /SR/SCS/TW/ECS
 238 *Pseudogobius masago* (Tomiya, 1936)
 /CS/SCS/TW/ECS
 239 *Pterogobius elapoides* (Günther, 1872)
 /CS/SCS/TW/ECS/YS
 240 *Pterogobius zacalles* Jordan & Snyder, 1901/CS/YS
 241 *Redigobius bikolanus* (Herre, 1927)/CS/TW
 242 **Rhinogobius aporus* Zhong & Wu, 1998/FW/YZR
 243 **Rhinogobius candidianus* (Regan, 1908)/FW/TW
 244 **Rhinogobius changjiangensis* Chen, Miller, Wu & Fang,
 2002/FW/HN
 245 **Rhinogobius changtinensis* Huang & Chen, 2007/FW/PR
 246 **Rhinogobius cliffordpopei* (Nichols, 1925)
 /FW/YZR/YR/LH/HJ
 247 **Rhinogobius davidi* (Sauvage & Dabry, 1874)/FW/YZR
 248 **Rhinogobius duospilus* (Herre, 1935)/FW/HN/PR
 249 **Rhinogobius filamentosus* (Wu, 1939)/FW/PR
 250 **Rhinogobius formosanus* Oshima, 1919/FW/TW
 251 **Rhinogobius fukushimai* Mori, 1934/FW/YZ R/YR/TM
 252 **Rhinogobius genanematus* Zhong & Tzeng, 1998/FW/YZR
 253 **Rhinogobius gigas* Aonuma & Chen, 1996/FW/TW
 254 *Rhinogobius giurinus* (Rutter, 1897)
 /FW/HN/PR/TW/YZR/YR/LH
 255 **Rhinogobius henchuenensis* Chen & Shao, 1996/FW/TW
 256 *Rhinogobius honghensis* Chen, Yang & Chen, 1999/FW/PR
 257 **Rhinogobius lanyuensis* Chen, Miller & Fang, 1998/FW/TW
 258 **Rhinogobius leavelli* (Herre, 1935)/FW/HN/PR
 259 **Rhinogobius lentiginis* (Wu & Zheng, 1985)/FW/YZR
 260 **Rhinogobius lindbergi* Berg, 1933/FW/TU
 261 **Rhinogobius linshuiensis* Chen, Miller, Wu & Fang, 2002
 /FW/HN
 262 **Rhinogobius liui* Chen & Wu, 2008/FW/YZR
 263 **Rhinogobius longyanensis* Chen, Cheng & Shao, 2008
 /FW/PR
 264 **Rhinogobius lungwoensis* Huang & Chen, 2007/FW/PR
 265 **Rhinogobius maculafasciatus* Chen & Shao, 1996/FW/TW
 266 **Rhinogobius multimaculatus* (Wu & Zheng, 1985)/FW/TW
 267 *Rhinogobius nagoyae* Jordan & Seale, 1906/FW/TM
 268 **Rhinogobius nanduijiangensis* Chen, Miller, Wu & Fang,
 2002/FW/HN
 269 **Rhinogobius nantaiensis* Aonuma & Chen, 1996/FW/TW
 270 **Rhinogobius parvus* (Luo, 1989)/FW/PR
 271 **Rhinogobius ponkouensis* Huang & Chen, 2007/FW/PR
 272 **Rhinogobius reticulatus* Li, Zhong & Wu, 2007/FW/MR
 273 **Rhinogobius rubrolineatus* Chen & Miller, 2008/FW/MR
 274 **Rhinogobius rubromaculatus* Lee & Chang, 1996/FW/TW
 275 **Rhinogobius sagittus* Chen & Miller, 2008/FW/MR
 276 **Rhinogobius shennongensis* (Yang & Xie, 1983)/FW/YZR
 277 **Rhinogobius szechuanensis* (Tchang, 1939)/FW/YZR
 278 **Rhinogobius wangchuangensis* Chen, Miller, Wu & Fang,
 2002/FW/HN
 279 **Rhinogobius wangi* Chen, & Fang, 2006/FW/PR
 280 **Rhinogobius wuyanlingensis* Yang, Wu & Chen, 2008
 /FW/YZR
 281 **Rhinogobius wuyiensis* Li & Zhong, 2007/FW/YZR
 282 **Rhinogobius xianshuiensis* Chen, Wu & Shao, 1999/FW/PR
 283 **Rhinogobius yaoshanensis* (Luo, 1989)/FW/PR
 284 *Schismatogobius ampluvinculus* Chen, Shao & Fang, 1995
 /SR/TW
 285 *Schismatogobius roxasi* Herre, 1936/SR/TW
 286 *Stenogobius genivittatus* (Valenciennes, 1837)/FW/TW
 287 *Stenogobius ophthalmoporos* (Bleeker, 1853)/FW/HN/TW
 288 *Tridentiger barbatus* (Günther, 1861)
 /CS/SCS/TW/ECS/YS/LH
 289 *Tridentiger bifasciatus* Steindachner, 1881
 /CS/SCS/TW/ECS/YS
 290 *Tridentiger brevispinis* Katsuyama, Arai & Nakamura,

- 1972/CS/SCS/TW/ECS/YS
 291 *Tridentiger nudicervicus* Tomiyama, 1934
 /CS/SCS/TW/ECS/YS
 292 *Tridentiger trigonocephalus* (Gill, 1859)
 /CS/SCS/TW/ECS/YS/LH
 293 *Trimma annosum* Winterbottom, 2003/SR/TW
 294 *Trimma emeryi* Winterbottom, 1985/SR/SCS
 295 *Trimma fangi* Winterbottom & Chen, 2004/SR/SCS
 296 *Trimma grammistes* (Tomiyama, 1936)/SR/TW
 297 *Trimma macrophthalma* (Tomiyama, 1936)/SR/SCS
 298 *Trimma naudei* Smith, 1957/SR/TW
 299 *Trimma okinawae* (Aoyagi, 1949)/SR/SCS/TW
 300 *Trimma tevegae* Cohen & Davis, 1969/SR/TW
 301 *Trimmatom macropodus* Winterbottom, 1989/SR/TW
 302 *Trysogobius porosus* Larson & Chen, 2007/SR/HN/TW
 303 *Valenciennea helsdingenii* (Bleeker, 1858)/SR/TW
 304 *Valenciennea immaculatus* (Ni, 1981)/SR/SCS/TW
 305 *Valenciennea longipinnis* (Lay & Bennett, 1839)
 /SR/SCS/TW
 306 *Valenciennea muralis* (Valenciennes, 1837)/SR/SCS/TW
 307 *Valenciennea puellaris* (Tomiyama, 1956)/SR/SCS/TW
 308 *Valenciennea sexguttata* (Valenciennes, 1837)/SR/SCS/TW
 309 *Valenciennea strigata* (Broussonet, 1782)/SR/SCS/TW
 310 *Valenciennea wardii* (Playfair, 1867)/SR/SCS
 311 *Vanderhorstia ambanoro* (Fourmanoir, 1957)/SR/TW
 312 *Vanderhorstia ornatisima* Smith, 1959/SR/TW
 313 **Vanderhorstia puncticeps* (Deng & Xiong, 1980)/SR/ECS
 314 *Yongeichthys nebulosus* (Forskål, 1775)/CS/SCS/TW
- Oxudercinae**
 315 *Apocryptodon glyphisodon* (Bleeker, 1849)/CS/TW/ECS
 316 *Apocryptodon madurensis* (Bleeker, 1849)
 /CS/SCS/TW/ECS/YS
 317 *Apocryptodon malcolmi* Smith, 1931/CS/SCS
 318 *Boleophthalmus pectinirostris* (Linnaeus, 1758)
 /CS/SCS/TW/ECS/YS
 319 *Oxudercus dentatus* Eydoux & Souleyet, 1842
 /CS/SCS/TW/ECS
 320 *Parapocryptes serperaster* (Richardson, 1846)
 /CS/SCS/TW/ECS
 321 *Periophthalmus argentilineatus* (Valenciennes, 1837)
 /CS/SCS
 322 *Periophthalmus magnuspinnatus* Lee, Choi & Ryu, 1995
 /CS/SCS/TW/ECS/YS/LH
 323 *Periophthalmus modestus* Cantor, 1842
 /CS/SCS/TW/ECS/YS
 324 *Pseudapocryptes elongatus* (Cuvier, 1816)/CS/SCS
 325 *Scartelaos gigas* Chu & Wu, 1963/CS/TW/ECS/YS
 326 *Scartelaos histophorus* (Valenciennes, 1837)/CS/SCS/ECS
- Sicydiinae**
 327 *Sicyopterus japonica* (Tanaka, 1909)/FW/TW
 328 *Sicyopterus macrostetholepis* (Bleeker, 1853)/FW/TW
 329 *Sicyopus zosterophorum* Bleeker, 1857/FW/TW
 330 *Stiphodon atropurpureus* (Herre, 1927)/FW/TW
 331 **Stiphodon multisquamus* Wu & Ni, 1986/FW/HN
 332 *Stiphodon percnopterygionus* Watson & Chen, 1998
 /FW/TW
- Amblyopinae**
 333 *Amblyotrypauchen arctocephalus* (Alcock, 1890)/CS/SCS
 334 *Brachyamblyopus anotus* (Franz, 1910)/CS/SCS/TW
 335 **Ctenotrypauchen chinensis* Steindachner, 1867
 /CS/SCS/TW/ECS/YS
 336 *Ctenotrypauchen microcephalus* (Bleeker, 1860)
 /CS/SCS/TW/ECS/YS/LH
 337 *Odontamblyopus lacepedii* (Temminck & Schlegel, 1845)
 /CS/SCS/TW/ECS/YS/LH
- 338 *Taenioides anguillaris* (Linnaeus, 1758)/CS/SCS/TW/ECS
 339 *Taenioides cirratus* (Blyth, 1860)/CS/SCS/TW/ECS
 340 *Taenioides limicola* Smith, 1964/CS/TW
 341 *Trypauchen taenia* Koumans, 1953/CS/SCS
 342 *Trypauchen vagina* (Bloch & Schneider, 1801)
 /CS/SCS/TW/ECS
- Polyspondylogobiinae**
 343 **Polyspondylogobius sinensis* Kimura & Wu, 1994/CS/SCS
- Microdesmidae**
 344 *Gunnellichthys curiosus* Dawson, 1968/SR/TW
- Ptereleotridae**
 345 *Nemateleotris decora* Randall & Allen, 1973/SR/TW
 346 *Nemateleotris magnificus* Fowler, 1938/SR/TW
 347 *Oxymetopon compressus* Chan, 1966/SR/SCS
 348 *Parioglossus dotui* Tomiyama, 1958/SR/
 349 *Parioglossus formosus* (Smith, 1931)/SR/SCS/TW
 350 **Parioglossus sinensis* Zhong, 1994/SR/ECS
 351 *Parioglossus taeniatus* Regan, 1912/SR/TW
 352 *Ptereleotris evides* (Jordan & Hubbs, 1925)/SR/SCS/TW
 353 *Ptereleotris hanae* (Jordan & Snyder, 1901)/SR/SCS
 354 *Ptereleotris heteroptera* (Bleeker, 1855)/SR/SCS/TW
 355 *Ptereleotris microlepis* (Bleeker, 1856)/SR/TW
 356 *Ptereleotris monoptera* Randall & Hoese, 1985/SR/TW
 357 *Ptereleotris zebra* (Fowler, 1938)/SR/SCS/TW
- Kraemeriidae**
 358 *Kraemeria cunicularia* Rofen, 1958/SR/SCS
- Xenisthmidae**
 359 *Xenisthmus polyzonatus* (Klunzinger, 1871)/SR/TW
- Schindleriidae**
 360 *Schindleria pietschmanni* (Schindler, 1931)/SR/SCS
 361 *Schindleria praematura* (Schindler, 1930)/SR/SCS/TW

ACKNOWLEDGEMENTS

We wish to thank whom have ever helped and provided us in the fish collections, identification, specimen preservation, technical information, research papers, and literature as follows: Profs. Wen-Xuan Cao, Chun-Guang Zhang, Jie Zhang, Jia-kun Song, Wen-Qiao Tang, Jing Liu all in China; Kwang-Tsao Shao, Lee-Shing Fang, Chyng-Shyan Tzeng, Chun-Fu Lai, Yung-Ching Chang all in Taiwan; Drs. K.Y. Poon, Y. Sadovy in Hong Kong; T. Nakabo, M. Aizawa, S. Kimura, K. Meguro, K. Sakamoto, Y. Ikeda, A. Iwata all in Japan; E.J. Kang, S.R. Jeon all in Korea; H.K. Larson in Australia; P.J. Miller in UK; M. Kottelat in Switzerland; P.K.L. Ng and K.K.P. Lim in Singapore; L.R. Parenti in USA; and R. Winterbottom in Canada.

Special thanks Kwang-Tsao Shao who provided a very good literature review and comments for fish taxonomic studies in the Northern South China Sea.

We are very grateful to His Majesty Emperor Akihito of Japan, a well-known goby specialist, has also shown his great support to our gobioid research by kindly providing us with specimens and literatures. His suggestions and opinions on the research of gobies in China were highly valuable.

We would like to express our sincere thank to the all the people above for their great support and assistance.

REFERENCES

- Akihito, P., M. Hayashi and T. Yoshino. 1984. Suborder Gobioidi, In: Masuda, H. and al. (ed.), The Fishes of the Japanese Archipelago. Tokai University Press, Tokyo, pp. 236-289.
- Akihito, K. Sakamoto, Y. Ikeda and K. Sugiyama. 2002. Suborder Gobioidi, In: Nakabo, T. (ed.), Fishes of Japan with pectoral keys to the species. Tokai University Press, Tokyo, pp. 1139-1310.
- Chen, C.H. 2003. Fishes of Penghu. Fisheries Research Institute, Council of Agriculture, Keelung. pp. 188-196. (in Chinese)
- Chen, I.-S., J.P. Chen and L.S. Fang. 2006. A new marine goby of genus *Callogobius* (Teleostei: Gobiidae) from Taiwan. Ichthyol. Res., 53: 228-232.
- Chen, I.-S., Y.H. Cheng and K.T. Shao. 2008. A new species of *Rhinogobius* (Teleostei: Gobiidae) from the Julongjiang basin in Fujian Province, China. Ichthyol. Res., 55: 335-343.
- Chen, I.-S. and L.S. Fang. 1999. The freshwater and estuarine fishes of Taiwan. National Museum of Marine Biology & Aquarium, Pingtung, pp. 180-257. (in Chinese)
- Chen, I.-S. and L.S. Fang. 2003. A new marine goby of genus *Flabelligobius* (Teleostei: Gobiidae) from Taiwan. Ichthyol. Res., 50: 333-338.
- Chen, I.-S. and L.S. Fang. 2006. A new species of *Rhinogobius* (Teleostei: Gobiidae) from Hanjiang basin in Guangdong Province, China. Ichthyol. Res., 53: 247-253.
- Chen, I.-S. and P.J. Miller. 1998. Redescription of a Chinese freshwater goby, *Gobius davidi* (Teleostei: Gobiidae), and comparison with *R. lentiginis*. Cybium, 22: 211-221.
- Chen, I.-S. and P.J. Miller. 2008. Two new freshwater gobies of genus *Rhinogobius* (Teleostei: Gobiidae) in southern China, around northern region of the South China Sea. Raffles Bull. Zool., Suppl. 19: 225-232.
- Chen, I.-S. and K.T. Shao. 1996. A taxonomic review of the gobiid fish genus *Rhinogobius* Gill, 1859, from Taiwan, with description of three new species. Zool. Stud., 35: 200-214.
- Chen, I.-S., K.T. Shao and J.P. Chen. 2006. Two new species of shrimp gobiid, *Amblyeleotris* (Teleostei: Gobiidae) from West Pacific. J. Nat. Hist., 40: 2555-2567.
- Chen, I.-S., M. Kottelat and H.L. Wu. 2002. A new genus of freshwater sleeper (Teleostei: Odontobutidae) from Southern China and Mainland Southeast Asia. J. Fish. Soc. Taiwan., 29: 229-235.
- Chen, I.-S., P.J. Miller and L.S. Fang. 1998. A new species of gobiid fish, *Rhinogobius lanyuensis* from Lanyu Island, Taiwan. Ichthyol. Explor. Freshwater., 9: 255-261.
- Chen, I.-S., P.J. Miller, H.L. Wu and L.S. Fang. 2002. Taxonomy and mitochondrial sequence evolution in non-diadromous species of *Rhinogobius* (Teleostei: Gobiidae) of Hainan Island, southern China. Mar. Fresh. Res., 53: 259-273.
- Chen, I.-S., T. Suzuki, Y.H. Cheng, C.C. Han, Y.M. Ju and L.S. Fang. 2007. New record of the rare amphidromous gobiid genus, *Lentipes* (Teleostei: Gobiidae) from Taiwan with the comparison of Japanese population. J. Mar. Sci. Tech., 15: 47-52.
- Chen, I.-S., H.L. Wu and K.T. Shao. 1999. A new species of *Rhinogobius* (Teleostei: Gobiidae) from Fujian Province, China. Ichthyol. Res., 46: 171-178.
- Chen, I.-S., J.S. Yang and Y.R. Chen. 1999. A new freshwater goby from Honghe basin, Yunnan Prov., China. Acta Zool. Taiwan., 10: 45-52.
- Chen, W. and C.Y. Zheng. 1985. Three species of Eleotridae from China. J. Sci. Med. Jinan Univ., 1985: 73-80. (in Chinese)
- Cheng, Q.T. and B.S. Zheng (eds.). 1987. Systematic synopsis of Chinese fishes. Science Press, Beijing. pp. 426-455. (in Chinese)
- Cheng, Q.T. and C.W. Zhou (eds.). 1997. Fishes of Shandong Province. Shandong Science and Technology Press, Jinan. pp. 362-397. (in Chinese)
- Chu, Y.T. (eds.). 1985. The freshwater fishes of Fujian Province (part 2). Fujian Science and Technology House, Fuzhou. pp. 325-382. (in Chinese)
- Chu, Y.T. and H.L. Wu. 1963. Gobioidi in Chu, Cheng and Tchang (eds). The fishes of East China Sea. Science Press, Beijing. pp. 412-450.
- Chu, Y.T. and Q.T. Cheng and C.L. Tchang. 1963. The fishes of East China Sea. Science Press, Beijing. pp. 412-450. (in Chinese)
- Chu, Y.T. and H.L. Wu. 1965. A preliminary study of the zoogeography of the Gobioid fishes of China. Oceanolog. et Limnolog. Sinica, 7: 122-140. (in Chinese)
- Fowler, H.W. 1972. A synopsis of the fishes of China. suborder Gobiina. Lochen, pp. 1225-1459.
- Guangxi Fisheries Research Institute and Institute of Zoology, the Chinese Academy of Sciences. 2006. Freshwater fishes of Guangxi, China. Second edition. Guangxi People's Publishing House, Nanning. pp. 458-486. (in Chinese)
- Günther, A. 1861. Catalogue of the fishes in British Museum. Catalogue of the acanthopterygian fishes in the collection of the British Museum. Gobiidae. Notacan-

- thi. Vol. 3. British Museum, London, pp. 21-142, 373.
- Harada, G. 1943. Fresh water fishes of the Hainan. Taiwan Press, Taipei, pp. 80-90. (in Japanese)
- Hayashi, M. and T. Shiratori. 2003. Gobies of Japanese Waters. Tokyo, pp. 1-222. (in Japanese)
- Herre, A.W. 1927. Gobies of the Philippines and the China Sea. Monogr. Bur. Sci. Manila, 23: 1-352.
- Huang, J.H. and I-S. Chen. 2008. A newly recorded fresh-water gobioid genus, *Bunaka* Herre, 1927 (Pisces: Eleotridae) from Taiwan. Taiwan. J. For. Sci., 23: 183-189.
- Huang, S.B. and I-S. Chen. 2007. Three new species of *Rhinogobius* Gill, 1859 (Teleostei: Gobiidae) from the Hanjiang basin, Southern China. Raffl. Bull. Zool., Suppl. 14: 101-110.
- Hubei Hydrobiological Institute. 1976. Fishes of Chang-Jiang (Yang-tze River). Science Press, Beijing, pp. 201-209. (in Chinese)
- Iwata, A., S.R. Jeon, N. Mizuno and K.C. Choi. 1985. A revision of the eleotrid goby genus *Odontobutis* in Japan, Korea and China. Japan. J. Ichthyol., 31: 373-388.
- Jordan, D.S. and B.W. Evermann. 1902. Notes on a collection of fishes from the island of Formosa. Proc. U. S. Natl. Mus., 25: 315-368.
- Kim, I.S. and E.J. Kang. 1993. Coloured fishes of Korea. Academy Publishing Company, Seoul, pp. 372-397. (in Korean)
- Kimura, S. and H.L. Wu. 1994. *Polyspondylogobius sinensis*, A new genus and species of gobiid fish from Southern China. Japan. J. Ichthyol., 40: 421-425.
- Koumans, F.P. 1953. Gobioidae. In: Weber, M. and L.F. de Beaufort (eds.), The fishes of Indo-Australian Archipelago. Vol. 10. Leiden, 1-423.
- Larson, H.K. 2001. A revision of the gobiid fish genus *Mugilogobius* (Teleostei: Gobioidae), and its systematic placement. Record. West. Aust. Mus., Suppl. 62: 1-233.
- Larson, H.K. and K.K.P. Lim. 2005. A guide to Gobies of Singapore. Singapore Science Centre, Singapore, pp. 1-164.
- Lee, Y.J. 1992. A taxonomic study of the genera *Acanthobius* and *Synechogobius* (Pisces: Gobiidae) from Korea. Korean J. Ichthyol., 4: 1-25. (in Korean)
- Lee, Y.J., Y. Choi and B.S. Ryu. 1995. A taxonomic revision of the genus *Periophthalmus* (Pisces: Gobiidae) from Korea with description of a new species. Korcan J. Ichthyol., 7: 120-127.
- Liang, Y.S. 1984. Notes on *Rhyacichthys aspro* found in Taiwan. Bull. Inst. Zool. Acad. Sinica., 23: 211-218.
- Liu, C.X. and K.J. Qin. 1987. Fauna Liaoningica Pisces. Liaoning Science and Technology Press, Shenyang, pp. 313-355. (in Chinese)
- Matsuura, K., K. Shibukawa, G. Shinohara and J. Liu. 2001. Fishes collected from the shallow waters of Hainan Island, South China Sea. Natl. Sci. Mus. Monog., 21: 101-126.
- Miller, P.J. 1988. New species of *Corcyrogobius*, *Thorogobius*, and *Wheelerigobius* and from West Africa (Teleostei: Gobiidae). Journal of Natural History, 22: 1245-1262.
- Mori, T. 1927. On the fresh water fishes from the Yalu River, Korea, with description of new species. J. Chosen Nat. Hist. Soc., 6: 7-24.
- Murdy, E.O. 1989. A taxonomic revision and cladistic analysis of the oxudercine gobies (Gobiidae: Oxudercinae). Rec. Austr. Mus., Suppl. 11: 1-93.
- Nelson, J.S. 2006. Fishes of the world. John Wiley and Sons, New York. 4d edition. pp. 419-424.
- Ni, Y. and H.L. Wu (ed.). 2006. Fishes of Jiangsu Province. Agriculture Press of China, Beijing, pp. 634-701. (in Chinese)
- Nichols, J.T. 1943. The fresh water fishes of China. Nat. Hist. Centr. Asia., 9: 138-265.
- Richardson, J. 1846. Report of the 15th Meeting of the British Association for the Advancement of Science, London, June 1846, pp. 204-210.
- Sadovy, Y. and A.S. Cornish. 2000. Reef Fishes of Hong Kong. Hong Kong, pp. 239-259.
- Shao, K.T., J.P. Chen and S.C. Shen. 1992. Marine fishes of the Ken-ting National Park. Ken-ting National Park. Ken-Ting National Park Headquarters Construction and Planning Administration Ministry of Interior, Pingtung, pp. 326-344.
- Shao, K.T., H.C. Ho, P.L. Lin, P.F. Lee, M.Y. Lee, C.Y. Tsai, Y.C. Liao and Y.C. Lin. 2008. A checklist of the fishes of southern Taiwan, Northern South China Sea. Raffles Bull. Zool., Suppl. 19: 233-271.
- Shen, S.C. (ed.). 1993. Fishes of Taiwan. Taiwan Univ. Zool. Depart. Press, Taipei, pp. 523-541. (in Chinese)
- Tchang, C.L. (ed.). 1955. Report of fishes on Yellow Sea and Bo Sea. Science Press, Beijing, pp. 197-231. (in Chinese)
- Tomiyama, I. 1936. Gobiidae of Japan. Japan J. Zool., 7: 37-112.
- Winterbottom, R. and I-S. Chen. 2004. Two new species of genus *Trimma* from the West Pacific Ocean. Raffl. Bull. Zool., Suppl. 11: 103-106.
- Wu, H.L. 1979. Gobioidae. In: South China Sea Fisheries Institute, China National Bureau of Aquatic Products (ed.), The fishes of the islands in the South China Sea. Science Press, Beijing, pp. 486-509. (in Chinese)
- Wu, H.L. 1985. Gobioidae. In: Chu, Y.T. (ed.), The fresh-water fishes of Fujian Province (part 2). Fujian Sci-

- ence and Technology House, Fuzhou, pp. 325-382. (in Chinese)
- Wu, H.L. 1987. Gobioidae. In: Cheng, Q.T. and B.S. Zheng (ed.), Systematic synopsis of Chinese Fishes. Science Press, Beijing, pp. 426-455. (in Chinese)
- Wu, H.L. 1991. Gobioidae. In: Pearl River Fisheries Research Institute, Chinese Academy of Fisheries Science (ed.), The freshwater fishes of Guangdong Province. Guangdong Science and Technology Press, Guangzhou, pp. 422-504. (in Chinese)
- Wu, H.L. and Y. Ni. 1986. Gobioidae. In: Pearl River Fisheries Research Institute, Chinese Academy of Fisheries Science (ed.), The freshwater and estuaries fishes of Hainan Island. Guangdong Science and Technology Press, Guangzhou, pp. 259-314. (in Chinese)
- Wu, H.L., I-S. Chen and D.H. Chong. 2002. A new species of the genus *Odontobutis* (Pisces, Odontobutidae) from China. *J. Shanghai Fisher. Univ.*, 11: 6-13. (in Chinese)
- Wu, H.L., K.T. Shao and C.F. Lai. 1999. A Latin-Chinese dictionary of world fishes names. Fisheries Publishing House, Keelung, 1028pp. (in Chinese)
- Wu, H.L., X.Q. Wu and Y.H. Xie. 1993. A revision of the genus *Odontobutis* from China with the description of a new species. *J. Shanghai Fisher. Univ.*, 2: 52-61. (in Chinese)
- Wu, H.L., Y.H. Zhen, Y. Mu and D.H. Chong. 2002. A new revision of the ichthyotoxic and medicinal fishes of China. Agriculture Press of China, Beijing, pp. 145-148, 580-586. (in Chinese)
- Wu, H.L., J.S. Zhong, I.S. Chen, N. Yong, D.W. Chong and K.T. Shao. 2008. Fauna Sinica Ostichthyes Perciformes (V) Gobioidae. Science Press, Beijing, 949pp. (in Chinese)
- Wu, H.W. 1931. Notes on the fishes from the coast of Foochow Region and Ming River. *Contr. Biol. Lab. Sci. Soc. China, Zool. series.*, 7: 1-64.
- Yang, J.Q., H.L. Wu and I-S. Chen. 2008. A new species of *Rhinogobius* (Teleostei: Gobiidae) from the Feiyunjiang Basin in Zhejiang Province, China. *Ichthyol. Res.*, 55: 379-385.
- Zhang, J.M. 1995. Fishes of Heilongjiang Province. Heilongjiang Science and Technology Press, Haerbin, pp. 222-229. (in Chinese)
- Zhao, S.L. and J.S. Zhong. 2006. The marine fishes of Zhoushan Islands in coloured illustrations. Zhejiang Science and Technology House, Hangzhou, pp. 143-150. (in Chinese)
- Zheng, B.S. 1955. Gobioidae. In: Tchang, C.L. (ed.), Report of fishes on Yellow Sea and Bo Sea. Science Press, Beijing, pp. 197-231. (in Chinese)
- Zheng, B.S. 1962. The Fishes of South China Sea. Science Press, Beijing, pp. 773-832. (in Chinese)
- Zheng, C.Y. (ed.). 1989. Fishes of Pearl River. Science Press, Beijing, pp. 342-364. (in Chinese)
- Zhong, J.S. 1994. On a new species of genus *Parioglossus* Regan (Perciformes, Eleotridae) from China. *J. Shanghai Fisher. Univ.*, 3: 127-130. (in Chinese)
- Zhong, J.S. 1997. Review the classification of *Acentrogobius* Bleeker (Perciformes: Gobiidae) from China. *J. Shanghai Fisher. Univ.*, 6: 200-211. (in Chinese)
- Zhong, J.S. and I-S. Chen. 1997. A new species of the genus, *Pseudogobiopsis* (Pisces, Gobiidae) from China. *J. Taiwan Mus.*, 50: 77-84. (in Chinese)
- Zhong, J.S. and C.S. Tzeng. 1998. A new species of *Rhinogobius* from China. *Zool. Res.*, 19: 237-241. (in Chinese)
- Zhong, J.S. and H.L. Wu. 1998. *Pseudorhinogobius aporus*, a new genus and species of Gobliid fish from Eastern China. *J. Fisher. China*, 22: 148-153. (in Chinese)
- Zhou, W. 1990. The fishes of Yunnan, China. Part 2. Science Press, Beijing, pp. 250-257. (in Chinese)
- Zhuang, P., Y.H. Wang, S.F. Li, S.M. Deng, C.S. Li and Y. Ni. 2006. Fishes of the Yangtze estuary. Shanghai Scientific & Technical Publishers, Shanghai, pp. 204-227. (in Chinese)