

## SEVEN NEW RECORDS OF FISHES FROM ANDAMAN ISLANDS

P.T. RAJAN AND C.R. SREERAJ

Zoological Survey of India Andaman and Nicobar regional Centre, Port Blair-744102

Email: rajanpt537@gmail.com

### INTRODUCTION

Andaman Nicobar Islands situated in the Bay of Bengal between 6°45' -13 45' N and 92°10' - 94°15' E consist of 352 islands 220 islets and rock. It covers a distance of almost 470 km over North South, with a coastline of 1962 km, and brings in for India an Exclusive Economic Zone (EEZ) of 600 thousand sq km. The coast is under the influence of a diverse set of oceanographic and ecological conditions. The shelf topography of these islands show frequent rises supporting coral reefs, which are characterized as fringing reefs on the eastern side and barrier reefs off west coast; the depressions are known as passages and straits. Besides coral reefs, the shore is composed of rocky and sandy areas and vast stretches of mangrove swamps, also few freshwater rivers and streams.

A comprehensive and authoritative account of fishes of the Indian region including Andaman and Nicobar Islands was published by Francis Day (1870, 1875-78 and 1888). Herre (1941) listed 490 species of fishes. Talwar (1990) prepared a comprehensive list of fishes consisting of 724 species, followed by a supplementary list by Kamla Devi (1991) containing 71 species of fish. The recent developments in the fish taxonomy of these Islands are the works by Kamla Devi and Rajan (1991), Mishra and Krishnan (1992), Krishnan and Mishra (1992), Dhandapani and Mishra (1993), Rajan (2001 a, 2001b, 2003, 2009), Rajan *et al.* (1992, 1993a, 1993b, 2012), Kamla Devi *et al.* (1993), Kamla Devi and Rao (1997, 2003a, 2003b, 2007), Rao *et al.* (1992, 1992a,

1992b, 1994, 1993a, 1993b, 1997, 2000), Rao (2003, 2009), Rao and Kamla Devi (1996, 1997a, 1997b, 1998, 2004), Soundararajan and Dam Roy (2004), Remadevi *et al.* (2010) Rajaram *et al.* (2007), Ramakrishna *et al.*, 2010, Smith-Vaniz, 2011 and Smith-Vaniz and Allen (2012).

### MATERIALS AND METHODS

The new records of fishes were made by fish sampling during the field surveys in the coral reef areas, mangrove habitats and freshwater streams. The identified fishes were deposited in the reference collection of Zoological survey of India, Port Blair. Taxonomic classification follows Nelson (2006).

### RESULTS AND DISCUSSION

The last few years represent a significant increase of knowledge about the fishes of Andaman and Nicobar Islands. During this study 7 new record of fishes were recorded under 2 orders, 4 families and 7 genera as *Rasbora hobelmani* Kottelat, 1984, *Pogonoperca ocellata* Gunther, 1859, *Apogonichthyoides nigripinnis* (Cuvier, 1828), and the gobies *Acentrogobius janthinopterus* (Bleeker, 1853), *Aulopareia koumansii* (Herre 1937), *Oligolepis acutipennis* (Valenciennes, 1837) and *Psammogobius biocellatus* (Valenciennes, 1837), are associated with coral reef, mangrove and freshwater habitats. With the exception of *Rasbora hobelmani*, collected from North Andaman, all the other species were collected from South Andaman.

**SYSTEMATICS**

Class ACTINOPTERYGII

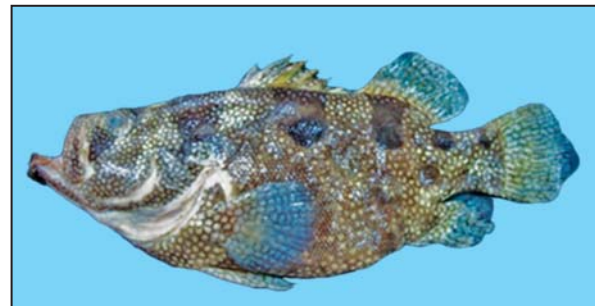
Order CYPRINIFORMES

Family CYPRINIDAE

***Rasbora hobelmani*** Kottelat, 1984  
Kottelat *Rasbora*1984. *Rasbora hobelmani* Kottelat, *Rev. Suisse Zool.*, **91**(3): 718, fig. 1 (Type locality: Chiangmai Province, Thailand).**Material examined:** Kalpong River, North Andaman; 1 ex.; 5.5 cm; P.T Rajan.**Diagnostic characters:** Dorsal soft rays 10; Anal soft rays 8; Lateral line complete with 25 scales. Body elongate; mouth moderate, obliquely directed upwards; dorsal fin inserted behind base of pelvic fins; caudal fin forked; lateral line complete. Body silvery-brown, more grayish on back and head; a black stripe from upper edge of branchial opening to base of caudal fin, the stripe expanded in an irregularly shaped spot on caudal peduncle, lateral stripe being wider on the body between opercle and vertical of dorsal fin than on the caudal peduncle; crescentic brown basal markings on scales; a black stripe at anal fin base; fins hyaline. Attains 7 cm.**Habitat:** Found from midwater to surface in pools of small upland freshwater streams.**Distribution:** Asia: eastern Myanmar, northern Thailand and the Mekong basin; North Andaman (Kalpong River), Andaman Islands.**Remarks:** First report from India***Rasbora hobelmani*** (freshly dead specimen)

Order PERCIFORMES

Family SERRANIDAE

***Pogonoperca ocellata*** Gunther, 1859 Bearded Soapfish1859. *Pogonoperca ocellata*, Gunther, *A. Catalogue of the fishes in the British Museum*, **1**: 169. (Type locality: Mauritius, Mascarenes, southwestern Indian Ocean).2012. *Pogonoperca ocellata* Allen and Erdmann. *Reef fishes of the East Indies*: 305.**Material examined:** Junglighat fish market, South Andaman; 1 ex.; 8.6 cm; P.T Rajan.**Diagnostic characters:** Dorsal fin with 8 spines and 12 rays; Anal fin with 3 spines and 8 soft rays; pectoral fin rays 18; pelvic fins short, 1.7 to 2 times in head length; Body oblong, mouth large, the maxilla extending to or slightly beyond a vertical through centre of eye; upper preopercular margin with 3 to 5 short spines; margins of subopercle and interopercle smooth; a flat fleshy flap as large as eye oriented transversely on tip of chin; the spinous portion nearly separated from the soft portion by a deep notch; caudal fin rounded. Colour: brown, somewhat blotched, with numerous dark-edged small white spots on head, body and basally on fins; 4 triangular black saddles on back, the first on nape and the last anteriorly on caudal peduncle.**Habitat:** Occurs on coral reefs.**Distribution:** Indian Ocean, India, Andaman Islands.**Remarks:** First report from India***Pogonoperca ocellata*** (freshly dead specimen)

Family APOGONIDAE

***Apogonichthyoides nigripinnis*** (Cuvier, 1828)

Bulls-eye Cardinal

1828. *Apogon nigripinnis* Cuvier, in Cuvier & Valenciennes *Histoire naturelle des poissons*, **2**: 152. (Type locality: Java, Indonesia; Puducherry, India).2010. *Apogonichthyoides nigripinnis* Fraser and Allen. *Zootaxa* No. 2348: 44.**Material examined:** Sippyghat, South Andaman; 1 ex.; 5.8 cm; P.T Rajan.

**Diagnostic characters:** Dorsal fin VIII spines and 9 soft rays; Anal fin II spines and 8 soft rays; Pectoral 15 rays; Lateral line with 28 scales; predorsal scales 2. Low hump above eyes; teeth villiform posteriorly on jaws and vomer, becoming larger and incurved anteriorly; caudal fin truncate. Body with a dark vertical bar under each dorsal and another on caudal base; large ocellus above pectoral; ventral black; pectoral light and other fins dusky to dark. Attains 10 cm.

**Habitat:** Mud bottoms of estuaries and mangroves.

**Distribution:** Indo-West Pacific, Red Sea and south to Delogo Bay; Sippyghat (Andaman Islands).

**Remarks:** First report from Andaman Islands.



*Apogonichthyoides nigripinnis* (freshly dead specimen)

***Acentrogobius janthinopterus*** (Bleeker, 1853)  
Green-spotted Goby

1853. *Gobius janthinopterus*, Bleeker, *Natuurkundig Tijdschrift voor Nederlandsch Indie* v. 3 (no. 5): 702. (Type locality: Wahi, Ceram, Indonesia).
2012. *Acentrogobius janthinopterus* Allen and Erdmann *Reef fishes of the East Indies*, Vol. 3: 954.

**Material examined:** Sippyghat, South Andaman; 1 ex.; 6.2 cm; P.T. Rajan.

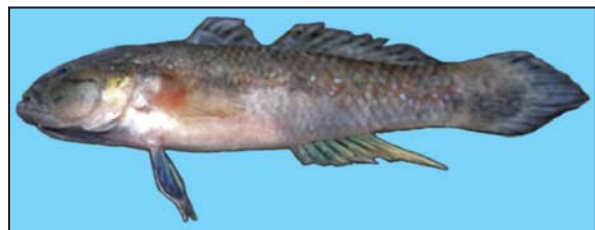
**Diagnostic characters:** Dorsal fin with VII spines and 10 soft rays; Anal fin with I spine and 10 rays; Pectoral fin 16 rays; Longitudinal scales series 32. Spines of first dorsal fin elongate and filamentous in male; caudal fin rounded, about equal to or slightly longer than head; predorsal scales scaled to just behind eyes; upper half of cheek

scaled and opercle fully scaled. Pale grayish to light brown with brown mottling on back, horizontal row of about five brown blotches along midside, scattered iridescent green flecks and submarginal dark band on caudal fin.

**Habitat:** Mud bottoms of estuaries, mangroves and occasionally in the vicinity of reefs if mangroves nearby.

**Distribution:** Sumatra to Australia, north to Japan; ranges throughout most of East Indian region; Sippyghat (Andaman Islands).

**Remarks:** First report from India



*Acentrogobius janthinopterus* (freshly dead specimen)



*Acentrogobius janthinopterus* (Preserved specimen)

***Aulopareia koumansii*** (Herre 1937)  
Kouman's Goby

1937. *Gnatholepis koumansii*, Herre, in Herre & Myers *Bulletin of the Raffles Museum* No. 13: 39, Pl. 1. (Type locality: Malacca Straits, 100 miles west of Singapore, off the northern coast of Sumatra, Indonesia).
2001. *Aulopareia koumansii*, Larson and Murdy In: Carpenter & Niem, *The living marine resources of the western central Pacific*. Bony fishes part 4 FAO, Rome. v. 6: iii-v; 3595.

**Material examined:** Sippyghat, South Andaman; 1 ex.; 4.4 cm; P.T. Rajan.

**Diagnostic characters:** Dorsal fin with VII spines and 10 soft rays; Anal fin I spine and 9 rays; Longitudinal scale series 29; Lateral transverse scales 10; Predorsal scales 16. Body elongate, compressed; eye small; mouth oblique,

lower jaw prominent; teeth in 3-4 rows, outer row enlarged; both the jaws with a canine on each side; isthmus broad; head scaled behind eyes; cheek with 6 longitudinal rows of scales, between which 4 longitudinal mucous canals; opercle scaled; first dorsal fin lower than body, 3<sup>rd</sup> ray longest; 2<sup>nd</sup> dorsal and anal fins becoming higher posteriorly. Body pale brownish and each scale bearing a pearl coloured spot; over nape a narrow black stripe; caudal fin dusky and all other fins black.

*Habitat*: Marine in mangrove creeks.

*Distribution*: Western Pacific and Sippyghat (Andaman Islands).

*Remarks*: First report from India.



*Aulopareia koumansii* (freshly dead specimen)

***Oligolepis acutipennis*** (Valenciennes, 1837)  
Sharp-tail Goby

1837. *Gobius acutipennis*, Valenciennes, in Cuvier & Valenciennes *Histoire naturelle des poissons*, **12**: 80. (Type locality: Malabar, India).

1991. *Oligolepis acutipennis*, Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, **2**: 939.

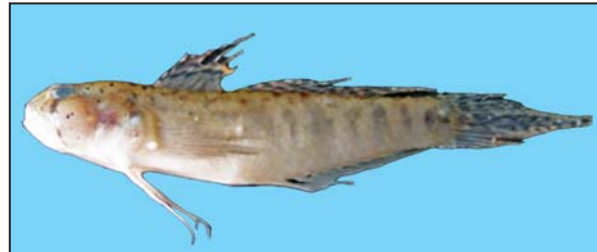
*Material examined*: Sippyghat, South Andaman; 1 ex.; 8.9 cm; P.T Rajan.

*Diagnostic characters*: Dorsal fin with VII spines and 10 rays; Anal fin I spine and 10 rays; Pectoral fin 20 rays; Longitudinal scales series 27. Body elongate and compressed; mouth oblique; tongue largely fused to floor of mouth, its tip free; dorsal spines 3<sup>rd</sup> to 5<sup>th</sup> prolonged and filamentous in male; predorsal and pectoral fin base scaleless. Body brownish with numerous dark blotches along back and a black blotch at caudal fin base; a black bar from eye to cheek; fins hyaline to dusky, often spotted. Attains 15 cm.

*Habitat*: Found in muddy estuaries and coastal bays, enters lower reaches of freshwater streams.

*Distribution*: Indo-West Pacific: Natal, South Africa to Indonesia and the western Pacific; Sippyghat (Andaman Islands).

*Remarks*: First report from Andaman Islands.



*Oligolepis acutipennis* (freshly dead specimen)

***Psammogobius biocellatus*** (Valenciennes, 1837) Sleepy Goby

1837. *Gobius biocellatus*, Valenciennes, in Cuvier & Valenciennes *Histoire naturelle des poissons*, **12**: 73. (Type locality: Puducherry, India).

2001. *Psammogobius biocellatus*, Larson, and Murdy, In: Carpenter & Niem. *The living marine resources of the western central Pacific*, **6**: iii- v. 3599.

*Material examined*: Sippyghat, South Andaman; 1 ex.; 7.2 cm; P.T Rajan.



*Psammogobius biocellatus* (freshly dead specimen)

*Diagnostic characters*: Dorsal fin with VII spines and 9 rays; Anal fin 1 spine and 8 rays; Pectoral with 17 rays; Scales in lateral series 28; lateral transverse scales 8; predorsal scales 15. Body is cylindrical and tapers towards the tail; head is big, triangular at the snout, mouth is large; with the lower jaw slightly longer than the upper jaw; eyes near the top of the head, large and placed close to one another; branchiostegal membranes form a free fold across isthmus. Body dark brown to black, with longitudinal rows of small black spot; 2-3 saddles on back and side; black 1st dorsal fin; dark cross-bands on pelvic fins; iris with a lappet dorsally covering part of pupil. Attains 12 cm.

*Habitat*: Inhabits intertidal areas, estuaries, lagoons and coastal rivers. Common in the mangroves.

*Distribution*: Indo-Pacific; Sippyghat (Andaman Islands).

*Remarks*: First report from Andaman Islands.

### CONCLUSIONS

It appears that the Andaman and Nicobar Islands coast has a regular connectivity with the south-eastern coast of Indonesia and north-eastern coast of Burma as observations of tropical affinity species. The fish diversity in these waters also receives special interest in terms of marine zoo-geography because of the confluence of Andaman Sea fishes with Western Pacific and the Eastern Indian Ocean. Long-term monitoring studies will allow a better understanding of distribution patterns along the

coast of Andaman and Nicobar Islands as well as the possible establishment of new populations of species. Review of literature revealed that *Rasbora hobelmani* Kottelat 1984, *Pogonoperca ocellata* Gunther 1859, *Acentrogobius janthinopterus* (Bleeker 1853) and *Aulopareia koumansii* (Herre 1937) are new additions to Indian waters and *Apogonichthyoides nigripinnis* (Cuvier, 1828), *Oligolepis acutipennis* (Valenciennes, 1837) and *Psammogobius biocellatus* (Valenciennes, 1837) are new additions to Andaman Islands. Addition of these seven new records of fishes resulted a total of 1434 species to the fish diversity of Andaman and Nicobar Islands, under 576 genera belonging to 33 orders and 165 families.

### ACKNOWLEDGEMENTS

We thank Dr K. Venkataraman, Director, Zoological Survey of India, Kolkata and Dr C. Raghunathan, Officer-in-Charge, Zoological Survey of India, Port Blair for facilities and encouragement to undertake this study.

### REFERENCES

- Day, F. 1870. On the fishes of the Andaman and Nicobar Islands. *Proc. Zool. Soc. Lond.*, : 677-705.
- Day, F. 1875-78. The Fishes of India being a natural history of the fishes known to inhabit the seas and freshwaters of India, Burma and Ceylon. 4 pts. London, 778 pp.
- Day, F. 1888. Fishes of India. Supplement. William Dawson, London, : 779-816.
- Devi, K. 1991. Supplementary list to the fishes of Bay Islands. *J. Andaman Sci. Assoc.*, **7**(2): 101-103.
- Devi, K. and D.V. Rao, 1997. New records of reef fishes from Andaman waters. *J. Andaman Sci. Assoc.*, **13**(1&2): 104-106.
- Devi, K. and D.V. Rao, 2003 a. Poisonous and venomous fishes of Andaman Islands, Bay of Bengal. *Rec. zool. Surv. India, Occ. Paper No.*, **211**: 1-71.
- Devi, K. and D.V. Rao, 2007. Mangrove Ichthyofauna of Andaman and Nicobar Islands, Bay of Bengal. Z.S.I., Port Blair, 228 pp.
- Devi, K., and D. V. Rao, 2003 b. A field guide to the fishes of Acanthuridae (Surgeon fishes) and Siganidae (Rabbit fishes) of Andaman and Nicobar Islands. Zoological Survey of India, Kolkata. Pp 42.
- Devi, K., D.V. Rao and P.T. Rajan, 1993. New records of wrasses (Labridae) and parrot fishes (Scaridae) from Andaman Islands. *J. Andaman Sci. Assoc.*, **11**(1&2): 76-78.
- Dhandapani, P. and S.S. Mishra, 1993. New records of marine fishes from Great Nicobar. *J. Andaman Sci. Assoc.*, **9**(1&2): 58-62.

- Herre, A.W.C.T. 1941. List of the fishes known from the Andaman Islands. *Mem. Indian Mus.*, **13**(3): 331-403.
- Krishnan, S. and S.S. Mishra, 1992. New records of the fishes from Andaman and Nicobar Islands. *J. Andaman Sci. Assoc.*, **8**(1): 82-84.
- Mishra, S.S. and S. Krishnan, 1992. Further new records of fishes from Andaman Islands. *J. Andaman Sci. Assoc.*, **8**(2): 175-177.
- Nelson, J. S. 2006. *The fishes of the world*. John Wiley & Sons, New York, 423pp.
- Rajan, P.T. 2001 a. A field guide to Grouper and Snapper fishes of Andaman and Nicobar Islands. Z.S.I., Port Blair, 103 pp.
- Rajan, P.T. 2001 b. New record of a Jawfish, *Opistognathus nigromarginatus* Ruppell (Perciforms : Opistognathidae) from Andaman and Nicobar Islands. *Geobios*, **28**(23): 171-172.
- Rajan, P.T. 2003. *A field Guide to Marine Food Fishes of Andaman and Nicobar Islands*. Z.S.I., Kolkata, 260 pp.
- P.T. Rajan, 2009. *Guide to Chaetodontidae (Butterflyfishes) and Scaridae (Parrot fishes) of Andaman and Nicobar Islands:1-94*, (Publishes by the Director, Zoological Survey of India, Kolkata).
- Rajan, P.T., D.V. Rao and K. Devi, 1992. New records of butterfly fishes from Andaman Islands. *J. Andaman Sci. Assoc.*, **8**(2): 172-174.
- Rajan, P.T., D.V. Rao and K. Devi, 1993. New records of fusilier fishes (Family: Caesionidae) from Andaman Sea. *J. Andaman Sci. Assoc.*, **9**: 76-78.
- Rajan, P.T., D.V. Rao, K. Devi and S. Dey, 1993. New records of rare fishes from Andaman Islands. *J. Andaman Sci. Assoc.*, **9**(1&2): 103-106.
- Rajan, P.T., Sreeraj, C.R. and Venkataraman, K., 2012. Diversity and abundance of chondrichthian fishes in Andaman and Nicobar Islands. in K. Venkataraman, Raghunathan, C and Sivaperuman, c. et al. (Eds). *Ecology of faunal communities on the Andaman and Nicobar Islands*. Springer-Verlag Berlin Heidelberg: 117-126.
- Rajaram, R., M. Srinivasan, A.S. Khan, L. Kannan, D.V. Rao and K. Devi, 2007. New records of two eel fishes from Great Nicobar Island, Bay of Bengal. *J. Bombay nat. Hist. Soc.*, **104**: 228-229.
- Ramakrishna, Titus Immanuel. Sreeraj, C.R., Raghunathan, C., Raghuraman, R., Rajan, P.T. and Yogesh Kumar, J.S. 2010. An account of additions to the Ichthyofauna of Andaman and Nicobar Islands. *Records of the Zoological Survey of India, Occasional Paper no. 326*: 1-140 (Published-Director, Zool. Surv. India, Kolkata).
- Rao, D. V., K. Devi and P.T. Rajan, 1997. New records of fishes from Andaman and Nicobar Islands. *Environ. Ecol.*, **15**: 107-112.
- Rao, D.V. and K. Devi, 1996. Notes on rabbit fishes (family: Siganidae) of Andaman and Nicobar Islands. *J. Andaman Sci. Assoc.*, **12**(1&2): 84-88.
- Rao, D.V. and K. Devi, 1997 a. Emperor fishes (Family: Lethrinidae) of Andaman and Nicobar Islands. *Environ. Ecol.*, **15**: 899-903.
- Rao, D.V. and K. Devi, 1997 b. Snappers (Family: Lutjanidae) of Andaman and Nicobar Islands. *Environ. Ecol.*, **15**: 924-931.

- Rao, D.V. and K. Devi, 1998. Fusilier fishes (Family: Caesionidae) of Andaman and Nicobar Islands. *Environ. Ecol.*, **16**: 760-771.
- Rao, D.V. and K. Devi, 2004. A Pictorial Guide to Butterfly and Anemone fishes of Andaman & Nicobar Islands. Z.S.I., Kolkata, 78 pp.
- Rao, D.V., 2003. Guide to Reef Fishes of Andaman and Nicobar Islands. Z.S.I., Kolkata, 555 pp.
- Rao, D.V., 2009. Checklist of fishes of Andaman and Nicobar Islands, Bay of Bengal. *Environ. Ecol.*, **27**(1a): 334-353.
- Rao, D.V., K. Devi and P.T. Rajan 2000. An account of Ichthyofauna of Andaman & Nicobar Islands, Bay of Bengal. *Rec. zool. Surv. India, Occ. Paper No.*, **178**: 1-434.
- Rao, D.V., K. Devi and P.T. Rajan, 1992 a. New records of tetraodontiform fishes from Andaman and Nicobar Islands. *J. Andaman Sci. Assoc.*, **8**(2): 115-120.
- Rao, D.V., K. Devi and P.T. Rajan, 1992 b. Some new records of wrasses (family : Labridae) from Andaman and Nicobar Islands. *J. Andaman Sci. Assoc.*, **8**(1): 43-46.
- Rao, D.V., K. Devi and P.T. Rajan, 1993 a. Addition to the fish fauna to the Andaman and Nicobar Islands. *Environ. & Ecol.*, **11**(4): 882-887.
- Rao, D.V., K. Devi and P.T. Rajan, 1993 b. Further new records of fishes from Bay Islands. *J. Andaman Sci. Assoc.*, **9**(1&2): 50-57.
- Rao, D.V., K. Devi and P.T. Rajan, 1994. Additions to the Ichthyofauna of Bay Islands. *J. Andaman Sci. Assoc.*, **10**(1&2): 28-31.
- Rao, D.V., P.T. Rajan and K. Devi, 1992. New records of groupers (Family : Serranidae) and cardinal fishes (Family : Apogonidae) from Andaman & Nicobar Islands. *J. Andaman Sci. Assoc.*, **8**(1): 47-52.
- Rema Devi, K. 2010. Freshwater fishes of Andaman Islands. In: Ramakrishna, Raghunathan, C and Sivaperuman (Eds), *Recent trends in Biodiversity of Andaman and Nicobar islands*: 329-339. (Published by the Director, Zool. Sur. India, Kolkata).
- Soundarajan, R and S. Dam Roy, 2005. Distributional records and biological notes on two deep sea shark *Centrophorus axus* Garnan and *Squalus megalops* (Macleay) from Andaman waters. *J. Mar. Biol. Assoc. India*, **46**(2). 178-184.
- Smith-Vaniz, W.F. 2011. *Opistognathus albicaudatus*, a new species of jawfish (Teleostei: opistognathidae) from the Andaman Islands. *Zootaxa*, **3085**: 34-40.
- Smith-Vaniz, W. F. & Allen, G. R. 2012. *Alloblennius frondiculus*, a new species of blenny from the Andaman Islands. (Teleostei: Blenniidae: Salariini). *Zootaxa*, **3199**: 60-65.
- Talwar, P.K. 1990. Fishes of the Andaman and Nicobar Islands: A Synoptic analysis. *J. Andaman Sci. Assoc.*, **6**(2): 71-102.