

Mangrove Ichthyofauna of Andaman & Nicobar Islands

Bay of Bengal

**KAMALA DEVI
D.V. RAO**



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**Mangrove Ichthyofauna of Andaman & Nicobar Islands,
Bay of Bengal**

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INTRODUCTION

Mangrove ecosystems are the most important and characteristic littoral plant formations of tropical and subtropical sheltered coastlines. Mangroves have suffered from a very poor reputation in the last several decades and further, have often been considered unsafe, worthless and harmful flies and mosquito-infested areas, being avoided by the people. Until very recently, mangrove swamps were often considered unattractive and frequently cut down for fire wood. In-times they have been re-evaluated due to their principal ecological functions such as breeding, spawning, hatching and nursery grounds for a variety of marine fauna. They also play a major role in shoreline stability and prevent excessive erosion. They are systems of both high organic production and nutrient traps. Mangroves reduce the flow of nutrient loads into the sea and support the growth of seagrasses and corals around coastal regions. The mangrove ecosystem is highly productive and helps in exchange of matter and energy with adjacent terrestrial and marine ecosystems. The different macro habitats of the mangroves support rich and taxonomically diverse microbial, floral and faunal components, making this ecosystem a reservoir for abundant and unique biodiversity. Next to their ecological value, mangroves provide abundant commercial products, generating much needed economic opportunities in the coastal regions. The most important component of the economic potential of mangroves is the use of their biodiversity such as fishes, crustaceans and molluscs. The fish is considered as one of the most important components of the mangrove fauna.

The mangroves usually grow in sheltered low lying coastal areas, mudflats, tidal creeks, backwaters, marshes, lagoons and estuaries of tropical and subtropical regions of the world. In India mangroves are distributed along the east and west coasts and Andaman and Nicobar Islands covering an estimated area of 6,740 sq. km. (Das, 2002), which constitutes about 7% of the world mangroves. The three different types of mangrove forests found in India are deltaic, backwater or estuarine and insular types. The mangrove vegetation usually grows on soft or compact mud, sandy-mud and rocks or adjacent to reefs.

MANGROVES OF A & N ISLANDS

The Andaman and Nicobar Islands comprise an arcuate chain of more than 500 island, islets and rocks in the Bay of Bengal lying between lat. 06° and 14° N and long. 92° and 94° E. The islands are spread in a linear distance of about 1120 km. and constitute the summits of the submarine range of hills connecting the Arakan Yomas of

Burma with the Achin Head in Sumatra of Indonesia. The islands have a coastline of 1926 km. There are a few rivers and streams flowing on the islands. The coastline is quite wavy with many serpentine creeks, lagoons and bays, supporting rocky, sandy and muddy beaches. Extensive sand and mud flats are common in sheltered areas and mangrove swamps. The mangroves are quite rich along sheltered bays, lagoons and creeks, while the coral reefs of the fringing type are common in shallow coastal waters.

The mangrove vegetation is quite extensive around these islands occupying an area of more than 1000 sq. km. (Blasco, 1977), but it has recently been reduced to about 750 sq. (Nayak, 1998) as per the satellite imageries taken during 1990-92. However, the mangrove area is quite extensive in Andaman Islands due to the presence of many sheltered areas, while it is sparse in the Nicobar Islands due to more exposed nature. The mangroves are completely absent on Car Nicobar due to full exposure to surf action all around the island (Rao and Khan, 1989). About 34 species of mangrove plants under 17 genera belonging to 13 families (Dagar, *et al.*, 1991) have been described from these islands.

Around the Islands mangroves grow on intertidal region, more or less sheltered, gently sloping flats. Muddy flats are the most flattering environments for mangroves but sandy flats are also common in the islands. Because of their intertidal location, mangroves have developed a number of morphological and physiological adaptations to cope with the saltwater conditions. In the Islands, the mangroves can be distinguished in to two categories, the creek mangroves and coastal mangroves. The creeks provide the protection they need to grow well. The growth of mangroves along the coastal areas is depending on the favourable current conditions or by presence of reefs or by one or more small islands protecting the coast from the severe wind and wave actions.

The animal communities associated with mangroves spans a wide range of invertebrates and vertebrates include both aquatic and terrestrial fauna. Hitherto 914 species of different faunal components including fish were reported to occur in the mangrove areas of the islands (Das, 2002). Fishes are the most conspicuous element of the mangrove fauna. During the high tide many fish enter mangrove forests in search of food, remain in the forest during high tide and leave again as the tide recedes. Many commercially important fish such as flounders, mullets, breams, flatheads, groupers, snappers, clupeids, anchovies, rabbitfishes, silverbellies etc. spend much of their juvenile and young life in mangrove creeks before moving out into adjacent sea water as adults. Studies on the mangrove fish fauna of these islands are very scanty. Das and Dev Roy (1989) first listed about 35 species of fish from mangrove environment of the islands. Later, Rajan and Dam Roy (2004) compiled a list of about 239 species of fish belonging to 59 families from the mangrove ecosystem. The number of species so far recorded from the islands is very high compared to any other mangrove ecosystems of the world. The highest number of fishes, about 262 species was reported from the



Fig. 1. Mangrove creeks at Mayabunder



Fig. 2. Dense mangrove patches



Fig. 3. Mangroves during low tide



Fig. 4. Cast net operation at Landfall Id.



Fig. 5. Mangrove creeks at Galathea Bay



Fig. 6. Mangrove creek during low tide



Fig. 7. Dense mangrove forest



Fig. 8. Wall of Mangrove belt between open sea and inner bay

southwest lagoon of New Caledonia (Thollot, 1996). A perusal of literature shows that fish is the dominant component of the mangrove fauna of the world. About 40 species of fish from mangroves of North Borneo by Inger (1955), 129 species from Madagascar by Kiner (1965), 54 species from South Vietnam by de Sylva and Michel (1974), 232 species from the South Africa by Wallace (1975), 52 species from western Puerto Rico by Austin (1977), 194 species of fish from Pitchavaram mangroves, South India by Krishnamurthy and Prince Jeyaseelan (1981), 204 species from North Australia and Papua New Guinea by Collette (1983) are reported. Keeping in view of the richness of mangrove ichthyofauna of these islands, the authors made a comprehensive study of the mangrove ichthyofauna of the islands and surprisingly recorded 290 species under 175 genera belonging to 68 families. The fish samples have been collected from the mangrove areas of different localities around the Andaman and Nicobar Islands by using bag net, traps, cast net, stake nets etc. The samples were preserved in 10% neutral formaldehyde and added to the National Zoological Collections of the Zoological Survey of India, Port Blair. The recorded species are documented here with their salient diagnostic features, habitat and biology, and distributional range. Based on the field observations and available information in the literature, the biology of the species is also given. An index to the species is provided at the end. All the references cited in the text along with the important references on fish studies are also provided.

It was observed that more than 50% of fishes recorded from mangroves are commercially important. But the direct exploitation of these resources in the islands is negligible. The sustainable utilization of these mangrove fish resources helps in improving the economy of local fishermen. The gear operated by the local fishermen to exploit these fish resources in the mangroves and creeks are the hand net, cast net, gill net, bag net and hook and lines etc., which are briefly described below :

Hand net : It is made of a circular iron ring or a cane with a handle fitted with a nylon bag of 60 to 70 cm length. The hand net is operated during low tide in the stagnated waters of mangrove forest to collect fish (fig. 9).

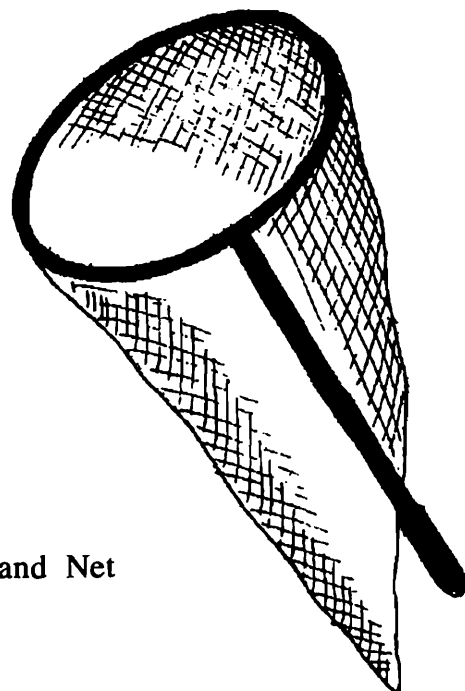


Fig. 9. Hand Net

Cast net : It is the most common net used by the fishermen in shallow mangrove areas by individual persons. The size of the net varies from 2-3 m diameter, with varying mesh sizes. The net is operated either from a small dinghy or standing in shallow waters during day or night (fig. 10).

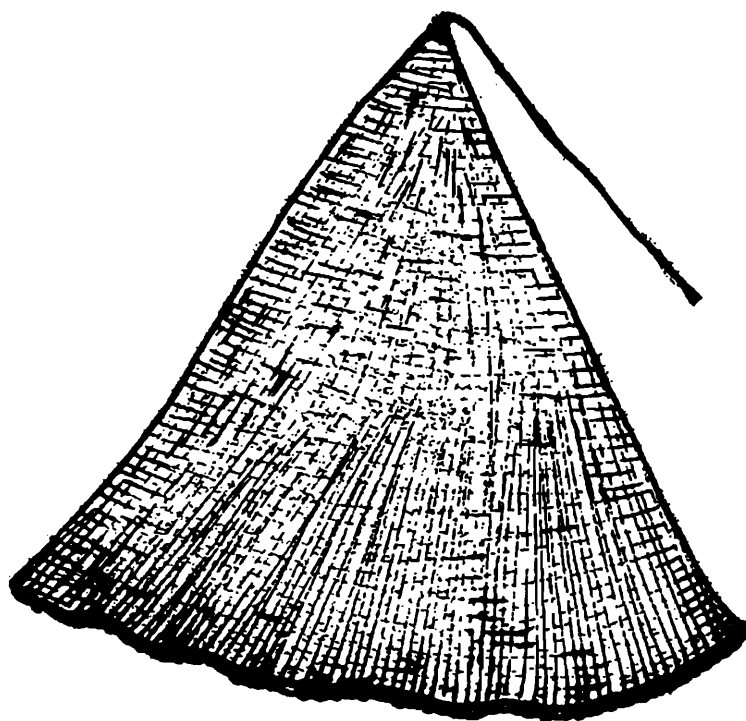


Fig. 10 Cast Net

Gill net : The net operated around mangrove areas is usually measuring about 70 to 80 m in length, suspended with floats and sinkers laid down close to mangroves in open areas or through mangrove forest. It is usually employed during tidal period both night and day time (fig. 11).

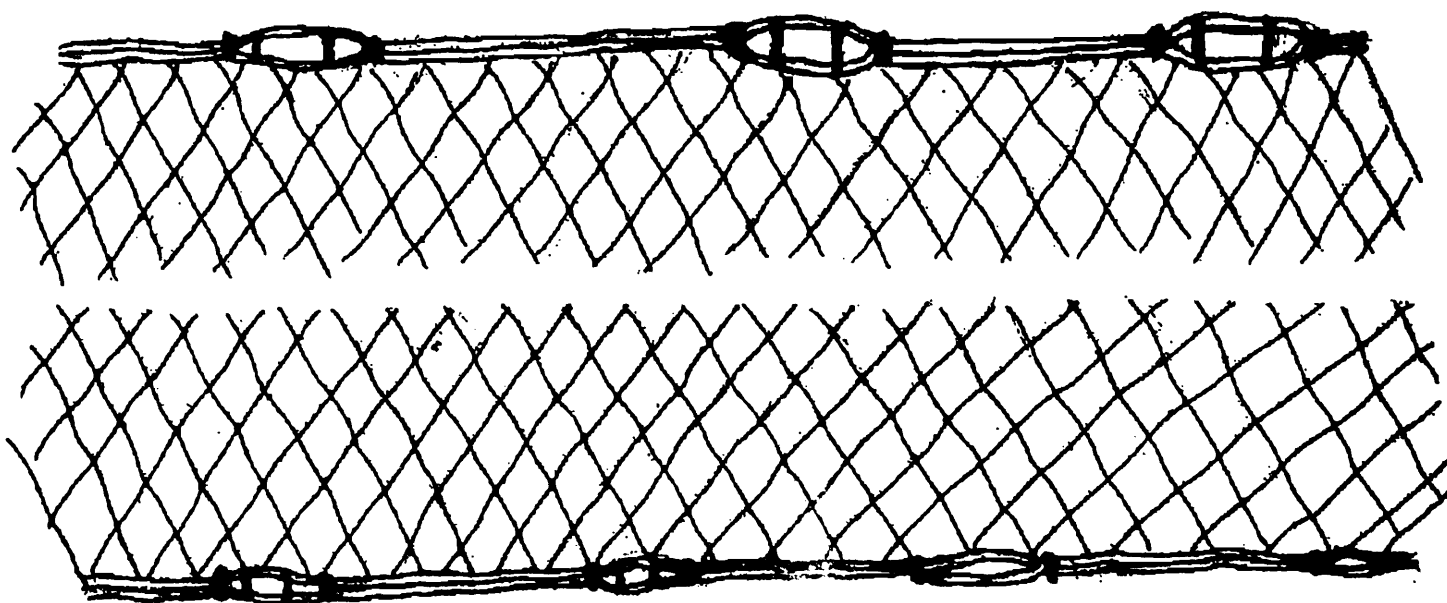


Fig. 11. Gill Net

Encircling net : It is nothing but a shore seine net laid down encircling the big patch of mangrove forest during high tide and emptied at low tide. The fish entered in the mangroves during high tide trapped inside the circular net. The trapped fish can be collected easily during low tide (fig. 12).

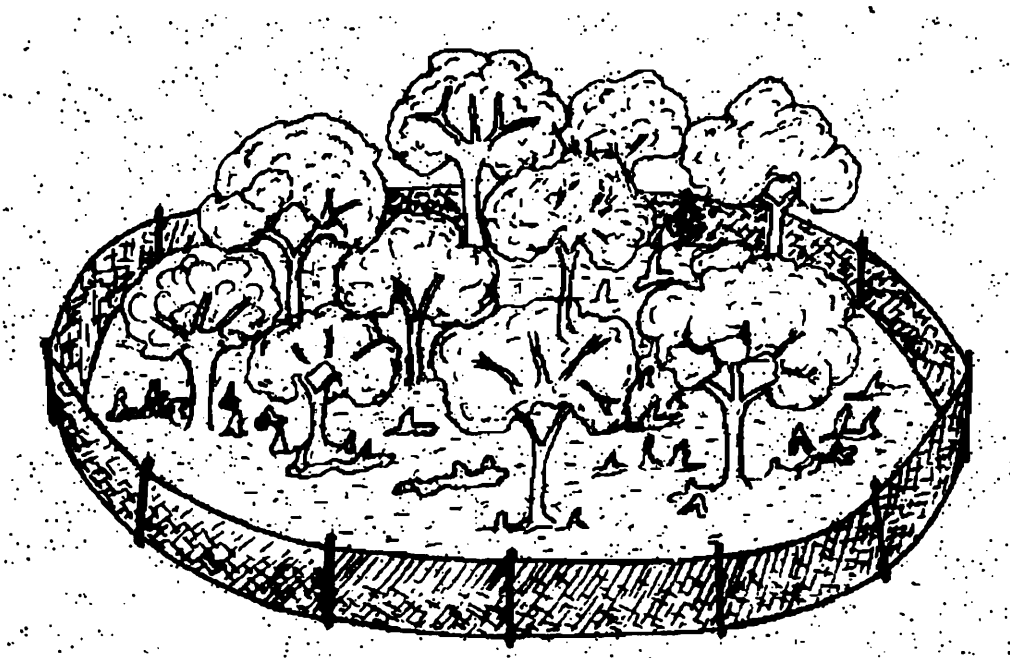


Fig. 12. Encircling net (set in mangrove forest during high tide and emptied at low tide)

Hook and lines : The hooks are attached to a long nylon rope laid out from the boat near mangrove areas or along the edges of waterways. Generally employed to catch large sized fishes. It is an easy and simple method of collecting mangrove fish.

Bag nets : The bag nets made of nylon with different length and diameter set in creeks to collect fish and juvenile shrimps etc. during ebb tide. When the water flows back to the sea, large number of fish trapped in the bag net. This is very efficient passive method of collecting fish from creeks and channels of mangroves (fig.13).

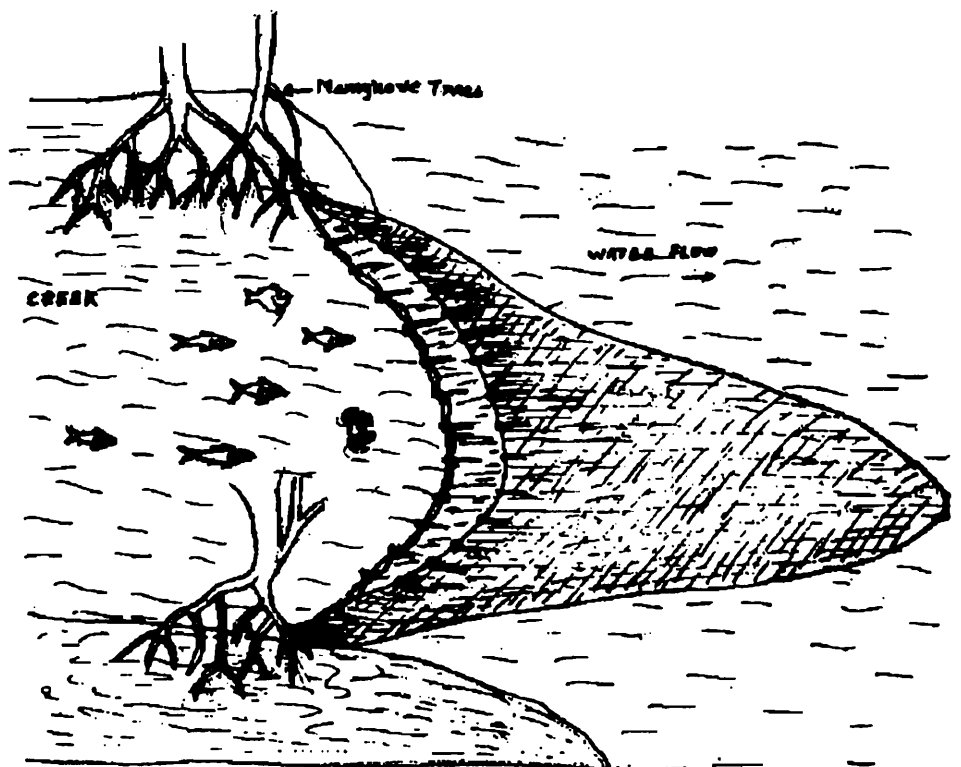


Fig. 13. Bag Net (Set in creeks to catch fish on ebb tide)

SYSTEMATIC ACCOUNT

Phylum	CHORDATA
Subphylum	VERTEBRATA
Class	CHONDRICHTHYES
Subclass	ELASMOBRANCHII
Order	CARCHARHINIFORMES
Family	CARCHARHINIDAE

1. *Carcharhinus melanopterus* (Quoy & Gaimard, 1824) (Fig. 14)

1824. *Squalus melanopterus* Quoy and Gaimard, *Voy. Uranie. Zool.*, : 194, pl. 43, fig. 1 & 2.
1878. *Carcharias melanopterus* : Day, *Fishes of India* : 715, pl. 185, fig. 3.
1968. *Carcharias melanopterus* : Menon and Talwar, *Rec. zool. Surv. India*, **66**(1-4) : 36.
2000. *Carcharhinus melanopterus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 51.
2004. *Carcharhinus melanopterus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 60, fig. 108.

Diagnostic features : Body fusiform, snout moderately pointed; spiracles absent; dorsal fin origin behind base of pectoral fin, anal fin origin below second dorsal origin; no keels on caudal peduncle, no lateral ridge. Body pale-brown on back, lighter below; tips of all fins black.

Habitat and Biology : Shallow inshore waters, commonly in the intertidal zone; enter into brackish water lakes and estuaries. It grows to about 200 to 250 cm long; not an aggressive species; viviparous with a yolk-sac placenta bearing 2-4 young; commercially important species, female possess large livers and yield large quantities of oil.

Distribution : Indo-west Pacific, from east coast of Africa to Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka to Japan and Australia to Marquesas Islands.

Family SPHYRNIDAE

2. *Eusphyrna blochii* (Cuvier, 1817)

1817. *Zygaena blochii* Cuvier, *Regne Animale*, **2** : 127, fig. 3.
1941. *Sphyrna blochii* : Herre, *Mem. Indian Mus.*, **13** : 333.
1991. *Eusphyrna blochii* : Talwar and Jhingran, *Inland fishes of India and Adjacent Countries*, **1** : 26, fig. 13.
2004. *Eusphyrna blochii* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 64.

Diagnostic features : Body elongate and compressed; lateral blades of head very narrow and wing-like with a deep groove along the anterior edge, reaching to the orbit; nostrils greatly elongated, wider than mouth; knobs present along anterior margin of head; first dorsal fin very high, strongly falcate, base of second dorsal shorter than anal. Body uniform grey or grey-brown, shading to white below; no markings on fins.

Habitat and Biology : Tropical shark of remarkable appearance, attains a very large size, rarely exceeded four feet in length; inhabits primarily surface waters in tropical and warm-temperate areas, occasionally brackish; viviparous; liver-oil contains high amount of vitamin-A.

Distribution : Indo-west Pacific.

3. *Sphyrna zygaena* (Linnaeus, 1758) (Fig. 15)

1758. *Squalus zygaena* Linnaeus, *Syst. Nat.* ed. 10, 1 : 234.

1982. *Sphyrna zygaena* : Munro, *The Marine and Freshwater Fishes of Ceylon* : 8.

2004. *Sphyrna zygaena* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 66, fig. 119.

Diagnostic features : Body elongate and moderately slender; lateral blades of head antero-posteriorly broad, not wing like; nostrils short, less than half of mouth width; no knobs along anterior margin of head; base of anal fin about equal to base of second dorsal but much shorter than that of pectoral. Body grey or grey-brown above, whitish below; fins black terminally.

Habitat and Biology : Tropical shark of remarkable appearance, grows to a large size of about 3-4 feet; inhabits surface waters of warm-temperate areas and occasionally in brackish waters; viviparous; liver-oil contains high amount of vitamin-A.

Distribution : Circumtropical.

Order RAJIFORMES
Family RHINOBATIDAE

4. *Rhinobatos granulatus* Cuvier, 1829

1829. *Rhinobatos granulatus* Cuvier, *Regne Animal.*, (ed. 2) : 396.

1959. *Rhinobatos granulatus* : Misra, *Rec. Indian Mus.*, 57(1-4) : 97.

2000. *Rhinobatos granulatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 53.

2004. *Rhinobatos granulatus* : Rao, *Guide to Reef Fishes of Andaman & Nicobar Islands* : 69, fig. 122.

Diagnostic features : Disc longer than wide, tapering to a pointed snout; rostral ridge joining at anterior end of snout; nostrils wide, about half width of mouth; spiracles smaller than eye; first dorsal origin behind ventral fin; no anal fin; back coarsely tuberculated; small thorns on mid-line of snout and strong thorns on mid-dorsal side of body. Body brownish above; snout buff brown; ventral side whitish; dorsal and caudal fins are grey.

Habitat and Biology : Sluggish, bottom-living fish, found in sandy or muddy bottom in shallow coastal areas, including brackish waters and estuaries; about one meter in length; commercially important species, flesh and fins are sold dried and salted.

Distribution : Indo-west Pacific.

5. *Rhynchobatus djeddensis* (Forsskal, 1775) (Fig. 16)

1775. *Raja djeddensis* Forsskal, *Descript. Animal* : 18.

1959. *Rhynchobatus djiddensis* : Misra, *Rec. Indian Mus.*, 57(1-4) : 100.

1984. *Rhynchobatus djeddensis* : Talwar and Kacker, *Commercial Sea Fishes of India* : 88, fig. 35.

2004. *Rhynchobatus djiddensis* : Rao, *Guide to Reef Fishes of Andaman & Nicobar Islands* : 69, fig. 123.

Diagnostic features : Snout long and pointed, anterior margin of disc weakly undulated and outer angle sharply rounded; first dorsal fin above the base of pelvic fins; second dorsal fin smaller in size but both the fins are triangular in shape; eyes larger and immediately anterior to spiracles; two cutaneous folds on the hind margin of spiracles; row of small tubercles along anterior and inner margin of each orbit and on inner margin of spiracles; median row of small tubercles anterior to first dorsal fin and similar row on inter dorsal space; an inner and outer series of tubercles on each shoulder, broken midway in its length.

Habitat and Biology : A demersal species, found in shallow coastal waters, occasionally enter brackish waters and estuaries; commercially important for its flesh and oil; large specimens are salted and consumed, smaller ones are eaten fresh; big size species can attain a weight of up to 250 kg.

Distribution : Widely distributed in Indo-west Pacific.

Order MYLIOBATIFORMES Family DASYATIDAE

6. *Dasyatis kuhlii* (Muller & Henle, 1841) (Fig. 17)

1841. *Trygon kuhlii* Muller and Henle, *Syst. Besch. Plagiost* : 164. pl. 51, fig. 2.

2000. *Dasyatis kuhlii* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 54.

2004. *Dasyatis kuhlii* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 72, fig. 125.

Diagnostic features : Disc kite-like, wider than long; naked with few dorsal denticles; snout short and gently rounded; two oral papillae; tail about as long as disc with upper and lower cutaneous folds; a pair of sharp spines on upper surface of middle part of tail. Body pale brown with small bright ocelli with blue centers and scattered black spots; underside of disc white; tail with black and white bands behind sting.

Habitat and Biology : Commonly found in sandy beaches, often enter estuaries and lagoons. Feeds voraciously on pelagic and benthic organisms such as fishes, crustaceans, molluscs and polychaets. When frightened, it lashes its tail and pierces its spine deeply into the flesh of offender. The sharp spine is connected to a poison gland at the base, which causes severe lacerated wounds.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to coasts of India, the Andaman Islands, Sri Lanka to Japan and southwards Australia.

7. *Himantura uarnak* (Forsskal, 1775) (Fig. 18)

1775. *Raja uarnak* Forsskal, *Descript. Animal* : 18.

1959. *Dasyatis (Himantura) uarnak* Misra, *Rec. Indian Mus.*, 57(1-4) : 103.

1986. *Himantura uarnak* : Compagno, In : Smith and Heemstra, *Smith's Sea Fishes* : 139. fig. 30.10.

2004. *Himantura uarnak* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 74, fig. 129.

Diagnostic features : Disc width is greater than its length; snout angular with a sharp point; eyes large and bulging; tail narrow and bear a sharp serrated sting. Body dark brown in middle and light brown at sides with white to yellow lines on dorsal side forming a marbled or reticulated pattern; tail striped with brown and white.

Habitat and Biology : Stenohaline fish, commonly found around sandy beaches, often entering into estuaries and lagoons. Viviparous fish; feeds voraciously on pelagic and benthic organisms, such as fishes, crustaceans, molluscs and polychaetes. When frightened, it lashes its tail and pierces its spine deeply into the flesh of offender. The serrated spine is connected to a poison gland at the base, which causes severe lacerated wounds; the tail of this fish is used as an ornamental article.

Distribution : Widespread in Indo-west Pacific.

8. *Hypolophus sephen* (Forsskal, 1775) (Fig. 19)

1775. *Raja sephen* Forsskal, *Descript. Animal* : 17.

2000. *Hypolophus sephen* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 55.

2004. *Hypolophus sephen* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 75, fig. 130.

Diagnostic features : Disc somewhat quadrangular; snout obtuse; mouth strongly undulated with four papillae; tail depressed with broad lower cutaneous fold and extends more than half way to its tip; serrated spine on its second quarter of tail; skin smooth in young, with age roughened with denticles. Body dark grey on dorsal surface and paler towards side; ventral surface white; caudal fold and filamentous part of tail black.

Habitat and Biology : Marine coastal species, occurs in estuarine habitats also in Indian region and has been reported from freshwater in the Ganges; large size fish has disc width up to 120 cm; commercially important fish; flesh is consumed as food, and the hard and tough skin is used for polishing wood.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to coasts of India, the Andaman Islands, Sri Lanka to China Sea and Australia to Melanesia.

Class OSTEICHTHYES
Order ELOPIFORMES
Family ELOPIDAE

9. *Elops machnata* (Forsskal, 1775)

1775. *Agentina machnata* Forsskal, *Decript. Animal* : 68.

1959. *Elops saurus* : Misra, *Rec. Indian Mus.*, 57(1-4) : 111.

1990. *Elops machnata* : Talwar, *J. Andaman Sci. Assoc.*, 6(2) : 72.

1991. *Elops machnata* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 1 : 67, fig. 26.

Diagnostic features : D.21-25; A.14-17; P.17-18; V.12-16. Body elongate, oval in cross section. Mouth terminal; teeth on jaws villiform; anal fin short, its origin well behind dorsal fin base; pelvic fins a little in front of dorsal fin origin. Body black-blue above, silvery on the flanks, fins dusky yellow.

Habitat and Biology : Found generally in coastal waters, also enters lagoons and estuaries. It forages for food just after dark and feeds on small fishes and shrimps. Not commercially important fish.

Distribution : Indo-west Pacific, coasts of India, and the Andaman Islands

Family MEGALOPIDAE

Genus *Megalops* Lacepede, 1803

10. *Megalops cyprinoides* (Broussonet, 1803)

1782. *Clupea cyprinoides* Broussonet, *Ichthyol.* : pl. 9.

1959. *Megalops cyprinoides* : Misra, *Rec. Indian Mus.*, 57(1-4) : 112.

1986. *Megalops cyprinoides* : Smith, In : Smith and Heemstra, *Smith's Sea Fishes* : 156, fig. 37.1.

2000. *Megalops cyprinoides* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 56, fig. 115.

Diagnostic features : D. 18-20; A. 26-28; P.15-16 V.10-11; Li. 38-40. Body fusiform; mouth superior; lower jaw projecting; a median gular bone present under side of chin; upper jaw extending to hind border of eye; last dorsal ray elongated and filamentous. Body blue-green above, flanks silvery.

Habitat and Biology : Creeks, mangroves and coastal waters. Feeds on small fishes and crustaceans.

Distribution : Indo-west Pacific, from east coast of Africa, Gulf of Omen, coasts of India, the Andaman Islands, Sri Lanka to Indonesia and the Philippines to China Sea.

Family ALBULIDAE

11. *Albula vulpes* (Linnaeus, 1758)

1758. *Esox vulpes* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 313.

1986. *Albula vulpes* : Smith, In : Smith and Heemstra, *Smith's Sea Fishes* : 157, fig. 38.1.

2000. *Albula vulpes* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 57.

Diagnostic features : D.17; A.8; P.17; V.10; Li.73. Depth 4.4, head 3.7 in standard length; eye 4.7 in head; snout rather pig-like; mouth inferior. Body brilliant silvery with narrow dark horizontal lines; all fins dusky and yellow at base of pectoral fin.

Habitat and Biology : Creeks, mangroves and shallow coastal waters. Feeds on small fishes and crustaceans.

Distribution : All tropical Seas.

Order ANGUILLIFORMES

Family ANGUILLIDAE

12. *Anguilla bengalensis bengalensis* (Gray, 1831)

1831. *Muraena bengalensis* Gray, *Illust. Indian zool.* : pl. 95.

1968. *Anguilla bengalensis* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 37.

1991. *Anguilla bengalensis bengalensis* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 1 : 74.

2000. *Anguilla bengalensis bengalensis* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 57.

Diagnostic features : Dorsal origin nearer to anus than pectoral base; teeth a narrow band, toothless groove between innermost row and outer rows on jaws; vomerine tooth band very narrow posteriorly. Body olive yellow, mottled with brown, lighter latero-ventrally.

Habitat and Biology : Creeks, mangroves and backwaters. Feeds on small fishes and shrimps.

Distribution : India including the Andaman Islands and Sri Lanka.

13. *Anguilla bicolor bicolor* Mc Clelland, 1844

1844. *Anguilla bicolor* Mc Clelland, *J. nat. Hist*, Calcutta : 74, pl. 6, fig. 1.

1986. *Anguilla bicolor bicolor* : Castle, In : Smith and Heemstra, *Smith's Sea Fishes* : 160, fig. 39.2.

2000. *Anguilla bicolor bicolor* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 58.

Diagnostic features : Dorsal fin origin slightly before anus; close-set, broad bands of teeth on jaws and vomer. Vomerine tooth band broad posteriorly. Body dark bluish-brown, lighter below from head to anus.

Habitat and Biology : Creeks. Feeds on small fishes and shrimps.

Distribution : Indian Ocean, from Kenya, Madagascar, Seychelles, Mauritius, coasts of India and the Andaman Island.

Family MURAENIDAE

14. *Gymnothorax fimbriatus* (Bennett, 1831) (Fig. 20)

1831. *Muraena fimbriatus* Bennett, *Proc. Zool. Soc., London* : 168.

1878. *Muraena fimbriata* : Day, *Fishes of India* : 670, pl. 172, fig. 1.

2000. *Gymnothorax fimbriatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 60.

2004. *Gymnothorax fimbriatus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 81, fig. 138.

Diagnostic features : Body slender and elongate; tail longer than head and trunk; Snout rather long, compressed; lower jaw slightly hooked; mouth can nearly be closed completely; anterior nostrils tubular; dorsal and anal fins well developed, the former origin nearer to gill opening. Body pale reddish-brown, with few small black spots on head; trunk and tail with irregular rows of black spots, extending obliquely backward as bars on fins; dorsal and anal with a light border.

Habitat and Biology : Elongate moray, typically living in inshore reef areas and in turbid waters of estuaries; feeds on a variety of small fishes and crustaceans.

Distribution : Indo-Pacific, from east coast of Africa to Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka to Japan and Marshall to Solomon Islands.

15. *Gymnothorax tile* (Hamilton-Buchanan, 1822)

1822. *Muraenophis tile* Hamilton-Buchanan, *Fishes of Ganges* : 18, 363.

1916. *Muraena (Gymnothorax) tile* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 3 : 370.

1991. *Lycodontis tile* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 1 : 79.

Diagnostic features : Body moderately elongate, cylindrical in front, compressed along tail; eyes very small; teeth sharp, in two rows, inner row with large teeth. Body brownish-yellow, lighter below, with small white patches disappearing with increasing age.

Habitat and Biology : Elongate moray, typically living in turbid waters of estuaries and river mouths, feeding on small fishes and crustaceans.

Distribution : India and the Andaman Islands, East Indies, the Philippines, Hawaii.

16. *Gymnothorax undulatus* (Lacepede, 1803)

1803. *Muraenophis undulatus* Lacepede, *Hist. nat. Poiss.*, 5 : 229, 644, pl. 64, fig. 2.

1941. *Gymnothorax undulatus* : Herre, *Mem. Indian Mus.*, 13 : 339.

2000. *Gymnothorax undulatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 62.

2004. *Gymnothorax undulatus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 47, fig. 144.

Diagnostic features : Body elongated; head 6.8-7.3 in total length; eye 9.2-10.2 in head. Uniserial sharp teeth on jaws; two canines in the middle of pre-maxillaries; lower jaw slightly hooked; dorsal fin origin ahead of level of gill opening. Body light yellow with large close-set, irregular dark reddish brown blotches and spots, the blotches merged to form irregular bars posteriorly, the narrow pale interspaces forming a very irregular reticulum.

Habitat and Biology : Inshore reef areas and in turbid water of estuaries; feeding on small fishes and crustaceans.

Distribution : Indo-Pacific, from Red Sea, Port Alfred to southern Mozambique, Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka to Japan and Australia to Hawaiian Islands.

17. *Thyrsoidea macrura* (Bleeker, 1854)

1854. *Muraena macrura* Bleeker, *Nat. Tijdschr. Ned.- Indie*, 7 : 324.

1991. *Thyrsoidea macrura* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 1 : 80, fig. 29.

Diagnostic features : Body extremely elongate, compressed for most of its length especially along tail; head not obviously distinct from trunk although the profile is

moderately steep; teeth biserial in jaws, large, sharp, those of outer row larger; no obvious lateral line. Body brownish-grey above, lighter below.

Habitat and Biology : A very elongate moray, typically living in turbid waters of estuaries and river mouths, feeding on variety of small fishes and crustaceans. No commercial value, consumed locally in minor quantities; slippery body and its remarkable strength out of water may help the fish to escape easily.

Distribution : East Africa from Natal to Mozambique, eastward to Madagascar, Sri Lanka; widespread but uncommon in the Indo-west Pacific.

18. *Uropterygius concolor* Ruppell, 1838

1838. *Uropterygius concolor* Ruppell, Naue. *Wirbe. Fische* : 83

2000. *Uropterygius concolor* : Rao, et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 63.

2004. *Uropterygius concolor* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 85, fig. 146.

Diagnostic features : Sharp teeth in two rows on jaws; inter-maxillary with two depressible fangs; lateral line pore single. Body uniform brown; tip of tail yellow.

Habitat and Biology : Reef crevices and in weedy region of estuaries. Feeding on variety of fishes and crustaceans.

Distribution : Indo-west Pacific, from east coast of India, the Andaman Islands, Sri Lanka to Philippines and Ryukyu Is.

Family OPHICHTHIDAE

19. *Leiuranus semicinctus* (Lay and Bennett, 1839)

1839. *Ophisurus semicinctus* Lay and Bennett, *Zool. CAP Beechey's Voy.* : 66.

1986. *Leiuranus semicinctus* : Mc Cosker and Castle, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 180, fig. 42.9.

2000. *Leiuranus semicinctus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 65.

2004. *Leiuranus semicinctus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 87, fig. 149.

Diagnostic features : Body elongate, head 12.5 in total length; snout pointed, groove on under side of snout; front nostril tubular; sharp teeth in uniserial on jaws; vomer edentate; upper lip entire; pectoral fins present; dorsal origin above pectoral; caudal tip a hard finless point. Body white with 28 black saddles, which meet only below tail.

Habitat and Biology : Inshore reef areas and in estuaries; feeding on variety of small fishes and crustaceans.

Distribution : Indo-west Pacific, from east coast of Africa to coasts of India, the Nicobar Islands to Japan, southwards Australia.

Order CLUPEIFORMES

Family CLUPEIDAE

20. *Amblygaster clupeioides* Bleeker, 1849

1849. *Amblygaster clupeioides* Bleeker, *J. Ind. Arch.*, 3 : 73.

1976. *Sardinella clupeioides* : Misra, *Fauna of India. Pisces*, (2nd ed), 2 : 39.

1984. *Sardinella clupeioides* : Talwar and Kacker, *Commercial Sea Fishes of India* : 140, fig. 48.

1994. *Sardinella clupeioides* : Dorairaj *et al.*, *Spl. Publ., CARI, Port Blair* : 11.

Diagnostic features : D.17-19; A.16-18; P. 16-17; V. 8; C. 20; L.1. 40-43; Ltr. 11-12; pre-dorsal scales 14-18. Body elongate and sub-cylindrical; belly rounded and smooth abdominal scutes feebly keeled, barely exposed; maxilla not reaching vertical through anterior margin of eye; gill-rakers on lower arm of first arch 26 to 31; dorsal fin origin nearer to snout than to caudal base; anal fin origin far behind dorsal fin; pelvic fin origin under anterior half of dorsal fin base; caudal deeply forked; scales cycloid; pre-dorsal median ridge covered by a single longitudinal series of scales; alar scales on caudal fin present. Colour blue-green above and silvery below; without spots on flanks.

Habitat and Biology : Pelagic fish, found in shallow coastal waters, mangrove swamps and estuaries. Feeds on copepods and zooplankton.

Distribution : Indo-west Pacific, from Red Sea, east and south coasts of Africa to coasts of India, the Andaman Islands, Lakshadweep, Sri Lanka and Australia.

21. *Amblygaster leiogaster* (Valenciennes, 1847)

(Fig. 21)

1847. *Sardinella leiogaster* Valenciennes, *Hist. nat. Poiss.*, 20 : 270.

1985. *Amblygaster leiogaster* : Whitehead, *FAO Fish. Synopsis*, Part.1, (125) 7 : 87.

1990. *Amblygaster leiogaster* : Talwar, *J. Andaman Sci. Assoc.*, 6(2) : 73.

Diagnostic features : D.15; A.14-17; P.17; V.8. Depth 4.2-4.7 in standard length; belly rounded and smooth; abdominal scutes feebly keeled and barely exposed, 17-18 pre-pelvic and 13-15 post-pelvic scutes; upper jaw not extending to vertical from anterior edge of eye; gill rakers on lower arm of first arch 31 to 35. Body moderately slender, dark blue above, silvery below, upper-half of sides with pearl colour; fins hyaline; dorsal and caudal dusky.

Habitat and Biology : Pelagic, small schooling fishes in coastal waters, juveniles and young enter lagoons, mangroves and estuaries. Feeds mainly on copepods and other elements in the zooplankton.

Distribution : India : Andaman Islands; North Borneo, Philippines and westward to East Africa.

22. *Amblygaster sirm* (Walbaum, 1792)

1792. *Clupea sirm* Walbaum, in *Artedi, Gen. Pisc.* : 38.

1985. *Amblygaster sirm* : Whitehead, *FAO Fish. Synopsis*, Part.1, (125) 7 : 88.

2000. *Amblygaster sirm* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 68.

Diagnostic features : D.14-15; A.15-16; P.13; V.8. Depth 4.2-4.9 in standard length; belly rounded; scutes with poorly developed keels, 17 pre-pelvic and 13-14 post-pelvic scutes; gill rakers 33-43 on lower arm of first arch. Body slender, blue-green above and silvery on sides with a series of 10-12 golden-green spots.

Habitat and Biology : Pelagic fish, form small schools in coastal waters; juveniles enter lagoons, mangroves and estuaries. Feeds mainly on copepods, gastropods and larval bivalves.

Distribution : Widespread in Indo-west Pacific region.

23. *Anodontostoma chacunda* (Hamilton-Buchanan, 1822) (Fig. 22)

1822. *Clupanodon chacunda* Hamilton-Buchanan, *Fishes of Ganges* : 246.

1959. *Anodontostoma chacunda* : Misra, *Rec. Indian Mus.*, 57(1-4) : 125.

2000. *Anodontostoma chacunda* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 68.

Diagnostic features : D.iii-v 15; A.ii-iv 18; P.i 15; V.i 7; Ls. 40. Body very deep, oval and compressed, ventral profile rounded; maxilla straight, thin and tip tapering; mouth inferior; last dorsal fin ray not filamentous. Body silvery with indistinct brown longitudinal lines along scale rows; a black spot on shoulder; fins hyaline.

Habitat and Biology : Small or moderate-sized marine gizzard shads; small schooling fishes in shallow coastal waters, mangroves and estuaries. It is a euryhaline species; breeding period from November to February. Feeds mainly on detritus from mud and sandy bottom.

Distribution : Widespread in Indian Ocean.

24. *Dussumieria acuta* Valenciennes, 1847

1847. *Dussumieria acuta* Valenciennes, *Hist. nat. Poiss.*, 20 : 467, pl. 606.

1959. *Dussumieria acuta* : Misra, *Rec. Indian Mus.*, 57(1-4) : 113.

1985. *Dussumieria acuta* : Whitehead, *FAO Species Catalogue*, Part.1, (125) 7 : 28.

2003. *Dussumiera acuta* : Rajan, *Field Guide to Marine Food Fishes of Andaman & Nicobar Islands* : 78.

Diagnostic features : D.17; A.14; P. 15; V. 8; Ls. 4; branchiostegal rays 12 to 15. Body elongate, moderately compressed; belly rounded without scutes; snout acute;

maxillary not reaching below front margin of eye; origin of anal fin behind dorsal fin; ventral fin origin below middle of dorsal fin; 28 gill rakers on lower arm of first arch. Body metallic blue-green on back, flanks silvery; all fins pale, first pectoral ray and tip of caudal fin dusky.

Habitat and Biology : Small pelagic fish sometimes appear in large group in coastal waters, mainly inshore fishes, usually attains about 20 cm in standard length.

Distribution : Widely distributed throughout the tropical Indo-Pacific.

25. *Dussumieria elopsoides* Bleeker, 1849

1849. *Dussumieria elopsoides* Bleeker, *Verh. batav. Genoot. Kunst. Wet.*, 22 : 12.

1959. *Dussumieria hasseltii* : Misra (nec Bleeker), *Rec. Indian Mus.*, 57(1-4) : 113.

1985. *Dussumieria elopsoides* : Whitehead, *FAO Species Catalogue*, Part-1, (125) 7 : 29.

Diagnostic features : D.18-19; A.16; P. 15; V.8; Ls. 52-56; branchiostegal rays 13 to 17. Body elongate, dorsal and ventral profile evenly convex; snout acute; maxillary nearly reaching below front margin of eye; origin of anal fin far behind dorsal fin; ventral fin origin below middle of dorsal fin; 32 gill rakers on lower arm of first arch. Body bluish-green on back, flanks silvery; a golden lateral band from opercle to caudal; all fins pale, first pectoral ray and tip of caudal fin dusky.

Habitat and Biology : Marine, pelagic and schooling fishes enter mangrove areas; attains about 20 cm in standard length.

Distribution : Widely distributed throughout the tropical Indo-Pacific.

26. *Herklotsichthys quadrimaculatus* (Ruppell, 1837) (Fig. 23)

1837. *Clupea quadrimaculatus* Ruppell, *Neue Wirbelth., Fische.*, : 78, pl. 21, fig. 3.

1984. *Herklotsichthys quadrimaculatus* : Talwar and Kacker, *Commercial Sea Fishes of India* : 135, fig. 46.

1985. *Herklotsichthys quadrimaculatus* : Whitehead, *FAO Species Catalogue*, Part.1(125)7 : 81.

2004. *Herklotsichthys quadrimaculatus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 89, fig. 153.

Diagnostic features : D.17-20; A.17- 19; P. 16; V. 8; Ls 38-45; body depth 3.3 to 5.5 in standard length; eye 2.3 to 3.7 in head length; wing-shaped median pre-dorsal scales hidden under the normal paired and overlapping median scales. Body blue-green; flanks silvery with a blue mid-lateral band at eye level and two orange spots above and below it just behind the gill opening.

Habitat and Biology : Pelagic fish appear in large groups in coastal waters, daytime found in a shallow clear waters, night-time into deeper waters; juveniles feeds on zooplankton, but young and adults feed on chaetognaths, polychaetes, shrimps and small fishes; also feeds on phytoplankton. Breeds during its first year and probably survives only a few months after maturity.

Distribution : Widespread in Indian Ocean and western Pacific.

27. *Nematalosa nasus* (Bloch, 1795)

1795. *Clupea nasus* Bloch, *Nat. ausland. Fische*, (19) : 116, pl.429, fig. 1.

1990. *Nematalosa nasus* : Talwar, *J. Andaman Sci. Assoc.*, 6(2) : 73.

1991. *Nematalosa nasus* : Talwar and Jhingran, *Inland Fishes*, 1 : 111, fig. 42.

Diagnostic features : D. iii-v 11-14; A. ii-iv 18-23; P. i 14; V. i 7. Body deep and compressed; abdomen keeled with about 28 to 30 scutes; small sub-terminal mouth, no teeth; maxilla reaching below anterior region of the eye; lateral line absent; pelvic and pectoral fins with axillary scales; hind edge of scales distinctly toothed. Body greyish-green above; lower region silvery; dark prominent blotch behind upper part of operculum on the shoulder; fins yellow.

Habitat and Biology : Euryhaline species, common in Chilka Lake (Orissa), the Hoogly estuary (West Bengal) and coastal areas and mangroves of Andaman and Nicobar Islands. Feeds mainly on detritus from mud and sandy bottom.

Distribution : Indo-west Pacific; from India, Malaysia, Gulf of Thailand; south China Sea to the Philippines; Hong Kong, Japan and Korea. India : Orissa, West Bengal and the Andaman and Nicobar Islands.

28. *Pellona dayi* Wongratana, 1983

1983. *Pellona dayi* Wongratana, *Jap. J. Ichthyol.*, 29(4) : 395, fig. 12.

1985. *Pellona dayi* : Whitehead, *FAO Species Catalogue*, Part.1, (125) 7 : 280.

1993. *Pellona dayi* : Dhandapani and Misra, *J. Andaman Sci. Assoc.*, 9(1&2) : 58.

Diagnostic features : D.15; A.35-41; P. 16; V. 7; Ls. 40. Body moderately deep, compressed; belly with sharp keels, 19 pre-pelvic and 8-9 post-pelvic scutes; eye large, lower jaw prominent; upper jaw with a toothed hypomaxilla; 20-21 gill rakers on lower arm of first arch; dorsal fin origin about mid-way of the body; anal origin slightly behind dorsal fin base end. Closely resembles the *P. ditchela*, only by the number of gill rakers the species can be distinguished

Habitat and Biology : Found in shallow coastal waters, mangrove swamps and estuaries. Feeds on small fishes, shrimps and polychaetes.

Distribution : Indian Ocean.

29. *Pellona ditchela* Valenciennes, 1847

1847. *Pellona ditchela* Valenciennes, *Hist. nat. Poiss.*, **20** : 314.

1991. *Pellona ditchela* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, **1** : 124, fig. 49.

2000. *Pellona ditchela* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 70.

2003. *Pellona ditchela* : Rajan, *Field Guide to Marine Food Fishes of Andaman & Nicobar Islands* : 80.

Diagnostic features : D.15; A.35; P.16; V.7; Ls.39. Body fairly deep and compressed; belly with sharp keels, 18 pre-pelvic and 9 post-pelvic scutes; eye large; lower jaw prominent; upper jaw with toothed hypomaxilla; 22-27 gill rakers on lower arm of first arch; dorsal fin origin about mid-way of the body; anal origin slightly behind dorsal fin base end. Colour brown above, flanks silvery, fins light yellow.

Habitat and Biology : Shallow coastal waters, mangrove swamps and estuaries. Feeds on small fishes, shrimps and polychaets.

Distribution : Indo-Pacific region.

30. *Sardinella fimbriata* (Valenciennes, 1847) (Fig. 24)

1847. *Spratella fimbriata* Valenciennes, *Hist. nat. Poiss.*, **20** : 359, pl.601.

1878. *Clupea fimbriata* : Day, *Fishes of India* : 637, pl.162, fig. 3.

2000. *Sardinella fimbriata* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 369.

Diagnostic features : D. 14-16; A. 16-19; P. 15; V. 8. Body fusiform, compressed, belly sharp with keeled scutes; pre-pelvic scutes 17-18, post-pelvic scutes 12-14; scales cycloid; pre-dorsal median ridge covered by adjacent side of two longitudinal series of scales. Body bluish-green, sides silvery; dorsal fin with numerous fine black dots.

Habitat and Biology : Inhabits shallow coastal waters, mangroves and creeks.

Distribution : Red Sea, seas of India, the Andaman Island to Malayan Archipelago.

31. *Sardinella gibbosa* (Bleeker, 1849) (Fig. 25)

1849. *Clupea gibbosa* Bleeker, *J Ind. Arch.*, **3** : 72.

1985. *Sardinella gibbosa* : Whitehead, *FAO Species Catalogue*, Part-1(125)7 : 100.

1992. *Sardinella gibbosa* : Misra and Krishnan. *J. Andaman Sci. Assoc.*, **8**(2) : 175.

Diagnostic features : D.13-16; A.14-18; P.15; V.8; C.20; L.I.45; L.tr.12; Pre-dorsal scales 14-16. Body moderately slender; belly rounded, number of scutes 32 to 34; gill-rakers on lower arm of first arch 45 to 59; dorsal fin origin slightly before midpoint of body; anal fin lying far behind dorsal fin; pelvic fin origin below anterior part of dorsal-fin base; caudal forked; scales cycloid; pre-dorsal median ridge covered by adjacent sides of two longitudinal rows of scales. Colour blue-green above, silvery on flanks, separated by a narrow yellow horizontal line; black spot at bases of anterior dorsal rays.

Habitat and Biology : Pelagic, small schooling in coastal waters, mangrove swamps and estuaries. Feed on plankton. In early stages feeds on crustaceans and seems to change to a diet of crustaceans and phytoplankton with age. Used as bait in Tuna fisheries.

Distribution : East coast of Africa, Madagascar, the Red Sea, coasts India, the Andaman and Nicobar Islands, East Indies to the Philippines, Hong Kong, Taiwan, to northern tip of Australia.

32. *Sardinella melanura* (Cuvier, 1829)

1829. *Clupea melanura* Cuvier, *Regne Animal.*, (2nd ed), 2 : 318.

1959. *Sardinella melanura* : Misra, *Rec. Indian Mus.*, 57(1-4) : 116.

1985. *Sardinella melanura* : Whitehead, *FAO Species Catalogue*, Part.1(125)7 : 108.

2000. *Sardinella melanura* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 71, fig. 120.

Diagnostic features : D.12-13; A.15-17; P.15; V.8; C.19; LI.38-40; Ltr.12; pre-dorsal scales 11-16. Body fusiform, slightly compressed; belly strongly keeled with scutes, 16 pre-pelvic and 13 post-pelvic; gill-rakers on lower arm of first arch 43 to 51; dorsal fin origin slightly before midpoint of body; anal base slightly longer than dorsal base, its origin slightly nearer to caudal than to pelvic origin; pelvic fin origin below anterior half of dorsal fin; caudal forked; scales cycloid; pre-dorsal scales paired and overlapping. Colour blue green above, sides silvery, tips of caudal fin dark black.

Habitat and Biology : Pelagic, small schooling in coastal waters, mangrove swamps and estuaries. Usually attaining about 10-12 cm in standard length.

Distribution : Southwest coast of India and the Andaman Islands.

33. *Tenuulosa toli* (Valenciennes, 1847)

1847. *Alausa toli* Valenciennes, *Hist. nat. Poiss.*, 20 : 435.

1994. *Hilsa toli* : Dorairaj et al., *Spl. Publ., CARI, Port Blair* : 11.

2000. *Hilsa (Tenuulosa) toli* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 434.

Diagnostic features : D. iv-v, 14-15; A. iii, 15-17; P. I, 13; V. I, 8. Body fusiform, moderately deep and strongly compressed; belly with 28 to 30 scutes; a distinct median notch in upper jaw; pre-operculum with an obtuse rounded angle; gill rakers fine, 60 to 100 on lower arm of first arch. Body silvery with yellow tinge; a diffuse dark blotch behind gill opening; fins hyaline.

Habitat and Biology : Pelagic, small schooling fishes of coastal waters, mangroves and estuaries; euryhaline and anadromous, enters rivers to breed; usually grows to a length of about 30-60 cm in standard length.

Distribution : India : the Andaman Islands; Java Sea, South China Sea, East China Sea and Mauritius.

Family PRISTIGASTERIDAE

34. *Ilisha megalopectera* (Swainson, 1839)

1839. *Platyaster megalopecterus* Swainson, *Natural History Animals*, 2 : 294 (on *Jangarloo* of Russell, 1803).

1985. *Ilisha megalopectera* : Whitehead. *FAO Fish Synop.* (125), 7 : 270.

1991. *Ilisha megalopectera* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 1 : 119.

Diagnostic features : D.iii 14-15; A.ii 40-52; P.i 15-17; V.i 6. Body deep ventral profile more convex than dorsal profile; belly with usually 19 to 23+ 8 to 12, total 28-35 scutes; eyes large; lower gill rakers 18 to 23; lower jaw strongly projecting; No toothed hypomaxilla; dorsal fin origin near midpoint of body; anal fin origin below hind part of dorsal fin base; swim bladder with a single long tube passing back down right side of body above anal fin base. Body light brown with dorsal profile dark; pectoral tip black; anal with black margin; caudal fin dusted with dark pigment.

Habitat and Biology : Inshore pelagic marine fishes, and also found in rivers and mangrove areas, usually attains about 27 cm in standard length; feeds on fishes, crustaceans, amphipods, occasionally polychaetes, tunicates, small amounts of algae and diatoms. It is mainly caught by gill nets and boat seines, and by cast nets.

Distribution : Indian Ocean, from coasts of India, Andaman Islands and Java Sea.

35. *Ilisha melastoma* (Schneider 1801)

1801. *Clupea melastoma* Schneider, *Syst. Ichthyol.* : 427.

1991. *Ilisha melastoma* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 1 : 121.

2003. *Ilisha melastoma* : Rajan, *Field Guide to Marine Food Fishes of Andaman & Nicobar Islands* : 79.

Diagnostic features : D.i-ii, 15-17; A.ii, 35-46; P.i, 15-16; V.i, 6. Body moderately deep; ventral profile more convex than dorsal profile; belly with usually 25 to 30 scutes;

eyes large; lower gill rakers 21 to 25; lower jaw prominent; dorsal fin inserted slightly before midpoint of body; anal fin origin under hind part of dorsal fin base; swim bladder with two tubes passing back in the muscles on either side of haemal spines. Body silvery-white with dorsal profile brown; dorsal fin dark; pectoral and anal fins hyaline; margin of caudal fin dark.

Habitat and Biology : Small pelagic fishes, dwell in small shoals in coastal waters, usually attaining about 17 cm in standard length; it also enters rivers and tolerates lower salinities; it is usually caught by gill-nets and boat seines, and also by cast nets.

Distribution : Coasts of India; Java Sea; South China Sea and East China Sea.

Family ENGRAULIDAE

36. *Coilia ramcarati* (Hamilton-Buchanan, 1822)

1822. *Mystus ramcarati* Hamilton-Buchanan, *Fishes of Ganges* : 233, 382.

1991. *Coilia ramcarati* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 1 : 130.

Diagnostic features : D.13-17; A.90-92, P.5-10; V.8-10. Body compressed, deepest under dorsal fin base, becoming keeled and more compressed behind pelvic fin base, with six pre-pelvic and ten or eleven post-pelvic scutes. Body golden-brown with dark pigmentation behind the gill opening; fins hyaline.

Habitat and Biology : Found in shallow coastal waters and estuaries. Feeds on small fishes, shrimps and polychaets.

Distribution : India : Ganga delta and Andaman Islands.

37. *Stolephorus commersonii* Lacepede, 1803

(Fig. 26)

1803. *Stolephorus commersonii* Lacepede, *Hist. nat. Poiss.*, 5 : 381, pl. 12, fig. 1.

1991. *Stolephorus commersonii* : Talwar and Jhingran, *Inland Fishes of India and Adjacent countries*, 1 : 139.

2000. *Stolephorus commersonii* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 72, fig. 121.

Diagnostic features : D.iii 12-14; A.iii 18-19; P. i 13-14; V.5-6. Body somewhat compressed; belly slightly rounded, with 1 to 4 (mostly 2 or 3) small, needle-like pre-pelvic scutes; maxilla tip pointed, reaching to or a little beyond hind border of pre-operculum; isthmus tapering evenly forward to hind margin of gill-membrane; lower gill rakers usually 23 to 28; small teeth present on upper edge of hyoid bones; no pre-dorsal spine; anal fin origin below second half of dorsal fin base. Body light transparent fleshy brown, with a silvery stripe down flanks; a pair of dark patches behind occiput, followed by a pair of dark lines to dorsal fin origin.

Habitat and Biology : Pelagic, small schooling in coastal waters, enters estuaries and brackish water; feeds on surface plankton, mainly copepods and prawn larvae; eggs oval with a knob; usually attaining about 8 to 10 cm in standard length.

Distribution : Widespread in Indian Ocean, Andaman and Nicobar Islands and eastern coast of Africa.

38. *Stolephorus indicus* (Van Hasselt, 1823)
(Fig. 27)

1823. *Engraulis indica* Van Hasselt, *Algemeene Konst-en Letterbode*, 1(23) : 329.

1959. *Anchoviella indica* : Misra, *Rec. Indian Mus.*, 57(1-4) : 129.

1991. *Stolephorus indicus* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 1 : 141.

Diagnostic features : D. 12-14; A.19-21; P.10-15; V.5-6. Body fusiform, nearly cylindrical; belly rounded with 3 to 5 needle like scutes between pectoral and pelvic fins; snout prominent, rather pointed; maxillary tip pointed not reaching to anterior border of pre-operculum. Body light transparent fleshy brown, with a silver stripe down flanks; no dark pigment lines on back between head and dorsal fin.

Habitat and Biology : Pelagic coastal species found throughout the coastal waters of India. It attains sexual maturity at the length of 10 to 12 cm. Feeding mostly on planktonic forms. Caught mainly by seines and bottom trawls. Marketed fresh, salted, dried and as fish balls or made in to fishmeal.

Distribution : Indian Ocean, extending eastwards to Southeast Asia.

39. *Thryssa baelama* (Forsskal, 1775)

1775. *Clupea baelama* Forsskal, *Discript. Animal* : 72.

1984. *Thrissina baelama* : Talwar and Kacker, *Commercial Sea Fishes of India* : 194, fig. 84.

1985. *Thryssa baelama* : Whitehead, *FAO Species Catalogue*, Part. 2, (125), 7 : 425.

2000. *Thryssa baelama* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 73.

Diagnostic features : D.16; A.27-30; P.12-13; V.7. Body slightly compressed, belly rounded before pelvic fins, with 4 to 9 pre-pelvic and 7 to 10 post-pelvic keeled scutes; head small with rounded snout; maxilla short and reaching to just beyond front border of pre-operculum, tip pointed; gill rakers 18 to 26 on lower arm of first arch. Body silvery, dorsal profile dark; black patch on shoulder; dorsal and caudal fins greyish, other fins white.

Habitat and Biology : Pelagic, small schooling in coastal waters, inshore in bays, harbours, mangrove pools and estuaries; thus tolerating lowered salinities; usually attaining 10 to 11 cm in standard length.

Distribution : Indian Ocean and western central Pacific.

**40. *Thryssa hamiltonii* (Gray, 1835)
(Fig. 28)**

1835. *Thryssa hamiltonii* Gray, *Illustrations Indian Zoology*, 2 : pl. 92, fig. 3.

1991. *Thryssa hamiltonii* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 1 : 144.

2000. *Thryssa hamiltonii* Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 73.

Diagnostic features : D.13-15; A.35-39; P.12-13; V.7. Body strongly compressed with 16-19 pre-pelvic and 8 or 9 post-pelvic keeled scutes; head small with pointed but rounded snout, its tip at above level of eye center; maxilla short, reaching to edge of gill-cover or projecting slightly beyond; gill rakers 12 to 14 on lower arm of first arch. Body silvery, dorsal profile blue-green; a dark blotch behind upper part of gill-opening; pigment lines along back.

Habitat and Biology : Marine and pelagic, found in small schools in coastal waters and enters mangroves and estuaries; Feeds on crustaceans, copepods, polychaetes and amphipods; attains 20 cm in standard length.

Distribution : Indo-west Pacific.

41. *Thryssa mystax* (Schneider, 1801)

1801. *Clupea mystax* Schneider, *Syst. Ichth.*, : 426, pl. 83.

1985. *Thryssa mystax* : Whitehead, *FAO Species Catalogue*, Part-2 (125)7 : 438.

2000. *Thryssa mystax* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 74.

Diagnostic features : D.13-14; A.33-35; P.12-13; V.7. Body compressed with 16-18 pre-pelvic and 8-12 post-pelvic keeled scutes; head small with pointed but rounded snout, its tip at level of eye center; large sub-terminal mouth with minute teeth in both jaws; maxilla long and reaching to pectoral fin base; gill rakers 14-15 on lower arm of first arch. Body silvery, dorsal profile bluish green or dark; black area behind gill opening; dorsal fin yellow with dark margins.

Habitat and Biology : Coastal, pelagic fish, also enters estuaries and mangrove swamps; carnivorous fish; that spawn between June-August and December-March months; each individual spawns only once in a season; feeds on shrimps and other organisms; minimum size of both the sexes at sexual maturity is about 14-15 cm.

Distribution : Pakistan, Bangladesh, India, Sri Lanka and extending eastward to Indonesia and Malaysia.

**42. *Thryssa setirostris* (Broussonet, 1782)
(Fig. 29)**

1782. *Clupea setirostris* Broussonet, *Ichthyol* : 12.

2000. *Thryssa setirostris* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 74.

2003. *Thryssa setirostris* : Rajan, *Field Guide to Marine Food Fishes of Andaman & Nicobar Islands* : 85.

Diagnostic features : D.13-15; A.35-37; P.12-13; V.7. Body strongly compressed; belly with 16 to 18 pre-pelvic and 9-10 post pelvic scutes; snout bluntly rounded; maxilla filamentous at tip, reaching ventral fin origin. Body silvery, back brown; a faint dark area on shoulder, all fins hyaline.

Habitat and Biology : Shallow coastal waters, estuaries and mangrove swamps; feeds on shrimps and other small organisms.

Distribution : Indo-Pacific, from Red Sea, east coast of Africa, coasts of India, the Andaman Islands, Sri Lanka to China Sea and Queensland.

Family CHIROCENTRIDAE

43. *Chirocentrus dorab* (Forsskal, 1775)

1775. *Clupea dorab* Forsskal, *Descript. Animal* : 72.

2000. *Chirocentrus dorab* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 75.

2003. *Chirocentrus dorab* : Rajan, *Field Guide to Marine Food Fishes of Andaman & Nicobar Islands* : 86.

Diagnostic features : D.16-19; A.26-29; P.14; V.6. Body elongate, strongly compressed; edge of belly sharp but without scutes; scales very small, easily shed; canine teeth in both jaws, two canine teeth on pre-maxillae pointing forward; anal-fin base twice the length of dorsal-fin base; ventral fins very small. Body deep blue-green, shading to brassy-gold to bright silvery on flanks; tip of dorsal fin and front of anal fin dark; caudal fin yellow.

Habitat and Biology : Shallow coastal waters, estuaries and mangrove swamps; carnivorous, feeds on small fishes like herrings and anchovies, attains at least 12 feet in length.

Distribution : Indo-Pacific, coasts of India, the Andaman Islands, Malay Archipelago and beyond.

44. *Chirocentrus nudus* Swainson, 1839

1839. *Chirocentrus nudus* Swainson, *Natural History of Animals*, 2 : 294.

1984. *Chirocentrus nudus* : Talwar and Kacker, *Commercial Sea Fishes of India* : 208. fig. 94.

Diagnostic features : D.16-19; A. 31-37; P.14; V.6. Body elongate and strongly compressed; edge of belly sharp but without scutes; scales very small, easily shed; large canine teeth in both jaws, two canine teeth on pre-maxillae pointing forward; anal-fin base twice the length of dorsal-fin base; ventral fins very small. Body bluish-green on back, silvery on sides; dorsal and anal fins colourless; pectoral fin black.

Habitat and Biology : Shallow coastal waters, estuaries and mangrove swamps; carnivorous, feeds on small fishes; attains at least 18 inches in length.

Distribution : East coast of Africa, coasts of India, the Andaman Islands, Sri Lanka, through the East Indies, to Japan and tropical Australian waters.

Order GONORHYNCHIFORMES

Family CHANIDAE

45. *Chanos chanos* (Forsskal, 1775) (Fig. 30)

1775. *Mugil chanos* Forsskal, *Descript. Animal* : 74.

1986. *Chanos chanos* : Smith, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 210, fig. 58.1.

Diagnostic features : D.13-14; A.8-9; P.15; V.11; LI.77-79. Body compressed and torpedo shaped; head naked; no teeth; dorsal and anal fins with basal scaly sheath; pectoral and ventral fins with large axillary scales; dorsal fin origin mid way between tip of snout and base of caudal. Caudal fin large and deeply forked. Body bright silvery, darker dorsally; caudal and anal fin margins dusky.

Habitat and Biology : Pelagic fish, inhabits open coastal waters and also enters estuaries, rivers and lakes. It is a selective feeder, feeds on planktonic organisms such as diatoms, copepods, fish eggs and larvae. Mostly found in the month of April and May. Spawning occurs on moonless nights when the salinity is low. It tolerates a wide range of temperature and salinity and is highly resistant to diseases, fast growing but not cannibalistic. It is a good species for culture. They are usually caught by traps, gill nets and scoop nets.

Distribution : Indo-west Pacific from east coast of Africa, Gulf of Oman, Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka to Japan and New Zealand to Hawaiian Islands.

Order SILURIFORMES.

Family ARIIDAE

46. *Arius macronotacanthus* Bleeker 1846

1846. *Arius macronotacanthus* Bleeker, *Nat. and Geneesk. Arch. Ned.*, 3(2) :156.

1981. *Arius macronotacanthus* : Day, *Fishes of India* : 465, pl. 113, fig. 1.

Diagnostic features : D. I.7; P. I. 9; V.6; A.18-19; C.15. Body elongate; width of the head exceeds its height, and equals its length excluding the snout; median longitudinal groove is wide between the eyes, becomes pointed both anteriorly and posteriorly;

occipital process with a median keel, triangular, about as long as broad, its hind border touching the narrow semicircular basal bone of the dorsal spine; maxillary barbel reach the middle of the pectoral spine and the outer mandibular ones its base; teeth small in an arcuate band, on the palate finely granular and in two elliptic widely separate patches; dorsal spine strong, caudal with pointed lobes, superior one is longer. Body dark bluish above, whitish below, adipose fin with a large dark spot.

Habitat and Biology : Inhabits seas and estuaries of tropical regions. Feeds on crustaceans, molluscs and fishes. The eggs are about as big as peas and carried in the mouth of the male until they hatch.

Distribution : India to Java, Sumatra, and Pinang.

47. *Arius sumatranus* (Bennett 1830)

1830. *Bagrus sumatranus* Bennett, *Cat. Zool. Spec. in Life of Raffles* : 691.

1981. *Arius sumatranus* : Day, *Fishes of India* : 460, pl. 107, fig. 6.

Diagnostic features : D. I. 7; P. I.10; V.6; A.18-19; C.17. Body elongate; head broad upper surface with scattered granulations, which are more lineated on the occipital process; median longitudinal groove becomes narrow posteriorly, nearly reaching the base of the occipital process; barbels three pairs; maxillary barbels reaching to the end of the head and mandibular ones the base of the pectoral fin; teeth villiform, two triangular patches diverging posteriorly; dorsal spine as long as the head behind the angle of the mouth, pectoral spine as long as the head excluding the snout. Body bluish-green above, lighter on the sides and below; edges of fins gray, adipose dorsal slightly black.

Habitat and Biology : Inhabits seas and estuaries. It feeds on crustaceans, molluscs and fishes. The eggs are about as big as peas and carried in the mouth of the male until they hatch.

Distribution : The Andaman Islands to Malay Archipelago.

48. *Arius thalassinus* (Ruppell, 1837)

1837. *Bagrus thalassinus* Ruppell, *Neue Wirbeltiere, Fische* : 75.

1959. *Tachysurus thalassinus* : Misra, *Rec. Indian Mus.*, 57(1-4) : 175.

1981. *Arius thalassinus* : Day, *Fishes of India* : 463, pl. 104, fig. 1.

Diagnostic features : D. I.7; P.I.12; V.6; A.15-17; C.17. Body elongate; upper surface of the head granulated, median longitudinal groove narrow posteriorly; occipital process triangular, keeled, longer than wide at its base, extends to the basal bone of the dorsal fin; eyes longest diameter obliquely transverse; maxillary barbels reaching to

base of pectoral, mandibular are a little shorter; teeth villiform, on the palate in two large, triangular separate patches, the base of each triangle formed by two quadrangular patches; dorsal spine equal to head without snout, base of adipose fin much shorter than its height, situated above the middle of the anal, pectoral spine strong, but a little shorter than dorsal, upper lobe of the caudal longer. Body reddish above, grayish white below, upper surface of the paired fins and distal part of the dorsal, adipose fin, anal and caudal darkish.

Habitat and Biology : Inhabits seas and estuaries. It feeds on crustaceans, molluscs and fishes. The eggs are carried in the mouth of the male until they hatch.

Distribution : Red Sea, through Africa and India, the Andaman Islands to Malay Archipelago.

49. *Ketengus typus* Bleeker, 1847

1847. *Ketengus typus* Bleeker, *Verh. Batav. Genoot. Kunst. Wet.*, 21 : 9.

1877. *Arius typus* : Day, *Fishes of India* : 469, pl. 108, fig. 2.

1941. *Ketengus typus* : Herre, *Mem. Indian Mus.*, 13 : 340.

1991. *Ketengus typus* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 709.

Diagnostic features : D. I.7; P. I..10; V.6; A.18-23; C.17. Body elongate; head slightly longer than broad; head-shield granular; median longitudinal groove does not extend to base of supra-occipital process; mouth sub-terminal and wide; teeth on jaws closely set, small, incisor-like in a single series, obtusely tricuspid or sub-truncated on jaws; palate edentate; barbels equal to eye; dorsal and pectoral spines strong and serrated. Body darkish above, silvery-white below with a metallic hue, fins yellowish.

Habitat and Biology : Inhabits rivers and in brackish water near the shore. It feeds on, molluscs, crustaceans and fishes.

Distribution : The Andaman Islands to Malay Archipelago.

Family PLOTOSIDAE

50. *Plotosus canius* Hamilton- Buchanan, 1822

1822. *Plotosus canius* Hamilton-Buchanan, *Fishes of Ganges* : 142, 374, pl. 15, fig. 44.

1991. *Plotosus canius* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 713.

2003. *Plotosus canius* : Rajan, *Field Guide to Marine Food Fishes of Andaman & Nicobar Islands* : 90.

2004. *Plotosus canius* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 92.

Diagnostic features : D₁.I, 4; D₂ procurrent; C. 85-120; P.13-14; A.89-109. Head moderately large, profile straight from tip of snout to dorsal fin origin; barbels four

pairs; anterior nostrils located at the edge of upper lip; eyes small. Generally dark olive-green over head and body, sides creamy, barbels and fins grey, first dorsal and pectoral fins darker.

Habitat and Biology : Inhabits chiefly estuaries and lagoons and sometimes uprivers in nearly fresh waters. Juveniles probably form dense aggregations. It feeds mainly on crustaceans, molluscs and fishes. This catfish contributes a moderate fishery in Hooghly estuary and also in other brackish water lakes along the east coast of India. It is a suitable species for brackish-water fish culture in India.

Distribution : Found in India, the Andaman Islands, Sri Lanka, Bangladesh and extending eastward to Malaysia, Thailand, and the Philippines as far as Papua New Guinea.

51. *Plotosus lineatus* (Thunberg, 1787)
(Fig. 31)

1787. *Silurus lineatus* Thunberg, *Museum Nat. Acad. Upsaliensis* : 31.

1968. *Plotosus anguillaris* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 36.

1991. *Plotosus lineatus* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 713.

2000. *Plotosus lineatus* : Rao *et al.*, *Rec. zool. Surv. India Occ. Paper*, 178 : 78.

2004. *Plotosus lineatus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 92, fig. 156.

Diagnostic features : D_1 , I, 4; D_2 procurent; C.84-109; A. 63-82; P I, 10-14; V. 10-12. Body elongate, tapering to a point posteriorly; no scales on body; dorsal, anal and caudal fins confluent; four pairs of nasal barbels reach hind border of eye. Body brownish-black above, whitish below with 2-3 light yellowish stripes on sides. Fins brown; dorsal and caudal fins often dark edged.

Habitat and Biology : Marine catfish found in packed groups in shallow reef areas and enters mangroves, brackish and fresh waters. It feeds on crustaceans, molluscs and fishes.

Distribution : Indo-west Pacific.

Order AULOPIFORMES
Family SYNODONTIDAE

52. *Saurida gracilis* (Quoy & Gaimard, 1824)
(Fig. 32)

1824. *Saurida gracilis* Quoy and Gaimard, *Voy. U. anie Zoolgie*. : 224.

1986. *Saurida gracilis* : Cressey, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 271, fig. 79.2.

2000. *Saurida gracilis* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 79, fig. 123.

Diagnostic features : D.10-11; A. 9; P.12-13; V.9; LI 48-51; Ltr. 3½ - 4½. Anterior nostril flap large; small teeth on vomer; minute teeth on tongue; axillary scale of pectoral fin short. Body brownish-yellow above, silvery below with prominent diffuse dark blotches dorsally and laterally on posterior half of body; all fins with spots and stripes.

Habitat and Biology : Inshore reef areas and in estuaries; young stages can be recognized by a series of dark patches lying in pairs along the ventral surface, two pairs between pectorals and ventrals and five pairs between ventrals and anal.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to Lakshadweep, coasts of India, the Andaman and Nicobar Islands, Sri Lanka to Japan and eastwards to Hawaiian Islands.

53. *Saurida tumbil* (Bloch, 1795)

1795. *Saurida tumbil* Bloch, *Nat. Ausland Fische.* : 112, pl. 430.

1984. *Saurida tumbil* : Talwar and Kacker, *Commercial Sea Fishes of India* : 284, fig.116.

2000. *Saurida tumbil* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 80.

2003. *Saurida tumbil* : Rajan, *Field Guide to Marine Food Fishes of Andaman & Nicobar Islands* : 92.

Diagnostic features : D.13; A.10; P. 14; V.9; LI. 58. Mouth large; teeth in jaws in several rows; pectoral fin reaching to level of ventral fin; axillary scale of pectoral fin long and pointed. Body brownish above, lower sides and belly white; mottled with faint dark cross bands on back, stomach white.

Habitat and Biology : Muddy bottom of continental shelf and estuaries.

Distribution : Indo-west Pacific from Tanzania, Pakistan to coasts of India, the Andaman and Nicobar Islands, Sri Lanka to China Sea.

54. *Saurida undosquamis* (Richardson, 1848)

1848. *Saurus undosquamis* Richardson, *Zool. Erebus. and Terror Fishes* : 138, pl. 51, fig. 1-6.

1986. *Saurida undosquamis* : Cressey, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 271, fig. 79.3.

2000. *Saurida undosquamis* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 80.

Diagnostic features : D.12-13; A.9-11; P.14; V.9; LI. 48-50. Several rows of slender, pointed teeth in jaws; palatine teeth in two pairs of bands; pectoral fin extending beyond ventral fin base. Body brownish-grey, lighter below with a series of fairly distinct 8-9 blotches along lateral line; a series of dark spots along front edge of dorsal and upper edge of caudal fin; stomach black.

Habitat and Biology : Muddy bottom of continental shelf and estuaries.

Distribution : Indo-west Pacific, from east coast of Africa, coasts of India, the Andaman Islands, Indonesia to Japan and Australia.

55. *Trachinocephalus myops* (Forster, 1801)
(Fig. 34)

1801. *Salmo myops* Forster, *Syst. Ichth.* : 421.

1986. *Trachinocephalus myops* : Cressey, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 273, pl. 11, fig. 79.10.

2000. *Trachinocephalus myops* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 81.

2003. *Trachinocephalus myops* : Rajan, *Field Guide to Marine Food Fishes of Andaman & Nicobar Islands* : 93.

Diagnostic features : D.11-12; A.16; P.11-12; V.8; LI. 55-56; Ltr. 3½./5½. Inter-orbital deeply concave; snout very short, equal to eye diameter; eye close to anterior end of upper jaw; anal fin base distinctly longer than dorsal fin base; pectoral fin rather small. Body greenish-brown above, belly silvery, with alternating pale blue and yellow stripes; an oblique black spot at upper end of gill opening; fins pale yellow.

Habitat and Biology : Shallow coastal waters and estuaries.

Distribution : Atlantic and Indo-Pacific.

Order **ATHERINIFORMES**
Family **ATHERINIDAE**

56. *Atherinomorus lacunosus* (Forster, 1801)

1801. *Atherina lacunose* Forster, *Syst. Ichth.* : 112.

1922. *Atherina forskali* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 4 : 274.

2000. *Atherinomorus lacunosus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.* 178 : 92, fig. 127.

Diagnostic features : D.V-VI +I, 8-10; A.I, 15-16; p. 14-16, V.I, 5. Body fusiform; dentary small and gently sloping upward; posterior edge of pre-opercle with distinct notch above angle; mid-lateral scale count 42-44. Body blue-green or gray, sides and cheeks silvery and iridescent; mid-lateral stripe silvery or black, more than one scale row; upper half of body heavily speckled with chromatophores; fins dusky; top of head, snout, cheeks and mid-lateral band dark.

Habitat and Biology : Small schooling species; usually in shallow inshore waters and mangroves. Feeds on zooplankton.

Distribution : Widespread in Indo-west Pacific.

57. *Atherina temminckii* Bleeker, 1853

1853. *Atherina temminckii* Bleeker, *Nat. Tijdschr. Ned. Indie.*, 5 : 506.

1922. *Atherina temminckii* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 4 : 269.

1941. *Atherina temminckii* : Herre, *Mem. Indian Mus.*, 13 : 347.

Diagnostic features : D.VI+I, 8-9; A.II, 10-11; P.I, 15-17; V.I, 5. Head pointed, upper surface flat; jaws equal; mouth small; snout much shorter than eye; dentary small and in narrow bands; posterior edge of pre-opercle with no distinct notch. Body silvery with brilliant mid-lateral band, about one and half times wider than pupil.

Habitat and Biology : Coastal and brackish waters of all temperate and tropical seas. Carnivorous fish.

Distribution : Widespread in tropical Indo-west Pacific.

Order CYPRINODONTIFORMES

Family HEMIRAMPHIDAE

58. *Hemiramphus far* (Forsskal, 1775)

1775. *Esox far* Forsskal, *Descript. Animal* : 67.

1986. *Hemiramphus far* : Collett, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 389, pl. 16.

2000. *Hemiramphus far* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 87.

2004. *Hemiramphus far* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 103, fig. 171.

Diagnostic features : D.13-14; A.11-12; P.12; V.6. Depth 6.2-7.1, head 3.2-4.5 in standard length; pectoral fin reaching forward to nasal fossa; preorbital ridge absent; stout tricuspid teeth in 2 to 4 rows in jaws; upper jaw naked; predorsal scales 38-40; gill rakers 26-34 on lower arm of first arch; caudal fin forked, the lower lobe much longer than upper. Body greenish-blue above, silvery on sides and below with 4-8 prominent blotches on sides above lateral line; lower jaw dark, tip reddish; a silvery stripe with blue upper margin on sides of body.

Habitat and Biology : Areas of rich submerged vegetation in shallow coastal waters and estuaries. Adults feed mainly on sea grasses and green algae.

Distribution : Indo-west Pacific from east coast of Africa, Gulf of Oman, coasts of India, the Andaman Islands to China Sea and Ryukyu Islands.

59. *Hyporhamphus dussumieri* (Valenciennes, 1846)

1846. *Hemiramphus dussumieri* Valenciennes, *Hist. nat. Poiss.*, 19 : 33, pl. 520.

1984. *Hyporhamphus dussumieri* : Talwar and Kacker, *Commercial Sea Fishes of India* : 314, fig. 127.
2000. *Hyporhamphus dussumieri* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 88.
2004. *Hyporhamphus dussumieri* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 104, fig. 172.

Diagnostic features : D.15; A.15; P.11; V.6. Head 2.72-2.75 in standard length; upper jaw short, triangular and scaly, its width greater than length; lower jaw equal to head length; gill rakers 36-42 on first arch; origin of ventral fin nearer to base of caudal fin. Body greenish above, silvery below; scales of back and upper sides with dark-brown spots; bluish-silvery lateral band bordered black above; dorsal and caudal fins dusky.

Habitat and Biology : Shallow coastal waters and estuaries.

Distribution : Indo-west Pacific from Red Sea, Tanzania, Seychelles, Gulf of Oman, Lakshadweep, coasts of India, the Andaman and Nicobar Islands to Japan and Society Islands.

60. *Rhynchorhamphus georgii* (Valenciennes, 1846)

1846. *Hyporhamphus georgii* Valenciennes, *Hist. nat. Poiss.*, 19 : 37
1875-78. *Hyporhamphus georgii* : Day, *Fishes of India* : 515, pl. 120, fig. 2.
1941. *Hemiramphus georgii* : Herre, *Mem. Indian Mus.*, 13 : 343.
1959. *Hemiramphus georgii* : Misra, *Rec. Indian Mus.*, 57(1-4) : 200.
1994. *Hemiramphus georgii* : Dorairaj et al., *Spl. Publ., CARI, Port Blair* : 18.

Diagnostic features : D.13-17; A.14-15; P.11; V.6. Height of body 10 to 13 in total length; the height of head equal to its length behind the middle of eye; pre-orbital slightly longer than height; teeth in upper jaw in a band tapering posteriorly, those on the lower jaw in a narrow band tapering anteriorly; caudal deeply forked. Body pale with a narrow lateral silvery band; fins hyaline; dorsal and caudal fin margins dusky.

Habitat and Biology : Shallow coastal waters, near creeks and mangroves.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to Malay Archipelago.

61. *Zenarchopterus buffonis* (Valenciennes, 1846)

1846. *Hemiramphus buffonis* Valenciennes, *Hist. nat. Poiss.*, 19 : 48.
1922. *Zenarchopterus buffonis* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 4 : 170.
1991. *Zenarchopterus buffonis* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 736.
2000. *Zenarchopterus buffonis* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 88.

Diagnostic features : D.12; A.12; P.10; V.6. Body elongate and slender; upper jaw wider than long, its length 7.2 in free lower jaw; fourth to seventh dorsal fin rays elongated; pre-dorsal scales 29. Body yellowish, sides of head and lateral stripe silvery; a dark brown stripe along mid line of snout, beak black; dorsal fin and margin of anterior anal fin rays black; caudal fin dusky.

Habitat and Biology : Inshore coastal waters and estuaries.

Distribution : Indo-west Pacific from coasts of India, the Andaman and Nicobar Islands, Sumatra to Philippines and Australia.

62. *Zenarchopterus gilli* Smith, 1945

1877. *Hemiramphus dispar* (nec Valenciennes) Day, *Fishes of India* : 517, pl. 119, fig. 5.

1945. *Zenarchopterus gilli* : Smith, *Bull. U.S. natn. Mus.*, (188) : 432.

1991. *Zenarchopterus gilli* : Talwar and Jhingran, *Inland fishes of India and Adjacent Countries*, 2 : 738.

2000. *Zenarchopterus gilli* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 89.

Diagnostic features : D.12; A.12; P.10; V.6. Upper jaw as long as wide at its base, its length 7.2 in free lower jaw; fourth to sixth dorsal fin rays elongate and thickened; caudal fin bluntly rounded. Body yellowish, back brownish; a silvery lateral band bordered above by a black line; mandible blackish with a white tip; caudal fin dusky.

Habitat and Biology : Marine, estuaries and tidal rivers.

Distribution : Western Indian Ocean, the Andaman and Nicobar Islands, East Indies, Caroline, Fiji, Guam and Australia.

Family BELONIDAE

63. *Strongylura strongylura* (van Hasselt, 1823)

1823. *Belone strongylura* van Hasselt, *Alg. Konst. en Letterbode.*, 1 : 130.

1939. *Tylosurus strongylurus* : Herre, *Rec. Indian Mus.*, 41, pt. 4 : 331.

1990. *Strongylura strongylura* : Talwar, *J. Andaman Sci. Assoc.*, 6(2) : 75.

2000. *Strongylura strongylura* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 89.

Diagnostic features : D. 14; A. 16; P. 11; V. 6. Body elongate and sub-cylindrical, slightly compressed laterally; Origin of dorsal fin opposite to fifth anal ray; caudal peduncle without keels; caudal fin slightly rounded. Body light greenish above, whitish below with a silvery stripe laterally on the body; all fins yellowish with greenish tinge; bluish black blotch on base of caudal.

Habitat and Biology : Shallow coastal waters, creeks and mangroves.

Distribution : Indo-west Pacific, from Pakistan, Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka, Indonesia to China and Australia.

64. *Tylosurus crocodilus crocodilus* (Peron & Le Sueur, 1821)
(Fig. 35)

1821. *Belone crocodila* Peron and Le Sueur, *J. Acad. nat. Soc. Philad.*, 2(2) : 129.

1986. *Tylosurus crocodilus crocodilus* : Collette, In : Smith and Heemstra, *Smith's Sea Fishes* : 387.

2000. *Tylosurus crocodilus crocodilus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 90.

Diagnostic features : D.22; A. 21; P.14; V.6. Lateral line forms a keel on caudal peduncle; canine of upper jaw vertical, caudal fin forked. Body dark green, sides silvery.

Habitat and Biology : Shallow coastal waters, near creeks and mangroves.

Distribution : Widespread in Indo-Pacific and Atlantic waters.

Family ORYZIIDAE

65. *Oryzias melastigma* (McClelland, 1839)

1839. *Aplocheilus melastigma* McClelland, *Asiatic Res.*, 19(2) : 301, 427, pl. 42, fig. 3 and pl. 35, fig. 4.

1889. *Haplochilus melanostigma* : Day, *Fauna Br. India, Fishes*, 1 : 415.

2000. *Oryzias melastigma* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 374.

Diagnostic features : Body compressed; eye large; mouth oblique; maxilla does not reach to below front edge of eye; teeth minute on jaws, none on palate; dorsal inserted above the last 4th of anal; few rays in dorsal and anal fins often prolonged and filiform; pectoral equal to head length; caudal fin rounded. Body greenish above, lighter below; a dark line along the middle of the side of body which ends in a dull spot at the base of caudal fin; anal margin white, other fins hyaline.

Habitat and Biology : Estuarine and brackish waters in creeks and mangroves, also in freshwater ponds and rivers. Larvivorous fish.

Distribution : India : Madras, Orissa, West Bengal and the Andaman Islands; Bangladesh, Myanmar and Sri Lanka.

Order SYNGNATHIFORMES

Family FISTULARIIDAE

66. *Fistularia commersonii* Ruppell, 1838
(Fig. 36)

1838. *Fistularia commersonii* Ruppell, *Neue. Weir. Von. Abyss. Fish. Res. Rothen Meeres.* : 142.

2000. *Fistularia commersonii* : Rao et al., Rec.z Zool. Surv. India, Occ. Paper No., 178 : 98.

2004. *Fistularia commersonii* : Rao, Guide to Reef Fishes of Andaman and Nicobar Islands : 117, fig. 189.

Diagnostic features : D.15, A. 14, P.14, V.6. Body elongate, snout prolonged; no bony plates along mid-line of body; no spines on lateral line ossifications; post temporal ridge is smooth. Body brownish above with two bluish green lines; median fins light pink.

Habitat and Biology : Coastal and estuarine waters. Elongate tubular snout is very efficient device for sucking in small fishes which are the most common food items for these stealthy predators.

Distribution : Indo-west Pacific from east coast of Africa, coasts of India, Nicobar Islands to South China Sea.

67. *Fistularia petimba* Lacepede, 1803

1803. *Fistularia petimba* Lacepede, Hist. nat. Poiss., 5 : 89.

1986. *Fistularia petimba* : Heemstra In : Smith and Heemstra, Smith's Sea Fishes : 444, pl. 23.

2000. *Fistularia petimba* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 99.

Diagnostic features : D.16, A.14, P.16, V.6. Elongate bony plate along dorsal mid-line of body; post temporal ridge with large antrose cirri; anus close behind ventral. Body orange brown dorsally and silvery ventrally.

Habitat and Biology : Coastal areas and estuaries over soft bottom. Feeds mainly on small fishes which are sucked into the long snout.

Distribution : Widespread in Atlantic and Indo-west Pacific.

Family SYNGNATHIDAE

68. *Choeroichthys sculptus* (Gunther, 1870) (Fig. 37)

1870. *Doryichthys sculptus* Gunther, Cat. Fish Br. Mus. : 185.

1986. *Choeroichthys sculptus* : Dawson, In : Smith and Heemstra, Smith's Sea Fishes : 447, fig. 145.2.

1980. *Choeroichthys sculptus* : Jones and Kumaran, Fishes of Laccadive Archipelago : 62, fig. 138.

2000. *Choeroichthys sculptus* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 103.

Diagnostic features : D.32, A.4, V.21, C.10. Body rings 20+21; dorsal profile of snout concave almost equal to post orbital head; keels on snout smooth; superior trunk and tail ridges continuous while inferior ridge of trunk end on anal ray; lateral trunk

ridge continuous with inferior tail ridge. Body yellowish with three rows of dark edged bluish white spots on trunk rings; a dark stripe through eye and black spots on lower part of head; caudal fin brownish.

Ecology and Biology : Shallow coral reef areas and in mangroves.

Distribution : Indo-Pacific from east coast of Africa to Lakshadweep and the Andaman Islands to Ryukyu Islands and Australia to Society Islands.

69. *Corythoichthys haematopterus* (Bleeker, 1851)
(Fig. 38)

1851. *Syngnathus haematopterus* Bleeker, *Nat. Tijdschr. Ned. Indie.*, 2 : 258.

1984. *Corythoichthys haematopterus* : Araga in Masuda *et al.*, *Fishes of Japanese Archipelago* : 87, pl. 76 K, L.

2000. *Corythoichthys haematopterus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 102, fig. 134.

2004. *Corythoichthys haematopterus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 119, fig. 191.

Diagnostic features : D.30, A.4, P.17. Body rings 17+36. Dorsal profile of head is strongly convex in front of eye; snout without a lateral ridge; superior ridge of trunk and tail discontinuous, median ridge of trunk and superior ridge of tail interrupted. Inferior ridge of trunk and tail continuous. Body whitish yellow with diffuse brown bars on sides and wavy blackish stripes, throat with 2-3 black bars.

Habitat and Biology : Shallow coral region and mangrove areas. Feeds on small crustaceans as copepods, mysids, and shrimps, which are sucked into the long snout.

Distribution : Indo-west Pacific from east coast of Africa to Lakshadweep and coasts of India, the Andaman Islands to Japan and Australia to New Hebrides.

70. *Corythoichthys intestinalis* (Ramsy, 1881)

1881. *Syngnathus intestinalis* Ramsy, *Proc. Linn. Soc., N.S. Wales*, : 494.

1990. *Corythoichthys intestinalis* : Randall *et al.*, *Fishes of Great Barrier Reef and Coral Sea* : 72.

2004. *Corythoichthys intestinalis* : Rajan and Dam Roy. *A compendium on Mangrove Biodiversity of A & N Islands, CARI, Port Blair* : 126.

Diagnostic features : D.28; A.4; P.18. Body rings 17+37; a crest on each side of head above eyes; inter-orbital space deeply concave; superior trunk and tail ridges discontinuous; lateral ridge of trunk straight, ending near anal ring; inferior ridges of trunk and tail continuous. Body light gray with numerous dark bars and wavy brown stripes along the sides; black stripes usually present on head.

Habitat and Biology : Coastal areas and in estuaries. Feeds on small copepods and shrimps.

Distribution : Indo-Pacific from Red Sea, east coast of Africa, coasts of India, the Andaman Islands, Sri Lanka to China, Japan and Australia.

71. *Doryramphus excisus excisus* Kaup, 1856
(Fig. 39)

1856. *Doryramphus excisus excisus* Kaup. Cat. Lophobar. Fish. : 54, pl. 3.

1986. *Doryramphus excisus excisus* : Dawson, In : Smith and Heemstra, *Smith's Sea Fishes* : 448, pl.23.

2000. *Doryramphus excisus excisus* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 104.

2004. *Doryramphus excisus excisus* : Rao, Guide to Reef Fishes of Andaman and Nicobar Islands : 120, fig. 193.

Diagnostic features : D.23-25, A.4, P.20; body rings 17+14-16. Snout long with serrated median ridge dorsally and granulated ridge on either side; superior trunk and tail ridges discontinuous; inferior trunk ridge ending on anal ring; lateral trunk ridges continuous with inferior tail ridge; ridges on each posterior body ring with spine. Body bright orange with bluish mid-lateral stripe from tip of snout to tail; caudal fin bluish-black.

Habitat and Biology : Mangroves and swamps, frequently visit reef areas. Feeds on copepods and small fishes.

Distribution : Indo-Pacific, from east coast of Africa to Hawaiian Islands.

72. *Doryichthys martensi* (Peters, 1869)

1869. *Syngnathus martensi* Peters, Monatar Akad. Berlin : 459.

1922. *Doryichthys martensi* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 4 : 54.

2000. *Doryichthys martensi* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 103.

Diagnostic features : D.36; A. 4; P.18-20; C. 9. Body rings 17+33-35. Inferior ridge of trunk and tail continuous; median ridge of trunk and superior ridge of tail sub-continuous; median keel of snout reaches to nostrils; tail longer than head and trunk. Body reddish-brown, a black spot on median ridge from fourth to penultimate ring of trunk.

Habitat and Biology : Creeks and mangrove areas.

Distribution : Indo-Malayan region from Nicobar Islands to Borneo, Java and Sumatra.

73. *Hippichthys heptagonus* Bleeker, 1849

1849. *Hippichthys heptagonus* Bleeker, *Vehand.Batav. Genootsch.*, 22, *Bijdr. Ichth. Fauna Madura* : 15.

1986. *Hippichthys heptagonus* : Dawson, In : Smith and Heemstra, *Smith's Sea Fishes* : 452.

2000. *Hippichthys heptagonus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 105.

Diagnostic features : D.27, A.3; P.14; C.10. Body rings 15+37. Body compressed, heptagonal, abdominal cristae sharp and prominent; dorsal origin on first tail ring. Tail twice as long as trunk. Inferior trunk and tail ridges continuous, the median trunk ridge deflected ventrally near anal ring; operculum with a complete keel. Body brownish with white, black margined ocellus on each trunk ring along the inferior cristae; ventral surface of the snout and head with black spots; caudal fin black.

Habitat and Biology : Mangroves and reef areas. Feeds mainly on small fishes and crustaceans.

Distribution : Indo-west Pacific from east coast of Africa, coasts of India, the Nicobar Islands, Sri Lanka, Indonesia to Solomon Islands.

74. *Hippichthys spicifer* (Ruppell, 1838)

1838. *Syngnathus spicifer* Ruppell, *Neu. Wirbil. Fishes des Rothen Meeres* : 143, pl. 33, fig. 4.

1986. *Hippichthys spicifer* : Dawson, In : Smith and Heemstra, *Smith's Sea Fishes* : 452, pl. 23.

2000. *Hippichthys spicifer* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 106.

Diagnostic features : D.28, A. 3, P. 17. Body rings 15+40. Body slender, trunk heptagonal and tail tetragonal; snout longer, almost twice the post orbital part of head; operculum with complete longitudinal keel; median cristae of trunk deflected on last ring of trunk and first ring of tail to inferior cristae of tail but united with them; superior cristae of tail and median cristae of trunk discontinuous; dorsal origin on or behind second tail ring. Body brownish; trunk ventrally dusky with 13-15 white cross bars.

Habitat and Biology : Mangroves and muddy coastal waters. Feeds on crustaceans and small fishes.

Distribution : Indo-west Pacific from east coast of Africa to Caroline Islands.

75. *Hippocampus histrix* Kaup, 1853 (Fig. 40)

1853. *Hippocampus histrix* Kaup, *Uebersicht der Lophobranchier Arch. Naturgesch*, 19(1) : 226-234.

1878. *Hippocampus histrix* : Day, *Fishes of India* : 663, pl. 76, fig. 2.

1922. *Halicampus hystrix* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 4 : 109.

1986. *Hippocampus hystrix* : Dawson, In : Smith and Heemstra, In : *Smith's Sea Fishes* : 453.

2004. *Hippocampus hystrix* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 120, fig. 194.

Diagnostic features : D.19, A. 4, P.17. Body rings 11+33; sharp spines on most rings; snout longer than head; coronet elevated with five spines; dorsal fin located above last two body rings and first two tail rings. Body light brownish yellow with dark stripes on snout; vermiculating fine lines on rest of head, body and trunk.

Habitat and Biology : Mangrove areas and among seaweeds. Feeds on fish larvae and small crustaceans.

Distribution : Indo-Pacific from Red Sea to Japan.

76. *Hippocampus kuda* Bleeker, 1852 (Fig. 41)

1852. *Hippocampus kuda* Bleeker, *Net. Tijd. Ned. Indie.*, 3 : 82.

2000. *Hippocampus kuda* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 :106.

2004. *Hippocampus kuda* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 121, fig. 195.

Diagnostic features : D.16, A.4, P.16. Body rings 11+36 without spines. Snout length 2.4 in head, cornet low, divided distally; tubercles on body rings; dorsal fin located above last two body rings and first two tail rings. Body dark brown with scattered dark spots and cross bands on tail.

Habitat and Biology : Found among seaweeds near coastal and mangroves. Mainly feeds on small fishes and crustaceans.

Distribution : Indo-Pacific, from Red Sea to Lakshadweep, coasts of India to Hawaiian Islands.

77. *Syngnathoides biaculeatus* (Bloch, 1785) (Fig. 42)

1785. *Syngnathus biaculeatus* Bloch, *Nat. ausland Fische.*, 1 : 10, pl.12, fig.1 & 2.

1922. *Syngnathoides biaculeatus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 4 : 40.

1980. *Syngnathoides biaculeatus* : Jones and Kumaran, *Fishes of Laccadive Archipelago* : 166, fig. 143.

2003. *Syngnathoides biaculeatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 107.

Diagnostic features : D. 42; A. 4; P.23; body rings 17+46. Trunk compressed dorso-ventrally, broadest near middle of trunk; a pair of small branchial barbel at chin; superior and inferior ridges of trunk and tail continuous; lateral trunk ridge angled dorsally, end near superior tail ridge; caudal fin absent; tail prehensile. Body greenish-brown, yellow below.

Habitat and Biology : Inhabits among floating seaweeds around reefs, creeks and mangrove areas.

Distribution : Indo-Pacific, from Red Sea, east coast of Africa, Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka to Australia.

Order SCORPAENIFORMES
Family SCORPAENIDAE

78. *Scorpaenodes guamensis* (Quoy & Gaimard, 1824)
(Fig. 43)

1824. *Scorpaena guamensis* Quoy and Gaimard, *Voy. Uranie. Zoologie* : 326.

1986. *Scorpaenodes guamensis* : Eschmeyer In : Smith and Heemstra, *Smith's Sea Fishes* : 472, fig.149.

2003. *Scorpaenodes gumanensis* : Kamla Devi and Rao, *Rec. zool. Surv. India, Occ. Paper No.*, (211) : 17, fig. 16.

Diagnostic features : D.XIII, 8-9; A. III, 4-5; P. 19; V. I, 5. Body scales ctenoid; nasal spine present; few spines in a row under eye. Body dark brown with dark and light mottling; fins with brown and white spots in rows; a prominent black spot on upper edge of operculum surrounded by whitish area.

Habitat and Biology : Shallow coastal waters near reefs, creeks and mangroves.

Distribution : Indo-west Pacific.

79. *Tetraroge niger* (Cuvier, 1829)
(Fig. 44)

1829. *Apistus niger* Cuvier, *Hist. nat. Poiss.* : 415.

1875. *Gymnapistus niger* : Day, *Fishes of India* : 156, pl. 37, fig. 1.

1962. *Tetraroge niger* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, 11 : 70, fig.16.

2000. *Tetraroge niger* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 115.

2003. *Tetraroge niger* : Kamla Devi and Rao, *Rec. zool. Surv. India, Occ. Paper No.*, (211) : 20.

Diagnostic features : D.XIII, 7; A.III, 5; P.12; V. I, 5. Body moderately compressed, no barbels on lower jaw; anterior pre-orbital spine short, posterior one long; origin of dorsal fin above posterior part of eye; skin covered with small papillae. Body dark brown with irregular dark blotches; all fins are with narrow white border and dark broad sub-marginal band; caudal fin white.

Habitat and Biology : Shallow coastal waters of creeks and mangroves. Feeds on small crustaceans and fish.

Distribution : Widespread in Indo-Pacific.

80. *Vespicula depressiforms* (Richardson, 1848)

1848. *Apistus depressiforms* Richardson, *Zool. Voy. Samarang Fishes* : 1.

1962. *Vespicula depressiforms* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, 11 : 74, fig. 17.

2000. *Vespicula depressiforms* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 114.

Diagnostic features : D.XIII, 7; A.III, 5; P.11; V.I, 5. Pre-orbital with two spines; origin of dorsal above hind boarder of pre-operculum. Body brownish, fins mottled; caudal fin with dark transverse bands.

Habitat and Biology : Found in coastal areas and mangroves. Feeds on small crustaceans and fish.

Distribution : Indo-west Pacific.

81. *Vespicula trachinoides* (Cuvier, 1829)

1829. *Apistus trachinoides* Cuvier, in Cuvier and Valenciennes, *Hist. nat. Poiss.*, 4 : 410.

1962. *Vespicula trachinoides* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, 11 : 73.

2000. *Vespicula trachinoides* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 115.

Diagnostic features : D. XV, 4; A. III, 4; P.12; V. I, 4. The origin of dorsal fin at hind border of pre-opercle; caudal fin rounded. Body reddish brown, light brown narrow bands on median fins; pectoral fins with light brown spots.

Habitat and Biology : Coastal areas and mangroves. Feeds on small fishes and crustaceans.

Distribution : Indo-west Pacific.

Family SYNANCEIIDAE

82. *Inimicus didactylus* (Pallas, 1769)

1769. *Scorpaena didactyla* Pallas, *Special. Zool.*, 7 : 26.

1962. *Inimicus didactylus* : De Beaufort and Briggs. *Fishes of Indo-Australian Archipelago*. 11 : 104, fig. 30.

Diagnostic features : D. XVII, 7; A. II, 10; P. 10+2; V. I, 5. Body elongate; no scales on body; head somewhat depressed; mouth vertical; dorsal origin between first spine of superior postorbital ridge; dorsal membranes deeply incised behind fourth spine; last ray of dorsal and anal fins connected to caudal peduncle; skin and fins with papillae; caudal fin rounded. Body brown with variegated light and dark brown; head whitish; black blotch between second and third dorsal spine membrane; soft dorsal with broad dark terminal border; edge of anal fin dark; distal part of ventral fin reddish; caudal fin with a basal and sub-terminal dark band.

Habitat and Biology : Shallow inshore waters of rubble and mangrove areas. Feeds on small crustaceans and fishes.

Distribution : Indo-west Pacific.

83. *Polycaulus uranoscopus* Bloch and Schneider, 1801
(Fig. 45)

1801. *Polycaulus uranoscopus* Bloch and Schneider, *Syst. Ichth.* : 195.

2000. *Polycaulus uranoscopus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 117, fig. 140.

Diagnostic features : D.XII, 12; A.14; P.14; V.I, 5. Head flattened with bony ridge; eye directed upwards; pre-orbital with two spines; supra-orbital ridges connected by a transverse ridge behind eyes; no scales on boy; lateral line near dorsal profile with 15 pores. Body light brown, pectoral fins dark brown with small white spots; other fins dark brown; tip of rays white; caudal fin with white spots.

Habitat and Biology : Muddy coastal waters and mangrove areas. Feeds mainly on crustaceans and fishes.

Distribution : The Andaman Islands to China.

Family PLATYCEPHALIDAE

84. *Cociella crocodila* (Tilesius, 1812)
(Fig. 46)

1812. *Platycephalus crocodila* Tilesius, *Krusenstern's Reise*, pl. 59, fig. 2.

1962. *Platycephalus crocodilus* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, 11 : 139.

2000. *Cociella crocodila* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 119.

2004. *Cociella crocodila* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 143, fig. 222.

Diagnostic features : D.VII+11; A.11; P.20; V.I, 5. Maxilla reaching to front border of eye; two short spines between anterior nostrils; posterior part of supra-orbital ridge

serrated; superior post orbital ridge with two spines; opercular spines two; anterior three scales of lateral line with spines. Body brownish with many dark spots on upper side; back with four cross bands; spinous dorsal with a broad black band near edge; all fins dusky.

Habitat and Biology : Shallow coastal waters and mangroves. Feeds on crustaceans and fishes.

Distribution : Indo-west Pacific, from east coast of Africa, Lakshadweep, coasts of India to New Hebrides.

85. *Eurycephalus carbunculus* (Valenciennes, 1833)

1833. *Platycephalus carbunculus* Valenciennes, *Hist. nat. Poiss.*, **9** : 461.

2000. *Thysanophrys carbunculus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 120.

2004. *Eurycephalus carbunculus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 144, fig. 223.

Diagnostic features : D.VIII+1; A.12; P.18; V.I, 5. Teeth in two patches on vomer; spine in front of eye; a small tentacle on eye; anterior five lateral line scales spiny; sub-orbital ridge serrated. Body light brown, white below; irregular dark brown bands on head and body; a dark brown blotch below eye. Outer half of dorsal fins with irregular spots; pectoral, ventral and caudal fins with row of dark spots.

Habitat and Biology : Benthic fish prefers sand or mud bottom in shallow waters and is common in mangroves. Feeds on shrimps, crabs and fish.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to Philippines.

86. *Platycephalus indicus* (Linnaeus, 1758) (Fig. 47)

1758. *Callynomyus indicus*. Linnaeus, *Systema Naturae*, **I** : 250.

1962. *Platycephalus indicus* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, **11** : 131, fig.30.

1968. *Platycephalus indicus* : Menon and Talwar, *Rec. zool. Surv. India*, **66**(1-4) : 59.

1994. *Thysanophrys indicus* : Dorairaj et al., *Spl. Publ., CARI, Port Blair* : 23.

2000. *Platycephalus indicus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 120.

Diagnostic features : D.VIII+14; A.13; P.18-19; V. I, 5. Teeth on vomer in one patch; head with bony ridges; small pre-opercular and two pre-ocular spines present.

Body grayish above whitish below; caudal fin with two horizontal black stripes; first dorsal fin black.

Habitat and Biology : Shallow, sandy or muddy bottom and is very common in mangroves. Feeds on crustaceans and fishes.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to the Andaman Islands, Sri Lanka to Japan and south of Australia.

87. *Sorsogona tuberculata* (Cuvier, 1829)
(Fig. 48)

1829. *Platycephalus tuberculata* Cuvier, *Hist. nat. Poiss.*, 4 : 258.

1962. *Platycephalus crocodiius* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, 11 : 139.

2000. *Sorsogona tuberculata* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 120.

Diagnostic features : D.VIII+11; A.11; P.20; V.I,5. Inter-orbital space concave; body compressed; head ridged and spiny; supra-ocular rim and opercular ridge serrated; teeth on vomer in two patches; three strong spines on anterior orbital rim; anterior 18 lateral scales with spines. Caudal fin rounded. Body brown above, white below with dark mottling and indistinct vertical bands; spinous dorsal black; other fins spotted.

Habitat and Biology : Sandy areas and in mangrove regions. Feeds on crabs, shrimps, small fishes.

Distribution : Indo-Pacific, from Natal to Philippines and Queensland.

Order PERCIFORMES
Family CENTROPOMIDAE

88. *Lates calcarifer* (Bloch, 1790)

1790. *Holocentrus calcarifer* Bloch, *Nat. ausland Fische*, 4 : 100, pl. 244.

1959. *Lates calcarifer* : Misra, *Rec. Indian Mus.*, 57(1-4) : 222.

2000. *Lates calcarifer* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 121.

Diagnostic features : D.VIII, 10; A.III, 8; P.17; V.I, 5. Body elongate and compressed; caudal peduncle very deep; head pointed with concave, dorsal profile becoming convex in front of dorsal fin; mouth large, upper jaw extending to behind eye; opercle with small spine; pre-opercle with spine in angle; deep notch between

spinous and soft portion of dorsal; scales large, ctenoid. Body blue green above and silvery below; eye bright pink.

Habitat and Biology : Shallow coastal waters, estuaries and lagoons.

Distribution : Widespread in Indo-Pacific region.

Family AMBASSIDAE

89. *Ambassis buruensis* Bleeker, 1856

1856. *Ambassis buruensis* Bleeker, *Nat. Tijdr. Ned. Indie.*, 11 : 396.

1941. *Ambassis buruensis* : Herre, *Mem. Indian Mus.*, 13 : 356.

2000. *Ambassis buruensis* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 122.

Diagnostic features : D.VII; I, 9; A. III, 9; P.14, V. I,5. Mouth oblique; sub-orbital ridge smooth ending in a spine; pre-orbital with blunt serrations; cheek with two transverse rows of scales; pre-dorsal scales 13; lateral line once interrupted. Body light yellowish with bright silvery band from operculum to median caudal rays; pale black stripes along middle of sides of caudal peduncle; membrane between second and third dorsal spine blackish; caudal lobes dusky.

Habitat and Biology : Coastal waters and mangroves.

Distribution : Indo-west Pacific, from the Andaman Island to Japan.

90. *Ambassis buton* Popat, 1918

1918. *Ambassis buton* Popat, *Meded. Zool. Mus. Leiden* : 6.

1972. *Ambassis buton* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1) : 42.

1991. *Ambassis buton* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 794.

Diagnostic features : D. VIII+I, 9; A. III, 9; P. I, 15; V. I, 5. Body elongate and compressed; mouth oblique; eyes large; supra-orbital ridge smooth with small spine posteriorly; pre-opercular ridge serrated; inter-operculum smooth; two rows of scales on cheeks; scales large; lateral line once interrupted. Body yellowish-brown on back, sides and belly silvery; a bluish stripe on sides; fins hyaline; membrane between second and third dorsal spines dusky.

Habitat and Biology : Freshwater creeks and mangroves areas.

Distribution : Great Nicobar Island to New Guinea.

91. *Ambassis commersoni* Cuvier, 1828

1828. *Ambassis commersoni* Cuvier, *Hist. nat. Poiss.*, 2 : 176.

1929. *Ambassis commersoni* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 5 : 407.

1958. *Ambassis commersoni* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 42.

1991. *Ambassis commersoni* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 794.

Diagnostic features : D.V+I, 8-9; A. III, 8-9; P.i,12-14; V. I, 5. Body oblong, mouth oblique; maxillary reaching to below anterior margin of eye; teeth pointed, three rows in upper jaw and two rows in lower jaw; supra-orbital ridge smooth with small spine posteriorly; pre-orbital ridge smooth; scales large; lateral line continuous; cheek with two transverse rows of scales. Body pale yellow with a bright silvery mid-lateral band; fin membrane between second and third dorsal spine dusky; fins hyaline; dark longitudinal band on each caudal lobe.

Habitat and Biology : Shallow coastal waters near creeks and mangroves.

Distribution : Indo-west Pacific, from Seychelles, coasts of India, the Andaman Islands, the Philippines to North Australia.

92. *Ambassis dussumieri* Cuvier, 1828

1828. *Ambassis dussumieri* Cuvier, *Hist. nat. Poiss.*, 2 : 181.

1965. *Ambassis dussumieri* : Day, *Fishes of Malabar* : 16.

1991. *Ambassis dussumieri* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 795.

Diagnostic features : D.VII+I, 8-9; A.III, 9; P.I,12-14; V. I, 5. Body slender and compressed; head large; supra-orbital ridge dentate with 3-5 spines; pre-orbital and pre-operculum dentate; sub-orbital and inter-operculum smooth; scales large; lateral line interrupted; cheeks with two transverse scale rows; pre-dorsal with 15-16 scales. Head and back greenish with minute black dots; sides and belly lighter; fins hyaline; membrane between second and third dorsal spines dark; caudal fin dusky.

Habitat and Biology : Shallow coastal areas near creeks and mangroves.

Distribution : Mauritius, Seychelles, coasts of India, the Andaman Islands; Malaysia to China.

93. *Ambassis gymnocephalus* (Lacepede, 1802)

1802. *Lutjanus gymnocephalus* Lacepede, *Hist. nat. Poiss.*, 3 :181, 216, pl. 23, fig. 3.

1875. *Ambassis gymnocephalus* : Day, *Fishes of India* : 54, pl. 15, fig. 6.

1991. *Ambassis gymnocephalus* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 796.

Diagnostic features : D.VII+I, 8-10; A. III, 9-10; P. ii, 12-14; V. I, 5. Very small fishes, body slender and compressed; supra-orbital and pre-orbital ridge dentate; sub-orbital and inter-operculum smooth; scales large; lateral line interrupted in middle below soft dorsal. Body silvery with a bright longitudinal band; fins pale.

Habitat and Biology : Shallow coastal areas, creeks and mangroves.

Distribution : Indo-west Pacific, from east coast of Africa, coasts of India, the Andaman Islands, Malay Archipelago and China.

94. *Ambassis interruptus* Bleeker, 1852 (Fig. 49)

1852. *Ambassis interruptus* Bleeker, *Nat. Tijdr. Ned. Indie.*, 3 : 696.

1875. *Ambassis interrupta* : Day, *Fishes of India* : 53, pl. 15, fig. 5.

1929. *Ambassis interrupta* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 5 : 415.

2000. *Ambassis interruptus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 122.

Diagnostic features : D.VII; I, 9; A. III, 9; P.14; V. I,5. Body deep and compressed; dorsal profile of head almost straight; snout equal to inter-orbital space; maxillary reaching to front border of eye; sub-orbital ridge smooth but ending in an indistinct spine; pre-orbital and pre-opercular ridge and edge denticulate; lateral line once interrupted; pre-dorsal scales 16 to 19; cheek with two scale rows. Body silvery with a narrow lateral stripe; second dorsal spine bright orange; a brilliant white patch on distal portion of membranes between second and third anal spines; a dark band along caudal lobes.

Habitat and Biology : Shallow coastal waters and mangroves.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to Japan and Australia.

95. *Ambassis kopsii* Bleeker, 1858

1858. *Ambassis kopsii* Bleeker, *Nat. Tijd. Ned. Indie.*, 15 : 258.

1991. *Ambassis kopsii* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 797.

Diagnostic features : D.VII+I, 8-10; A. III,9; P. ii,12; V. I,5. Body slender and compressed; head small; scales large; pre-dorsal scales 8-12; cheek with two transverse rows of scales; supra-orbital with 2-3 small spines; pre-orbital, pre-

operculum and inter-operculum serrated; lateral line complete. Body pale with a bright silvery band on side; middle part of spinous dorsal dusky; all fins pale.

Habitat and Biology : Shallow coastal waters near creeks and mangroves.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands, East Indies and Philippines.

96. *Ambassis nalua* (Hamilton-Buchanan, 1822)

1822. *Chanda nalua* Hamilton-Buchanan, *Fishes of Ganges* : 107, 371, pl.6, fig. 36.

1875. *Ambassis nalua* : Day, *Fishes of India* : 53, pl. 15, fig. 4.

1929. *Ambassis nalua* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 5 : 409.

2000. *Ambassis nalua* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 376.

Diagnostic features : D.VII+I,9-10; A.III, 8-9; P.i,13-15; V. I, 5. Body deep and compressed; mouth oblique; maxilla reaches to below middle of eye; supra-orbital ridge smooth with a single spine; pre-orbital, sub-orbital, pre-operculum and inter-operculum serrated; lateral line continuous. Body pale green above, lighter below; middle part of spinous dorsal dusky; dark longitudinal band along each caudal lobe.

Habitat and Biology : Creeks and mangrove areas.

Distribution : Indian Ocean, from coasts of India and the Andaman Islands to Malay Archipelago

97. *Ambassis urotaenia* Bleeker, 1852

1852. *Ambassis urotaenia* Bleeker, *Nat. Tijds. Ned. Indie.*, 3 : 257.

1875. *Ambassis urotaenia* : Day, *Fishes of India* : 55, pl. 15, fig. 8.

1968. *Ambassis urotaenia* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 42.

2000. *Ambassis urotaenia* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 123.

Diagnostic features : D.VII; I, 9; A. III, 9; P.15; V.I, 5. Body elongate and compressed; head large; supra orbital ridge smooth; pre-orbital ridge serrated; pre-opercle strongly denticulate on both ridge and edge; lateral line interrupted twice; pre-dorsal scales 8; cheek with one row of scales. Body silvery-yellow with a bright silvery lateral band from head to caudal; membrane between second and third spines of dorsal and caudal lobes black.

Habitat and Biology : Shallow coastal areas and mangroves.

Distribution : Indo-west Pacific, from Seychelles, coasts of India to Southern Japan, Caroline and Fiji Islands.

Family SERRANIDAE

98. *Anyperodon leucogrammicus* (Valenciennes, 1828)
(Fig. 50)

1828. *Serranus leucogrammicus* Valenciennes, *Hist. nat. Poiss.* : 347.

1991. *Anyperodon leucogrammicus* : Randall and Heemstra, *Indo-Pacific Fishes*, (20) : 23, pl. IB, fig. 34.

2000. *Anyperodon leucogrammicus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 125.

Diagnostic features : D. XI, 15-16; A. III, 8-9; P.17; V. I, 5. Body elongate; head pointed; lower jaw projecting; posterior nostril vertically elongate; caudal fin rounded. Body brownish gray with numerous orange red spots on head, body and dorsal fin; four longitudinal whitish streaks on head and body.

Habitat and Biology : Coral reef and mangrove areas.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to coasts of India to New Caledonia.

99. *Cephalopholis formosa* (Shaw & Nodder, 1812)

1812. *Sciaena formosa* Shaw and Nodder, *Nat. Misc.*, pl. 1007.

1991. *Cephalopholis formosa* : Randall and Heemstra, *Indo-Pacific Fishes*, (20) : 43, pl.30 A, B, fig.14.

2000. *Cephalopholis formosa* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 128.

Diagnostic features : D.IX, 16; A. III, 8; P.16; V. I, 5. Body stout; mouth oblique; snout scaled; maxilla partially scaled; lower jaw projecting; teeth in narrow bands in jaws with a pair of canines in front of each jaw; pelvic fin just reaching anus; caudal fin rounded. Body dark brown with wavy longitudinal dark blue lines; snout, lips and ventral part of head with scattered small blue spots.

Habitat and Biology : Shallow coastal waters, juveniles common in estuaries and mangroves. Feeds on crustaceans and fishes.

Distribution : Indo-west Pacific, from coasts of India, Andaman and Nicobar Islands, and Sri Lanka to Australia.

100. *Epinephelus areolatus* (Forsskal, 1775)

(Fig. 51)

1775. *Perca areolata* Forsskal, *Descript. Animal.* : 42.

1870. *Serranus glaucus* : Day, *Proc. Zool. Soc. London* : 678.

1991. *Epinephelus areolatus* : Randall and Heemstra, *Indo-Pacific Fishes*, (20) : 99, pl.8 A, fig.43.

2000. *Epinephelus areolatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 132.

Diagnostic features : D. XI, 15-16; A. III, 8; P.17-18; V.I, 5. Body moderately elongate and compressed; inter-orbital space slightly convex; two rows of teeth on sides of lower jaw; auxillary scales present on body; spinous dorsal membrane incised; caudal fin emarginated. Body whitish with numerous close-set round to polygonal yellowish brown spots on head, body and fins; spots on pectoral fin small and confined to rays; posterior part of caudal fin with narrow white border.

Habitat and Biology : Sea grass beds, on fine sediment bottoms of reefs, frequently visit mangroves also. Feeds on benthic invertebrates and fish.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to coasts of India, the Andaman Islands to Japan and Queensland.

101. *Epinephelus coioides* (Hamilton-Buchanan, 1822)
(Fig. 52)

1822. *Bola coioides* Hamilton-Buchanan, *Fishes of Ganges* : 82.

1991. *Epinephelus coioides* : Randall and Heemstra, *Indo-Pacific Fishes*, (20) : 122, pl. 10a, fig. 59.

2000. *Epinephelus coioides* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 133.

2004. *Epinephelus coioides* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 163, fig. 248.

Diagnostic features : D.XI,15; A.III, 8; P.19-20; V.I,5. Body elongate and not much compressed; inter-orbital space slightly convex; fourth dorsal spine usually longest; caudal fin rounded; ventral fins not reaching anus. Body light brown, whitish ventrolaterally with numerous brown orange spots on head and body; five slightly oblique brown bars on head and body which bifurcate ventrally, the first four bars extending basally into dorsal fin; large brown blotches on head; fins whitish to dusky with brown spots.

Habitat and Biology : Rocky and reef areas and often mangrove areas.

Distribution : Indo-west Pacific.

102. *Epinephelus fuscoguttatus* (Forsskal, 1775)
(Fig. 53)

1775. *Perca summana* Forsskal, *Descript Animal* : 41.

1931. *Epinephelus fuscoguttatus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 68.

1991. *Epinephelus fuscoguttatus* : Randall and Heemstra, *Indo-Pacific Fishes*, (20) : 157, pl.17 B, fig. 77.

2000. *Epinephelus fuscoguttatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 135.

Diagnostic features : D.XI, 15; A.II, 8; P.19; V.I, 5. Body oblong and laterally compressed; dorsal profile of head indented at inter-orbital region and distinctly convex from there to dorsal origin; inter-orbital space flat; teeth on side of lower jaw in three rows; maxillary extending beyond posterior border of eye; pre-opercle obtusely rounded and upper edge finely serrated; spinal dorsal incised; pelvic fin not approaching anus; caudal fin rounded. Body light yellowish brown with irregular brown blotches of variable size on head and body; blotches along back are dark; body and fins with numerous small brown spots.

Habitat and Biology : Adults in coral areas and juveniles in mangroves. Feeds on crustaceans, cephalopods and fish.

Distribution : Indo-west Pacific.

103. *Epinephelus lanceolatus* (Bloch, 1790)

1790. *Holocentrus lanceolatus* Bloch, *Nat. ausland. Fische.*, 4 : 92, pl. 242, fig. 1.

1993. *Epinephelus lanceolatus* : Rao *et al.*, *Environment and Ecology*. 11(4) : 882.

2004. *Epinephelus lanceolatus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 167.

Diagnostic features : D. XI, 15; A. III, 8; P.19; V.I, 5. Body robust; lateral line scales with branched tubules; inter-orbital space flat; maxilla extending beyond rear edge of orbit; pre-opercle sub-angular, finely serrated; small canine teeth at front of jaws; pelvic fins short, not approaching anus; caudal fin rounded. Small juveniles yellow with irregular broad black bars on body; small adults with irregular white or yellow spots on the black areas and fins with irregular black spots; adults dark brown with faint mottling, the fins with numerous small black spots, large adults dark brown, fin darker.

Habitat and Biology : Inhabits reefs, estuaries and mangroves. Feeds on crustaceans and fishes.

Distribution : Indo-Pacific, from Red Sea to Hawaiian Islands.

104. *Epinephelus longispinis* (Kner, 1864) (Fig. 54)

1864. *Serranus longispinis* Kner, *Reise. Der oster. Fregatte.den Fische* : 403.

1991. *Epinephelus longispinis* : Randall and Heemstra, *Indo-Pacific Fishes*, (20) : 182, pl. 16, fig. 90.

2000. *Epinephelus longispinis* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 135.

2003. *Epinephelus longispinis* : Rajan, *Field Guide to Marine Food Fishes of Andaman & Nicobar Islands* : 117.

Diagnostic features : D.XI, 16; A.III, 8; P.18; V.I, 5. Body moderately elongate; inter-orbital space flat to slightly convex; two rows of teeth on mid-side of lower jaw; inter-spinous membrane incised; pelvic fin not reaching anus; caudal fin slightly rounded. Head and body pale brown with dark reddish brown spots that are round and well separated on head and front part of body, but become more abundant and elongated posteriorly.

Habitat and Biology : Rocky, sandy and mangrove areas. Feeds on crustaceans, squids and fishes.

Distribution : Indian Ocean, from east coast of Africa, Sri Lanka and the Andaman Island to Indonesia.

105. *Epinephelus macrospilos* (Bleeker, 1855)

1855. *Serranus macrospilos* Bleeker, *Nat. Tijds. Ned. Indie.*, 6 : 499.

1991. *Epinephelus macrospilos* : Randall and Heemstra, *Indo-Pacific Fishes*, (20) : 186, pl. 26 B, C, fig. 92-94.

2000. *Epinephelus macrospilos* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 136.

Diagnostic features : D.XI, 17; A.III, 8; P.18; V.I, 5. Body robust, dorsal profile of head with an angularity above anterior edge of orbit, giving a sub-nose effect; snout short; inter-orbital area flat or slightly concave; lower jaw strongly projecting; teeth on mid-side of lower jaw in two rows; pelvic fins not reaching anus; caudal fin rounded. Head and body with round to polygonal dark brown spots; edge of maxillary groove with dark streak, all fins yellowish with scattered large black spots except pectoral dusky with a few black spots basally; margin of fins narrow whitish.

Habitat and Biology : Shallow reef areas, creeks and mangroves. Feeds on crustaceans, octopuses, squids and fishes.

Distribution : Indo-Pacific, from east coast of Africa, Indian Ocean, Cocos-Keeling to Marquesas Islands.

106. *Epinephelus malabaricus* (Bloch & Schneider, 1801) (Fig. 55)

1801. *Holocentrus malabaricus* Bloch and Schneider, *Syst. Ichth.* : 319, pl. 63.

1875. *Serranus salmoides* : Day (nec. Lacepede), *Fishes of India* : 20, pl.4, fig. 3

1991. *Epinephelus malabaricus* : Randall and Heemstra, *Indo-Pacific Fishes*, (20) : 194, pl. 17B, fig. 99.

2000. *Epinephelus malabaricus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 136.

Diagnostic features : D. XI, 15; A. III, 8; P. 19; V.I, 5. Body moderately elongate and not very compressed; eye relatively small, inter-orbital slightly convex; maxilla extending posterior to a vertical rear edge of orbit; two rows of teeth on midside of lower jaw in sub-adults, increasing to 4-5 rows in large adults; pelvic fin not reaching anus; caudal fin rounded. Grey to yellowish brown with five slightly oblique broad dark brown bars on body which tend to bifurcate ventrally; head and body with numerous small well developed black spots, a dark streak present at upper edge of maxillary groove; fins with scattered black spots.

Habitat and Biology : Shallow reef areas, creeks and mangroves. Feeds on crustaceans and fishes.

Distribution : Indo-Pacific, from Red Sea, east coast of Africa, coasts of India, Australia to Tonga Island.

107. *Epinephelus merra* Bloch, 1793 (Fig. 56)

1793. *Epinephelus merra* Bloch, *Nat. Ausland Fische*. 7 : 17, pl. 329

1875. *Serranus merra* : Day, *Fishes of India* : 13, pl. II, fig. 2.

1991. *Epinephelus merra* : Randall and Heemstra, *Indo-Pacific Fishes*, (20) : 205, pl.18A, fig. 106.

2000. *Epinephelus merra* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 137, fig. 144.

Diagnostic features : D.XI,15-17; A.III,8; P.16-17; V.I,5. Body oblong, somewhat compressed; maxillary extending behind the hind border of eye; two rows of teeth on midside of lower jaw; pectoral fin shorter than head; pelvic fin not reaching anus; first dorsal spine shorter than others; dorsal rays longer than dorsal spines; caudal fin rounded. Body light brown with close-set round to hexagonal dark brown spots, a few spots joined to form diagonal dark bands; the spots on head progressively small anteriorly; spots on fins and ventral side of body more widely separated; pectoral fin covered with small black spots that are largely confined to the rays; outer half of the fin dark.

Habitat and Biology : Shallow reef areas, creeks and mangroves. Feeds on crustaceans and fishes.

Distribution : Indo-Pacific, from east coast of Africa to Lakshadweep, coasts of India, Andaman and Nicobar Islands, Sri Lanka to Japan and Australia to Tahiti Island.

108. *Epinephelus polystigma* (Bleeker, 1853)

1853. *Serranus polystigma* Bleeker, *Nat. Tijdschr. Neder. Indie*. 4 : 243-302.

1991. *Epinephelus polystigma* : Randall and Heemstra, *Indo-Pacific Fishes*, (20) : 234, pl. 20A, fig. 121.

2003. *Epinephelus polystigma* : Rajan, *Field Guide to Marine Food Fishes of Andaman & Nicobar Islands* : 120.

Diagnostic features : D. XI, 15-16; A. III, 8; P. 16-18; V.I, 5. Body moderately elongate and slightly compressed; inter-orbital space flat to slightly convex; maxilla extending posterior to a vertical at rear edge of orbit; two rows of teeth on mid-side of lower jaw in sub-adults, three rows in adults; pelvic fin not reaching anus; caudal fin rounded. Body dark brown with numerous small white dots on head, body and fins, soft portion of dorsal, anal, posterior caudal and pectoral fins with a narrow orange-red margin.

Habitat and Biology : Creeks and mangroves. Feeds on crustaceans and fishes.

Distribution : Indonesia, Papua New Guinea, Solomon Islands, the Philippines and the Andaman Islands.

109. *Epinephelus tauvina* (Forsskal, 1775)

1775. *Perca tauvina* Forsskal, *Descript. Animal* : 40.

1931. *Epinephelus tauvina* : Weber and De Beaufort. *Fishes of Indo-Australian Archipelago*, 6 : 60, fig.7.

1991. *Epinephelus tauvina* : Randall and Heemstra, *Indo-Pacific Fishes*, (20) : 269, pl. 23B, fig. 143.

2004. *Epinephelus tauvina* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 171, fig. 262.

Diagnostic features : D. XI, 15-16; A. III, 8; P.18-19; V.I, 5. Body elongate; maxilla reaches well past eye; 3-5 rows of teeth at side of lower jaw; upper margin of operculum moderately convex; the opercular flap pointed; caudal fin rounded. Body grayish to pale brown dorsally with many orange brown spots and five faint, oblique dark bars; blackish blotch usually present on back at base of last four dorsal spines; dark spots also present on fins.

Habitat and Biology : Reef area and mangroves. Feeds on crustaceans and fishes.

Distribution : Widespread in the tropical Indo-Pacific.

Family TERAPONIDAE

110. *Terapon jarbua* (Forsskal, 1775) (Fig. 57)

1775. *Sciaena jarbua* Forsskal, *Descript Animal* : 50.

1968. *Terapon jarbua* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 44.

1986. *Terapon jarbua* : Heemstra, In : Smith and Heemstra, *Smith's Sea Fishes* : 544, pl. 47.

2000. *Terapon jarbua* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 144, fig. 150.

Diagnostic features : D. XII, 9-10; A. III, 8-10; P.13-14; V. I, 5. Body slightly compressed; jaws with strong conical teeth in outer row; spinous part of dorsal fin strongly arched and deeply notched; 3 to 5 large spines at angle of pre-operculum; lower spine very long, extending distinctly beyond edge of opercular flap. Body silvery with 3 to 4 curved dark brown stripes; spinous dorsal fin with black blotch between third and sixth spine; anterior and posterior tips of dorsal black; caudal fin with three horizontal stripes.

Habitat and Biology : Creeks, shallow coastal waters and mangroves. Feeds on small fishes and shrimps.

Distribution : Wide spread in Indo-west Pacific, from South China Sea, Indian Ocean, the Andaman Islands and Red Sea.

111. *Terapon theraps* (Cuvier, 1829)

1829. *Therapon theraps* Cuvier, *Hist. nat. Poiss.*, 3 : 129, pl. 53.

1931. *Therapon theraps* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 145, fig. 26.

1986. *Terapon theraps* : Heemstra, In : Smith and Heemstra, *Smith's Sea Fishes* : 544, fig. 173.3.

2000. *Terapon theraps* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 145.

Diagnostic features : D.XII, 11; A. III, 8; P.14; V. I, 5. Body compressed, slightly deep and oblong; maxilla reaching to below 1/3rd of eye; lateral line slightly arched; anal fin origin slightly in front of the dorsal notch; caudal fin deeply emarginated. Body dusky above, silvery below with four horizontal dark stripes; spinous dorsal fin with prominent black blotch on fin membranes between third and seventh spines; soft anal fin with black blotch; pelvic fins slightly dusky; caudal fin with three horizontal stripes; tip of upper lobe black.

Habitat and Biology : Creeks, shallow coastal waters and mangroves. Feeds on fishes, crustaceans, molluscs and worms.

Distribution : Widely distributed in Indo-Pacific region.

112. *Pelates quadrilineatus* (Bloch, 1790) (Fig. 58)

1790. *Holocentrus quadrilineatus* Bloch, *Nat. ausland Fische*. (4) : 82, pl. 238, fig. 2.

1991. *Pelates quadrilineatus* Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 809.

2004. *Pelates quadrilineatus* Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 180, fig. 277.

Diagnostic features : D. XII- XIII, 9-11; A. III, 9-10; P. 13-16; V.I, 5. Body moderately deep and compressed; mouth oblique; teeth in two rows on lower jaw, outer-rows enlarged; vomer or palatines without teeth; pre-operculum evenly serrate in young, serrations larger along vertical edge with age; caudal fin emarginated. Body silvery with five horizontal black bars; a prominent shoulder blotch usually present; mouth and gill cavity bright red; spinous dorsal fin with dark blotch dorsally between third and seventh spines; soft dorsal fin with black tips; spinous dorsal and soft anal fin yellow with dark edges; pectoral and pelvic fins yellowish; caudal fin yellow with dusky edges.

Habitat and Biology : Coastal waters and mangrove areas. Feeds on algae, benthic invertebrates and fishes.

Distribution : Indo-west Pacific.

Family APOGONIDAE

113. *Apogon hyalosoma* Bleeker, 1852 (Fig. 59)

1852. *Apogon hyalosoma* Bleeker, *Nat. Tijds. Ned. Indie.*, 3 : 63.

1929. *Apogon hyalosoma* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 5 : 341.

2000. *Apogon hyalosoma* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 150.

Diagnostic features : D.VI+I, 9; A. II, 8; P.14; V. I, 5. Dorsal profile arched with slight concavity at nape; mouth oblique; hind and lower border of pre-operculum feebly serrated; pre-opercular ridge and pre-orbital rim smooth; teeth small in villiform bands. Body yellowish above, lighter below; a large round black blotch near base of caudal; a black spot at the end of base of anal and second dorsal; a dusky spot on operculum; fin membrane between second and third dorsal spines blackish; second dorsal, anal and caudal fins slightly dusky.

Habitat and Biology : Shallow coastal waters, mangroves and creeks.

Distribution : Indo-west Pacific, from Zanzibar to the Andaman Islands, Indonesia to Japan.

114. *Sphaeramia orbicularis* Cuvier & Valenciennes, 1828 (Fig. 60)

1828. *Apogon orbicularis* Cuvier and Valenciennes, *Hist. nat. Poiss.*, 2 : 155.

1875. *Apogon orbicularis* : Day, *Fishes of India* : 65, pl. 17, fig. 7.

1929. *Apogon orbicularis* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 5 : 333.

2000. *Sphaeramia orbicularis* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 154, fig.156.

Diagnostic features : D.VI+1,9; A. II, 8; P.12; V.I, 5. Body much elevated; dorsal profile raising steeply from snout to dorsal; mouth oblique, lower jaw longer, maxillary reaching to below the middle of orbit; the outer edges of both limbs of pre-opercle serrated; teeth small in villiform bands, both in jaws and on palatines. Body olive brown, a dark transverse band running from the origin of first dorsal to behind the ventral; head spotted with black; first dorsal with some dark spots, front border of both dorsal fins dark; base of second dorsal and hind margin of ventral fins dark; middle of the caudal peduncle with black spots.

Habitat and Biology : Found in coastal, creeks and mangrove areas.

Distribution : Indo-west Pacific, from the Andaman Islands to Philippines.

115. *Apogon quadrifasciatus* Cuvier, 1828

1828. *Apogon quadrifasciatus* Cuvier, Hist nat. Poiss., 2 : 153.

1992. *Ostorhynchus quadrifasciatus* : Rao et al., J. Andaman Sci. Assoc., 8 (1) : 50.

2000. *Apogon quadrifasciatus* : Rao et al., Rec. zool. Surv. Indian Occ. Paper No., 178 : 151.

Diagnostic features : D. VII+I, 9; A. II, 8; P.13; V. I, 5. Upper profile of body somewhat arched; mouth oblique; maxillary reaching below posterior half of eye; orbital rim very rough; pre-orbital and pre-opercular ridge smooth; pectoral shorter than head without snout; caudal truncate, lobes slightly rounded. Body yellowish brown, lighter below with silvery reflections; two longitudinal dark stripes on lateral side of body, the first from snout along back towards upper edge of caudal base, the second band through eye, over opercle to the end of median caudal rays; anterior part of the first dorsal dusky; soft dorsal and anal with sub-basal dark brownish band; upper and lower rays of caudal dusky.

Habitat and Biology : Sandy areas of reefs and mangroves.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to Lakshadweep, costs of India to Fiji Islands.

116. *Apogonichthys ocellatus* (Weber, 1913)

(Fig. 61)

1913. *Apogon ocellatus* Weber, Siboga Expd. Fishe, : 231.

2000. *Apogonichthys ocelatus* : Rao et al., Rec. zool. Surv. Indian Occ. Paper No., 178 : 152.

2004. *Apogonichthys ocellatus* : Rao, Guide to Reef Fishes of Andaman and Nicobar Islands : 193, fig. 297.

Diagnostic features : D.VII+I, 9; A.II, 8; P.14; V. I, 5. Dorsal profile convex, sloping in an almost straight line from dorsal to snout; head smooth; orbital rim rough; anterior nostril with long flap; all fins rounded. Body brownish, the cheek bar from eye to lower margin of pre-opercle edge black, another band from eye to superior angle of operculum; a black ocellus equal to eye diameter on the first dorsal between fourth and seventh spines; all fins brown; pectoral fin with dark spot.

Habitat and Biology : Under rocks and in muddy areas of coastal and mangrove areas.

Distribution : Indo-west Pacific from east coast of Africa, Lakshadweep, the Andaman Islands to Ryukyu Islands and Marshall to Tuamotu Island.

117. *Cheilodipterus lineatus* Lacepede, 1802

1802. *Cheilodipterus lineatus* Lacepede, *Hist. nat. Poiss.*, 3 : 539.

1875. *Cheilodipterus lineatus* : Day, *Fishes of India* : 66, pl. 18, fig. 8.

1986. *Cheilodipterus lineatus* : Gon, In : Smith and Heemstra, *Smith's Sea Fishes* : 555, pl. 50.

2000. *Cheilodipterus lineatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 153, fig. 158.

Diagnostic features : D.VI+I, 9; A.II, 8; P.13; V.I, 5. Body slender and low; large canine teeth present; pre-opercle serrated; pre-dorsal scales five. Body whitish with 8-9 dark reddish brown stripes broader than pale interspaces; caudal base dark; the upper and lower margins of caudal fin dark brown; upper part of first dorsal fin black

Habitat and Biology : Coral reefs, creeks and mangrove areas. Nocturnal fishes, feeds mainly crustaceans and small fish.

Distribution : Indo-Pacific from Red Sea, east coast of Africa to the Andaman Islands, Indonesia to Japan and Australia to Samoa.

118. *Cheilodipterus quinquelineatus* Cuvier, 1828 (Fig. 62)

1828. *Cheilodipterus quinquelineatus* Cuvier, *Hist. nat. Poiss.*, 2 : 167.

1986. *Cheilodipterus quinquelineatus* : Gon In : Smith and Heemstra, *Smith's Sea Fishes* : 556, pl. 50.

2000. *Cheilodipterus quinquelineatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 153.

Diagnostic features : D.VI+I, 9; A.II, 8; P.12; V.I, 5. Body slender; sharp canine teeth on both jaws; pre-dorsal scales 6-7. Body white with five dark longitudinal stripes narrower than interspaces on body; first dorsal spine black; base of caudal fin light yellow with a black spot at the base of middle rays; upper and lower margins of caudal fin dusky.

Habitat and Biology : Rocky and reef areas, creeks and mangroves. Feeds on small crustaceans and fish.

Distribution : Indo-Pacific, from Red Sea, east coast of Africa, coasts of India, the Andaman Islands, Sri Lanka to Japan and Australia to Society Islands.

Family SILLAGINIDAE

119. *Sillago sihama* (Forsskal, 1775) (Fig. 63)

1775. *Atherina sihama* Forsskal, *Descript. Animal* : 70.

1931. *Sillago sihama* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 172, fig. 33.

1986. *Sillago sihama* : Mc Kay, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 615, fig. 198.3.

2000. *Sillago sihama* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 155, fig. 159.

Diagnostic features : D. XI+I, 22-23; A. II, 231-23; P.16-17; V.I, 5. Body elongated, covered with moderate to large ctenoid scales; snout pointed; mouth small and terminal; caudal fin emarginated. Body light brown above, lower flanks and belly whitish; dorsal and caudal fins dusky, other fins pale.

Habitat and Biology : Creeks, sandy bottoms of inshore waters and mangroves. Buries itself in the sand or mud when in danger. Omnivorous, feeds on crustaceans, worms and small fish.

Distribution : Widespread in Indo-Pacific region.

Family LACTARIIDAE

120. *Lactarius lactarius* (Schneider, 1801)

1801. *Scomber lactarius* Schneider, *Syst. Ichth. Bloch* : 31.

1984. *Lactarius lactarius* : Talwar and Kacker, *Commercial Sea Fishes of India* : 427, fig. 165.

2000. *Lactarius lactarius* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 155.

Diagnostic features : D.VII+I, 21-22; A. III, 28. Head large about 2.5 in standard length; mouth oblique, the lower jaw prominent; two small canine teeth in front of each jaw; ventral fins below the level of pectoral fin base; soft portion of dorsal and anal fins covered with scales. Body silvery gray above and silvery white below; a dusky spot on upper part of operculum; fins pale yellow; margin of dorsal and caudal fin dusky.

Habitat and Biology : Coastal waters, creeks and mangroves.

Distribution : Widespread in Indo-Pacific region.

Family CARANGIDAE

121. *Alectis ciliaris* (Bloch, 1788)
(Fig. 64)

1788. *Zeus ciliaris* Bloch, *Nat. Ausland Fische.*, 6 : 29, pl. 19.

1931. *Alectis ciliaris* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 269.

1986. *Alectis ciliaris* : Smith Vaniz, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 640, pl. 79.

2000. *Alectis ciliaris* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 158.

Diagnostic features : D. VII+I, 19-22; A. II+I, 16-18. Body strongly compressed and deep; head elevated; snout rather short; chin prominent; sub-orbital depth 1.8 to 2.4 in upper jaw length; gill rakers on lower arm of first arch 13 to 16; anterior dorsal and anal fin rays extremely long and filamentous in young; scales smooth and embedded in skin. Body silvery; dark small spot on upper side of opercle; outer edge of pectoral fin dusky, rest of the fin pale.

Habitat and Biology : Large shoals in coastal waters, juveniles tend to be more solitary, often enter mangroves. Feeds on crustaceans.

Distribution : Widespread in all tropical waters.

122. *Alectis indicus* (Ruppell, 1830)
(Fig. 65)

1830. *Scyris indicus* Ruppell, *Atlas. Reise. N. Aftika, Fische* : 128, pl. 33.

1986. *Alectis indicus* : Smith Vaniz, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 640, pl. 79.

2004. *Alectis indicus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 305, fig. 456.

Diagnostic features : D. VII+I, 18-20; A. II+I, 18-20. Body deep and strongly compressed which becomes more elongate and less deep with age; the head profile is almost vertical but with a marked hump above the eye; the straight part of lateral line is armed with 5 to 12 feeble scutes. Mostly silvery with dusky green tinge dorsally; a black blotch on operculum; second dorsal fin pale, tip of rays dusky; anal fin pale and caudal fin dusky green. Juveniles with dark bands on body.

Habitat and Biology : Large shoals in tropical coastal waters, juveniles often enter estuaries and mangroves. Sluggish species and is not aggressive as a predator. Feeds on fish, squids and crustaceans.

Distribution : Indian Ocean and eastward to Ryukyu Islands and Australia.

123. *Carangoides malabaricus* (Bloch and Schneider, 1801)
(Fig. 66)

1801. *Scomber malabaricus* Bloch and Schneider, *Syst. Ichth.* : 31.

1959. *Citula malabaricus* : Misra, *Rec. Indian Mus.*, 57(1-4) : 238.

1986. *Carangoides malabaricus* : Smith Vaniz, In : Smith and Heemstra, *Smith's Sea Fishes* : 645, fig. 210.14.

2000. *Carangoides malabaricus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 163.

Diagnostic features : D.VIII+I, 22; A. II+I, 18; P.18; V.I, 5. Body oblong, dorsal profile strongly concave with a concavity before nostrils; maxilla reaching to front border of eye; lower jaw prominent; breast naked from behind ventral fin origin and laterally to pectoral base including small area anteriorly just above fin; 32 scutes on lateral line; soft dorsal fin less than head length. Body silvery; bluish gray above; a black blotch on operculum; fins pale yellow.

Habitat and Biology : Coastal waters in rocky areas; juveniles often found in estuaries and mangroves.

Distribution : Widespread in Indo-Pacific region.

124. *Caranx ignobilis* (Forsskal, 1775)
(Fig. 67)

1775. *Scomber ignobilis* Forsskal, *Descript Animal*, 11 : 55.

1986. *Caranx ignobilis* : Smith Vaniz, In : Smith and Heemstra, *Smith's Sea Fishes* : 647, pl. 80.

2003. *Caranx ignobilis* : Rajan, *Field Guide to Marine Food Fishes of Andaman and Nicobar Islands* : 137.

2004. *Caranx ignobilis* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 310, fig. 464.

Diagnostic features : D.VIII+I, 18-21; A.II+I, 15-17; P.19-20; V. I, 5. Straight part of lateral line with 26 to 38 strong scutes; breast naked ventrally, typically with a small patch of pre-pelvic scales. Body silvery gray to dark above, usually paler below; no dark spot at upper end of opercle; fins usually uniformly pigmented gray to black; except fish from turbid coastal waters often with yellow fins.

Habitat and Biology : Abundant in tropical and sub-tropical marine habitats; juveniles and young often found in estuaries and mangroves. Feeds mainly on fishes, cuttlefish, squids and crustaceans.

Distribution : Widespread in Indo-Pacific region.

125. *Caranx melampygus* Cuvier, 1833

1833. *Caranx melampygus* Cuvier, *Hist. nat. Poiss.*, 9 : 116.

1876. *Caranx melampygus* : Day, *Fishes of India* : 214, pl. L, fig.3.

1931. *Caranx (Caranx) melampygus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 248.

1986. *Caranx melampygus* : Smith Vaniz, In : Smith and Heemstra, *Smith's Sea Fishes* : 647, fig. 210.19.

Diagnostic features : D.VIII+I,23; A.II.+I,19-20;V.I,5. Body oblong, head profile fairly steep; nine gill rakers on first arch; breast completely scaled; 36-39 scutes on lateral line. Body greenish blue, silvery white on lower side; irregularly scattered black spots on upper back and sides; lobes of dorsal and anal fins dark; pectoral fins light yellow.

Habitat and Biology : Coastal waters near reef and mangroves. Feeds on fishes and crustaceans

Distribution : Widespread in Indo-Pacific region.

126. *Caranx sexfasciatus* Quoy & Gaimard, 1825

(Fig. 68)

1825. *Caranx sexfasciatus* Quoy and Gaimard, *Voy. Uranie. Physic. Zool.* : 358, pl. 65.

1931. *Caranx (Caranx) sexfasciatus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 243.

1984. *Caranx sexfasciatus* : Talwar and Kacker, *Commercial Sea Fishes of India* : 464, fig. 178.

1986. *Caranx sexfasciatus* : Smith Vaniz, In : Smith and Heemstra, *Smith's Sea Fishes* : 648, fig. 210.22.

Diagnostic features : D.VIII+I, 20-21; A. II+I, 15-16; P.19-20; V. I,5. Body oblong and moderately compressed; upper and lower profiles equal; nape elevated; maxilla extend to posterior edge of eye; gill rakers 16-17 on lower arm of first arch; 32-34 strong scutes on lateral line; breast completely scaled; body blue green above, silvery below; small black spot on upper edge of opercle; tip of soft dorsal and anal fins white; caudal fin dusky.

Habitat and Biology : Coastal waters of coral and rocky reefs and in estuaries. Nocturnal in behaviour; feeds on crustaceans, squids, cuttlefish and fish.

Distribution : Widespread in Indo-Pacific region.

127. *Gnathanodon speciosus* (Forsskal, 1775)

1775. *Scomber speciosus* Forsskal, *Descript Animal* : 54.

1931. *Caranx (Gnathanodon) speciosus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 264, fig.50.
1986. *Gnathanodon speciosus* : Smith Vaniz, In : Smith and Heemstra, *Smith's Sea Fishes* : 652, fig. 210.32.
2000. *Gnathanodon speciosus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 166.

Diagnostic features : D.VII+I, 8-20; A. II+I,15; P.18-19; V. I,5. Upper jaw without teeth; feeble teeth on lower jaw; lips thick; breast completely scaled. Body yellowish silvery with 8-10 black bars alternating broad and narrow; all fins yellow; caudal fin tips black; the dark spot on opercle fades with age.

Habitat and Biology : Inshore including rocky reefs, deep lagoons, estuaries and mangroves. A bottom feeder that preys on crustaceans, molluscs and small fishes.

Distribution : Indo-Pacific, from Red Sea, east coast of Africa to Hawaiian Islands.

128. *Megalaspis cordyla* (Linnaeus, 1758) (Fig. 69)

1758. *Scomber cordyla* Linnaeus, *Syst. Nat.*, 1 : 298.
1986. *Megalaspis cordyla* : Smith Vaniz, In : Smith and Heemstra, *Smith's Sea Fishes* : 653, fig. 210.34.
2000. *Megalaspis cordyla* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 166.
2004. *Megalaspis cordyla* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 313, fig. 469.

Diagnostic features : D.VIII+I, 10+8-9 fin-lets; A.II+I, 8+9-10 fin-lets; P.22; V.I, 5. Body slightly compressed, sub-cylindrical and elongated; scales small, head scaleless except for upper part of operculum and cheeks; breast naked; mouth terminal and small with prominent lower jaw; maxilla reaching below middle of eye; lateral line with short curve, straight part with 54-56 strong and large scutes; caudal peduncle very slender. Body bluish gray to green above, silvery below; a prominent dark spot on upper edge of operculum; all fins light yellow.

Habitat and Biology : Pelagic species, found in schools in coastal waters, occasionally enter mangroves; feeds on small fishes.

Distribution : Widespread in Indo-Pacific region.

129. *Scomberoides commersonnianus* Lacepede, 1801

1801. *Scomberoides commersonnianus* Lacepede, *Hist. nat. Poiss.*, 2 : 50.
1986. *Scomberoides commersonnianus* : Smith Vaniz, In : Smith and Heemstra, *Smith's Sea Fishes* : 655, fig. 210.38.
2000. *Scomberoides commersonnianus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 167.

2004. *Scomberoides commersonnianus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 313.

Diagnostic features : D.VII+I, 20-21; A.II+I, 18-19; P.18; V.I,5. Body compressed with blunt snout and depression over eyes; upper jaw extending well beyond eye; no scutes, 9-10 gill rakers on first arch; posterior soft dorsal and anal with semi-detached finlets. Body dusky green above, silvery below with 6-9 large oval blotches above or slightly on lateral line; the first two blotches intersecting lateral line; pectoral fin pale with dusky blotch ventrally; ventral fins white.

Habitat and Biology : Coastal waters and mangrove areas. Feeds on fish and crustaceans.

Distribution : Widespread in Indo-west Pacific region.

130. *Scomberoides lysan* (Forsskal, 1775)
(Fig. 70)

1775. *Scomber lysan* Forsskal, *Descript Animal* : 54.

1876. *Chorinemus tolooo* : Day (nec Cuvier), *Fishes of India* : 232, pl. 51,a, fig. 3.

1931. *Scomberoides lysan* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 277, fig. 56b.

1986. *Scomberoides lysan* : Smith Vaniz, In : Smith and Heemstra, *Smith's Sea Fishes* : 655, fig. 210.39.

2000. *Scomberoides lysan* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 167.

Diagnostic features : D.VII+I, 21; A.II+I, 19; P. 17; V. I,5. Body oblong to elliptical, strongly compressed, snout pointed, nape slightly concave; jaw extend to posterior margin of eye; no scutes; scales on mid-body below lateral line lanceolate; gill rakers on lower arm of first arch 24. Body gray, green above, silvery white below; double series of 6-8 dusky roundish blotches above and below lateral line; distal half of dorsal fin lobe heavily pigmented; anal fin with small dusky blotch on anterior part.

Habitat and Biology : Very fast moving pelagic fish, found in coastal areas and mangroves. Feeds on fishes and crustaceans.

Distribution : Indo-west Pacific, from Okinawa to Australia and eastwards to the Hawaiian Islands.

131. *Scomberoides tol* (Cuvier, 1832)
(Fig. 71)

1832. *Chironemus tol* Cuvier, *Hist. nat. Poiss*, 8 : 385.

1931. *Chorinemus tala* : Weber and De Beaufort (nec Cuv. & Val.) *Fishes of Indo-Australian Archipelago*, 6 : 281.

1986. *Scomberoides tol* : Smith Vaniz, In : Smith and Heemstra, *Smith's Sea Fishes* : 655, fig. 210.40.

2000. *Scomberoides tala* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 168.

Diagnostic features : D.VII+I, 20; A. II+I, 18; P.17; V. I, 5. Dorsal profile of body more convex than ventral profile; cleft of mouth commences opposite to middle of eye; maxilla not reaching to posterior margin of eye; no scutes; 24-25 gill rakers on first arch.

Habitat and Biology : Small schools near coastal waters, creeks and mangroves.

Distribution : Widespread throughout Indian Ocean and Indo-west Pacific region.

132. *Selar crumenophthalmus* (Bloch, 1739)

1739. *Scomber crumenophthalmus* Bloch, *Nat. Ausland Fische.*, 7 : 77.

1876. *Caranx crumenophthalmus* : Day, *Fishes of India* : 217, pl. 49, fig.1.

1941. *Selar crumenophthalmus* : Herre, *Mem. Indian Mus.*, 13 : 352.

1986. *Selar crumenophthalmus* : Smith Vaniz, In : Smith and Heemstra, *Smith's Sea Fishes* : 656, fig. 210.41.

2000. *Selar crumenophthalmus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 169.

Diagnostic features : D.VIII+I, 25-26; A. II+I, 21-22; P.19; V. I, 5. Body elongate, shallow and moderately compressed; dorsal and anal fins without a detached terminal fin-let; eye very large, shorter than snout; adipose eye lid covering eye except for broad oval slit on pupil; a deep furrow in lower margin of gill opening with large papillae immediately above it, and smaller papillae near upper edge; 27 gill rakers on lower arm of first arch; lateral line slightly curved anteriorly becoming straight below middle of soft dorsal fin with 33-34 scutes. Body metallic blue above, shading to white below; operculum with large black spot; fins pale green, caudal fin lobe dusky.

Habitat and Biology : Large to small schools in inshore waters near reef areas, creeks and mangroves. Feeds on plankton and benthic invertebrates and fishes.

Distribution : Worldwide in tropical and sub-tropical waters.

133. *Selaroides leptolepis* (Cuvier, 1833)

1833. *Caranx leptolepis* Cuvier, *Hist. nat. Poiss.*, 9 : 63.

1993. *Selaroides leptolepis* : Rao et al., *Environment and Ecology*, 11(4) : 884.

2000. *Selaroides leptolepis* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 170.

Diagnostic features : D.VIII+I, 24-25; A. II+I, 20; P.15; V. I, 5. No teeth on upper jaw, vomerine and palatine; eye with a broad adipose eye lid; pectoral fin falcate; breast

with small conspicuous scales; 25 to 33 scutes on lateral line. Body dark blue-green above, silvery below; a golden yellow band from eye to caudal fin; a distinct dusky spot on operculum; fins light yellow.

Habitat and Biology : Shallow coastal waters, creeks and mangroves.

Distribution : Widespread in Indo-Pacific, from Gulf of Oman to Australia.

134. *Seriolina nigrofasciata* (Ruppell, 1829)
(Fig. 72)

1829. *Nomeus nigrofasciatus* Ruppell, *Atlas. Nordl. Afr. Fische. Rotyhen Meeres* : 82, pl. 24.

1986. *Seriolina nigrofasciata* : Smith Vaniz, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 657, fig. 210.46.

2000. *Seriolina nigrofasciatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 170.

Diagnostic features : D.VII+I, 34; A.II+I, 16. Snout blunt, maxilla reaching to below rear margin of eye; six gill rakers on lower arm of first arch; anal fin base about half length of dorsal fin base; pectoral fin falcate, shorter than head; scales small; breast scaled; no scutes; caudal peduncle grooves present. Body bluish-gray to black above, silvery gray below with 5-6 dark oblique bands on upper half of body; spinous dorsal black; soft dorsal and anal fins dusky brown; tips white; caudal and ventral fins yellowish.

Habitat and Biology : Solitary species found in coastal waters near reefs and mangroves.

Distribution : Widespread in Indo-Pacific region.

Family CICHILIDAE

135. *Oreochromis mossambica* (Peters, 1852)

1852. *Chromis (Tilapia) mossambicus* Peters, *Montab. Akad. Wiss., Berlin* : 681.

1952. *Tilapia mossambica* : Jones and Sarojini, *J. Bombay nat. Hist. Soc.*, 50(3) : 606.

1991. *Oreochromis mossambica* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 887.

Diagnostic features : D. XV-XVI, 10-12; A. III, 10-11; P.15; V. I, 5. Body compressed, mouth large; teeth 3-5 rows on jaws; longest soft dorsal ray extending to above proximal part of caudal fin in female and immature males; scales cycloid; caudal fin truncate. Females grey in colour. Body of male in breeding season deep black, lower part of head grayish-white; dorsal fin black with red margin; caudal fin with a broad red margin.

Habitat and Biology : In brackish water creeks, mangroves, freshwater ponds, pools, streams and rivers.

Distribution : East Africa, India, Pakistan and Sri Lanka.

Family MENIDAE

136. *Mene maculata* (Bloch & Schneider, 1801) (Fig. 73)

1801. *Zeus maculates* Bloch and Schneider, *Syst. Ichth.* : 95, pl. 22.

1986. *Mene maculata* : Smith *In* : Smith and Heemstra, *Smith's Sea Fishes* : 619.

2000. *Mene maculata* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 172, fig. 161.

Diagnostic features : D.III, 45; A.33; P.15; V.I, 5. Body highly compressed and disc like with sharp breast; mouth protrudes upwards with minute teeth; dorsal and anal fins very long and low, the rays are short; first two rays of ventral fin fused and elongate; scales small, deciduous. Body dark blue above, silvery white below; three rows of dark spots immediately above and below lateral line. Dorsal and caudal fin dusky.

Habitat and Biology : Deeper coastal waters, sometimes enter estuaries and mangroves.

Distribution : Widespread in tropical Indo-west Pacific.

Family LEIOGNATHIDAE

137. *Gazza minuta* (Bloch, 1797)

1797. *Scomber minuta* Bloch, *Ichthologic.* : 110, pl. 429.

1876. *Gazza minuta* : Day, *Fishes of India* : 244, pl. 53, fig. 1.

1931. *Gazza minuta* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, **6** : 339, fig.71, 72.

1986. *Gazza minuta* : Smith, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 620, pl. 71.

2000. *Gazza minuta* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 172, fig. 162.

Diagnostic features : D.VIII, 16; A. III, 14; P.16; V.I, 5. Body oval and somewhat compressed and moderately deep; mouth pointing forward when protracted, distinct caniniform teeth in both jaws; head scaleless. Body silvery with brownish wavy lines on upper half; spinous dorsal fin membrane black edged; soft portion of dorsal fin and anal fin edged gray; caudal fin yellowish, its hind margin dusky.

Habitat and Biology : Creeks, mangrove and inshore waters. Feed mainly on fishes, crustaceans and worms.

Distribution : Widespread in Indo-Pacific region.

138. *Leiognathus berbis* (Valenciennes, 1835)

1835. *Equula berbis* Valenciennes, *Hist. nat. Poiss.*, 10 : 85.

1984. *Leiognathus berbis* : Talwar and Kacker, *Commercial Sea Fishes of India* : 503.

Diagnostic features : D. VIII, 16; A. III, 14; P. 18-19; V. I, 5. Body elongate and compressed, dorsal and ventral profile equally convex; mouth small, pointing downward when protracted; gape of mouth opposite lower one-third of eye and tip of maxilla just reaching the front border of eye; teeth small, in a single row in both jaws; head scaleless; caudal deeply forked. Body silvery with greenish vermicular pattern on back little below the lateral line.

Habitat and Biology : Coastal waters, sometime enter creeks and mangroves.

Distribution : India, Sri Lanka, through the East Indies to Japan and Queensland.

139. *Leiognathus equula* (Forsskal, 1775)
(Fig. 74)

1775. *Scomber equula* Forsskal, *Descript Animal* : 75.

1968. *Leiognathus equulus* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 45.

1986. *Leiognathus equula* : Smith, In : Smith and Heemstra, *Smith's Sea Fishes* : 621, fig. 201.3.

2000. *Leiognathus equula* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 174.

Diagnostic features : D. VIII, 16; A. III, 14; P. 18-20; V. I, 5. Body oval and compressed; dorsal profile more convex than ventral profile; head small with bony ridges; mouth protrudes downwards; a single series of minute teeth present in both jaws; palatine toothless; lower edge of pre-opercle serrated; nostrils below the top edge of orbit; body covered with small cycloid scales except head and breast. Upper region grayish becoming silvery below; numerous faint dark vertical lines along upper region of body; a dark brown blotch behind posterior end of dorsal fin.

Habitat and Biology : A demersal and semi-pelagic schooling fish frequently encountered in mangrove areas. Feeds on worms, crustaceans and fish.

Distribution : Found in Indian Ocean and South China Sea.

140. *Leiognathus fasciatus* (Lacepede, 1803)
(Fig. 75)

1803. *Clupea fasciatus* Lacepede, *Hist. nat. Poiss.*, 5 : 460, 463.

1931. *Leiognathus fasciatus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 320.

1984. *Leiognathus fasciatus* : Talwar and Kacker, *Commercial Sea Fishes of India* : 511, fig. 199.

2000. *Leiognathus fasciatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 174.

Diagnostic features : D.VIII, 16; A. III, 4; P.20-21; V. I, 5. Mouth pointing downwards when protracted; cleft of mouth below lower edge of eye; supra-orbital rim smooth; second dorsal spine elongate and filiform. Body silvery with dark irregular vertical stripes on back; small dark blotch on caudal peduncle; pectoral fin axil yellowish, other fins hyaline.

Habitat and Biology : Shallow coastal waters near creeks and mangroves.

Distribution : Widespread in Indo-Pacific region.

141. *Leiognathus leuciscus* (Gunther, 1860)

1860. *Equula leuciscus* Gunther, *Cat. Fish Br. Mus.*, 2 : 503.

1984. *Leiognathus leuciscus* : Talwar and Kacker, *Commercial Sea Fishes of India* : 514, fig. 201.

2000. *Leiognathus leuciscus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 175.

Diagnostic features : D.VIII, 16; A.III, 14; P.18-20; V. I, 5. Dorsal and ventral profiles equally convex; mouth pointing downwards when protractile; second dorsal spine greatly elongate and filiform; second anal spine slightly elongated. Body silvery with greenish vermicular pattern on back; pectoral axil with black dots; posterior portions of caudal lobes yellowish with light grey edges.

Habitat and Biology : Shallow coastal waters near mangroves.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands, Sri Lanka to Ryukyu Islands and Australia to Hawaiian Islands.

142. *Leiognathus splendens* (Cuvier, 1829)

1829. *Equula splendens* Cuvier, *Regne. Animal*, 2 : 212.

1984. *Leiognathus splendens* : Talwar and Kacker, *Commercial Sea Fishes of India* : 516, fig. 203.

1991. *Leiognathus splendens* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 832.

2000. *Leiognathus splendens* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 175.

Diagnostic features : D.VIII, 16; A. III, 14; P.18; V. I, 5. Body compressed, dorsal profile more convex than ventral; mouth pointing downwards when protracted; nostril above orbit; a minute spine above each eye; maxilla reaching the front border of the eye; lower margin of mandible slightly concave; pre-operculum with its lower arm and ridge distinctly serrated; teeth small in single row in both jaws; small scales on body; head naked. Body silvery with zig-zag stripes on upper half; tip of snout dusky; tip of dorsal black with yellow band below.

Habitat and Biology : Shallow coastal waters; juveniles have been found in creeks, estuaries and mangrove areas.

Distribution : Widespread in Indo-west Pacific region.

143. *Secutor insidiator* (Bloch, 1787)
(Fig. 76)

1787. *Zeus insidiator* Bloch, Nat. ausland Fische., (8) : 41, pl. 192, figs. 2 & 3.

1876. *Equula insidiatrix* : Day, *Fishes of India* : 242, pl. 51 C, fig. 5.

1968. *Secutor insidiator* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1&4) : 46.

1994. *Secutor insidiator* : Dorairaj et al., *Spl. Publ., CARI, Port Blair* : 30.

Diagnostic features : D.VIII, 16; A.III, 14; P.i, 17; V.I,5. Body compressed; mouth small, pointing upward; one or two rows of minute teeth on jaws; scales small; sub-orbital region naked; lateral line reaching backward to below end of dorsal; caudal fin forked. Body silvery with blue spots on upper half; margin of spinous dorsal black; other fins pale.

Habitat and Biology : Shallow coastal waters near creeks and mangroves.

Distribution : Indo-west Pacific.

144. *Secutor ruconius* (Hamilton-Buchanan, 1822)

1822. *Chanda ruconius* Hamilton-Buchanan, *Fishes of Ganges* : 106, 371, pl. 12, fig. 12.

1991. *Secutor ruconius* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 833.

1994. *Secutor ruconius* : Dorairaj et al., *Spl. Publ. CARI, Port Blair* : 30.

Diagnostic features : D.VIII, 16; A.III, 14; P.i,17; V.I,5. Body oval, very deep and compressed; mouth small, one or two rows of minute teeth on jaws; scales small; sub-orbital scaled; lateral line ending below middle of dorsal fin but sometimes continue to its last third; caudal fin forked. Body pinkish silvery with blue spots on upper half; abdomen silvery with black dots; a black stripe from the anterior edge of eye to throat; pectoral axil black; opercle with a dark spot; spinous dorsal tip black.

Habitat and Biology : Inhabits in shallow coastal waters, creeks and mangrove areas.

Distribution : Indo-west Pacific from coasts of India and the Andaman Islands.

Family LUTJANIDAE

145. *Lutjanus argentimaculatus* (Forsskal, 1775)

1775. *Sciaena argentimaculatus* Forsskal, *Descript. Animal*, **11** : 47.

1959. *Lutjanus argentimaculata* : Misra, *Rec. Indian Mus.*, **57**(1-4) : 248.

1985. *Lutjanus argentimaculatus* : Allen, *FAO Fish. Synop.*, (125) **6** : 58, pl.11.

2000. *Lutjanus argentimaculatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 180.

Diagnostic features : D. X, 13; A. III, 8; P. 17; V.I, 5. Body moderately deep; pre-opercular notch and knob poorly developed; vomerine tooth patch crescentic; tongue with a patch of granular teeth; scale rows above lateral line parallel; caudal fin emarginated. Body greenish brown to reddish, bell silvery; scales with dark centers and white margin; median fins with reddish hue, pectoral and ventral fins dark brown.

Habitat and Biology : Juveniles found in big lagoons and mangrove, adults live in deeper reef areas. Feeds on crustaceans and fishes.

Distribution : Indo-west Pacific from Red Sea, east coast of Africa to coasts of India, Australia to Line Islands.

146. *Lutjanus bohar* (Forsskal, 1775) (Fig. 77)

1775. *Sciaena bohar* Forsskal, *Descript. Animal*, **11** : 46.

1985 *Lutjanus bohar* : Allen, *FAO Fish. Synop.*, (125) **6** : 64, pl. 1, fig. 48.

2000. *Lutjanus bohar* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 181.

Diagnostic features : D. X, 13; A. III, 8; P. 17; V.I, 5. Body moderately deep; snout somewhat pointed; nostrils in deep groove; inter-orbital flat; vomerine tooth patch crescentic; pre-opercular notch poorly developed; scale rows above lateral line oblique. Body reddish-brown above, lower sides and belly reddish; all fins dusky except pectoral; pectoral pink, the dorsal edge dark.

Habitat and Biology : Juveniles found in lagoons and mangrove, adults live in reef areas. Feeds on fishes, crustaceans and cephalopods.

Distribution : Indo-west Pacific from Red Sea, east coast of Africa to coasts of India, the Andaman Islands, Sri Lanka to Ryukyu Is., Australia to Tahiti Island.

147. *Lutjanus decussatus* (Cuvier, 1828)
(Fig. 78)

1828. *Mesoprion decussates* Cuvier, *Hist. nat. Poiss.*, 2 : 487.

1875. *Lutjanus decussatus* : Day, *Fishes of India* : 47, pl.14, fig.4.

1984. *Lutjanus decussatus* : Talwar and Kacker, *Commercial Sea Fishes of India* : 537.

1985. *Lutjanus decussatus* : Allen, *FAO Fish. Synop.*, (125) 6 : 73, pl.13, fig. 52.

2000. *Lutjanus decussatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 181, fig. 163.

Diagnostic features : D. X, 13; A. III, 8; P. 16; V.I, 5. Body moderately deep; preopercular notch poorly developed; vomerine tooth patch crescentic; scale rows above lateral line oblique; caudal fin emarginated. Body whitish silvery with five dark brown bars, upper three stripes crossed by dark vertical bars forming a net work of light and dark squares; a large black spot on caudal fin base; dorsal and caudal fins dusky red, other fins yellowish-white.

Habitat and Biology : Shallow reef and mangrove areas.

Distribution : Indo-west Pacific from Red Sea, east coast of India, the Andaman Islands, Sri Lanka to Japan and Australia.

148. *Lutjanus ehrenbergi* (Peters, 1869)
(Fig. 79)

1869. *Lutjanus ehrenbergii* Peters, *Monatsh. Akad. Wiss. Berlin* : 704.

1986. *Lutjanus ehrenbergii* : Allen, In : Smith and Heemstra, *Smith's Sea Fishes* : 574, Pl. 54.

2000. *Lutjanus ehrenbergii* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 182.

Diagnostic features : D. X, 13; A. III, 8; P. 16; V.I, 5. Vomerine tooth patch triangular with small posterior extension; tongue with a patch of teeth; scale rows on back parallel to lateral line; caudal fin emarginated. Body dark brown, lower sides and belly whitish-silvery, four narrow yellow stripes on sides below lateral line; prominent black spot on back below posterior part of spinous dorsal fin.

Habitat and Biology : Creeks, mangrove and reef areas.

Distribution : Indo-west Pacific from east coast of Africa to Solomon and Mariana Islands.

149. *Lutjanus fluviiflamma* (Forsskal, 1775)
(Fig. 80)

1775. *Sciaena fluviiflamma* Forsskal, *Descript. Animal.*, 11 : 45.

2000. *Lutjanus fluviflamma* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 182, fig. 164.

1985. *Lutjanus fluviflamma* : Allen, FAO Fish. Synop., (125) 6 : 80, pl.14, fig.56.

Diagnostic features : D. X, 13; A. III, 8; P.15-16; V.I, 5. Body moderately elongate; head profile convex; inter-orbital space broad and flat; pre-opercular knob and notch poorly developed; vomerine tooth patch triangular with a medial posterior extension; tongue with a patch of teeth; caudal fin slightly emarginate. Body dark brown on head and back, light brown on sides, belly yellow; sides of body below lateral line with yellow stripes; an elongate black spot at level of lateral line below base of soft dorsal fin; all fins yellowish.

Habitat and Biology : Coastal waters around reefs, creeks and mangroves. Feeds on small invertebrates and fishes.

Distribution : Indo-west Pacific from Red Sea, east coast of Africa to coasts of India, the Andaman Islands, Sri Lanka to Ryukyu Islands, and Australia to Line Islands.

150. *Lutjanus fulvus* (Schneider, 1801)
(Fig. 81)

1801. *Holocentrus fulvus* Schneider, Syst. Ichth. : 318.

1875. *Lutjanus fulvus* : Day, Fishes of India : 34, pl. 10, fig. 5.

1985. *Lutjanus fulvus* : Allen, FAO Fish Synop., (125) 6 : 82.

2000. *Lutjanus fulvus* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 83, fig. 165.

Diagnostic features : D.X, 14; A.III, 8; P.16; V.I, 5. Dorsal profile of head steeply sloped; pre-opercle with prominent notch on rear edge; posterior profile of dorsal and anal fins rounded; scale rows horizontal below lateral line, but rising oblique above it; caudal fin emarginated. Body brownish yellow with a series of narrow yellow horizontal lines on sides below lateral line, anterior part of head brownish; under side of head and belly whitish; dorsal fin brownish with a black band near margin, more broader on soft dorsal; caudal fin black, margin of dorsal and caudal fins white.

Habitat and Biology : Shallow waters around reefs, creeks and mangroves. Feeds on crustaceans, cephalopods, holothurians and fishes.

Distribution : Indo-Pacific from Red Sea, east coast of Africa to coasts of India, the Andaman Islands, Sri Lanka to Japan, and Australia to Palau Island.

151. *Lutjanus gibbus* (Forsskal, 1775)
(Fig. 82)

1775. *Sciaena gibbus* Forsskal, Descript. Animal., 9 : 46.

1875. *Lutianus gibbus* : Day, *Fishes of India* : 43, pl. 13, fig. 2.

1985. *Lutjanus gibbus* : Allen, *FAO Fish. Synop.*, (125) 6 : 84, pl. 15. fig. 59

2000. *Lutjanus gibbus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 183, fig. 166.

Diagnostic features : D.X, 14; A.III, 8; P.17; V.I, 5. Body oblong and well compressed; dorsal profile of head steep and concave; tongue edentate; preopercle notch and knob well developed; posterior profile of dorsal and anal fins pointed; caudal fin forked; lobes rounded. Body red, more dark on back and silvery-red below; eye, base of pectoral and its axil orange; fins reddish brown; soft dorsal, anal and caudal fin margins white.

Habitat and Biology : Reefs, creeks and mangrove areas. Feeds on crustaceans, cephalopods and fishes.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to coasts of India, the Andaman Islands, Sri Lanka to Japan, and Australia to Tuamotu Islands.

152. *Lutjanus johnii* (Bloch, 1792)

1792. *Anthias johnii* Bloch, *Nat. ausland Fische*, 6 : 113.

1985. *Lutjanus johnii* : Allen, *FAO Fish. Synop.*, (125) 6 : 94.

2000. *Lutjanus johnii* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 184.

Diagnostic features : D. X, 14; A. III, 8; P.16; V. I, 5. Body oblong, compressed and deep with convex dorsal profile and straight ventral profile; mouth large, terminal and slightly protractile with thick lips; vomerine tooth patch crescentic without a median extension; tongue with a patch of granular teeth; fourth and fifth dorsal spines longest; caudal fin slightly emarginated. Body yellow with silvery green, center of each scale with reddish-brown spots giving an appearance of series of horizontal lines; a round black spot longer than eye above lateral line, below anterior soft dorsal rays.

Habitat and Biology : Shallow coastal water, creeks and mangrove. Feeds on bottom living invertebrates and small fishes.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to coasts of India, the Andaman Islands, Japan and Fiji Islands.

153. *Lutjanus kasmira* (Forsskal, 1775) (Fig. 83)

1775. *Sciaena kasmira* Forsskal, *Descript. Animal.*, 11 : 46.

1936. *Lutianus kasmira* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 7 : 256.

1985. *Lutjanus kasmira* : Allen, *FAO Fish. Synop.*, (125) 6 : 96, pl. 17.

2000. *Lutjanus kasmira* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 184.

Diagnostic features : D. X, 14; A. III, 8; P.15-16; V. I, 5. Body moderately deep; dorsal profile of head steeply sloped; five to six scale rows on cheek; pre-opercular notch well developed; vomerine tooth patch crescentic; tongue edentate; caudal fin slightly emarginated. Body yellow, under side of head and belly white; four bright black edged blue stripes along side of head and body; all fins yellow; a large black spot present in lateral line below anterior soft dorsal rays.

Habitat and Biology : Reefs, creeks and mangroves in large aggregations. Feeds on crustaceans, cephalopods and fishes.

Distribution : Indo-Pacific, from Red Sea, east coast of Africa to coasts of India, the Andaman Islands, Sri Lanka to Japan, and New Guinea, Australia to Tuamotu Islands.

154. *Lutjanus lutjanus* Bloch, 1790
(Fig. 84)

1790. *Lutjanus lutjanus* Bloch, Nat. Ausland. Fische., 4 : 107.

1985. *Lutjanus lutjanus* : Allen, FAO Fish. Synop., (125) 6 : 99, pl. 18.

2000. *Lutjanus lutjanus* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 185.

Diagnostic features : D. X, 12; A. III, 8; P.16; V. I, 5. Body fusiform and slender; dorsal profile of head gently sloped; pre-opercular margin finely denticulated; opercular notch absent; inter-orbital space flat and less than eye diameter; maxilla reaching below anterior margin of pupil; vomerine tooth patch triangular with median extension; tongue with a patch of granular teeth; scale rows rising obliquely above lateral line. Body brown, sides silvery-white; horizontal yellow lines on flank, a broad yellow stripe from snout through eye to caudal base; fins pale yellow.

Habitat and Biology : Reef, creeks and mangroves in large aggregations. Feeds on crustaceans and small fishes.

Distribution : Indo-west Pacific, from east coast of Africa to Solomon Islands and Australia to Japan.

155. *Lutjanus malabaricus* (Schneider, 1801)
(Fig. 85)

1801. *Sparus malabaricus* Schneider, Syst. Ichth. : 278.

1985. *Lutjanus malabaricus* : Allen, FAO Fish Synop., (125) 6 : 102.

2000. *Lutjanus malabaricus* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 186.

Diagnostic features : D. X, 14; A. III, 8; P.16; V. I, 5. Dorsal profile of head steeply sloped; pre-opercle notch and knob poorly developed; vomerine tooth patch crescentic without a median extension; tongue edentate; scale rows above lateral line rising obliquely. Body reddish orange, lighter on lower parts; all fins reddish.

Habitat and Biology : Shallow waters around reefs, juveniles occur in creeks and mangroves.

Distribution : Indo-west Pacific, from Persian Gulf and coasts of India to Japan, Australia to Fiji.

156. *Lutjanus rivulatus* (Cuvier, 1828)
(Fig. 86)

1828. *Diacope rivulata* Cuvier, *Hist. nat. Poiss.*, 2 : 414.

1985. *Lutjanus rivulatus* : Allen, *FAO Fish Synop.*, (125) 6 : 112.

2000. *Lutjanus rivulatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 187.

Diagnostic features : D. X, 15; A. III, 8; P.17; V. I, 5. Body deep; dorsal profile of head steeply sloped; pre-opercular notch moderately developed; vomerine tooth patch crescentic; posterior profile of anal fin pointed. Body reddish brown; each scale with one or two bluish spots; head with fine wavy blue lines; lips whitish; all fins yellow with dusky markings; caudal fin grayish with yellow margin.

Habitat and Biology : Shallow reef areas, juveniles occur in creeks and mangroves.

Distribution : Indo-Pacific, from Red Sea, east coast of Africa to coasts of India, the Andaman Islands to Japan and Australia to Tahiti Island.

157. *Lutjanus russelli* (Bleeker, 1849)
(Fig. 87)

1849. *Mesoprion russelli* Bleeker, *Verh. Batav. Genootsh (Percoid)*, 22 : 41.

1984. *Lutjanus russelli* : Talwar and Kacker, *Commercial Sea Fishes of India* : 549, fig. 215.

1985. *Lutjanus russelli* : Allen, *FAO Fish Synop.*, (125) 6 : 113, pl. 20

1994. *Lutjanus russelli* : Dorairaj *et al.*, *Spl. Publ., CARI, Port Blair* : 31.

2000. *Lutjanus russelli* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 187.

Diagnostic features : D. X, 14; A. III, 8; P.16; V.I, 5. Body moderately deep; head profile little concave; inter-orbital space convex; vomerine tooth patch triangular with a posterior median extension; tongue with a patch of teeth; longitudinal rows of scales above lateral line appear to rise obliquely to dorsal profile, those below lateral line horizontal. Body brownish yellow, lower sides and belly yellowish white; six to seven narrow golden horizontal stripes on sides; a black blotch below anterior dorsal rays.

Habitat and Biology : Inshore and offshore coral reefs, juveniles occur in creeks and mangroves. Feeds on bottom living invertebrates and fishes.

Distribution : Widespread in the Indo-west Pacific, from Red Sea, east coast of Africa to Japan, and Australia to Fiji Island.

158. *Lutjanus sebae* (Cuvier, 1828)
(Fig. 88)

1828. *Diacope sebae* Cuvier, *Hist. nat. Poiss.*, 2 : 411.

1989. *Lutjanus sebae* : Day, *Fauna Br. India, Fishes*.1 : 465.

2004. *Lutjanus sebae* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 218, fig. 339.

Diagnostic features : D. XI, 15-16; A. III, 8; P.17; V. I, 5. Body deep; head profile straight; pre-opercular notch distinct and deep; vertical and horizontal edges of pre-operculum finely serrated; mouth terminal and large, with small teeth in narrow bands in jaws, with an outer series of more distant caninoids; triangular shaped patch of small teeth on vomer and on palatines in a very narrow band. Body deep red in adults but juveniles and smaller adults pink with a dark red band from snout through eye to dorsal fin origin, a second dark band from middle of spinous dorsal fin to pelvic fin, and a third band curves back from the dorsal fin to the lower part of the caudal fin; margin of soft dorsal, margin of caudal fin and anterior margin of anal fin dark.

Habitat and Biology : Reef areas, juveniles occur in creeks and mangroves. Feeds on fishes, benthic crustaceans and cephalopods.

Distribution : Widespread in the Indo-west Pacific, from coasts of India, the Andaman Islands, Sri Lanka, Indonesia to Ryukyu Islands.

Family GERRIDAE

159. *Gerres abbreviatus* Bleeker, 1850
(Fig. 89)

1850. *Gerres abbreviatus* Bleeker, *Nat. Tijl. Ned. Indie.*, 1 : 103.

1931. *Gerres abbreviatus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 344.

1984. *Gerres abbreviatus* : Talwar and Kacker, *Commercial Sea Fishes of India* : 579, fig. 227.

2000. *Gerres abbreviatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 194.

Diagnostic features : D.IX, 10; A. III, 7; P.17; V. I, 5. Body deep and compressed; antero-dorsal profile ascending steeply; spines strong particularly the second anal which is either sub-equal to or much longer than the base of anal fin; pectoral fin reaching beyond the origin of anal spine. Body silvery, tinged with brown dorsally, indistinct

fine dark stripe following scale rows in older fish; margin of dorsal fin black; pectoral, ventral and anal fins yellow; caudal fin dusky.

Habitat and Biology : Small schools in shallow coastal waters, mangroves and rarely enters freshwater streams. Feeds on fishes, crustaceans, cephalopods, molluscs, worms and seaweeds.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands, Sri Lanka, Indonesia to Ryukyu Islands.

160. *Gerres filamentosus* Cuvier, 1829
(Fig. 90)

1829. *Gerres filamentosus* Cuvier, *Regne. Animal*, (ed. 2), 2 : 188.

1931. *Gerres punctatus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 349, fig. 73.

1968. *Pertica filamentosa* : Menon and Talwar, *Rec. zool. Surv. India*, 66 (1&4) : 46.

1986. *Gerres filamentosus* : Woodland, In : Smith and Heemstra, *Smith's Sea Fishes* : 608, fig. 194. 2.

Diagnostic features : D. IX, 10; A. III, 7; P.16; V. I, 5. Body highly compressed and elevated; second dorsal spine longer than head and filamentous, five scale rows between lateral line and fifth dorsal spine; pectoral fin very long, tip of fin reaching to a level of origin of first anal spine. Body silvery with seven to ten vertical series of ovoid bluish spots on sides; pectoral, pelvic, anal and caudal fins dusky, dorsal fin hyaline, end of the filamentous spine black.

Habitat and Biology : Tidal creeks and mangroves. Feeds on small organisms such as amphipods, polychaetes and crustaceans.

Distribution : Indo-west Pacific, from east coast of Africa to Australia and northwards to Japan.

161. *Gerres oblongus* Cuvier, 1830
(Fig. 91)

1830. *Gerres oblongus* Cuvier, *Hist. nat. Poiss.*, 6 : 479.

1875. *Gerres oblongus* : Day, *Fishes of India* : 98, pl. 25, fig. 2.

1931. *Gerres oblongus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 352.

1986. *Gerres oblongus* : Woodland, In : Smith and Heemstra, *Smith's Sea Fishes* : 609, fig. 194.3.

2000. *Gerres oblongus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 195.

Diagnostic features : D. IX, 10; A. III, 7; P.17; V. I, 5. Body elongate, slightly compressed; mouth small but strongly protrusible; fine teeth in jaws; dorsal profile

from tip of snout to dorsal origin almost straight; second dorsal spine shorter than head; five and half scale rows between lateral line and base of fifth dorsal spine. Body light brown dorsally, sides silvery; young with indistinct crossbars on body; dorsal fin with faint dark margin.

Habitat and Biology : Shallow coastal waters, tidal creeks and mangrove swamps.

Distribution : Indo-west Pacific, from east coast of Africa to Philippines and New Caledonia to Samoan Island.

162. *Gerres oyena* (Forsskal, 1775)
(Fig. 92)

1775. *Labrus oyena* Forsskal, *Descript. Animal* : 35.

1959. *Gerres oyena* : Misra, *Rec. Indian Mus.*, 57(1-4) : 261.

1986. *Gerres oyena* : Woodland, In : Smith and Heemstra, *Smith's Sea Fishes* : 609, fig. 194.4.

2000. *Gerres oyena* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 195.

Diagnostic features : D. IX, 10; A. III, 7; P.15; V. I, 5. Body very slender, second anal spine slender and short, equal to or shorter than eye diameter. Three and half scale rows between lateral line and fifth dorsal spine; pectoral reaching to just above anus; caudal fin deeply forked. Body olive above, silvery below; margin of dorsal and caudal fins dusky.

Habitat and Biology : Sandy beaches to a depth of 20 m and also enters estuaries and mangroves. Carnivorous fish.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to Caroline Island.

Family HAEMULIDAE

163. *Plectorhynchus gibbosus* (Lacepede, 1802)
(Fig. 93)

1802. *Holocentrus gibbosus* Lacepede, *Hist. nat. Poiss.*, 4 : 344.

1986. *Plectorhynchus gibbosus* : Smith and Mc kay, In : Smith and Heemstra, *Smith's Sea Fishes* : 566, fig. 179.5.

2000. *Plectorhynchus gibbosus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 197, fig.171.

Diagnostic features : D. XIV, 16; A. III, 7; V. I, 5. Dorsal fin deeply notched; upper lip more thick; dorsal fin spines more strong, the fourth and fifth longest, second anal spine longer and stronger; snout scaleless up to nostrils. Body dark reddish grey; margin of cheek and gill cover black; all fins dark brown.

Habitat and Biology : Coastal waters, maxillary around reefs, sand banks, creeks and mangroves.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to coasts of India, Sri Lanka to China and Australia to Samoa.

164. *Pomadasys argyreus* (Valenciennes, 1833)

1833. *Pristipoma argyreus* Valenciennes, *Hist. nat. Poiss.*, 9 : 385.

1936. *Pomadasys argyreus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 7 : 406.

1991. *Pomadasys argyreus* : Talwar and Jhingren, *Inland Fishes of India and Adjacent Countries*, 2 : 844.

2000. *Pomadasys argyreus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 198.

Diagnostic features : D. XII, 13; A. III, 7; P. 17; V. I, 5. Body oblong and compressed; head blunt its upper profile convex; mouth small; outer series of teeth slightly enlarged; scales ctenoid. Body silvery, dark blotch on operculum usually present in juveniles; fins yellowish brown.

Habitat and Biology : Creeks, shallow coastal waters and in mangrove areas,

Distribution : Indo-west Pacific, from Pakistan, coasts of India, the Andaman Islands, Sri Lanka to Philippines.

165. *Pomadasys gouraca* (Russell, 1803)

1803. *Pristipoma gouraca* Russell, *Fishes of Vizagpatnam*, 2 : 24, pl. 132.

1875. *Pristipoma gouraca* : Day, *Fishes of India* : 75, pl. 20, fig. 1.

2004. *Pomadasys gouraca* : Rajan and Dam Roy. *A compendium on Mangrove Biodiversity of A & N Islands, CARI, Port Blair* : 129.

Diagnostic features : Body elongate and compressed; mouth small; lips thick; maxilla reaches to below front edge of eye; teeth villiform, outer row in upper jaw enlarged; pectoral fin equal to the head length; caudal fin emarginated. Body silvery, dark on back; fins yellowish-brown.

Habitat and Biology : Shallow coastal waters, creeks and mangroves areas.

Distribution : Indo-west Pacific, from east coasts of Africa, coasts of India, the Andaman Islands, Malay Archipelago to North Australia.

166. *Pomadasys kaakan* (Cuvier, 1830)

1830. *Pristipoma kaakan* Cuvier, *Hist. nat. Poiss.*, 5 : 244.

1986. *Pomadasys kaakan* : Mc Kay, In : Smith and Heemstra, *Smith's Sea Fishes* : 569, fig. 179.13.

2000. *Pomadasys kaakan* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 199.

Diagnostic features : D.XII,13; A.III,7; P.17;V.I,5. Body oblong and compressed; head and dorsal profile convex, mouth small, possess thick lips; two small pores on chin; pointed teeth in narrow bands in both jaws. Body covered with moderate ctenoid scales; dorsal and anal fin spines strong; caudal fin slightly emarginated; maxilla reaching below anterior margin of eye; body silvery with broken vertical bars, round spots on lower half of dorsal fin; black blotch on opercle.

Habitat and Biology : Coastal waters around coral reefs, able to tolerate murky waters of mangroves and swamps. Feeds on crustaceans and fishes.

Distribution : Indo-west Pacific, from east coast of Africa, coasts of India, the Andaman and Nicobar Islands, Sri Lanka to Queensland.

167. *Pomadasys maculatum* (Bloch, 1797)
(Fig. 94)

1797. *Anthias maculates* Bloch, *Nat. ausland. Fische* : 7, pl. 326.

1936. *Pomodasys maculatus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 7 : 400.

1986. *Pomadasys maculatum* : Smith and Mc Kay, In : Smith and Heemstra, *Smith's Sea Fishes* : 570, fig. 179.15.

2000. *Pomodasys maculatum* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 199.

Diagnostic features : D.XII, 14; A. III, 7; P.17; V. I, 5. Body compressed, covered with small ctenoid scales; head and dorsal profile convex; mouth small and slightly oblique; narrow bands of small pointed teeth in the jaws, with an outer series of enlarged ones; dorsal and anal fin spines strong; caudal fin emarginated. Body silvery white, nape and back with series of incomplete cross bars on upper half of body, vary in shape and size, the bar on nape inconspicuous; spinous dorsal fin large with black blotch; caudal fin dusky distally.

Habitat and Biology : Coastal waters near shallow reefs, enter estuaries and mangroves, and tolerate murky waters. Feeds on copepods.

Distribution : Indo-west Pacific from Red Sea, east coast of Africa to coasts of India, the Andaman Islands, Sri Lanka to Japan and New Guinea to Queensland.

Family SPARIDAE

168. *Acanthopagrus berda* (Forsskal, 1775)

1775. *Sparus berda* Forsskal, *Descript. Animal* : 32.

1986. *Acanthopagrus berda* : Smith and Smith, In : Smith and Heemstra, *Smith's Sea Fishes* : 581, pl. 58.

Diagnostic features : D. IX, 11; A. III, 8; P.14; V. I, 5. Body fairly deep and compressed; head large rather pointed; 4-6 canine teeth in front of jaws; scales large; pre-operculum with six rows of scales; inter-orbital without scales; second anal spine distinctly longer than third spine; caudal fin forked. Colour grey above, silvery white below; dorsal and anal fins with dusky markings; soft dorsal, anal and ventral fins blackish; pectoral fins yellow.

Habitat and Biology : Sandy reef areas, creeks and mangrove swamps. Feeds on worms, echinoderms, crustaceans, molluscs and other invertebrates.

Distribution : Widespread in tropical Indo-west Pacific.

Family LETHRINIDAE

169. *Gymnocranius elongatus* Senta, 1973

1973. *Gymnocranius elongatus* Senta, *Japan J. Ichthyol.*, 20(3) : 135-144.

1989. *Gymnocranius elongatus* : Carpenter and Allen, *FAO Fish. Synop.*, (125) 9 : 23, fig. 48, pl. 1.

2000. *Gymnocranius elongatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 201.

Diagnostic features : D.XI, 10; A.III,10; P.14; V.I, 5. Body oblong; head profile evenly rounded; lower edge of eye intersected by line from snout to middle of caudal fin fork; surface of maxilla smooth; cheek with five rows of scales; inner surface of pectoral fin axil scaleless; caudal fin deeply forked. Body silvery, light brown above with eight faint transverse bands on sides; fins yellowish white; caudal fin margin and tips red.

Habitat and Biology : Reef and mangrove areas. Feeds on bottom living invertebrates.

Distribution : Eastern Indian Ocean to West Pacific, from east coast of India, the Andaman Islands, Sri Lanka to Japan, New Guinea to Solomon Island.

170. *Lethrinus harak* (Forsskal, 1775) (Fig. 95)

1775. *Sciaena harak* Forsskal, *Descript. Animal.*, 11 : 52.

1936. *Lethrinus rhodopterus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 7 : 450.

1984. *Lethrinus harak* : Talwar and Kacker, *Commercial Sea Fishes of India* : 608, fig. 237.

1989. *Lethrinus harak* : Carpenter and Allen, *FAO Fish. Synop.*, (125) 9 : 64, fig. 121, pl. 4.

2000. *Lethrinus harak* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 202.

Diagnostic features : D.X,10; A.III, 8; P.13; V.I,5. Body compressed; dorsal profile near eye convex; eye situated close to dorsal profile; cheek without scales; inner base of pectoral fin with scales. Body gray above, whitish below with orange edge, large black oblong blotch on body below lateral line above pectoral fin level; caudal fin red, other fins white.

Habitat and Biology : Shallow sandy coral rubble, sea grass and adjacent to mangrove areas. Feeds on polychaetes, crustaceans, molluscs etc. Most often found in solitary, but some times in small schools.

Distribution : Indo-west Pacific, from Red Sea, East coast of Africa, coasts of India, the Andaman Islands, Sri Lanka to Japan and Australia to Samoa Island.

171. *Lethrinus lentjan* (Lacepede, 1802)
(Fig. 96)

1802. *Bodianus lentjan* Lacepede, *Hist. nat. Poiss.*, 4 : 281.

1989. *Lethrinus lentjan* : Carpenter and Allen, *FAO Fish. Synop.*, (125) 9 : 67, fig. 125, pl. 5.

2004. *Lethrinus lentjan* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 236, fig. 363.

Diagnostic features : D.X, 9; A.III, 8; P.13; V.I, 5. Body moderately deep, dorsal profile near eye almost straight; snout pointed; eye situated close to or far from dorsal profile; inner base of pectoral fin with few scales or absent. Body olive green above, paler below, each scale on upper side with white center; posterior margin of opercle and base of pectoral fin red; dorsal and caudal fins mottled orange, other fins yellowish.

Habitat and Biology : Juveniles and small adults in loose aggregations over sea grass beds, mangroves and shallow sandy areas; adults are solitary, found in deeper waters. Feeds on a variety of invertebrates and small fish.

Distribution : Widespread in the tropical Indo-west Pacific.

172. *Lethrinus nebulosus* (Forsskal, 1775)
(Fig. 97)

1775. *Sciaena nebulosus* Forsskal, *Descript Animal.*, 11 : 52.

1989. *Lethrinus nebulosus* : Carpenter and Allen, *FAO Fish. Synop.*, (125) 9 : 75, fig. 133, pl. 6.

2000. *Lethrinus nebulosus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 204.

Diagnostic features : D. X, 9; A. III, 8; P.13; V.I, 5. Body moderately deep; dorsal profile from eye to snout straight; outer surface of maxilla with ridge; cheek without scales; 5-9 scales in supra-temporal patch. Body light yellow, pale below; centers of scales with light blue spot and irregular dark bars on sides; series of elongate blue

spots radiating from eye; fins light yellow, edge of dorsal fin light red; opercular membrane bluish.

Habitat and Biology : Reef areas, sea grass beds, mangroves and coastal sandy areas. Juveniles found in large schools and adults alone or in small schools. Feeds on small invertebrates and fishes.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to coasts of India, the Andaman Islands to Japan, New Guinea to Samoa Island.

173. *Lethrinus obsoletus* (Forsskal, 1775)
(Fig. 98)

1775. *Sciaena obsoleta* Forsskal, *Descript. Animal.*, 9 : 52.

1984. *Lethrinus ramak* : Talwar and Kacker, *Commercial Sea Fishes of India* : 616.

1989. *Lethrinus obsoletus* : Carpenter and Allen, *FAO Fish. Synop.*, (125)9 : 77, fig. 135, pl. 6.

2000. *Lethrinus obsoletus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 204.

Diagnostic features : D. X, 9; A. III, 8; P.13; V. I, 5. Body moderately deep; dorsal profile almost straight near eye, eye close to dorsal profile; outer surface of maxilla with a distinct knob; seven rows of scales in supra-temporal patch; inner surface of pectoral base with scales. Body olive to brown, lighter below; centers of scales lighter than ground colour and orange yellow stripe on lower side at the level of pectoral fin base; faint orange yellow stripe above and below this stripe; white spots below eye; posterior edge of operculum dark brown; fins whitish.

Habitat and Biology : Reefs, seagrass beds and mangrove areas. Feed mostly on crustaceans, molluscs and echinoderms.

Distribution : Indo-west Pacific, from east coast of Africa to coasts of India, the Andaman Islands, Sri Lanka to Ryukyu Islands, Australia to Samoa Island.

174. *Lethrinus ornatus* Valenciennes, 1830
(Fig. 99)

1830. *Lethrinus ornatus* Valenciennes, *Hist. nat. Poiss.*, 6 : 310.

1875. *Lethrinus ornatus* : Day, *Fishes of India* : 137.

1936. *Lethrinus ornatus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 7 : 447, fig. 99.

1989. *Lethrinus ornatus* : Carpenter and Allen, *FAO Fish. Synop.*, (125)9 : 80, fig. 139, pl. 7.

2000. *Lethrinus ornatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 205.

Diagnostic features : D.X, 9; A.III, 8; P.13; V.I, 5. Body deep, dorsal profile near eye convex; eye situated close to dorsal profile; outer surface of maxilla usually smooth, sometimes with longitudinal ridge; cheek without scales; seven scales in supra temporal patch; inner surface of pectoral fin densely covered with scales. Body dusky, lower sides lighter with five orange stripes; posterior edge of operculum and pre-operculum bright red; pectoral and anal fins yellowish; posterior part of dorsal and caudal fins reddish.

Habitat and Biology : Shallow sandy bottom areas, sea grass beds and mangrove areas. Feed on invertebrates and fishes.

Distribution : Eastern Indian Ocean and West Pacific, from Sri Lanka, the Andaman Islands to Ryukyu Islands and New Guinea, Australia.

Family NEMIPTERIDAE

175. *Scolopsis bilineatus* (Bloch, 1793) (Fig.100)

1793. *Anthias bilineatus* Bloch, *Nat. ausland Fische.*, 7 : 3.

1875-78. *Scolopsis bilineatus* : Day, *Fishes of India* : 85, pl. 22, fig. 3.

1936. *Scolopsis bilineatus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 7 : 339.

1980. *Scolopsis bilinratus* : Jones and Kumaran, *Fishes of Laccadive Archipelago* : 323, fig. 274.

2000. *Scolopsis bilineatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 209, fig. 175.

Diagnostic features : D. X, 9; A. III, 7; P.17; V.I,5. Body oblong, snout slightly pointed; posterior spine of sub-orbital elongate, mouth somewhat oblique; maxillary smooth, reaching beyond vertical to front border of eye; slender curved teeth in narrow bands in the jaws, the outer series enlarged. Body dusky on dorsal side of head and body, whitish on side and below; a prominent curved white band with a black margin from mouth to middle of dorsal fin base; a pair of short white stripes above eye; spinous dorsal bright yellow; white mark on soft dorsal extending on to back; anal fin black anteriorly.

Habitat and Biology : Reef lagoons and mangroves.

Distribution : Indo-west Pacific, from Lakshadweep, the Andaman Islands to Japan and southwards Fiji.

Family SCIAENIDAE

176. *Dendrophysa russelli* (Cuvier, 1830) (Fig.101)

1830. *Umbrina russelli* Cuvier, *Hist. nat. poiss.*, 5 : 178.

1876. *Umbrina russellii* : Day, *Fishes of India*, 1 : 183, pl. 43, fig. 4.

1984. *Dendrophysa russelli* : Talwar and Kacker, *Commercial Sea Fishes of India*, : 642, fig. 253.

Diagnostic features : D.X+I,27; A.II, 7; P.18; V. I,5. Snout rounded and projecting slightly beyond tip of upper jaw; mouth inferior; a single barbel on chin; teeth of lower jaw uniform, rather strong; gill rakers eight on lower arm of first arch; caudal fin rhomboid; swim bladder carrot shaped with 15-17 pairs of arborescent appendages, the first entering head. Body grey on back, shading to white on belly; upper part of spinous dorsal fin dark; other fins pale.

Habitat and Biology : Shallow coastal waters near creeks and mangroves.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands, Sri Lanka, East Indies to Kwangtung.

177. *Johnius amblycephalus* (Bleeker, 1855)
(Fig. 102)

1855. *Umbrina amblycephalus* Bleeker, *Nat. Tijdr. Ned. Indie.*, 8 : 412.

1876. *Umbrina dussumieri* : Day, *Fishes of India*, : 183, pl. 43, fig. 2 & 3.

1984. *Johnius amblycephalus* : Talwar and Kacker, *Commercial Sea Fishes of India*, : 645, fig. 254.

Diagnostic features : D.X+I, 24; A. II, 7; P.18; V. I, 5. Snout rounded; mouth inferior; maxilla extending to below hind parts of pupil; a barbel on chin with median ventral pore at front of its base; gill rakers eight on lower arm of first arch; outer teeth of upper jaw enlarged and more widely spaced; caudal truncate; scales on body cycloid; swim bladder hammer-shaped with 14 pairs of arborescent appendages, the first branching in head. Body dark grey on head and flanks to below level of pectoral fin, silvery on belly; upper part of spinous dorsal fin black; other fins yellowish brown.

Habitat and Biology : Shallow coastal waters, creeks and mangroves.

Distribution : Widespread in Indo-west Pacific, coasts of India, the Andaman Islands, Tamil Nadu and Maharashtra coasts.

178. *Otolithes ruber* (Schneider, 1801)

1801. *Johnius ruber* Schneider, *Syst. Ichth.* : 75, pl. 17.

1986. *Otolithes ruber* : Heemstra, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 619, pl. 17.

2000. *Otolithus ruber* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 214.

Diagnostic features : D. X+I, 30; A. II, 7; P.17; V. I, 5. Body elongate and slender, mouth large and terminal; lower jaw slightly projecting; inter-orbital space flat; pre-opercular scarcely denticulated; opercle with two flat spines; no pores or barbels on

chin; a pair of very large canines in front of both jaws; caudal fin rhomboid; swim bladder carrot shaped with 34 pairs of arborescent appendages, not entering head; gill rakers 11 on lower arm of first arch. Body silvery, anal, pectoral and ventral fins yellowish.

Habitat and Biology : Coastal waters and mangrove swamps.

Distribution : Widespread in Indo-Pacific region.

179. *Pennahia anea* (Bloch, 1793)

1793. *Johnius anea* Bloch, *Nat. ausland Fische*, 7 : 135.

1876. *Sciaena aneus* : Day, *Fishes of India* : 189 pl. 45, fig. 5.

1936. *Pseudosciaena aneus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 7 : 508.

1984. *Pennahia macrophthalmus* : Talwar and Kacker, *Commercial Sea Fishes of India* : 669, fig. 270.

2000. *Pennahia macrophthalmus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 214.

Diagnostic features : D. X+I, 23-24; A. II, 7-8; P. 16-18; V. I, 5. Mouth large, terminal and oblique; no canines; two or three pairs of pores on front of chin, the first pair separated by symphysis of lower jaw; swim bladder carrot shaped, its appendages wing like without dorsal limb; caudal fin truncate. Body grey above, flanks and belly silvery; upper half of spinous dorsal dusky; diffused blotch on pectoral fin axil.

Habitat and Biology : Coastal waters and mangroves.

Distribution : Indo-west Pacific from Pakistan, coasts of India, the Andaman Islands, Sri Lanka, East Indies to China

Family MULLIDAE

180. *Mulloidichthys flavolineatus* (Lacepede, 1801) (Fig.103)

1801. *Mullus flavolineatus* Lacepede, *Hist. nat. Poiss.* : 348.

1876. *Mulloides flavolineatus* : Day, *Fishes of India* : 122, pl. 30, fig. 6.

1986. *Mulloides flavilineatus* : Ben-Tuvia, In : Smith and Heemstra, *Smith's Sea Fishes* : 610, pl. 69.

2000. *Mulloides flavolineatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 215.

2004. *Mulloidichthys flavolineatus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 261, fig. 397.

Diagnostic features : D.VII+I, 8; A. I, 6; P.18; V.I, 5. Body oblong, two long unbranched barbels on chin; villiform teeth in jaws; palatine and vomer edentate; five scales between first and second dorsal fins. Body silvery white with bright yellow longitudinal band from eye to caudal; small dark blotch below first dorsal.

Habitat and Biology : Coastal waters and mangroves.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to Australia and New Guinea.

181. *Parupeneus barberinus* (Lacepede, 1801)
(Fig. 104)

1801. *Mullus barberinus* Lacepede, *Hist. nat. Poiss.*, 3 : 386, pl. 13, fig. 2.

1876. *Upeneus barberinus* : Day, *Fishes of India* : 124.

1931. *Parupeneus barberinus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 392.

1986. *Parupeneus barberinus* : Ben-Tuvia, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 611, pl. 69.

2000. *Parupeneus barberinus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 216, fig. 177.

Diagnostic features : D.VIII+I, 8; A. I, 6; P.16-18; V.I, 5. Body slightly elongate; snout long; teeth on jaws stout and one row only; second dorsal spine flexible; three vertical rows of scales in space between dorsal fins. Body pale brown to reddish brown dorsally, shading to whitish on sides and ventrally; a dark stripe from front of snout through eye to upper caudal peduncle; a large black spot at caudal base.

Habitat and Biology : Shallow sandy bottom, sometimes entering estuaries and mangrove swamps. Feeds mainly on crustaceans and polychaetes.

Distribution : Indo-Pacific, from Red Sea, east coast of Africa to Japan and Australia to Hawaiian Islands.

182. *Parupeneus indicus* (Shaw, 1803)

1803. *Mullus indicus* Shaw, *General Zoology*, 4 : 614.

1986. *Parupeneus indicus* : Ben-Tuvia, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 612, pl. 69.

1876. *Upeneus indicus* : Day, *Fishes of India* : 126, pl. 31, fig. 4.

1931. *Parupeneus indicus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 394.

2000. *Parupeneus indicus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 218, fig. 179.

Diagnostic features : D.VIII+I, 8; A. I, 6; P.15-16; V. I, 5. Body slightly elongate, snout long; teeth strong in a single row in jaws, no teeth on vomer and palatines; barbels long, extending slightly behind hind margin of pre-operculum; second dorsal spine shorter than third; pectoral shorter than ventral. Body brownish white above, silvery white below; a horizontally elongate yellow spot on middle of back centered on lateral line, a dark spot on posterior half of caudal peduncle; upper part of head with light blue lines; fins hyaline.

Habitat and Biology : Shallow sandy coastal waters, enters mangrove areas during spawning season.

Distribution : Indo-west Pacific, from east coast of Africa to Japan and Australia to Samoa Island.

183. *Upeneus sulphureus* Cuvier, 1829
(Fig. 105)

1829. *Upeneus sulphureus* Cuvier, *Hist. nat. Poiss.*, 3 : 450.

1931. *Parupeneus spilurus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 397.

1984. *Upeneus (Upeneus) sulphureus* : Talwar and Kacker, *Commercial Sea Fishes of India* : 685, fig. 278.

2000. *Upeneus sulphures* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 220.

Diagnostic features : D.VIII+I,8; A.I, 7; P.16; V.I,5. Body elongate and slightly compressed; dorsal profile of head convex; barbels thin, extend beyond rear edge of operculum; pre-orbital scales absent. Body grayish-bronze, head reddish, lower sides and belly pale with two yellowish horizontal stripes on sides; tip of first dorsal fin black; no bars on caudal and anal fins.

Habitat and Biology : Shallow coastal waters, sometimes found in creeks and mangroves. Carnivorous fish.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa, coasts of India, the Andaman Islands, Sri Lanka to Japan and Marshall to Fiji Island.

184. *Upeneus tragula* Richardson, 1846
(Fig. 106)

1846. *Upeneus tragula* Richardson, *Ichth. China and Japan* : 220.

1876. *Upeneus tragula* : Day, *Fishes of India* : 121, pl. 30, fig. 4.

1931. *Upeneus tragula* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 6 : 368, fig. 75.

1986. *Upeneus tragula* : Ben-Tuvia, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 613, pl. 70.

2000. *Upeneus tragula* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 220, fig. 180.

Diagnostic features : D.VIII+I, 8; A. I, 6; P.13-14; V. I,5. Body elongate; teeth villiform bands in jaws, vomer and palatine with teeth; barbels extending up to hind margin of pre-operculum; second dorsal spine longest equal to snout and eye together. Body brown with reddish patches on head and body; lighter below; a black brown horizontal stripe from snout to base of caudal fin; ventral part of body with large reddish blotches; barbels yellow; a large reddish area on outer part of first dorsal; caudal fin lobes with brown cross bars.

Habitat and Biology : Coastal and mangrove areas.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to Andaman Islands, Indonesia to Japan and Australia to Palau Island.

185. *Upeneus vittatus* (Forsskal, 1775)
(Fig. 107)

1775. *Mullus vittatus* Forsskal, *Descript Animal* : 31.

1941. *Upeneus vittatus* : Herre, *Mem. Indian Mus.*, 13 : 366.

1986. *Upeneus vittatus* : Ben-Tuvia, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 613, pl. 70.

2000. *Upeneus vittatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 221.

Diagnostic features : D.VIII+I, 8; A. I, 7; P.15-16; V. I, 5. Body deep and compressed, barbels reaching hind margin of pre-operculum; pre-orbital scales absent. Body light grey on back, sides and belly yellowish; three light yellow bands on sides; spinous dorsal with two bands, the tip black; soft dorsal with three bars; caudal fin lobes with dark black bars.

Habitat and Biology : Coastal and mangrove areas.

Distribution : Indo-Pacific, from Red Sea, east coast of Africa to coasts of India, the Andaman and Nicobar Islands, Sri Lanka to Japan and Australia to Marquesas Islands.

Family MONODACTYLIDAE

186. *Monodactylus argenteus* (Linnaeus, 1758)
(Fig. 108)

1758. *Chaetodon argenteus* Linnaeus, *Syst. Nat.*, ed.10, 1 : 272.

1936. *Monodactylus argenteus* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 7 : 207.

1968. *Monodactylus argenteus* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1&4) : 46.

1986. *Monodactylus argenteus* : Heemstra *In* : Smith and Heemstra, *Smith's Sea Fishes* : 607, fig. 193.1.

2000. *Monodactylus argenteus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 221, fig. 181.

Diagnostic features : D.VIII, 28; A.III, 20-30; P.16. Body deep and compressed; scales deciduous and extending onto head and median fins; lobes of dorsal and anal fins prolonged; ventral fins rudimentary, juveniles silvery with two curved dark stripes across head, the first through eye and the second from the nape through base of pectoral to before anal fin; anterior lobes of dorsal and anal fins dusky; all fins pale; adults silvery with anterior lobe of dorsal and anal fins dusky.

Habitat and Biology : Shallow reefs, mangrove areas and estuaries in large schools. Feeds on benthic invertebrates, bottom detritus and algae.

Distribution : Widespread in Indo-west Pacific region.

Family TOXOTIDAE

187. *Toxotes chatareus* (Hamilton-Buchanan, 1822)

1822. *Coius chatareus* Hamilton-Buchanan, *Fishes of Ganges* : 101, pl. 14, fig. 3.

1991. *Toxotes chaetareus* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 871, fig. 263b.

2000. *Toxotes chatareus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 223.

Diagnostic features : D.V, 12; A.III, 16; P.13; V.I, 5. Body oblong and compressed. Pale gray with a series of 6 to 7 alternating large and small black blotches on upper side of body; all fins dusky.

Habitat and Biology : Creeks and mangroves. Feeds on insects and crustaceans and fishes.

Distribution : Indo-west Pacific, from east coast of India to Australia.

188. *Toxotes jaculator* (Pallas, 1766) (Fig. 109)

1766. *Sciæna jaculatrix* Pallas, *Spicilegium Zoologicum* : 186.

1875. *Toxotes jaculator* Day, *Fishes of India* : 117.

1936. *Toxotes jaculator* Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 7 : 199, fig. 53.

1991. *Toxotes jaculator* Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 871, fig. 263a.

Diagnostic features : D.IV, 11-12; A.III, 16; P.15; V.I, 5. Body oblong and compressed; head flattened on dorsal surface; dorsal and anal fins scaly; body pale with series of 4-5 dark blotches on upper side; dorsal and anal fins dusky, other fins pale.

Habitat and Biology : Schooling species, occur around mangroves and creeks. Feed on invertebrates.

Distribution : Indo-west Pacific, from coasts of India to Solomon Islands.

Family EPHIPPIDAE

189. *Drepane punctata* (Linnaeus, 1758) (Fig. 110)

1758. *Chaetodon punctata* Linnaeus, *Syst. Nat. (ed.)* 10, 1 : 273.

1936. *Drepane punctata* Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 7 : 180, fig. 47.

1959. *Drepane punctata* Misra, *Rec. Indian Mus.*, 57(1-4) : 281.

2000. *Drepane punctata* Rao *et al.*, *Rec. zool. Surv. India Occ. Paper*. 178 : 226.

Diagnostic features : D. IX, 20-22; A. III, 18-19; P.18; V.I,5. Body and head deep, strongly compressed; mouth protrusible; fringe of 4-10 short cirri on chin; dorsal fin deeply notched; pectoral fin long and pointed, reaching to base of caudal fin. Body silvery-grey with 6-10 vertical bands of small black spots present on upper half.

Habitat and Biology : Coral and rocky reef areas and occasionally enter into mangroves and estuaries. Feeds on invertebrates.

Distribution : Indo-west Pacific, from Pakistan, costs of India, the Andaman Islands to China Sea.

190. *Platax orbicularis* (Forsskal, 1775)
(Fig. 111)

1775. *Chaetodon orbicularis* Forsskal, *Descript Animal* : 59.

1876. *Platax vespertilio* : Day, *Fishes of India* : 236, pl. 51, A, fig. 5.

1936. *Platax orbicularis* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 7 : 189, fig. 49b, 50.

1986. *Platax orbicularis* : Smith *In* : Smith and Heemstra, *Smith's Sea Fishes* : 605, fig. 192.1.

2000. *Platax orbicularis* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 226.

Diagnostic features : D.V, 36; A. III, 26; P.18; V. I, 5. Body orbiculate; snout convex; chin with five mandibular pores on each side; inter-orbital naked; dorsal and anal fins broad. Body brownish yellow with a vertical black bar through eye and another at the level of pectoral fin; dorsal and anal fins with black margin; caudal fin hyaline.

Habitat and Biology : Coastal, estuaries and mangrove areas. Feeds on fishes and invertebrates.

Distribution : Indo-west Pacific, from Red Sea to Japan and Australia to Tuamotu.

191. *Platax pinnatus* (Linnaeus, 1758)
(Fig. 112)

1758. *Chaetodon pinnatus* Linnaeus, *Syst. Nat.*, 1 : 272.

1959. *Platax pinnatus* : Misra, *Rec. Indian Mus.*, 57(1-4) : 280.

1986. *Platax pinnatus* : Smith, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 605. fig. 192.2.

2000. *Platax pinnatus* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 227.

Diagnostic features : D.V,37; A.III, 27; P.18; V.I, 5. Body deep and compressed, mouth profile pointed, snout concave before eyes, chin with four mandibular pores on each side; dorsal and anal fins much elongated. Body silvery-grey with dark vertical black bars, one through eye, the other at the level of pectoral extending on to ventral fin; pectoral fin black basally, yellow distally; ventral fins black.

Habitat and Biology : Weedy areas of coastal regions and mangroves. Feeds on fishes and invertebrates.

Distribution : Indo-west Pacific, from east coast of Africa to coasts of India, the Andaman Islands to Japan and Australia.

192. *Ephippus orbis* (Bloch, 1787)

1787. *Chaetodon orbis* Bloch, Nat. ausland Fische., 3 : 81, pl. 202, fig. 2.

1875. *Ephippus orbis* : Day, Fishes of India : 115, pl. 229, fig. 4.

1936. *Ephippus orbis* : Weber and De Beaufort, Fishes of Indo-Australian Archipelago, 7 : 178, fig. 46.

2004. *Ephippus orbis* : Rao, Guide to Reef Fishes of Andaman and Nicobar Islands : 254, fig. 390.

Diagnostic features : D. IX, 19; A. III, 15-16; P.14-15; V.I, 5. Body deep nearly circular, compressed; mouth small; dorsal fin with one forward pointing procumbent spine, caudal peduncle deep, caudal fin truncate. Body silvery, dorsal profile greenish, spines light yellow with dusky margin; upper part of the body with 4-5 dark bands between dorsal fin and abdomen.

Habitat and Biology : Shallow waters in coastal and mangrove areas. Feeds on bottom living invertebrates and fishes.

Distribution : Widely distributed in Indo-west Pacific region.

Family SCATOPHAGIDAE

193. *Scatophagus argus* (Linnaeus, 1766). (Fig. 113)

1766. *Chaetodon argus* Linnaeus, Syst. Nat., ed. 12, 1 : 464.

1941. *Scatophagus argus* : Herre, Mem. Indian Mus., 13 : 369.

1984. *Scatophagus argus* : Talwar and Kacker, Commercial Sea Fishes of India : 704, fig. 286.

2000. *Scatophagus argus* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 227, fig. 182.

Diagnostic features : D. XI, 16-18; A. IV, 14; P.16; V. I, 5. Body quadrangular, and strongly compressed; forehead steep; mouth small with brush like teeth; scales ctenoid; a procumbent spine present before dorsal spine; dorsal fin notched; caudal truncate.

Body dusky brown above, silvery below; numerous large round brown spots on body except breast and belly, these spots may extend onto the soft dorsal fin; all fins slightly dusky.

Habitat and Biology : Small fishes usually occur in aggregations near harbours, estuaries and mangrove areas. Feeds on benthic invertebrates, bottom detritus, algae, etc.

Distribution : Indo-west Pacific, from coasts of India to Queensland.

Family POMACENTRIDAE

194. *Abudefduf bengalensis* (Bloch, 1787)
(Fig. 114)

1787. *Chaetodon bengalensis* Bloch, *Nat. ausland Fische*, 3 : 110, pl. 213, fig. 2.

1877. *Glyphidodon bengalensis* : Day, *Fishes of India* : 387, pl. 83, fig. 3.

1940. *Abudefduf bengalensis* : De Beaufort, *Fishes of Indo-Australian Archipelago*, 8 : 403.

1980. *Abudefduf bengalensis* : Jones and Kumaran, *Fishes of Laccadive Archipelago* : 418, fig. 351.

2000. *Abudefduf bengalensis* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 241.

Diagnostic features : D.XIII, 14; A.II,13-14; P.18; V.I,5. Body compressed, scales ctenoid; pre-orbital naked; scales on head reaching to nostrils; caudal lobes rounded. Body light gray with six black bars on sides.

Habitat and Biology : Protected inshore waters, sometimes found in estuaries and mangroves.

Distribution : Indo-west Pacific, from Madagascar, coasts of India, the Andaman Islands to China and Australia to Samoa Islands.

195. *Abudefduf septemfasciatus* (Cuvier, 1830)
(Fig. 115)

1830. *Glyphisodon septemfasciatus* Cuvier, *Hist. nat. Poiss.*, 5 : 463.

1986. *Abudefduf septemfasciatus* : Allen, In : Smith and Heemstra, *Smith's Sea Fishes* : 672, pl. 85.

2000. *Abudefduf septemfasciatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 241.

Diagnostic features : D.XIII, 13; A.XI, 12; P.18-20; V.I, 5. Body compressed, scales ctenoid; scales not reaching to nostril; opercular margin smooth; teeth uniserial in jaws. Body light yellowish-white with seven dark grey transverse bands on side; soft dorsal, anal and caudal fins dusky; pectoral yellowish with basal triangular black blotch.

Habitat and Biology : Inshore reef areas and also found in estuaries and mangroves.

Distribution : Indo-Pacific, from east coast of Africa to Japan and Line Islands.

Family MUGILIDAE

196. *Crenimugil crenilabis* (Forsskal, 1775)
(Fig. 116)

1775. *Mugil crenilabis crenilabis* Forsskal, *Descript Animal* : 14, 73.

1941. *Mugil crenilabis* : Herre, *Mem. Indian Mus.*, 13 : 348.

2000. *Crenimugil crenilabis* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 252.

2004. *Crenimugil crenilabis* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 401, fig. 593.

Diagnostic features : D.IV+I, 8; A.III, 9; P.16; V.I,5. Scales cycloid with straight mucus canal; no adipose eye lids; pectoral folded forward reaches beyond eye; upper lip with prominent papillae; teeth present on tongue and absent on lips. Body greenish above, silvery below; pectoral with purplish axillary spot.

Habitat and Biology : Shallow coastal waters, creeks and mangroves.

Distribution : Indo-west Pacific, from east coast of Africa to Japan and Tuamotu Island.

197. *Liza macrolepis* (Smith, 1849)
(Fig. 117)

1849. *Mugil macrolepis* Smith, *Illustr. Zool. S. Africa*, 4 : pl. 28, fig. 2.

1941. *Liza borneensis* : Herre, *Mem. Indian Mus.*, 13 : 347.

1968. *Mugil macrolepis* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 40.

1991. *Liza macrolepis* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 891.

Diagnostic features : D.IV+I, 8; A.III, 9; P.15; V.I,5. No adipose eyelids, teeth feeble, peg-like in two rows on upper lip; ciliiform on lower lip; second dorsal fin origin on vertical through middle of anal fin base. Body greenish-grey above, silvery below; all fins dusky.

Habitat and Biology : Shallow costal waters, estuaries and mangroves.

Distribution : Indo-west Pacific.

198. *Liza melanoptera* (Valenciennes, 1836)
(Fig. 118)

1836. *Mugil melanoptera* Valenciennes, *Hist. nat. Poiss.*, 11 : 146, pl. 314.

1968. *Mugil melanoptera* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 41.

1991. *Liza melanoptera* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 892.

2000. *Liza melanoptera* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 253.

Diagnostic features : D. IV+I, 8; A.III, 8; P.15; V.I, 5. Adipose eyelid covered 1/3rd of iris; no teeth in lower jaw; tongue toothed; no pectoral axillary scale; dorsal spine strong; second dorsal fin origin on vertical through middle of anal fin base. Body greenish-brown above, silvery below; all fins dusky.

Habitat and Biology : Shallow coastal waters, estuaries and mangroves. Feeds on algae, diatoms, and other organic matter.

Distribution : Widespread in Indo-Pacific region.

199. *Liza parsia* (Hamilton-Buchanan, 1822)

1822. *Mugil parsia* Hamilton-Buchanan, *Fishes of Ganges* : 215, pl. 17, fig. 71.

1991. *Liza parsia* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 893.

2003. *Liza parsia* : Rajan, *Field Guide to Marine Food Fishes of Andaman and Nicobar Islands* : 215.

Diagnostic features : D. IV+I, 8; A.III, 9; P. 14; V. I, 5. Adipose eyelid covered most of the eye posteriorly and part of it anteriorly; two rows of short teeth on upper lip; pectoral axillary scale rudimentary or absent; second dorsal fin origin on vertical between anterior third of half of anal fin base. Body greenish-brown above, silvery below; a golden spot on upper part of operculum; base of second dorsal, anal and caudal fin yellowish; other fins dusky.

Habitat and Biology : Schooling fishes found in shallow coastal waters, creeks and mangroves. Feeds on algae, diatoms and other organic matter.

Distribution : Widespread in Indo-Pacific.

200. *Liza vaigiensis* (Quoy & Gaimard, 1825) (Fig. 119)

1825. *Mugil vaigiensis* Quoy and Gaimard, *Voy. Urani. Physic., Zool.* : 337, pl. 59, fig. 2.

1922. *Mugil vaigiensis* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 4 : 235.

1991. *Liza vaigiensis* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 895.

2000. *Liza vaigiensis* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 253.

Diagnostic features : D. IV+I, 8; A.III, 8; P.16; V.I, 7. Adipose eyelid vestigial; ciliated teeth on upper lip, few on lower lip; tongue dentate; scales ctenoid; second dorsal and anal scaly; pectoral bent forward reaches front of eye; pectoral axillary scale absent; caudal emarginated. Body light olive above, silvery on sides; dusky streaks along upper scale rows; fins dusky; pectoral fin black.

Habitat and Biology : Shallow coastal waters and mangrove areas.

Distribution : Widespread in Indo-Pacific region.

201. *Valamugil buchanani* (Bleeker, 1853)

1853. *Mugil buchanani* Bleeker, *Verh. batav. Genoot. Kunst. Wet.*, **25** : 29.

1991. *Valamugil buchanani* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, **2** : 901.

2000. *Valamugil buchanani* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 254.

Diagnostic features : D. IV+I, 8; A.III, 9; P.17; V. I, 5. Lips thin; pterygoids and tongue dentate; palatines and vomer edentate; adipose eyelids absent; dorsal and anal fins falcate; second dorsal inserted on vertical from origin of anal fin; pectoral fin folded forward reaches beyond eye; pectoral axillary scale longer and pointed. Body greenish on back, silvery on sides and belly; a dark axillary spot on base of pectoral fin; caudal fin brilliant blue.

Habitat and Biology : Shallow coastal waters and mangrove areas.

Distribution : Indo-west Pacific region.

202. *Valamugil cunnesius* (Valenciennes, 1836)
(Fig. 120)

1836. *Mugil cunnesius* Valenciennes, *Hist. nat. Poiss.*, **11** : 114.

1876. *Mugil amarulus* : Day, *Fishes of India* : 356.

1991. *Valamugil cunnesius* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, **2** : 901.

2000. *Valamugil cunnesius* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 254.

Diagnostic features : D.IV+I, 8; A.III, 9; P.15-16; V.I, 5. Adipose eyelid well developed; maxilla exposed when mouth shut; minute teeth on lips; no teeth on palatines and pterygoids; tongue dentate; second dorsal fin origin vertical through end of anterior third of anal fin base. Body dark grey on back, silvery below; dark axillary spot on pectoral base.

Habitat and Biology : Shallow coastal waters, creeks and mangroves. Feeds on detritus, algae, fish eggs and larvae of marine forms.

Distribution : Widespread in Indo-Pacific region.

203. *Valamugil seheli* (Forsskal, 1775)

1775. *Mugil crenilabis seheli* Forsskal, *Descript Animal* : 73.

1941. *Liza seheli* : Herre, *Mem. Indian Mus.*, **13** : 347.

1991. *Valamugil seheli* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 902.

Diagnostic features : IV+I, 8; A. III, 9; P. 16-17; V.I, 5. Head wide and dorsally flattened; adipose eyelids feeble; a rim around eye; no teeth on lips or palatines, vomer dentate; lips thin; second dorsal fin origin slightly behind a level from anal fin origin. Body light blush-green on back, silvery on sides and below; dorsal, anal and caudal dusky; dark axillary spot on pectoral base.

Habitat and Biology : Shallow coastal waters and mangroves. Feeds on algae, fish eggs and larvae.

Distribution : Indo-west Pacific.

Family SPHYRAENIDAE

204. *Sphyraena barracuda* (Walbaum, 1792) (Fig. 121)

1792. *Esox barracuda* Walbaum, *Ichthyologie* : 94.

1986. *Sphyraena barracuda* : De Sylva and Williams, In : Smith and Heemstra, *Smith's Sea Fishes* : 723, fig. 224.3.

2000. *Sphyraena barracuda* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 255.

2004. *Sphyraena barracuda* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 403, fig. 596.

Diagnostic features : D.I, 9; A.II,8; P; 14; V. I, 5. Body elongate and slightly compressed; snout long and pointed; edge of operculum rounded; no produced flap; inter-orbital space flattened; maxilla extending to level of anterior margin of eye; gill rakers absent; caudal fin bilobed. Body deep green to steel grey above, silvery below; sides above lateral line with a series of 18-20 faint cross bars angled backwards; irregular black blotches present on lower side of body; median fins dusky; tips of rays pale; edge of caudal, pectoral and ventral fins grey.

Habitat and Biology : Diurnal and solitary species, some times found in small schools; adults found in open sea while juveniles and young found in mangroves and creeks. Voracious feeder; feeds on fishes.

Distribution : Widespread in Indo-Pacific region.

205. *Sphyraena flavicauda* Ruppell, 1838 (Fig. 122)

1838. *Sphyraena flavicauda* Ruppell, *Neue. Wirth. Fauna. Abyssinien Gehorig.* : 100, pl. 25.

1986. *Sphyraena flavicauda* : De Sylva and Williams, In : Smith and Heemstra, *Smith's Sea Fishes* : 724, fig. 224.5.

2000. *Sphyraena flavicauda* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 256, fig. 202.

2000. *Sphyraena langsar* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 256.

Diagnostic features : D. V+I, 9; A.I, 9; P.14; V.I, 5. Body elongate and slightly compressed; head large with long pointed snout; angle of pre-opercle with a membranous flap; maxilla not reaching to the level of front edge of eye; first gill raker at angle of first gill arch and second on lower limb; origin of first dorsal behind ventral origin and from behind to above tip of pectorals. Body iridescent dark green above, silvery below; a brown stripe from tip of snout through center of eye and through pectoral base to caudal peduncle; dorsal fins dark blue green, anal and ventral fins white; pectoral fins pale with dusky axillary patch caudal fin dusky yellow.

Habitat and Biology : Close to the surface of sandy bottom while juveniles and young are found in creeks and mangroves.

Distribution : Western and Central Pacific region.

206. *Sphyraena obtusata* Cuvier, 1829 (Fig. 123)

1829. *Sphyraena obtusata* Cuvier, Hist. nat. Poiss., 3 : 350, pl.10.

1984. *Sphyraena obtusata* : Talwar and Kacker, Commercial Sea Fishes of India : 742, fig.303.

2000. *Sphyraena obtusata* Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 257.

Diagnostic features : D.V+I, 9; A.II, 9; P.14; V.I, 5. Body elongate, slightly compressed; head large with long pointed snout; angle of pre-operculum triangular; two gill rakers on first arch; origin of first dorsal in front of tip of pectoral fin. Body grey-green above, silvery below; in side of mouth orange-yellow; first dorsal dusky, second dorsal and caudal fin yellow with dark margin; pectoral and anal fins yellow; ventral fin white.

Habitat and Biology : Coastal waters, creeks and mangroves. Feeds on fishes.

Distribution : Indo-west Pacific, from Pakistan, coasts of India, the Andaman and Nicobar Islands to Japan.

Family POLYNEMIDAE

207. *Polydactylus plebeius* (Broussonet, 1782)

1782. *Polynemus plebeius* Broussonet, Ichthyologica : 23, pl. 88.

1986. *Polydactylus plebeius* : Smith, In : Smith and Heemstra, Smith's Sea Fishes : 721, fig. 223.2.

2000. *Polydactylus plebeius* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 258.

Diagnostic features : D.VIII+I, 13; A.III, 11; P.17+5; V. I, 5. Body moderately elongate and slightly compressed; mouth inferior; eye covered with gelatinous membrane; maxillary scaly; preoperculum serrated; teeth on vomer present; upper lip

absent; pectoral rays simple, longest filament reaching beyond tip of ventral fin. Body yellowish-grey with dark line along each scale row; fins dusky.

Habitat and Biology : Shallow coastal waters, creeks and mangroves.

Distribution : Indo-west Pacific, from Red Sea to the Andaman Islands to Japan.

208. *Polydactylus heptadactylus* (Cuvier, 1829)

1829. *Polynemus heptadactylus* Cuvier, *Hist. nat. Poiss.*, 3 : 390.

1991. *Polydactylus heptadactylus* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 909.

2000. *Polydactylus heptadactylus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 259.

Diagnostic features : D.VIII+I, 13; A. III, 12; P.13-14+7; V. I,5. Mouth large reaching far behind eye; maxilla is scaly; head covered with scales; upper lip absent; pectoral filamentous, reaching to end of ventral fins. Body golden above, light below with distinct dusky blotch on shoulder; pectoral fin black; margin of dorsal and anal dark.

Habitat and Biology : Coastal waters, creeks and mangroves.

Distribution : Indo-west-Pacific, from Pakistan, coasts of India, the Andaman and Nicobar Islands to Indonesia.

209. *Polynemus melanochir* Cuvier & Valenciennes, 1831

1831. *Polynemus melanochir* Cuvier and Valenciennes, *Hist. nat. Poiss.*, 7 : 513.

1922. *Polynemus melanochir* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 4 : 211.

2000. *Polynemus melanochir* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 259.

Diagnostic features : D.VIII+I, 11-12; A. III, 15; P.14+7; V. I, 5. Mouth large reaching far behind eye; head covered with scales to end of snout; upper lip absent; origin of dorsal between ventral and pectoral fins; caudal fin deeply forked, the lobes pointed; pectoral much longer than head, the middle filaments longest reaching to tip of caudal. Body golden brown, pectoral fins are black.

Habitat and Biology : Shallow sandy shores, creeks and mangroves.

Distribution : Indian Ocean, from the Andaman and Nicobar Islands to Indonesia.

Family CALLIONYMIDAE

210. *Callionymus filamentosus* Valenciennes, 1837

1837. *Callionymus filamentosus* Valenciennes, *Hist. nat. Poiss.* : 303.

1951. *Callionymus filamentosus* : De Beaufort and Chapman, *Fishes of Indo-Australian Archipelago*, 9 : 57.

1986. *Callionymus filamentosus* : Fricke, In : Smith and Heemstra, *Smith's Sea Fishes* : 771, fig. 239.1.

2000. *Callionymus filamentosus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 289.

Diagnostic features : D. I+III+9; A.9; P.18-20; V. I, 5. Inter-orbital space with bony ridge; pre-opercular process straight with 4-6 barbs along its inner side; lateral line with two ventral branches in post orbital region, lines of opposite sides connected across occiput and dorsal side of caudal peduncle; caudal peduncle rounded; in males central two rays of caudal fin produced

Habitat and Biology : Shallow sandy and muddy bottoms of mangrove and coastal areas.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa, Persian Gulf, the Andaman Islands to the Philippines.

211. *Eleutherochir opercularis* (Valenciennes, 1837)

1837. *Callionymus opercularis* Valenciennes, *Hist. nat. Poss.*, **12** : 305.

1990. *Eleutherochir opercularis* Kamla Devi and Rajan, *J. Andaman Sci. Assoc.*, **6**(1&2) : 193.

2000. *Eleutherochir opercularis* Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 290.

Diagnostic features : D.IV, 9; A.9; P.22-24; V.I,5. Head and body depressed; head flat above; pre-opercular process curved, without anterior spine ending in a hooked spine with 3-5 spines along upper border; caudal fin truncate. Body dark-grey, belly white; nape and back with black spots; first dorsal black; rayed dorsal with black spots; anal and caudal fins dusky, ventrals black.

Habitat and Biology : Sandy and muddy bottoms of creeks and mangroves.

Distribution : Indian Ocean, from the Andaman Islands to Philippines.

Family BLENNIIDAE

212. *Astrosalarias fuscus* (Ruppell, 1835)

1835. *Salarias fuscus* Ruppell, *Neue. Wirbe. Fische* : 135.

1951. *Astrosalarias fuscus* : De Beaufort and Chapman, *Fishes of Indo-Australian Archipelago*, **9** : 255, fig. 44.

1968. *Astrosalarias fuscus* : Menon and Talwar, *Rec. zool. Surv. India*, **66**(1&4) : 51.

1989. *Salarias fuscus* : Das and Dev Roy, *A General account of the Mangrove fauna of Andaman and Nicobar Islands* : 138.

2000. *Astrosalarias fuscus* : Rao *et al.*, *Rec. zool. Surv. India Occ. Paer*, **178** : 282.

Diagnostic features : D. XI, 20-21; A. II, 19; P. 16; V. I, 2. Nuchal cirri present; no crest on head; upper lip crenulated, lower lip smooth; lateral line curving down behind

pectoral; dorsal fin unnotched. Head and body dark brown dorsally, lighter ventrally; upper half of pectoral base with dark spot; pectoral and caudal fins light yellow.

Habitat and Biology : Shallow reef areas, creeks and mangroves.

Distribution : Indo-Pacific, from Red Sea, coasts of India, the Andaman Islands, the Philippines to Tonga Islands.

213. *Blenniella bilitonensis* (Bleeker, 1858)

1858. *Salarias bilitonensis* Bleeker, *Nat. Tijdr. Ned. Indiae.*, **15** : 231.

1876. *Salarias bilitonensis* : Day, *Fishes of India* : 334, pl.71, fig.1.

1968. *Istiblennius bilitonensis* : Menon and Talwar, *Rec. zool. Surv. India*, **66**(1&4) : 52.

1994. *Blenniella bilitonensis* : Springer and Williams, *Smithsonian Contr. Zoology*, (565) : 43, fig. 14, 15.

2000. *Blenniella bilitonensis* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 283.

Diagnostic features : D. XIII, 20; A. II, 21; P.14; V. I,3. Crest present on head of males. Nuchal cirri absent; supra-orbital cirrus simple; lips smooth; dorsal fin notched. Body light brown with dark vertical bands on middle of sides; lower side with horizontal white dashes edged with black; upper corner of opercle with blue-black spot; two narrow white dashes behind eye; dorsal with dark wavy lines; pectoral fin with small black spots on middle rays.

Habitat and Biology : Shallow coastal areas, creeks and mangroves.

Distribution : Indo-west Pacific, from the Andaman Islands, Indonesia to Ryukyu Islands.

214. *Istiblennius dussumieri* (Valenciennes, 1831)

1831. *Salarias dussumieri* Valenciennes, *Hist. nat. Poiss.*, **11** : 310.

1876. *Salarias dussumieri* : Day, *Fishes of India* : 333, pl. 70, fig. 7.

1951. *Salarias dussumieri* : De Beaufort and Chapman, *Fishes of Indo-Australian Archipelago*, **9** : 352.

1986. *Istiblennius dussumieri* : Springer, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 748, fig. 235.17.

1989. *Istiblennius dussumieri* : Das and Dev Roy. *A General Account of the Mangrove Fauna of Andaman and Nicobar Islands* : 138.

2000. *Istiblennius dussumieri* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 285.

Diagnostic features : D. XIII, 21; A. II, 20; P. 14; V. I, 3. Males with crest on top of head; cirri on nape absent; nuchal cirri absent; no larger canines. Body with six pairs of dusky bands; margin of soft dorsal and anal fins dusky; dark spots distally between first two dorsal spines.

Habitat and Biology : Shallow coastal areas near creeks and mangroves.

Distribution : Indo-Pacific, from east coast of Africa to Samoa Islands.

Family GOBIIDAE

215. *Acentrogobius bontii* (Bleeker, 1849)

(Fig. 124)

1849. *Gobius bontii* Bleeker, *Verh. Bat. Gen.*, **22** : 27.

1953. *Acentrogobius bontii* : Koumans, *Fishes of Indo-Australian Archipelago*, **10** : 54, fig. 14.

2000. *Acentrogobius bontii* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 296.

Diagnostic features : D.VI, I, 10; A. I, 8; P.18; V.I, 5. Body elongate, head obtuse; profile convex, mouth oblique; lower jaw prominent, lips thick; teeth filiform in many rows, in lower jaw on each side two curved canines; three longitudinal mucus canals on cheek; head naked, scales beginning from above the operculum. Body reddish-green above, lighter below; 5-6 dark spots laterally on posterior part of body; dorsal with dark spots on base; margin of anal fin dark.

Habitat and Biology : Creeks and mangroves. Carnivorous fish.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to the Philippines.

216. *Acentrogobius viridipunctatus* (Valenciennes, 1837)

(Fig. 125)

1837. *Gobius viridipunctatus* Valenciennes, *Hist. nat. Poiss.*, **12** : 62.

1941. *Ctenogobius viridipunctatus* : Herre, *Mem. Indian Mus.*, **13** : 385.

1991. *Acentrogobius viridipunctatus* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, **2** : 926.

2000. *Acentrogobius viridipunctatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 297.

Diagnostic features : D.VI+I,10; A.I,9; P.18-19; V.I,5. Body elongate; head little compressed, mouth oblique; lower jaw prominent; maxilla extend to below middle of eye; teeth filiform in many rows; outer row enlarged, head scaled above behind eyes and on upper part of pre-opercle and opercle; pre-dorsal scales 30. Body dusky, green above, lighter below; laterally with dark spots; half way the flank with longitudinal row of large dark spots; a dark stripe on first dorsal and two longitudinal dark bands on second dorsal fin; caudal fin with black spots.

Habitat and Biology : Shallow coastal waters, creeks and mangroves.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands, Sri Lanka to Japan.

217. *Amblygobius albimaculatus* (Ruppell, 1830)

1830. *Gobius albimaculatus* : Ruppell, *Atlas Reise. N. Afrk. Fische* : 135.

1953. *Amblygobius albimaculatus* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 141.

2000. *Amblygobius albimaculatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 298.

Diagnostic features : D.VI, I,14-15; A.I,13; P.20-21; V.I, 5. Body elongated and compressed, head profile convex; mouth oblique; lips thick, jaws equal, teeth in both jaws in three rows; outer rows enlarged; pre-dorsal scales 25-27; body scales ctenoid, cheek without scales; middle spine of first dorsal distinctly long; second dorsal and anal fins pointed posteriorly; caudal fin rounded. Body light green above, yellowish below; head and nape with violet edged yellow spots; five transverse dark bands on sides of body; a brown spot above pectoral fin base; caudal fin with a black spot on upper base and small black spot at upper and lower sides.

Habitat and Biology : Shallow coastal waters near reefs, creeks and mangroves. Carnivorous fish.

Distribution : Indo-Pacific, from Red Sea, east coast of Africa, Lakshadweep and the Andaman Islands.

218. *Asterropteryx semipunctatus* Ruppell, 1830

1830. *Asterropteryx semipunctatus* Ruppell, *Atlas. Reise. N. Afrika. Fische.*, pl. 34, fig. 4.

1953. *Asterropteryx semipunctatus* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 290.

1993. *Asterropteryx semipunctatus* : Rao *et al.*, *J Andaman Sci. Assoc.*, 9(1&2) : 54.

Diagnostic features : D.VI+I,10; A. I,9; P.17; V.I,5. Head and body compressed, snout blunt; maxilla reaching to below middle of eye; teeth in several rows; outer row enlarged in both jaws; 3-5 spines at the angle of pre-opercle; body scales ctenoid; cheek and operculum with large scales; ventral fins separate; third dorsal spine filamentous; pre-dorsal scales seven; caudal fin rounded. Body brown with dark spots on mid-side; small dark saddles dorsally; anal fin with blue dots.

Habitat and Biology : Shallow coastal waters near reefs, creeks and mangroves.

Distribution : Indo-west Pacific from Red Sea, east coast of Africa, coasts of India, the Andaman Islands to Hawaiian Islands.

219. *Bathygobius fuscus* (Ruppell, 1830)

1830. *Gobius fuscus* Ruppell, *Atlas. Reise. N. Afrk. Fische* : 137.

1953. *Bathygobius fuscus* Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 187.

1968. *Bathygobius fuscus* Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 57.

2000. *Bathygobius fuscus* Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 299.

Diagnostic features : D.VI+I,9; A.I,8; P.17-18; V.I,5. Body elongate, somewhat compressed; lips thick; teeth in several rows; longitudinal rows of mucous canal on cheek; maxilla extend to below posterior part of eye; upper three pectoral rays free from membrane; pre-pelvic region scaled; pre-dorsal scales 14-16; caudal fin obtuse, equal to head length. Body dusky with scattered spots; sides of body with faint blotches, extends ventrally; fins dark with dusky margins.

Habitat and Biology : Creeks and mangroves.

Distribution : Indo-Pacific, from east coast of Africa to Japan and Australia.

220. *Boleophthalmus boddarti* (Pallas, 1770)

1770. *Gobius boddarti* Pallas, *Spicilegia. Zoologica*, 1 : 11, pl. 2, figs. 4,5.

1953. *Boleophthalmus boddarti* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 259.

1989. *Boleophthalmus boddarti* : Murdy, *Rec. Australian Mus.*, Suppl., (11) : 14, pl. 1D, fig. 9,10.

2000. *Boleophthalmus boddarti* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 299, fig. 224.

Diagnostic features : D.VI+I,24-25; A.I,24; P.18; V.I,5. Body elongate, little compressed; maxilla extends to behind eye; base of dorsal and anal fins long; pelvic frenum well developed; teeth in single row on jaws; 4-6 canines in front in upper jaw; caudal fin lanceolate. Body grayish-green dorsally with 6-7 oblique bands; greenish-white ventrally; head and trunk with small white spots; brown spots on head and nape; dorsal fin bluish green with small white spots; pectoral fin with dark margin.

Habitat and Biology : Shallow coastal areas, creeks and mangroves.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to Indonesia and Vietnam.

221. *Callogobius hasseltii* (Bleeker, 1851)

(Fig. 126)

1851. *Eleotris hasseltii* Bleeker, *Nat.Tijdr. Ned. Indie.*, 1 : 253.

1953. *Callogobius hasseltii* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 298.

1968. *Callogobius hasseltii* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 57.

1984. *Callogobius hasseltii* : Akahito, in Masuda et al., *Fishes of Japanese Archipelago* : 264, pl. 246A.

2000. *Callogobius hasseltii* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 300.

Diagnostic features : D.VI+I,10; A.I,8; P.18; V.I,5. Head pointed, profile convex, mouth very oblique; lower jaw prominent, maxilla does not reach eye; head with papillae; snout, cheek and opercle with folds; connecting membrane of ventral fin notched; caudal fin lanceolate, longer than head. Body reddish-green above, lighter

below with three indistinct transverse bands; fins yellow; except caudal all fins with transverse stripes, small black spot may be present on upper part of caudal fin.

Habitat and Biology : Shallow waters of coastal areas and mangroves.

Distribution : Indo-west Pacific, coasts of India, the Andaman Islands to Japan.

222. *Ctenotrypauchen microcephalus* (Bleeker, 1860)

1860. *Trypauchen microcephalus* Bleeker, *Act. Soc. Indo-Neerl.*, 8 : 62.

1953. *Ctenotrypauchen microcephalus* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 282, fig. 71.

2000. *Ctenotrypauchen microcephalus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 386.

Diagnostic features : D.VI, 50; A. I, 44-49; P.17; V.I,5. Body elongate and compressed, covered with cycloid scales; head obtuse; head, nape and belly naked; eye very small, covered by skin; mouth very oblique; lower jaw prominent; teeth in outer row enlarged without canines; no barbels on head; dorsal and anal fins connected with the caudal fin; ventral united but deeply emarginated; basal membrane present. Body red, fins reddish hyaline.

Habitat and Biology : Shallow waters near creeks and mangroves.

Distribution : Indo-west Pacific, from Persian Gulf, coasts of India, the Andaman Islands to the Philippines.

223. *Exyrias puntang* (Bleeker, 1851)

1851. *Gobius puntang* Bleeker, *Nat. Tijd. Ned. Indie.*, 2 : 486.

1876. *Gobius puntang* : Day, *Fishes of India* : 284, pl. 41, fig. 1.

1953. *Acentrogobius puntang* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 66.

1985. *Exyrias puntang* : Murdy, *Indo-Pacific Fishes*, (10) : 10, fig. 1 & 2, pl. 2B.

2000. *Exyrias puntang* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 300.

Diagnostic features : D.VI+I,10; A.I, 9-10; P.17-18; V.I,5. Mouth inferior, teeth small; 4-5 rows in each jaw; pre-dorsal scales 10-12. Body dark brown above, lighter below; small red spots on anterior dorsal part of body and silvery-white spots on posterior part of body. Dorsal fin with alternating purple and yellow stripes; anal fin yellow, blackish medially with two red stripes; dusky spot on pectoral fin; ventral fin blackish.

Habitat and Biology : Found in creeks and mangroves.

Distribution : Indo-west Pacific, from the Andaman Island to Ryukyu Islands, New Guinea to New Caledonia.

224. *Glossogobius biocellatus* (Valenciennes, 1837)

1837. *Gobius biocellatus* Valenciennes, *Hist. nat. Poiss.*, **12** : 73.

1953. *Glossogobius biocellatus* : Koumans, *Fishes of Indo-Australian Archipelago*, **10** : 163.

1986. *Glossogobius biocellatus* : Hoese, In : Smith and Heemstra, *Smith's Sea Fishes* : 789.

2000. *Glossogobius biocellatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 301.

Diagnostic features : D.VI+I, 9; A.I,8; P.18; V.I,5. Snout elongate, tongue bilobed, lower jaw prominent; maxilla extends to below posterior margin of eye; teeth in many rows, in lower jaw the outer and inner rows caninoid and enlarged; outer row strongly curved in front; 3-5 longitudinal mucous canals on cheek; pre-dorsal scales 14-16; dorsal fins separate; caudal fin rounded. Body brownish-black with black spots in longitudinal rows; 2-3 saddles on back and sides; first dorsal with two ocelli, all fins except ventral with spotted rays.

Habitat and Biology : Creeks and mangroves.

Distribution : Indo-Pacific, from east coast of Africa, coasts of India, the Andaman Islands, Sri Lanka to Samoa Islands.

225. *Glossogobius bicirrhosus* (Weber, 1894)

1894. *Gobius bicirrhosus* Weber, *Zool. Ergebnisse.*, **3** : 412.

1953. *Illana bicirrhosus* : Koumans, *Fishes of Indo-Australian Archipelago*, **10** : 128, fig. 29.

2000. *Illana bicirrhosus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 304.

2004. *Illana bicirrhosus* : Rajan and Dam Roy. *A compendium on Mangrove Biodiversity of A & N Islands, CARI, Port Blair* : 131.

Diagnostic features : D.VI+I, 9; A. I, 8; P.18; V. I, 5. Body elongate and slightly compressed; snout blunt; lower jaw prominent; no canines, a pair of barbels on chin; 5-6 longitudinal, two oblique mucous canals on cheek; second ray of the first dorsal longest; caudal fin oblong. Body dark grey dorsally, light ventrally with five dark blotches along sides; dorsal fin with oblique lines and dots; caudal fin with vertical bands.

Habitat and Biology : Around mangrove areas.

Distribution : The Andaman Islands to the Philippines.

226. *Glossogobius giuris* (Hamilton-Buchanan, 1822) (Fig. 127)

1822. *Glossogobius giuris* Hamilton-Buchanan, *Fishes of Ganges* : 50, pl. 33.

1876. *Gobius giuris* : Day, *Fishes of India* 295, pl.67, fig. 1.

1953. *Glossogobius giuris* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 165, fig. 39, 40.

1986. *Glossogobius giuris* : Hoese, In : Smith and Heemstra, *Smiths's Sea Fishes*, : 790, fig. 240.44.

2000. *Glossogobius giuris* : Rao et al., *Rec. zool. Surv.India, Occ. Paper No.*, 178 : 301.

Diagnostic features : D.VI+I, 9; A. I, 8; P.19-20; V.I, 5. Body elongate, anteriorly cylindrical; lower jaw prominent; maxilla extends to below anterior part of eye; lips thick; tongue bilobate; 3-5 longitudinal mucous canals on cheek; dorsal fin close together; pre-dorsal scales 22-26. Body pale with small spots forming longitudinal stripes; first dorsal fin with one black spot; rays of dorsal, pectoral and caudal fins with black spots.

Habitat and Biology : Freshwater bodies, creeks and mangroves.

Distribution : Indo-west Pacific, from east coast of Africa, coasts of India, the Andaman Islands to Japan and Australia.

227. *Istigobius goldmanni* (Bleeker, 1852)
(Fig. 128)

1852. *Gobius goldmanni* Bleeker, *Nat. Tijds. Ned. Indie.*, 3 :167.

1953. *Acentrogobius goldmanni* : Koumans, *Fishes of the Indo-Australian Archipelago*, 10 : 70.

1993. *Istigobius goldmanni* : Rao et al., *J. Andaman Sci. Assoc.*, 9(1&2) : 55.

Diagnostic features : D1.VI, D2. I,10. A.I,9; P.17; V. I,5. Body anteriorly cylindrical; posteriorly compressed; anterior nostrils in a short tube; lips thick; maxillary not reaching to eye. Body pale, lighter below; many dark spots on dorsum; abdomen with dusky bars; a prominent dark line on cheek; a row of blotches basally on first dorsal fin membrane; second dorsal with three rows of dark spots; ventral fin dusky.

Habitat and Biology : Shallow coastal reef areas, creeks and mangroves.

Distribution : Indo-west Pacific, from the Andaman Islands, Philippines to Japan and Australia to Fiji.

228. *Istigobius ornatus* (Ruppell, 1830)
(Fig. 129)

1830. *Gobius ornatus* Ruppell, *Atlas. Reise. Nord. Afrik. Fische. Rothen Meeres.*, p.135.

1876. *Gobius ornatus* : Day, *Fishes of India* : 294, pl. 53, fig. 1.

1953. *Acentrogobius ornatus* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 71.

1985. *Istigobius ornatus* : Murdy and Hoese, *Indo-Pacific Fishes* : (4) : 9, pl. 1A & 3C.

2000. *Istigobius ornatus* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 305.

Diagnostic features : D_1 . VI, D_2 . I,10; A. I,9; P.18-19; V. I, 5. Mouth inferior, maxillary not reaching to eye; cheeks and operculum without scales; no recurved canines in lower jaw; upper 3-4 pectoral rays free; pre-dorsal scales 10-11; body pale grey with three rows of small white dots; center of the body with 7-8 rectangular dark spots; two thin brown longitudinal lines dorsally on body; eight large black spots in a horizontal line ventrally; dorsal and anal fins with dark spots.

Habitat and Biology : Mangroves and sometimes in rubble reef areas.

Distribution : Indo-west Pacific, from Red Sea, Madagascar to coasts of India, the Andaman Islands to Japan, Australia to Solomon Islands.

229. *Mahidolia mystacina* (Valenciennes, 1837)

1837. *Gobius mystacina* : Valenciennes, Hist. nat. Poiss., 12 : 124.

1953. *Waitea mystacina* : Koumans, Fishes of Indo-Australian Archipelago, 10 : 107, fig. 23.

1993. *Mahidolia mystacina* : Kamla et al., Environment and Ecology, 11(4) : 812.

2000. *Mahidolia mystacina* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 305.

Diagnostic features : D_1 .VI, D_2 .I,10; A.I,9; P.16; V.I,5. Head compressed, maxillary reaching beyond eye; no anterior inter-orbital pore; gill opening extending to below end of operculum; no scales on head; breast scaled; pre-dorsal scales eight; posterior rays of soft dorsal and anal prolonged, reaching caudal fin. Body with 6-8 slightly oblique cross bars, head with small blue spots; tip of first dorsal black; pectoral fin dark; anal fin margin with pale band.

Habitat and Biology : Shallow coastal waters near creeks and mangroves.

Distribution : Indo-west Pacific, from east coast of Africa, the Andaman Islands to Japan and Australia.

230. *Oplopomus caninoides* (Bleeker, 1852)

1852. *Gobius caninoides* Bleeker, Nat. Tijds. Ned. Indie. : 274.

1941. *Oplopomus caninoides* : Koumans, Mem. Indian Mus., 13 : 215.

1990. *Oplopomus caninoides* : Mehta and Kamla Devi, J. Andaman Sci. Assoc., 6(1) : 68.

2000. *Oplopomus caninoides* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 306.

Diagnostic features : D_1 .VI, D_2 . I,10; A. I,10; P.17; V.I,5. Body elongate, compressed; head obtused; mouth oblique; lower jaw little prominent; maxillary extend to below anterior part of eye; teeth in upper jaw, outer row enlarged; scales of head,

nape, breast and belly cycloid, other scales ctenoid; pre-opercle with one or two spines. Body reddish-brown with pearl-like spots on lateral sides; dorsal and caudal fins with rows of dark spots.

Habitat and Biology : Shallow sandy coastal areas near creeks and mangroves.

Distribution : Indo-west Pacific, from Persian Gulf, the Andaman Islands to Philippines.

231. *Oplopomus oplopomus* (Valenciennes, 1837)

1837. *Gobius oplopomus* Valenciennes, *Hist. nat. Poiss.*, 12 : 66.

1941. *Oplopomus oplopomus* : Koumans, *Mem. Indian Mus.*, 13 : 214.

1986. *Oplopomus oplopomus* : Hoese, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 796, pl. 124.

2000. *Oplopomus oplopomus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 306.

Diagnostic features : D₁.V, D₂. I,10; A. I,10; P.18-9; V. I,5. Mouth oblique; pre-opercle with two flattened spines; cheek and opercle naked; head scaled little behind eye; nape, breast and belly scaled; first ray of first dorsal pungent, the fourth and fifth rays longest. Body white with a mid-lateral row of 4-5 brownish blotches and a row of smaller blotches along back; several small pale blue and orange spots on head and body; cheek with elongate blue streaks; middle ray of caudal fin with orange streaks.

Habitat and Biology : Shallow sandy coastal areas near creeks and mangroves.

Distribution : Indo-west Pacific, from Persian Gulf, the Andaman Islands to Philippines.

232. *Oxyurichthys papuensis* (Valenciennes, 1837)
(Fig. 130)

1837. *Gobius papuensis* Valenciennes, *Hist. nat. Poiss.*, 12 : 106.

1953. *Oxyurichthys papuensis* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 46, fig. 12.

2000. *Oxyurichthys papuensis* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 307.

Diagnostic features : D.VI+I,12; A. I, 13; P.22-23; V. I, 5. Body very elongate, snout obtuse; mouth oblique, lower jaw prominent; maxilla extends to below middle of eye; breast scaled; pectoral base naked; pre-dorsal scales 18-22; caudal fin lanceolate. Body brown with 7-8 vertical dark brown bars with shiny spots; dorsal and caudal fin reddish with blue streaks; a dark spot on middle of caudal peduncle.

Habitat and Biology : Shallow coastal waters, creeks and mangroves.

Distribution : Indo-west Pacific, from east coast of Africa, to coasts of India, the Andaman Islands to the Philippines and New Guinea.

233. *Oxyurichthys tentacularis* (Valenciennes, 1837)
(Fig. 131)

1837. *Gobius tentacularis* Valenciennes, *Hist. nat. Poiss.*, 12 : 128.

1953. *Oxyurichthys tentacularis* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 44, fig. 11.

1991. *Oxyurichthys tentacularis* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 942.

2000. *Oxyurichthys tentacularis* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 307.

Diagnostic features : D.VI+I, 12; A. I,14; P.18-20; V. I,5. Body very elongate with a pair of ocular tentacles; mouth oblique; lower jaw prominent; maxilla extends to below posterior part of eye; some longitudinal mucous canals on cheek; median line of head and nape naked; caudal fin long and pointed. Body reddish green above, paler below; scales of back and sides with red spots; first dorsal fin spotted with three longitudinal rows of reddish-violet spots; second dorsal with oblong reddish violet spots; pectoral fin orange; ventral and anal fins violet; caudal fin with oblique reddish streaks.

Habitat and Biology : Shallow creeks and mangroves also found around shallow coastal areas.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to the Philippines and Australia to Fiji Islands.

234. *Papillogobius reichei* (Bleeker, 1843)

1843. *Gobius reichei* Bleeker, *Nat. Tijds. Ned. Indie.*, 5 : 509.

1941. *Ctenogobius reichei* : Herre, *Mem. Indian Mus.*, 13 : 385.

1953. *Acentrogobius reichei* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 77.

2000. *Acentrogobius reichei* : Rao et al., *Rec. zool. Sur India, Occ. Paper No.*, 178 : 297.

Diagnostic features : D.VI+I, 8; A.I, 8; P.16; V.I,5. Body elongate; head little depressed; profile convex; mouth oblique; lower jaw prominent; teeth in many rows; outer row enlarged; maxilla extend to below anterior part of eye; scales beginning on head from behind eyes; cheeks and opercle naked; a narrow band of mucous canal running below eye to maxilla; two strong canals longitudinally on cheek and one canal along posterior margin of pre-opercle; pectoral fin shorter than head; caudal fin rounded. Body green above, lighter below; cheek and opercle with violet streaks; a violet stripe from eye over to lip to chin; dusky spots laterally on back; second dorsal, pectoral and caudal fins spotted; dark stripe on lower base of pectoral.

Habitat and Biology : Creeks and mangroves. Carnivorous fish.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to the Philippines and New Hebrides.

**235. *Parachaeturichthys polynema* (Bleeker, 1853)
(Fig. 132)**

1853. *Chaeturichthys polynema* Bleeker, *Verh. Gen.*, **25** : 44, fig. 4.

1878. *Gobius polynema* : Day, *Fishes of India* : 286, pl. 61, fig. 8.

1994. *Parachaeturichthys polynema* : Rao *et al.*, *J Andaman Sci. Assoc.*, **10**(1&2) : 30.

2000. *Parachaeturichthys polynema* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 307.

Diagnostic features : D.VI+I,11; A. I, 10; P.20; V. I,5. Body elongate, head little depressed, profile convex; mouth oblique; lower jaw little prominent; maxilla extends to below middle of eye; opercle and cheek scaled; scales beginning on head between eye; numerous small barbels on ventral side of head; caudal fin longer than head. Body greenish above, lighter below; upper base of caudal fin with large black spot surrounded by yellow; all fins dusky.

Habitat and Biology : Shallow coastal waters, creeks and mangroves.

Distribution : Indo-west Pacific, from east coast of Africa to coasts of India, the Andaman Islands to Japan and North Queens land.

**236. *Periophthalmus argentilineatus* Valenciennes, 1837
(Fig. 133)**

1837. *Periophthalmus argentilineatus* Valenciennes, *Hist. nat. Poiss.*, **12** : 191.

1941. *Periophthalmus dipus* : Koumans, *Mem. Indian Mus.*, **13** : 291.

1953. *Periophthalmus dipus* : Koumans, *Fishes of Indo-Australian Archipelago*, **10** : 212.

2004. *Periophthalmus vulgaris* : Rajan and Dam Roy, *A compendium on Mangrove Biodiversity of A & N Islands, CARI, Port Blair* : 131.

Diagnostic features : D₁.XII-XVI, D₂. 10-13; A.I, 9-12; P.12-14; V.I, 5. Ventral fins lacking frenum; both dorsal fins separated; second dorsal fin slightly higher than anal fin. Body brownish, silvery white ventrally; numerous white spots on head and few on trunk; trunk with narrow silvery bars and 3-4 saddle like blotches postero-dorsally; first dorsal with prominent black infra-marginal band and below with white spots; middle of second dorsal with black spots; caudal with brownish red spots.

Habitat and Biology : Shallow coastal areas near creeks and mangroves. Carnivorous fish.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa to coasts of India, the Andaman Islands to Ryukyu Islands and Australia to Samoa Islands.

237. *Periophthalmus barbarus* (Linnaeus, 1766)
(Fig. 134)

1766. *Gobius barbarus* Linnaeus, *Systema Naturae.*, (ed.12), 1(1) : 450.

1875-78. *Periophthalmus koelreuteri* : Day, *Fishes of India* : 303, pl. 64, fig. 8.

1953. *Periophthalmus koelreuteri* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 207.

2004. *Periophthalmus koelreuteri* : Rajan and Dam Roy, *A compendium on Mangrove Biodiversity of A & N Islands*, CARI, Port Blair : 131.

Diagnostic features : D_1 . X-IV, D_2 .11-14; A. 9-11; P.13; V. I, 5. No frenum uniting pelvic fins, inner rays of ventral fins only unite at the base by narrow membrane; no elongate spines in first dorsal; inter-dorsal space wide. Body blackish brown above, lighter below; first dorsal thin with pale margin; infra-marginally black band with broken white line, rest of the fin grey-brown, second dorsal fin margin brown, below it a dark band present between two white lines; caudal fin sometimes spotted, other fins dusky.

Habitat and Biology : Shallow coastal waters and mangroves.

Distribution : Indo-west Pacific, from Red Sea, coasts of India, the Andaman Islands, Australia to Fiji Island.

238. *Periophthalmus kalolo* Lesson, 1830
(Fig. 135)

1830. *Periophthalmus kalolo* Lesson, *Vog. Coguille. Zool.*, 2 : 146.

2000. *Periophthalmus kalolo* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 308.

Diagnostic features : D_1 . XI-XII, D_2 .12; A.12; P.12-13; V.I, 5. Pelvic frenum vestigial; pelvic fins united by membrane about one and half of their length; first dorsal fin widely separated by second. Body greyish, head with numerous white spots antero-ventrally; trunk with black flecks, light brown saddles dorsally; margin of dorsal white, all fins with dark spots.

Habitat and Biology : Coastal waters near creeks and mangroves. Well adapted for amphibious mode of life.

Distribution : Indo-west Pacific, from east coast of Africa, coasts of India, the Andaman Islands, Sri Lanka to the Philippines and New Guinea to Fiji.

239. *Periophthalmus malaccensis* Eggert, 1935

1935. *Periophthalmus malaccensis* Eggert, Zool. Jahr. Abt. Syst. Oek. Geo. Tiera., 67 : 62, fig. 3 & 4.

1993. *Periophthalmus malaccensis* : Kamla et al., Environment and Ecology, 11(4) : 813.

2000. *Periophthalmus malaccensis* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 309.

Diagnostic features : D₁.IX; D₂.I,10; A.10; P.13-14; V.I,5. Spinous dorsal triangular, its margin feebly convex, first ray prolonged; pectoral fin equal to head length; pelvic frenum prominent; fins united partially by basal membrane. Body dark grey above, lighter below; head with many small white spots; first dorsal margin white, fin with white spots; second dorsal with dark brown stripe and scattered white spots; ventrals with narrow white margin; caudal fin with dusky spots.

Habitat and Biology : Shallow coastal waters and mangroves.

Distribution : Singapore, Indonesia, the Philippines and the Andaman Islands.

240. *Periophthalmus novemradiatus* (Hamilton-Buchanan., 1822)

1822. *Gobius novemradiatus* Hamilton-Buchanan, Fishes of Ganges : 47, pl.2, fig. 14.

1953. *Periophthalmus variables* : Koumans, Fishes of Indo-Australian Archipelago, 10 : 205.

1968. *Periophthalmus variabilis* : Menon and Talwar, Rec. zool. Surv. India, 66(1-4) : 59.

Diagnostic features : D₁.IX-XI; D₂.13-14; A.12-14; P.11; V. I, 5. Pelvic fins with prominent frenum; fins united partially at their base; height of first dorsal moderate, first spine longest. Body greyish-brown above whitish below; head and trunk with numerous dark spots; a thin dark bar directed antero-ventrally from orbit; eight black saddle-like blotches on dorsum; first dorsal with pale margin and black stripe; second dorsal margin pale, infra marginally with black stripes and dusky spots; caudal fin dusky with dark spots.

Habitat and Biology : Rivers, creeks and mangroves.

Distribution : Coasts of India, Burma, Thailand, Malaysia and Philippines.

241. *Periophthalmodon schlosseri* (Pallas, 1770)

1770. *Gobius schlosseri* Pallas, Spicilegia. Zoologica, 8 : 3, pl. 1, fig. 1-4.

1837. *Periophthalmus schlosseri* : Cuvier and Valenciennes., Hist. nat. Poiss., 12 : 192.

1876. *Periophthalmus schlosseri* : Day, Fishes of India : 304, pl. 66, fig. 4.

Diagnostic features : D₁.VI-10, D₂.12-13; A.12-13; P.16-19; V.I, 5. Body elongate, teeth in upper jaw in two rows, outer row 10 to 12 canines in front, inner row 2-4 smaller teeth; pelvic with frenum and completely unite; snout scaly; isthmus without scales; caudal fin obliquely rounded; head and trunk greenish-brown above and silvery below; dark stripe behind eye to shoulder; numerous blue shiny spots on head and body; first dorsal yellowish brown with pale margin; second dorsal light brown with dark longitudinal band in middle; pectoral fin greenish brown with some blue shiny spots; ventral and anal fins hyaline; caudal fin dark.

Habitat and Biology : Shallow coastal waters, creeks and mangroves.

Distribution : Thailand, Malaysia, Singapore, Indonesia, coasts of India, the Andaman Islands to China.

242. *Scartelaos cantoris* (Day, 1871)
(Fig. 136)

1871. *Apocryptus cantoris* Day, *Proc. Zool. Soc., London* : 693.

1870. *Apocryptes cantoris* : Day, *Proc. zool. Soc., London* : 693.

1953. *Apocryptichthys cantoris* : Koumans, *Fishes of Indo-Australian Archipelago*, **10** : 252, fig. 61.

2000. *Scartelaos cantoris* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 310.

Diagnostic features : D₁.V, D₂. I, 26; A. I, 24; P.21; V.I, 5. Interdorsal space wide; second dorsal and anal fins connected by membrane to caudal fin; ventral side of head with fleshy mounds; caudal fin lanceolate. Body pale brown; many small dark spots on nape, cheek, gill cover and pectoral base; anterior part of body with eight narrow pale vertical bars; first dorsal pale except between first and second spine dark; second dorsal with three horizontal brownish black lines basally.

Habitat and Biology : Creeks and mangroves.

Distribution : Indian Ocean; known only from the Andaman Islands.

243. *Stenogobius gymnopomus* (Bleeker, 1853)

1853. *Gobius gymnopomus* Bleeker, *Nat. Tijds. Ned. Indie.*, **4** : 270.

1953. *Stenogobius gymnopomus* : Koumans, *Fishes of Indo-Australian Archipelago*, **10** : 34.

1993. *Stenogobius gymnopomus* : Kamla *et al.*, *Environment and Ecology*, **11**(4) : 814, fig.2.

2000. *Stenogobius gymnopomus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 310.

Diagnostic features : D₁.VI, D₂.I,10; A.I,10; P.15-16; V.I, 5. Body elongate and compressed; snout obtuse; maxilla reaches to below middle of eye; cheek with transverse mucous canals below eye; head, nape and breast naked; predorsal scales 18.

Body light brown, a dark band from eye to behind maxilla, laterally three transverse bands curved backward; brown blotches on head; all fins violet with several rows of dark spots.

Habitat and Biology : Creeks and mangroves.

Distribution : Indian Ocean, from coasts of India, the Andaman Island to Indonesia.

244. *Stigmatogobius sadanundio* (Hamilton-Buchanan, 1822)

1822. *Gobius sadanandio* Hamilton-Buchanan, *Fishes of Ganges* : 52, 366.

1941. *Stigmatogobius sadanandio* : Koumans, *Mem. Indian Mus.*, 13(3) : 261.

1991. *Stigmatogobius sadanandio* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 949, fig. 275.

2000. *Stigmatogobius sadanundio* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 311.

Diagnostic features : D₁.VI; D₂.I, 7 : A.I, 8; P.17; V.I,5. Head sub-cylindrical; mouth oblique; lower jaw prominent; inter-orbital broader than eye diameter; scales large; 8-9 pre-dorsal scales; caudal fin rounded. Body olive-green with black spots in two rows on sides; first dorsal with black blotch between third and sixth spines; soft dorsal, caudal and anal fins with dark spots.

Habitat and Biology : Creeks and mangroves.

Distribution : India, the Andaman Islands, Sri Lanka, Bangladesh, and Indonesia to Philippines.

245. *Taenioides cirratus* (Blyth, 1860)

1860. *Amblyopus cirratus* Blyth, *J. Asiatic Soc., Bengal*, 29 : 147.

1941. *Taenioides cirratus* : Herre, *Mem. Indian Mus.*, 13 : 389.

1953. *Taenioides cirratus* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 270, fig. 67.

2000. *Taenioides cirratus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 311.

Diagnostic features : D.VI, 47; A. I, 43; P.13; V. I,5. Body elongate and sub-cylindrical; a row of three short barbels on each side of chin; teeth strong; a deep notch separated dorsal and anal fins from the caudal fin; pectoral fin short; caudal fin rhomboid. Body colour uniformly grey.

Habitat and Biology : Creeks and mangroves.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to the Philippines.

246. *Taenioides anguillaris* (Linnaeus, 1758)

1758. *Gobius anguillaris* Linnaeus, *Syst. Nat.*, ed. 10 : 264.

1876. *Gobioides caeculus* : Day, *Fishes of India* : 318, pl. 68, fig. 1.

1953. *Taenioides anguillaris* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 273.

2000. *Taenioides anguillaris* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 386.

Diagnostic features : D.VI, 40-47; A. I, 37-44; P. 15; V.I,5. Body elongate and compressed posteriorly; a row of three short barbels on each side below head; outer row of teeth in both jaws are caninoid; dorsal, anal and caudal fins continuous; caudal pointed pectoral short. Body pinkish-grey, centre of caudal fin dark.

Habitat and Biology : Muddy bottom near creeks and mangroves.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to Malay Archipelago and China.

247. *Trypauchen vagina* (Bloch & Schneider, 1801)

1801. *Gobius vagina* Bloch and Schneider, *Syst. Ichth.* : 73.

1953. *Trypauchen vagina* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 277.

2000. *Trypauchen vagina* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 386.

Diagnostic features : D.VI, 40-49; A.I,39-46; P.15-18; V.I,5. Body compressed; eyes very small, covered by skin; mouth oblique, lower jaw prominent; maxilla extends to behind eye; head, nape and breast naked; body covered with cycloid scales; teeth in many rows and pointed; pectoral fin half of head length; caudal fin rounded and equal to head length. Body reddish.

Habitat and Biology : Shallow coastal waters near creeks and mangroves.

Distributing : Indo-west Pacific, from Persian Gulf, coasts of India, the Nicobar Islands to China.

248. *Valenciennesia sexguttata* (Valenciennes, 1837)

1837. *Eleotris sexguttatus* Valenciennes, *Hist. nat. Poiss.* :12.

1953. *Eleotriodes sexguttatus* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 339.

1994. *Eleotriodes sexguttatus* : Rao *et al.*, *J Andaman Sci. Assoc.*, 10(1&2) : 30.

2004. *Valenciennesia sexguttata* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 435, fig. 641.

Diagnostic features : D.VI+I, 12; A. I, 12; P.20; V. I, 5. Body elongate and compressed, snout obtuse; jaws equal; maxilla extends to below middle of eye; teeth in upper jaw in one row and lower jaw in front two rows, laterally in one row; supra-opercular groove distinct; head and median parts of nape naked; first 2-4 dorsal spines elongated; caudal fin obtuse. Body yellowish white, lighter below; 7-9 bluish spots on cheek, opercle and on base of pectoral; all fins yellow; first dorsal fin with small violet spots; tip of third spine black; inner side of mouth black.

Habitat and Biology : Coastal waters, mangroves and creeks.

Distribution : Indo-west Pacific, from Red Sea, coasts of India, the Andaman Islands, Sri Lanka, Indonesia to Samoan Islands.

249. *Yongeichthys criniger* (Valenciennes, 1837)
(Fig. 137)

1837. *Gobius criniger* Valenciennes, *Hist. nat. Poiss.*, 12 : 82.

1953. *Ctenogobius criniger* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 178.

1968. *Ctenogobius criniger* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 57.

2000. *Yongeichthys criniger* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 312.

Diagnostic features : D₁.VI, D₂.I,9; A.I,9; P.18-19. V.I,5. Head naked; no scales on cheek and opercle; anterior nostril in a tube; teeth in lower jaw, on each side a curved canine; first dorsal fin pointed, second and third rays longest; second dorsal much lower than body; pectoral and caudal fins rounded. Body orange green above, lighter below; head and body with irregular large dark spots; a mid lateral row of three blackish spots on sides of body; the last one at the base of caudal fin; dorsal and caudal fins with irregular black spots.

Habitat and Biology : Shallow waters in creeks and mangroves.

Distribution : Indo-west Pacific, from east coast of Africa, coasts of India, the Andaman Islands to Ryukyu Islands, Australia to Samoa Islands.

Family ELEOTRIDIDAE

250. *Bostrichthys sinensis* (Lacepede, 1802)

1802. *Bostrychus sinensis* Lacepede, *Hist. nat. Poiss.*, 5 : 183.

1876. *Bostrichthys sinensis* : Day, *Fishes of India* : 309, pl. 65, fig. 4.

1953. *Bostrichthys sinensis* : Koumans, *Fishes of Indo-Australia Archipelago*, 10 : 286.

1968. *Bostrichthys sinensis* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 54.

2000. *Bostrichthys sinensis* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 291.

Diagnostic features : D.VI+I, 9; A.I, 8; P.16; V.I,5. Body elongate, head depressed, snout pointed; lower jaw little prominent, maxilla reaches to below middle of eye; scales very small; teeth of outer row distinct, inner row small, on vomer conical; caudal fin rounded. Body green above, light yellowish ventrally; sides with oblong spots and violet streaks; dorsal and anal fins with streaks; base of caudal fin with orange ocellus bordered with black; pectoral, ventral and caudal fins with dark streaks.

Habitat and Biology : Creeks and mangrove habitats.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to Ryukyu Islands, south wards Fiji to New Guinea.

251. *Bunaka gyrinoides* (Bleeker, 1853)

1853. *Eleotris gyrinoides* Bleeker, *Nat. Tijdr. Ned. Indie.*, 4 : 272.

1876. *Eleotris canarensis* : Day, *Fishes of India* : 313, pl. 69, fig. 2.

1953. *Bunaka gyrinoides* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 350.

1968. *Bunaka gyrinoides* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 54.

Diagnostic features : D.VI+I, 8; A.I, 8; P.18-19; V.I,5. Body anteriorly cylindrical; posteriorly compressed; head pointed, profile above the eyes slightly concave; 2-3 mucous canals on cheek; teeth small and equal in size; scales of body ctenoid, those on head, nape and breast cycloid; pre-dorsal scales 40; cheek and opercle scaled; snout naked; second dorsal and anal fins slightly higher than first dorsal fin; base of pectoral fin scaled. Body dark green above orange-green below; each scale with a black spot, forming longitudinal stripes; fins orange, rays spotted with black forming bands; base of pectoral black.

Habitat and Biology : Rivers, estuaries, creeks and mangroves.

Distribution : Sumatra, Java, coasts of India, the Andaman Islands, Sri Lanka, the Philippines to Australia.

252. *Butis butis* (Hamilton-Buchanan, 1822) (Fig. 138)

1822. *Cheilodipterus butis* Hamilton-Buchanan, *Fishes of Ganges* : 57,367.

1876. *Eleotris amboinensis* : Day, *Fishes of India* : 316.

1953. *Butis butis* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 306, fig. 76.

2000. *Butis butis* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 291.

Diagnostic features : D.VI+I, 8; A. I, 8; P.18-20; V. I,5. Body elongate, slightly compressed; head pointed and depressed, profile concave; lower jaw prominent;

maxilla extend to below anterior margin of eye; teeth in many rows; outer rows in both jaws enlarged; 2-3 pores on posterior margin of pre-opercle; body scaly; ctenoid scales between eye and orbital crest; pre-dorsal scales 22-24; caudal fin obtuse. Body dark, head and body with reddish spots, first dorsal black with red tip; other fins dusky; base of pectoral with black spot.

Habitat and Biology : Mangroves and coastal waters.

Distribution : Indo-west Pacific, from east coast of Africa to Sri Lanka, the Andaman Islands to Australia.

253. *Butis gymnopomus* (Bleeker, 1853)

1853. *Eleotris gymnopomus* Bleeker, *Nat. Tijds. Ned. Indie.*, 4 : 274.

1941. *Butis gymnopomus* : Koumans, *Mem. Indian Mus.*, 13 : 315.

1953. *Butis gymnopomus* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 311.

1968. *Butis gymnopomus* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 53.

Diagnostic features : D.VI+I, 8; A.I,8; P.17; V.I,5. Body elongate, head pointed; teeth small, pointed, in many rows, inner and outer rows enlarged; number of mucous canals radiating under eye, one indistinct longitudinal canal on cheek; 2-3 open pores on posterior margin of pre-opercle; an open pore on each side in inter-orbital, some pores along each orbital crest; scales on breast and belly cycloid, nape and sides on body ctenoid; pre-dorsal scales 14; snout, inter-orbital and cheek naked; opercle and head above behind eye scaly; no scales between eye and orbital crest; in male last ray of second dorsal fin prolonged. Body dusky green above, lighter to orange below; 7-8 longitudinal stripes and small spots on sides; pectoral fin orange with dark spot on base, dorsal, ventral and anal dusky with red margin; caudal dusky with dark spots and red margin.

Habitat and Biology : Rivers, estuaries, creeks and mangroves.

Distribution : Singapore, Sumatra, Java, New Guinea, India and the Andaman Islands to Solomon Islands.

254. *Eleotris fusca* (Schneider, 1801) (Fig. 139)

1801. *Poecilia fusca* Schneider, in Bloch and Schneider, *Syst. Ichth.* : 543.

1878. *Eleotris fusca* : Day, *Fishes of India* : 313, pl.65, fig. 7.

1953. *Eleotris fusca* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 294.

1991. *Eleotris fusca* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 975.

2000. *Eleotris fusca* : Rao et al., Rec. zool. Surv. India, Occ. Paper No., 178 : 292.

Diagnostic features : D.VI+I, 8; A.I, 8; P.18; V.I, 5. Body elongate and compressed; mouth oblique; maxilla extend to below middle of eye; teeth villiform; 8-11 rows of transverse papillae along lower margin of pre-opercle; scales of body ctenoid posteriorly and cycloid anteriorly; head scaled above between and behind eye, on cheeks and opercles; snout and below eye naked; pre-dorsal scales about 50; caudal fin rounded. Head, body and fins dark brown; numerous dark horizontal lines on body.

Habitat and Biology : Creeks and mangroves.

Distribution : Indo-west Pacific, from east coast of Africa to Ryukyu Islands.

255. *Eleotris lutea* Day, 1876

1876. *Eleotris lutea* Day, *Fishes of India* : 314.

1991. *Eleotris lutea* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 976.

Diagnostic features : D.VI+I, 8; A.I, 8-9; P.15; V.I, 5. Body elongate, slightly compressed; mouth oblique, maxilla extend to below middle of eye; teeth villiform; scales small, on body ctenoid, head, breast and belly cycloid; pre-dorsal scales 23-24. Greyish in colour with dark vertical bands on posterior part of body; many dark spots on head, dorsal and anal fins with bands of dark spots; caudal dark and reticulated.

Habitat and Biology : Estuaries, creeks and mangroves.

Distribution : India, the Andaman Islands and Burma.

256. *Ophieleotris aporos* (Bleeker, 1854) (Fig. 140)

1854. *Eleotris aporos* Bleeker, *Nat. Tijds. Ned. Indie.*, 6 : 59.

1953. *Ophiocara aporos* : Koumans, *Fishes of Indo-Australian Archipelago*, 10 : 346, fig. 84.

1968. *Ophiocara aporos* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 55.

Diagnostic features : D. VI+I, 9; A.I, 9; P.14; V.I, 5. Body elongates, slightly compressed; mouth oblique, teeth in villiform bands; body scales ctenoid posteriorly, cycloid anteriorly, head totally scaled; pre-dorsal scales 14-16. Body dark brown, pale ventrally; two dark lines from eye to lower part of opercle; a dark longitudinal line on opercle, a dark line at pectoral base ending with a transverse oblong patch at base of rays; caudal fin with elongated spots.

Habitat and Biology : Freshwaters, shallow coastal areas and mangroves.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to the Philippines and Australia to Fiji.

257. *Ophiocara porocephala* (Valenciennes, 1837)
(Fig. 141)

1837. *Eleotris porocephala* Valenciennes, *Hist. nat. Poiss.*, **12** : 237.

1876. *Eleotris littoralis* : Day, *Fishes of India* : 314.

1876. *Eleotris ophioccephalus* : Day, *Fishes of India* : 312, pl. 67, fig. 2.

2000. *Ophiocara porocephala* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 294.

Diagnostic features : D.VI+I,9; A.I,9; P.12; V.I,5. Pre-dorsal scales 18-24. Body elongated, somewhat compressed; mouth oblique, teeth in villiform bands; head scaled. Head and body dark; second dorsal and caudal fins spotted.

Habitat and Biology : Freshwaters, creeks and mangroves,

Distribution : Indo-west Pacific, from east coast of Africa to Australia and south Pacific.

258. *Prionobutis koilomatodon* (Bleeker, 1849)

1849. *Eleotris koilomatodon* Bleeker, *Verh. Bat. Gen.*, **22** : 21.

1878. *Eleotris caperata* : Day, *Fishes of India* : 315.

1941. *Prionobutis koilomatodon* : Herre, *Mem. Indian Mus.*, **13** : 384.

1953. *Prionobutis koilomatodon* : Koumans, *Fishes of Indo-Australian Archipelago*, **10** : 313.

Diagnostic features : DVI+I,8; A.I,8; P.20-21; V.I,5. Body anteriorly cylindrical; posteriorly compressed; inter-orbital less than one in eye diameter; orbital crest denticulated; denticulated crests on each side of snout; lower jaw prominent; maxilla extend to below posterior part of eye; 2-3 pores on posterior margin of pre-opercle; head without papillae; pre-dorsal scales 12-14; caudal fin oblong, equal to head length. Dusky green above, lighter below; scales on body with red spots; tip of first dorsal dusky; posterior margin pink; pectoral fin orange red with black base, bordered with red; dorsal and anal fins spotted; anal and caudal fin margin red.

Habitat and Biology : Creeks and mangroves.

Distribution : Singapore, Java, Celebes Islands, coasts of India, the Andaman Islands, to China and the Philippines.

Family KRAEMERIIDAE

259. *Kraemicus smithi* Menon & Talwar, 1972

1972. *Kraemicus smithi* Menon and Talwar, *Rec. zool. Surv. India*, **66** (1-4) : 55, fig. 1.

1989. *Kraemicus smithi* : Das and Dev Roy, *Mangrove Fauna of Andaman and Nicobar Islands* : 139.

1991. *Kraemicus smithi* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, **2** : 989.

Diagnostic features : D₁.V, D₂.I,7; A.I,12; P. I,5; V. I,4. Body fairly elongate and moderately compressed; eyes large, mouth moderate; teeth minute and sharp, one row in upper jaw and two rows in lower jaw; caudal fin truncate. Body light brown, eyes black; fins with pigmented spots.

Habitat and Biology : Creeks and mangroves.

Distribution : India : Nicobar Islands.

Family ACANTHURIDAE

260. *Acanthurus mata* (Cuvier, 1829)
(Fig. 142)

1829. *Chaetodon mata* Cuvier, in Cuv. and Val., *Hist. nat. Poiss.*, **22** : 224.

1986. *Acanthurus mata* : Randall, *In* : Smith and Heemstra, *Smith's Sea Fishes* : 814.

2003. *Acanthurus mata* : Kamla Devi and Rao, *Field Guide to Fishes of Acanthuridae and Siganidae of Andaman and Nicobar Islands* : 8, fig.6.

2004. *Acanthurus mata* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 444, fig. 649.

Diagnostic features : D. IX, 24-26; A. III, 23-24; P.16-17. Body elongate and slightly deep; dorsal profile of head gradually sloping to snout; mouth small; caudal fin lunate. Dark brown with narrow longitudinal blue lines on head and body; a yellow area behind eye; two yellow bands radiating anteriorly from eye. Capable of change its colour to overall pale blue.

Habitat and Biology : Turbid waters near reefs, creeks and mangroves.

Distribution : Widespread in Indo-Pacific region.

261. *Acanthurus triostegus* (Linnaeus, 1758)
(Fig. 143)

1758. *Chaetodon triostegus* Linnaeus, *Syst. Nat.*, (ed.10) : 274.

1876. *Acanthurus triostegus* : Day, *Fishes of India* : 204, pl. 48, fig. 2.
1951. *Acanthurus triostegus* : De Beaufort and Chapman, *Fishes of Indo-Australian Archipelago*, 9 : 144.
1986. *Acanthurus triostegus* : Randall, In : Smith and Heemstra, *Smith's Sea Fishes* : 816, pl. 127.
2000. *Acanthurus triostegus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 314, fig. 227.
2003. *Acanthurus triostegus* : Kamla Devi and Rao, *Field Guide to Fishes of Acanthuridae and Siganidae of Andaman and Nicobar Islands* : 10, fig.12.

Diagnostic features : D.IX, 22-24; A. III, 20-22; P.14-16; V. I, 5. Body ovate, mouth small, teeth spatulate, close-set, with denticulate edge; caudal peduncular spine small; caudal fin emarginated. Light greenish-grey with six narrow black bars on head and body,

Habitat and Biology : Coastal waters near reefs, creeks and mangroves. Herbivorous fish some times found in large aggregations and feeds on algae.

Distribution : Indo-Pacific, from east coast of Africa to the Andaman Islands and to Philippines, Australia to Hawaiian Islands.

262. *Acanthurus xanthopterus* Valenciennes, 1835 (Fig. 144)

1835. *Acanthurus xanthopterus* Valenciennes, *Hist. nat. Poiss.*, 10 : 215.
1986. *Acanthurus xanthopterus* : Randall, In : Smith and Heemstra, *Smith's Sea Fishes* : 816.
2000. *Acanthurus xanthopterus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 315, fig. 228.
2003. *Acanthurus xanthopterus* : Kamla Devi and Rao, *Field Guide to Fishes of Acanthuridae and Siganidae of Andaman and Nicobar Islands* : 10, fig. 13.

Diagnostic features : D.IX, 25-26; A.III, 23-24; P.16; V. I,5. Body compressed; mouth small; teeth 12-18 in upper jaw, 14-21 in lower jaw; caudal fin lunate; caudal peduncular spine small. Body blue-grey with irregular dark-grey lines; a dull yellow area behind and in front of eye; caudal fin bluish grey; dorsal and anal fins with alternate yellow and blue stripes; outer third of pectoral yellow.

Habitat and Biology : Found in shallow sandy coastal areas, lagoons and mangroves.

Distribution : Indo-Pacific, from east coast of Africa to Andaman Islands, Sri Lanka to Philippines and to Japan.

Family SIGANIDAE

263. *Siganus canaliculatus* (Park, 1797)
(Fig. 145)

1797. *Chaetodon canaliculatus* Park, *Linn. Trans*, 3 : 33.

1876. *Teuthis oramin* : Day, *Fishes of India* : 168, pl. 40, fig. 6.

1951. *Siganus oramin* : De Beaufort and Chapman, *Fishes of Indo-Australian Archipelago*, 9 : 107.

1990. *Siganus canaliculatus* : Woodland, *Indo-Pacific Fishes*, (19) : 51, pl. 3B.

2003. *Siganus canaliculatus* : Kamla Devi and Rao, *Field Guide to the Fishes of Acanthuridae and Siganidae of Andaman and Nicobar Islands* : 19, fig. 25.

2004. *Siganus canaliculatus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 457, fig. 669.

Diagnostic features : D. XIII, 10; A.VII, 9; P.16; V.II, 3. Body elongate; spines slender and pungent; caudal fin emarginated in juveniles, forked in adults; mid-line of thorax between pelvic ridges scaleless; few embedded scales on lower third of cheek. Body silver-grey above, silvery below; nape and upper surface of head olive-green; head and body with pearly white round or oval spots, some are elongate; a black patch below origin of lateral line; soft dorsal and anal fins slightly dusky.

Habitat and Biology : Shallow coastal waters, creeks and mangroves.

Distribution : Indo-west Pacific, from Persian Gulf, Pakistan, coasts of India, the Andaman and Nicobar Islands, Sri Lanka to South China and Australia.

264. *Siganus guttatus* (Bloch, 1787)
(Fig. 146)

1787. *Chaetodon guttatus* Bloch, *Ausland Fische.*, 3 : 35.

1876. *Teuthis concatenata* : Day, *Fishes of India* : 167, pl. 40, fig. 4.

1951. *Siganus guttatus* : De Beaufort and Chapman, *Fishes of Indo-Australian Archipelago*, 9 : 123.

1990. *Siganus guttatus* : Woodland, *Indo-Pacific Fishes*, (19) : 93.

2003. *Siganus guttatus* : Kamla Devi and Rao, *Field Guide to the Fishes of Acanthuridae and Siganidae of Andaman and Nicobar Islands* : 20, fig. 28.

Diagnostic features : D. XIII,10; A.VII, 9; P.16; V.II, 3. Spines stout and pungent; caudal fin emarginated in juvenile and forked in adults; cheeks completely covered with strong scales; mid-line of thorax scaled, pelvic ridges scaleless. Body dusky blue above, silvery below with large round golden yellow spots on body except on thorax and belly; a bright yellow spot adjacent to last dorsal fin rays; a pattern of alternating blue and yellow lines radiating from mouth to opercular margin.

Habitat and Biology : Shallow coastal waters near reefs, creeks and mangroves.

Distribution : Indo-west Pacific, from the Andaman Islands to Japan.

265. *Siganus javus* (Linnaeus, 1766)
(Fig. 147)

1766. *Teuthis javus* Linnaeus, *Syst. Nat.*, (ed.12) : 507.

1951. *Siganus javus* : De Beaufort and Chapman, *Fishes of Indo-Australian Archipelago*, 9 : 111.

1990. *Siganus javus* : Woodland, *Indo-Pacific Fishes*, (19) : 67, pl. 4C.

2000. *Siganus javus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 319.

2003. *Siganus javus* : Kamla Devi and Rao, *Field Guide to the Fishes of Acanthuridae and Siganidae of Andaman and Nicobar Islands* : 21, fig.29.

Diagnostic features : D. XIII,10; A.VII, 9; P.17-18; V.II,3. Body deep and ovate; spines slender and pungent; anal spines stout; caudal fin emarginated; cheeks covered with scales; mid-line of thorax scaled; pelvic ridges scaleless. Body bluish-white above, light below on belly and thorax; upper half of body, head and nape with numerous blue spots; ventral part of body with narrow irregular bluish-grey wavy stripes form a reticulum; cheeks golden yellow with small blue spots; dorsal and anal fins yellow; caudal fin dusky with a large dark patch in center.

Habitat and Biology : Shallow coastal areas near reefs, creeks and mangroves.

Distribution : Indo-west Pacific, from Red Sea through coasts of India, the Andaman Islands to Sri Lanka and to South China Sea.

266. *Siganus spinus* (Linnaeus, 1758)
(Fig. 148)

1758. *Sparus spinus* Linnaeus, *Syst. Nat.* (ed.10) : 281.

1951. *Siganus spinus* : De Beaufort and Chapman, *Fishes of Indo-Australian Archipelago*, 9 : 104.

1990. *Siganus spinus* : Woodland, *Indo-Pacific Fishes*, (19) : 34, pl. 2A.

2000. *Siganus spinus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 319, fig. 230.

2003. *Siganus spinus* : Kamla Devi and Rao, *Field Guide to the Fishes of Acanthuridae and Siganidae of Andaman and Nicobar Islands* : 22, fig. 31.

Diagnostic features : D.XIII,10; A.VII, 9; P.17; V.II,3. Body moderately elongate, spines stout; anal spines robust and pungent; caudal fin truncate; cheeks with fine scales; lower two-third of pre-opercular region with densely packed scales; mid-line of thorax and pelvic ridges scaleless. Colour whitish with labyrinth of narrow brown bands on head and body; fins mottled with dark brown.

Habitat and Biology : Outer reef areas near creeks and mangroves.

Distribution : Indo-west Pacific, from coasts of India to Japan and Australia to Society Islands.

267. *Siganus stellatus* (Forsskal, 1775)
(Fig. 149)

1775. *Sparus stellatus* Forsskal, *Descript Animal* : 26.

1990. *Siganus stellatus* : Woodland, *Indo-Pacific Fishes*, (19) : 78, pl. 4A,B.

2000. *Siganus stellatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 320, fig. 231.

2003. *Siganus stellatus* : Kamla Devi and Rao, *Field Guide to the fishes of Acanthuridae and Siganidae of Andaman and Nicobar Islands* : 22, fig. 32.

Diagnostic features : D.XIII, 10; A.VII, 9; P.16-17; V.II,3. Spines stout but not pungent; caudal fin forked, its lobe rounded at tips, but upper lobe sometimes pointed; cheeks covered with scales; mid-line of thorax scaly, pelvic ridges scaleless. Body yellowish green with chocolate brown spots on head and body, extending onto caudal fin and soft dorsal and anal fins; a dark patch above the gill opening; dorsal, anal and caudal fins pale yellow.

Habitat and Biology : Juveniles found in schools in creeks and mangroves, adults live in pair in reef areas.

Distribution : Indo-west Pacific, from east coast of Africa to Indonesia and Thailand.

268. *Siganus vermiculatus* (Valenciennes, 1835)
(Fig. 150)

1835. *Amphacanthus vermiculatus* Valenciennes, *Hist. nat. Poiss.* : 126.

1951. *Siganus vermiculatus* : De Beaufort and Chapman, *Fishes of Indo-Australian Archipelago*, **9** :121.

1990. *Siganus vermiculatus* : Woodland, *Indo-Pacific Fishes*, (19) : 98, pl.8A.

2000. *Siganus vermiculatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 320, fig. 232.

2003. *Siganus vermiculatus* : Kamla Devi and Rao, *Field Guide to the fishes of Acanthuridae and Siganidae of Andaman and Nicobar Islands* : 22, fig. 33.

Diagnostic features : D.XIII, 10; A.VII, 9; P.16; V. II, 3. Body deep and ovate; dorsal profile of snout steep; spines stout; caudal fin emarginated; cheeks with strong scales, thorax scaly, pelvic ridges scaleless. Body bluish-white with irregular vermiculate dark brown bands, ventral part with brown spots; a row of brown spots above base of soft dorsal and anal fins; dorsal and anal fins dusky, iris golden-yellow.

Habitat and Biology : Around shallow turbid coastal waters and mangrove areas.

Distribution : Indo-west Pacific, from coasts of India, the Andaman Islands to Philippines and Australia to Fiji Islands.

Family TRICHURIDEA

269. *Lepturacanthus savala* (Cuvier, 1829)

1829. *Trichiurus savala* Cuvier, *Regne. Animal*, 2 : 219.

1951. *Trichiurus savala* : De Beaufort and Chapman, *Fishes of Indo-Australian Archipelago*, 9 : 93.

1967. *Lepturacanthus savala* : James, *Mem. Mar. biol. Assoc. India*, (1) : 24, fig. 3D.

1984. *Lepturacanthus savala* : Talwar and Kacker, *Commercial Sea Fishes of India* : 786, fig. 319.

2000. *Lepturacanthus savala* : Rao *et al.*, *Rec. zool. Surv. India Occ. Paper No.*, 178 : 321.

Diagnostic features : Body extremely elongate and compressed, ribbon-like; mouth large, lower jaw projecting; teeth strong, fang-like in front of upper jaw; eight gill rakers on lower arm of first arch; anal fin reduced to a separate spines; ventral and caudal fin absent; post anal scute prominent and dagger-like. Body steel-blue with metallic reflections.

Habitat and Biology : Outer reef areas, creeks and mangroves.

Distribution : Indo-west Pacific, from coasts of India to Japan and Australia.

Order PLEURONECTIFORMES

Family PSETTODIDAE

270. *Psettodes erumei* (Bloch & Schneider, 1801) (Fig. 151)

1801. *Pleuronectis erumei* Bloch and Schneiderr, *Syst. Ichth.* : 150.

1941. *Psettodes erumei* : Herre, *Mem. Indian Mus.*, 13 : 390.

1986. *Psettodes erumei* : Heemstra, In : Smith and Heemstra, *Smith's Sea Fishes* : 853, fig. 257.

2000. *Psettodes erumei* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 328.

2004. *Psettodes erumei* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 472, fig. 90.

Diagnostic features : D.50-56; A.34-37; P.16; V.I, 6. Body flat and oval; upper eye close to dorsal edge of body; jaws with large canines in two rows; gill rakers absent; lateral line developed on both sides of body; dorsal fin origin well behind eye. Body brown with four dark bands.

Habitat and Biology : Sandy as well as muddy coastal areas of creeks and mangroves. Feeds on bottom living animals.

Distribution : Indo-west Pacific, from east coast of Africa, Red Sea to coasts of India, the Andaman Islands to Japan.

Family BOTHIDAE

271. *Bothus pantherinus* (Ruppell, 1830)

1830. *Rhombus pantherinus* Ruppell, *Atlas. Reise. Nordl. Afrika, Fische. Rothen Meeres* : 121.

1877. *Platophrys pantherinus* : Day, *Fishes of India* : 425, pl. 92, fig. 3 & 4.

1982. *Bothus pantherinus* : Munro, *The Marine and Freshwater Fishes of Ceylon* : 261, pl. 50, fig. 755.

1986. *Bothus pantherinus* : Hensley, In : Smith and Heemstra, *Smith's Sea Fishes* : 856, fig. 259.5.

2000. *Bothus pantherinus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 329, fig. 234.

2004. *Bothus pantherinus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 473, fig. 691.

Diagnostic features : D.86-92; A.67-71, P.9-10; V.37-38. Each eye with 1-3 tentacles in both sexes. Male with elongate pectoral on eyed side; inter-orbital wide; spines on snout and edge of eye. Colour on eye side brownish with numerous dark spots, blotches and rings extending onto the fins; a distinct dark blotch on middle of lateral line.

Habitat and Biology : Sandy and muddy bottoms near reefs and mangroves.

Distribution : Indo-Pacific, from east Africa to Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka, Indonesia to Japan, southwards Australia to Hawaiian Islands.

272. *Pseudorhombus arsius* (Hamilton-Buchanan, 1822)

1822. *Pleuronectes arsius* Hamilton-Buchanan., *Fishes of Ganges* : 128.

1877. *Pseudorhombus arsius* : Day, *Fishes of India* : 423, pl. 91, fig. 5.

1929. *Pseudorhombus arsius* : Weber and De Beaufort, *Fishes of Indo-Australian Archipelago*, 5 : 105.

1991. *Pseudorhombus arsius* : Talwar and Jhingran, *Inland Fishes of India and Adjacent Countries*, 2 : 1039.

2000. *Pseudorhombus arsius* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 329.

Diagnostic features : D.74-76; A.56-61; P.11-12. Body oval and flat; maxilla extend to below rear half of lower eye; first dorsal ray inserted over anterior nostril; gill-rakers on lower arm of first arch 10-12; scales ctenoid on eye side, cycloid on blind side. Body brown with numerous dark spots and rings on eye side; a large dark spot at the junction of straight and curved parts of lateral lines and two smaller ones on posterior part of body; median fins with scattered dark spots.

Habitat and Biology : Shallow coastal areas, creeks and mangrove areas.

Distribution : Indo-west Pacific, from east coast of Africa, coasts of India, the Andaman Islands to Indonesia, the Philippines to Ryukyu Islands and from Marianus to Marshall Islands.

273. *Pseudorhombus elevatus* Ogilby, 1912

1912. *Pseudorhombus elevatus* Ogilby, *Mem. Queensland*, 1 : 45.

1984. *Pseudorhombus elevatus* : Talwar and Kacker, *Commercial Sea Fishes of India* : 853, fig. 351.

1986. *Pseudorhombus elevatus* : Hensley, In : Smith and Heemstra, *Smith's Sea Fishes* : 862, fig. 259.18.

2000. *Pseudorhombus elevatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 329.

Diagnostic features : D.69; A.55; P.10-11; V. I, 5. Origin of dorsal fin just above the anterior nostril of blind side; maxilla extend to rear half of lower eye; scales on eye side ctenoid, blind side cycloid except those on dorsal and anal rays; gill rakers on lower arm of first arch 16-18; teeth in both jaws mostly small and closely sets. Body pale brown with faint blotches arranged in five longitudinal rows; large dark blotch at the junction of straight and curved parts of lateral line and two smaller ones on posterior part of lateral line; median fins with small dark spots.

Habitat and Biology : Sandy and muddy bottoms of coastal areas and also near creeks and mangroves.

Distribution : Indo-west Pacific, from east coast of Africa to coasts of India, the Andaman Islands to Australia.

Family CYNOGLOSSIDAE

274. *Cynoglossus arel* (Schneider, 1801)

1801. *Pleuronectes arel* Schneider, *Syst. Ichth. Bloch* : 159.

1877. *Cynoglossus macrolepidotus* (Bleeker) : Day, *Fishes of India* : 434, pl. 96, fig. 3.

1941. *Cynoglossus macrolepidotus* : Herre, *Mem. Indian Mus.*, 13 : 392.

1984. *Cynoglossus arel* : Talwar and Kacker, *Commercial Sea Fishes of India* : 873, fig. 359.

Diagnostic features : D.117-122; A. 88-94; C.10. Body flat and elongate, dorsal and anal fins confluent with caudal fin; both the eyes on left side of body, two lateral lines on eyed side, none on blind side; scales ctenoid on eyed side and cycloid on blind side. Body uniform brown towards ocular side, with a dark patch on gill cover, blind side white.

Habitat and Biology : Sandy and muddy bottoms of continental shelf, creeks and mangroves. Feeds on bottom living invertebrates, mostly worms.

Distribution : Persian Gulf through Seas of India, the Andaman Islands, East Indies to Philippines and Taiwan.

Order TETRAODONTIFORMES

Family TRIACANTHIDAE

275. *Pseudotriacanthus strigilifer* (Cantor, 1850) (Fig. 152)

1850. *Triacanthus strigilifer* Cantor, *J Asiatic Soc., Bengal*, **18**(2) : 1345.

1962. *Pseudotriacanthus strigilifer* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, **11** : 276, fig. 73.

2000. *Pseudotriacanthus strigilifer* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 335.

2003. *Pseudotriacanthus strigilifer* : Kamla Devi and Rao, *Rec. zool. Surv. India Occ. Paper*, (211) : 47, fig. 48.

Diagnostic features : D. V+I, 22; A.17; P.13; V. I. Body compressed, snout elongate; first dorsal spine strong and longer than head; ventral with one strong long spine; caudal peduncle tapering to base of caudal; caudal fin forked. Body silvery brown above, lighter below; yellowish blotch on the dorso-lateral side of body; fins light yellow, edge of first and second dorsal spines and membrane dusky.

Habitat and Biology : Shallow coastal waters near reefs, creeks and mangroves.

Distribution : Indo-west Pacific, from Persian Gulf, coasts of India, the Andaman Islands to China and Philippines.

276. *Triacanthus biaculeatus* (Bloch, 1786)

1786. *Balistes biaculeatus* Bloch, *Nat. ausland Fische.*, **2** : 19, pl. 148.

1878. *Triacanthus brevirostris* : Day, *Fishes of India* : 685, pl. 75, fig. 1.

1982. *Triacanthus biaculeatus* : Munro, *Marine and Freshwater Fishes of Ceylon* : 272, pl. 54, fig. 796.

2000. *Triacanthus biaculeatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 334.

2002. *Triacanthus biaculeatus* : Ramaiyan *et al.*, *Finfish resources of Pitchavaram Mangrove Ecosystem* : 79, pl. 8d.

Diagnostic features : D.V+23; A.21; P.14; V.I. Body oblong and compressed; snout concave; first dorsal spine strong and much longer than second spine; narrow pelvis between ventrals; caudal peduncle depressed. Body silvery brown on snout and back, white below; membrane between first and second dorsal spines black; dorsal, anal and pectoral fins light yellow; caudal fin yellowish orange.

Habitat and Biology : Shallow coastal waters, near creeks and mangroves. Feed on benthic invertebrates.

Distribution : Indo-west Pacific, from Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka to Japan and Australia.

Family OSTRACIIDAE

277. *Lactoria cornuta* (Linnaeus, 1758) (Fig. 153)

1758. *Ostracion cornutus* Linnaeus, *Syst. Nat.*, (ed.10) : 331.

2002. *Lactoria cornuta* : Ramaiyan *et al.*, *Finfish resources of Pitchavaram Mangrove Ecosystem* : 80, pl. 8e.

2000. *Lactoria cornuta* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 343, fig. 241, 242.

2003. *Lactoria cornuta* : Kamla Devi and Rao, *Rec. zool. Surv. India, Occ. Paper No.*, (211) : 58, fig. 64.

Diagnostic features : D. 9; A. 9; P.10; C.9-10. Head and body encased in a four ridged carapace formed by large hexagonal plates with a feeble spine on middle of back; sides of body concave, ventral surface somewhat rounded; profile of snout almost vertical; lateral and pelvic ridges rounded; frontal spine horn-like, long and slender, directed forward; pelvic ridge terminating posteriorly in a backwardly directed spine. Body yellowish brown, with rounded bluish spots except on ventral side; all fins light yellow; caudal fin with small scattered bluish spots.

Habitat and Biology : Weedy areas near reefs, creeks and mangroves.

Distribution : Indo-Pacific, from east coast of Africa to Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka to Japan and Australia to Hawaiian Islands.

278. *Tetrosomus gibbosus* (Linnaeus, 1758)

1758. *Ostracion gibbosus* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 332.

1962. *Ostrocion gibbosus* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, 11 : 347.

1986. *Tetrosomus gibbosus* : Smith and Heemstra, *Smith's Sea Fishes* : 893, fig. 266. 10.

2002. *Tetrosomus gibbosus* : Ramaiyan *et al.*, *Fin fish Resources of Pitchavaram Mangrove Ecosystem* : 81, pl. 8f.

Diagnostic features : D.9; A.9-10; P.10-11; C.10. Body covered with bony shell except fins and caudal peduncle; dorsal ridge with large spine, four spines along pelvic ridges. Body light brown, each bony plate with a central dark spots; all fins yellowish.

Habitat and Biology : Shallow coastal waters near reefs, creeks and mangroves. Feeds on coral polyps, crustaceans and small fishes.

Distribution : Indian Ocean and South China Sea.

Family TETRAODONTIDAE

279. *Arothron hispidus* (Linnaeus, 1758) (Fig. 154)

1758. *Tetrodon hispidus* Linnaeus, *Syst. Nat.*, (ed.10) : 333.

1982. *Arothron hispidus* : Munro, *The Marine and Freshwater Fishes of Ceylon* : 283, fig. 828.

2003. *Arothron hispidus* : Kamla Devi and Rao, *Rec. zool. Surv. India Occ Paper* (211) : 50.

2004. *Arothron hispidus* : Rao, *Guide to Reef Fishes of Andaman and Nicobar Islands* : 509, fig. 734.

Diagnostic features : D.10; A.10; P. 17. Body flabby and short; lateral line single; spinules on body except on caudal peduncle; dorsal and anal fins rounded; caudal fin truncate. Body brown above, lighter below with small bluish white spots on upper half of head and body; 4-5 irregular dark bars on sides from snout to above anal; caudal fin brownish, other fins lighter.

Habitat and Biology : Murky waters near reefs, creeks and mangroves.

Distribution : Indo-west Pacific, coasts of India, and the Andaman Islands.

280. *Arothron immaculatus* (Bloch & Schneider, 1801) (Fig. 155)

1801. *Tetrodon immaculatus* Bloch and Schneider, *Syst. Ichth.* : 507.

1962. *Tetrodon immaculatus* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, 11 : 405.

1968. *Tetraodon immaculatus* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 60.

1982. *Arothron immaculatus* : Munro, *The Marine and Freshwater Fishes of Ceylon* : 282, pl. 55, fig. 824.

2000. *Arothron immaculatus* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 346, fig. 244.

Diagnostic features : D.10; A.9; P.16. Body with small spines except; lips and caudal peduncle; caudal fin rounded. Body dark brown above, lighter below; upper and lower edges and margin of caudal fin black; a black blotch at pectoral fin base.

Habitat and Biology : Shallow sandy coastal areas near reefs, creeks and mangroves.

Distribution : Indo-west Pacific, from east coast of Africa to Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka to Ryukyu Islands.

281. *Arothron nigropunctatus* (Bloch & Schneider, 1801)

1801. *Tetrodon nigropunctatus* Bloch and Schneider, *Syst. Ichth.* : 507.

1962. *Tetrodon nigropunctatus* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, 11 : 408.

1982. *Arothron nigropunctatus* : Munro, *The Marine and Freshwater Fishes of Ceylon* : 283, fig. 825.

1986. *Arothron nigropunctatus* : Smith and Heemstra, *Smith's Sea Fishes* : 897, pl.143, fig. 268.7.

2000. *Arothron nigropunctatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 347, fig. 246.

Diagnostic features : D.10; A.10; P.18. Head and body covered with spinules except middle of back, around mouth, sides of caudal peduncle; caudal fin slightly rounded. Colour brownish above, pale below with widely scattered black spots of different sizes; snout and anus black.

Habitat and Biology : Shallow waters near reefs, creeks and mangroves.

Distribution : Indo-west Pacific, from Red Sea, east coast of Africa, to Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka to Ryukyu Island, Australia to Society Island.

**282. *Arothron reticularis* (Bloch & Schneider, 1785)
(Fig. 156)**

1785. *Tetrodon testudineus* Bloch and Schneider, *Syst. Ichth.* : 502.

1962. *Tetrodon reticularis* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, 11 : 401.

1968. *Tetraodon reticularis* : Menon and Talwar, *Rec. zool. Surv. India*, 66(1-4) : 60.

1982. *Arothron reticularis* : Munro, *The Marine and Freshwater Fishes of Ceylon* : 284, pl. 55, fig. 829.

2003. *Arothron reticularis* : Rao, *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, (211) : 49, fig. 53.

Diagnostic features : D.10; A.10; P.16. Body stout; nostrils with two tentacles on each side; body covered with small spines except around mouth; dorsal and caudal fin rounded. Body brownish above and whitish below; back side, caudal peduncle and caudal fin with white spots; belly with dark longitudinal bands and ascending to cheeks and snout.

Habitat and Biology : Shallow coastal waters, creeks and mangroves.

Distribution : Indo-west Pacific, from coasts of India and the Andaman Islands, Sri Lanka to China Sea and Ryukyu Island to Fiji Islands.

283. *Arothron stellatus* (Bloch & Schneider, 1801)
(Fig. 157)

1801. *Tetrodon stellatus* Bloch and Schneider, *Syst. Nat.* : 503.

1986. *Arothron stellatus* : Smith and Heemstra, *Smith's Sea Fishes* : 801, fig. 268.8.

2000. *Arothron stellatus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 348.

2003. *Arothron stellatus* : Kamla Devi and Rao, *Rec. zool. Surv. India, Occ. Paper No.*, (211) : 50, fig. 54.

Diagnostic features : D.11; A.11; P.17. Body robust; small spinules on head and body except on top of snout, base of fins and sides of caudal peduncle; caudal fin slightly rounded. Colour whitish with small black spots on head, body and median fins; few irregular black bands on abdomen.

Habitat and Biology : Shallow coastal areas, creeks and mangroves.

Distribution : Indo-Pacific, from Red Sea, east coast of Africa to Lakshadweep, coasts of India, the Andaman Islands, Sri Lanka to Japan and Australia to Hawaiian Islands.

284. *Chelonodon patoca* (Hamilton-Buchanan, 1822)
(Fig. 158)

1822. *Tetrodon patoca* Hamilton.-Buchanan., *Fishes of Ganges* : 7.

1962. *Chelonodon patoca* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, 11 : 390, fig. 86.

2000. *Lagocephalus guentheri* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 351, fig. 247.

2003. *Chelonodon patoca* : Kamla Devi and Rao, *Rec. zool. Surv. India, Occ. Paper No.*, (211) : 51, fig. 55.

Diagnostic features : D.10; A.8; P.16. Body stout and small sized fishes, covered with small spinules on back, abdomen and throat; caudal fin rounded, brownish-grey on back with large round to ovate white spots; ventral side of body white; a broad yellow streak on lower side, three narrow dark bars on back.

Habitat and Biology : Coastal waters near creeks and mangroves.

Distribution : Indo-west Pacific, from Persian Gulf, coasts of India, the Andaman Islands, Sri Lanka to Australia.

285. *Tetraodon fluviatilis* Hamilton-Buchanan, 1822

1822. *Tetraodon fluviatilis* Hamilton-Buchanan, *Fishes of Ganges* : 6.

1962. *Tetraodon fluviatilis* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, **11** : 395.

1968. *Tetraodon fluviatilis* : Menon and Talwar, *Rec. zool. Surv. India*, **66**(1-4) : 60.

2003. *Tetraodon fluviatilis* : Kamla Devi and Rao, *Rec. zool. Surv. India, Occ. Paper No.*, **211** : 52.

Diagnostic features : D.14-16; A.12-13; P.22. Body flabby and small, eye large; spinules on body except on posterior part of body; caudal fin truncate. Body greenish-olive above, white on sides and below; back and sides with large black blotches; irregular light cross bands between eyes and on back; abdomen with black blotches and spots, much wider than interspaces; fins yellowish, edge of caudal fin black.

Habitat and Biology : Murky waters of coastal areas near creeks and mangroves.

Distribution : Indian Ocean, from the Andaman Islands to Malay Peninsula to Philippines.

286. *Tetraodon palembangensis* (Bleeker, 1852)

1852. *Tetrodon palembangensis* Bleeker, *Nat. Tijds. Ned. Indie.*, **3** : 605.

1992. *Arothron palembangensis* : Rao et al., *J Andaman Sci. Assoc.*, **8**(2) : 117, fig. 2.

2000. *Arothron palembangensis* : Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 347.

Diagnostic features : D.13; A.11; P.21. Inter-orbital space flat, nasal organ a tube with single nostril at its end; body covered with small spines except mouth and caudal peduncle; lateral line forming a ring around eye. Body light brown, whitish on sides and belly; a narrow blotch on inter-orbital space; large blotches on head and on back before dorsal; other small blotches encircled by light brown lines forming reticulations; caudal dusky; other fins yellowish.

Habitat and Biology : Creeks and mangroves.

Distribution : Indian Ocean, from the Andaman Islands to Thailand.

287. *Lagocephalus scleratus* (Forster, 1788)

1788. *Tetrodon scleratus* Forster, in Gmelin, *Linn. Syst. Nat.* : 1444.

1992. *Lagocephalus scleratus* Rao et al., *J Andaman Sci. Assoc.*, **8**(2) : 118, fig. 3.

2000. *Lagocephalus scleratus* Rao et al., *Rec. zool. Surv. India, Occ. Paper No.*, **178** : 350, fig. 248.

2003. *Lagocephalus scleratus* Kamla Devi and Rao, *Rec. zool. Surv. India, Occ. Paper No.*, **211** : 53.

Diagnostic features : D.10; A.8; P.16. Body narrow and elongate, snout blunt, inter-orbital space flat; two lateral lines on body; small spinules on body except around the mouth and caudal peduncle; caudal peduncle depressed; fin forked. Body brownish green with dark spots; a brown ring around eye; a broad silvery band from mouth to middle of caudal peduncle; belly white; a silvery blotch before eye; pectoral base and inside of gill opening black.

Habitat and Biology : Sandy coastal waters near creeks and mangroves.

Distribution : Indo-west Pacific.

**288. *Lagocephalus lunaris* Bloch & Schneider, 1801
(Fig. 159)**

1801. *Tetrodon lunaris* Bloch and Schneider, *Syst. Ichyh.* : 505.

1878. *Tetrodon lunaris* : Day, *Fishes of India* : 701, pl. 82, fig. 2.

1962. *Sphaeroides lunaris* : De Beaufort and Briggs, *Fishes of Indo-Australian Archipelago*, 11 : 378.

1986. *Lagocephalus lunaris* : Smith and Heemstra, *Smith's Sea Fishes* : 901, pl.144, fig.268.22.

2003. *Lagocephalus lunaris* : Kamla Devi and Rao, *Rec. zool. Surv. India, Occ. Paper No.*, 211 : 52, fig. 56.

Diagnostic features : D.11-13; A.10-12; P.18. Body slightly elongate, snout blunt; inter-orbital space flat; two lateral lines on body; spinules cover inter-orbital space to origin of dorsal, snout, sides of body and caudal peduncle smooth. Body yellowish green above, silvery below; dorsal, pectoral and upper half of caudal fin white.

Habitat and Biology : Sandy shallow coastal waters, near creeks and mangroves.

Distribution : Indo-west Pacific, from Red Sea, Persian Gulf, coasts of India, the Andaman Islands to Malay Peninsula and to Japan, Solomon Islands to Fiji Islands.

Family DIODONTIDAE

289. *Diodon hystrix* Linnaeus, 1758

1758. *Diodon hystrix* Linnaeus, *Hist. Nat.*, ed.10, 1 : 335.

1878. *Diodon hystrix* : Day, *Fishes of India* : 708, pl. 79, fig. 4.

1986. *Diodon hystrix* : Leis, In : Smith and Heemstra, *Smith's Sea Fishes* : 906, fig. 298.6.

2000. *Diodon hystrix* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 352, fig. 250.

2003. *Diodon hystrix* : Kamla Devi and Rao, *Rec. zool. Surv. India, Occ. Paper No.*, 211 : 60.

Diagnostic features : D.16; A.14; P.23. Body flabby; eyes large; head and body with long pointed spines; no downward pointed spine below eye; no barbels on chin; teeth

fused into dental plates; pectoral fins broad; caudal fin rounded. Body brownish dorsally with small black spots; fins yellowish with dark spots.

Habitat and Biology : Shallow coastal areas near reefs, creeks and mangroves.

Distribution : Circumtropical.

290. *Diodon liturosus* Shaw, 1804
(Fig. 160)

1804. *Diodon liturosus* Shaw, *General Zoology*, 2 : 436.

2000. *Diodon liturosus* : Rao *et al.*, *Rec. zool. Surv. India, Occ. Paper No.*, 178 : 352.

2003. *Diodon liturosus* : Kamla Devi and Rao, *Rec. zool. Surv. India, Occ. Paper No.*, 211 : 61, fig. 68.

Diagnostic features : D.14-15; A.15-16; P.22-25. Head and body covered with long and pointed spines, except on caudal peduncle; a short downward pointed spine below front of eye; two small barbels on chin. Body light brown with small dark spots on upper part; large white edged blotches across back and sides, one blotch above and passing ventrally from eye; fins yellowish.

Habitat and Biology : Shallow coastal waters near reefs, creeks and mangroves.

Distribution : Indo-Pacific, from east coast of Africa, coasts of India, the Andaman Islands to Japan and southwards to Australia.

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Fig. 14. *Carcharinus melanopterus*



Fig. 15. *Sphyrna zygaena*

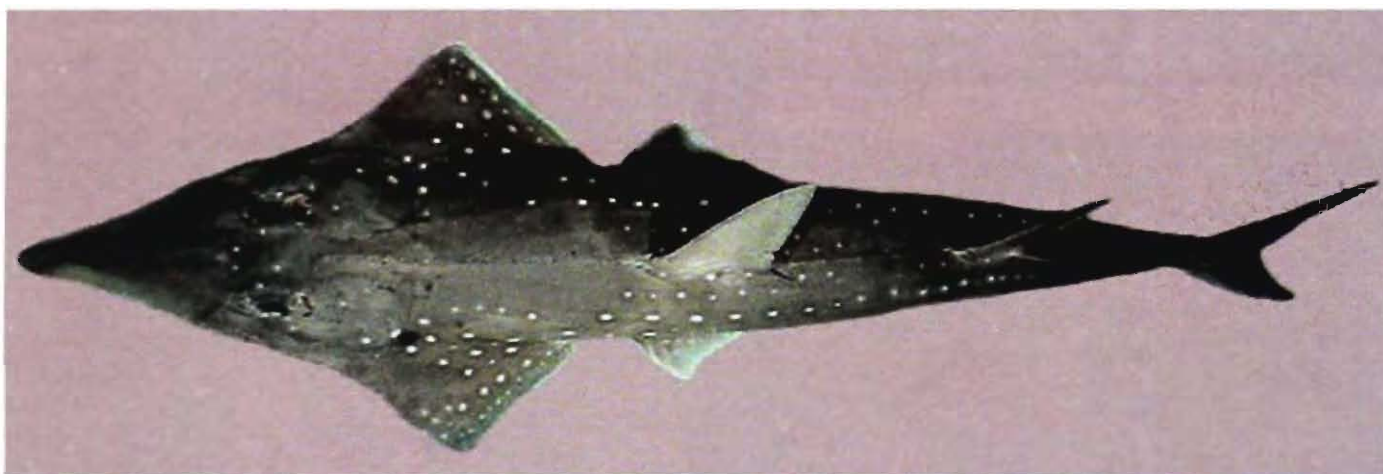


Fig. 16. *Rhinobatos djeddensis*



Fig. 17. *Dasyatis kuhlii*



Fig. 18. *Himantura uranak*



Fig. 19. *Hypolophus sephen*

Fig. 20. *Gymnothorax fimbriatus*



Fig. 21. *Amblygaster leiogaster*



Fig. 22. *Anodontostoma chacunda*



Fig. 23. *Herklotsichthys quadrimaculatus*



Fig. 24. *Sardinella fimbriata*



Fig. 25. *Sardinella gibbosa*



Fig. 26. *Stolephorus commersonii*



Fig. 27. *Stolephorus indicus*



Fig. 28. *Thryssa hamiltonii*



Fig. 29. *Thryssa setirostris*

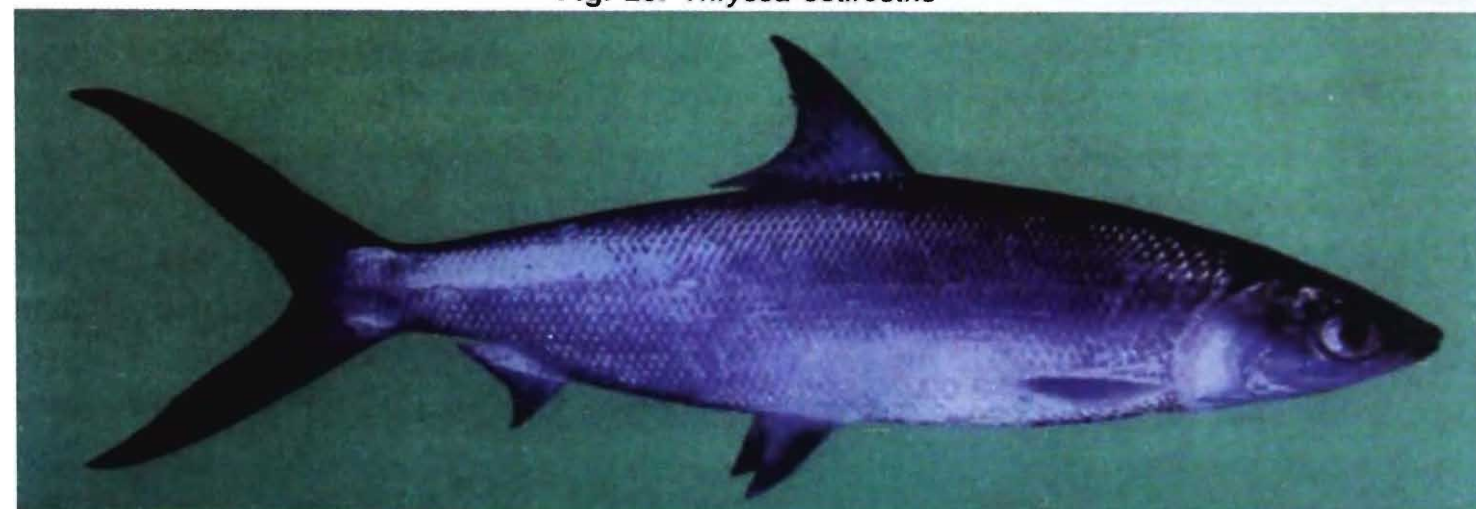


Fig. 30. *Chanos chanos*



Fig. 31. *Plotosus lineatus*

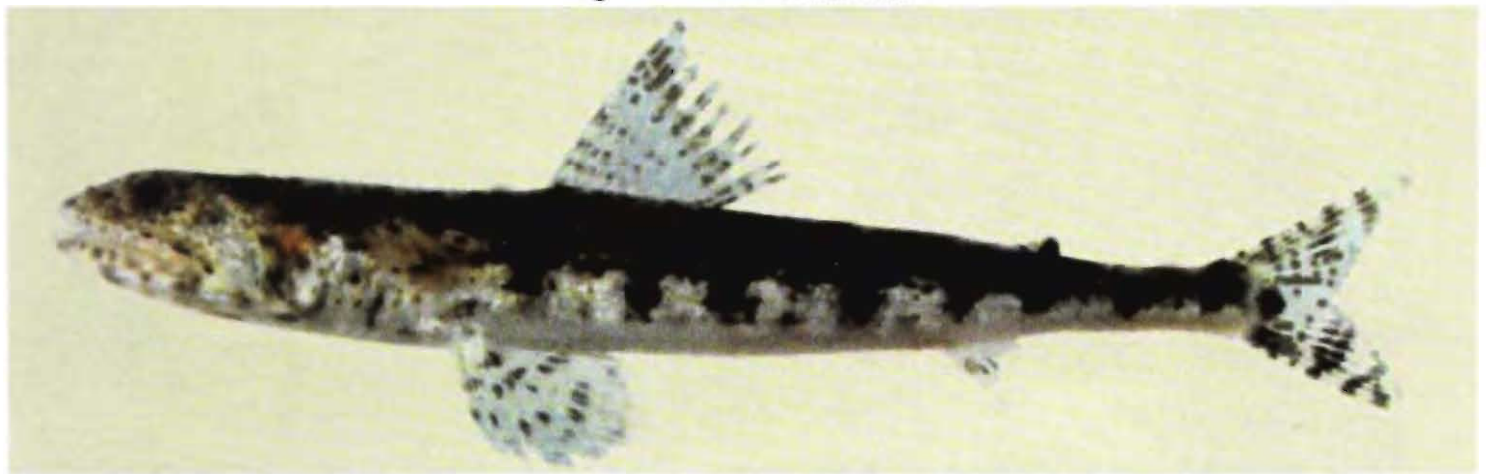


Fig. 32. *Saurida gracilis*



Fig. 33. *Saurida undosquamis*



Fig. 34. *Trachinocephalus myops*

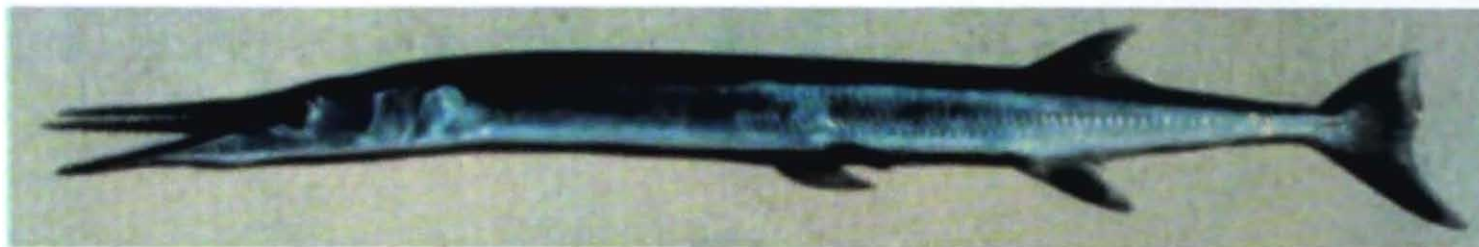


Fig. 35. *Tylosurus crocodilus*

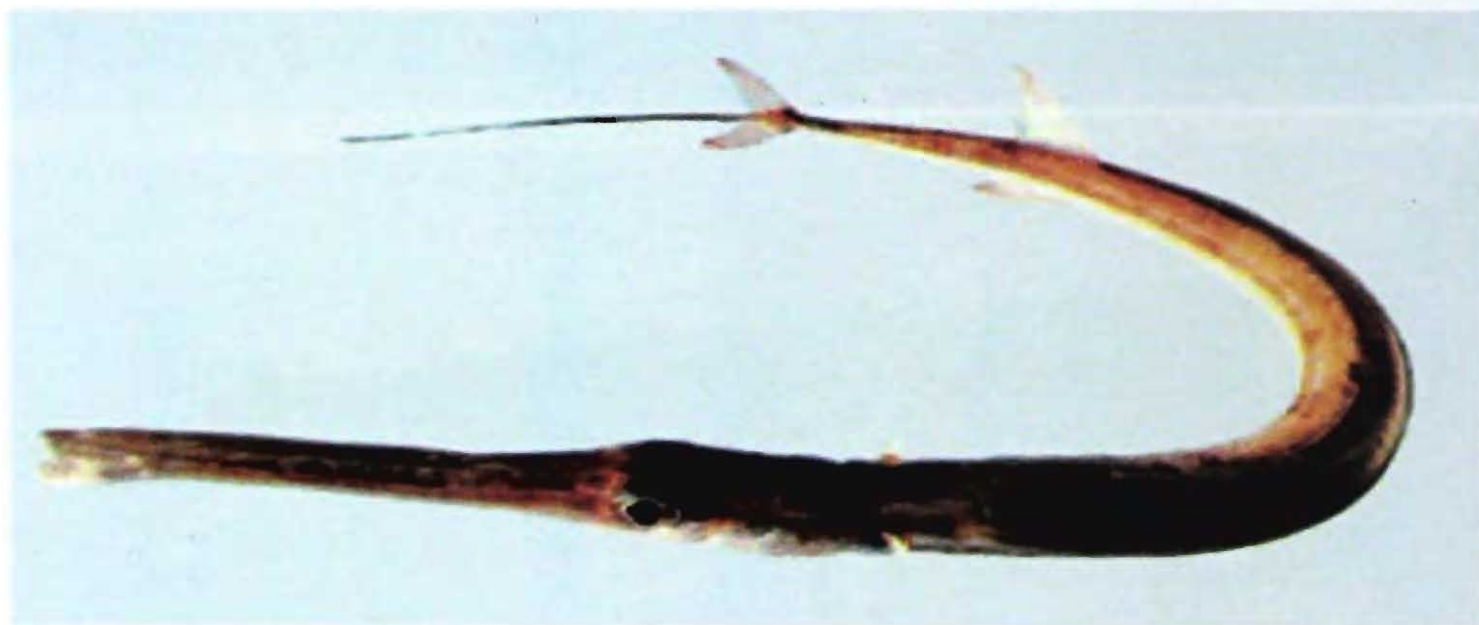


Fig. 36. *Fistularia commersonii*



Fig. 37. *Choeroichthys sculptus*



Fig. 38. *Corytholchthys hematopterus*

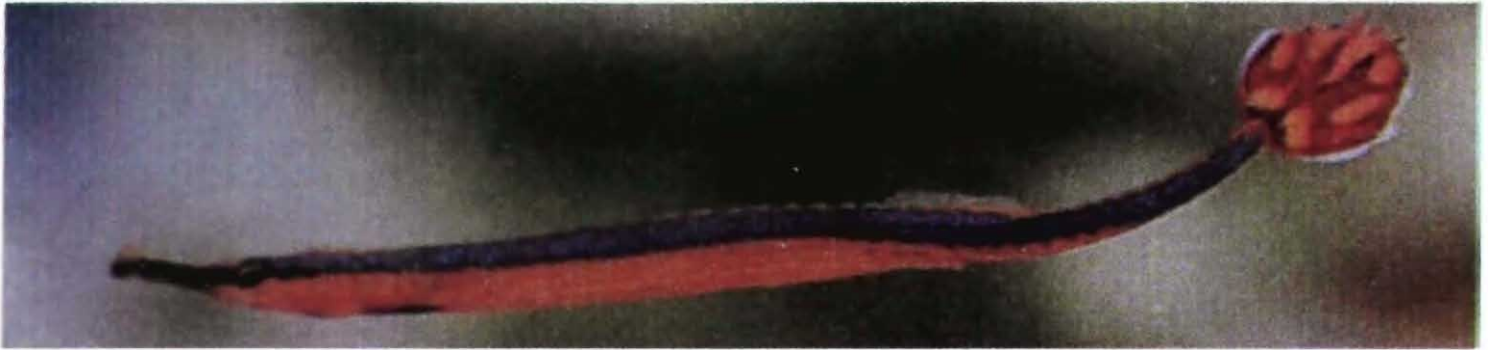


Fig. 39. *Doryramphus excisus*

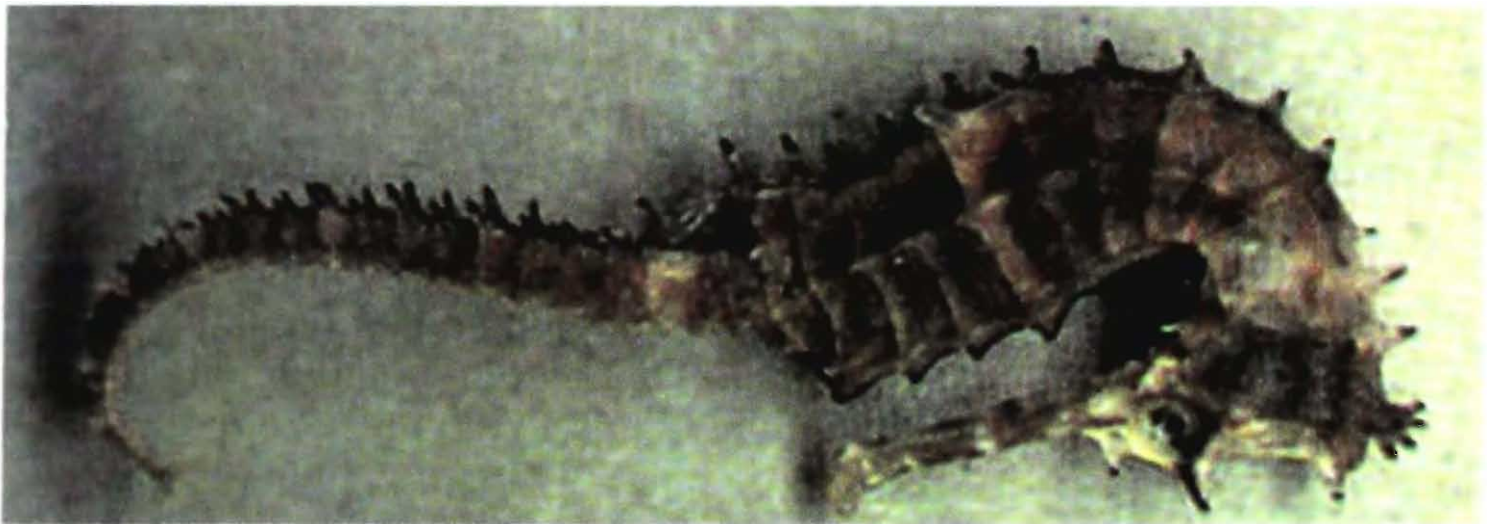


Fig. 40. *Hippocampus histrix*



Fig. 41. *Hippocampus kuda*



Fig. 42. *Syngnathoides biaculeatus*



Fig. 43. *Scorpaenodes guamensis*



Fig. 44. *Tetraroge niger*



Fig. 45. *Polycaulus uranoscopus*



Fig. 46. *Cociella crocodila*



Fig. 47. *Platycephalus indicus*

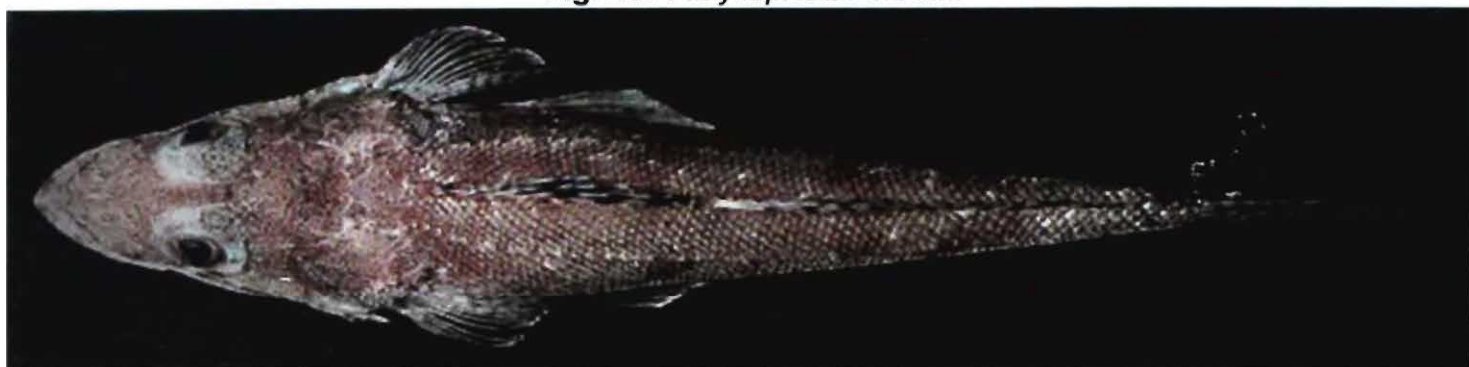


Fig. 48. *Sorsogona tuberculata*



Fig. 49. *Ambassis interruptus*



Fig. 50. *Anyperodon leucogrammicus*



Fig. 51. *Epinephelus areolatus*



Fig. 52. *Epinephelus coioides*

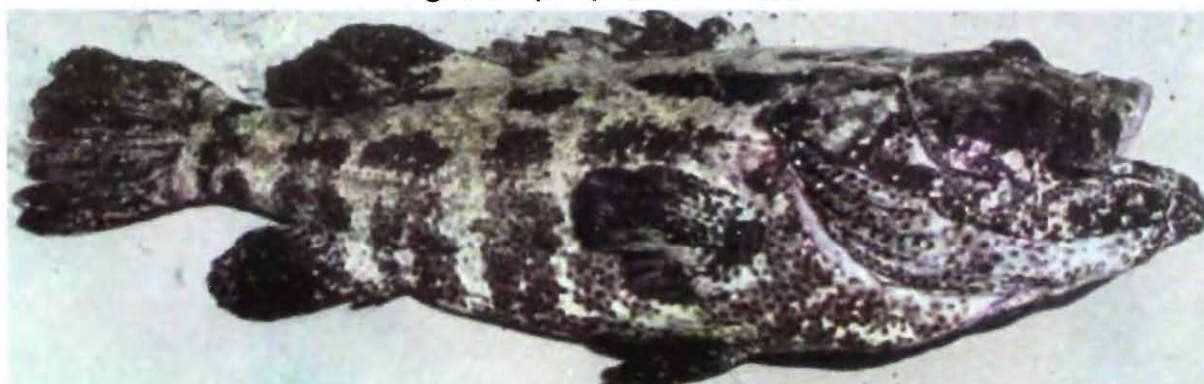


Fig. 53. *Epinephelus fuscoguttatus*



Fig. 54. *Epinephelus longispinis*



Fig. 55. *Epinephelus malabaricus*



Fig. 56. *Epinephelus merra*

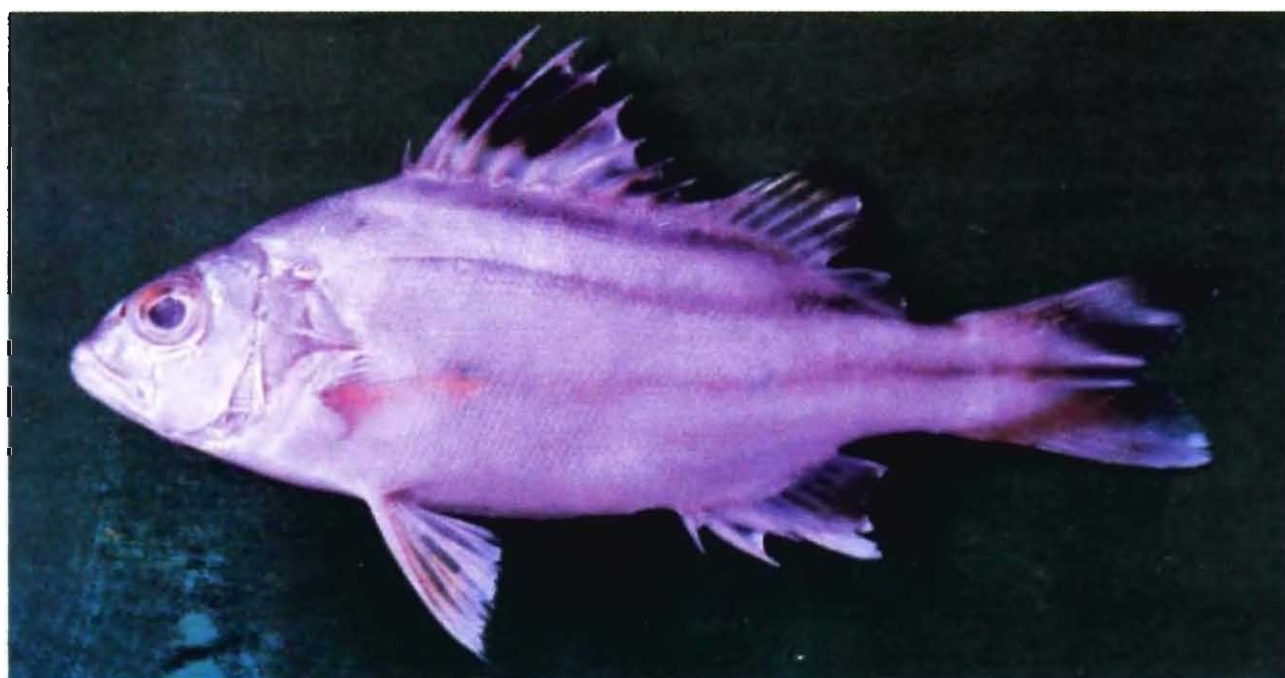


Fig. 57. *Terapon jarbua*



Fig. 58. *Pelates quadrilineatus*



Fig. 59. *Apogon hyalosoma*



Fig. 60. *Sphaeramia orbicularis*

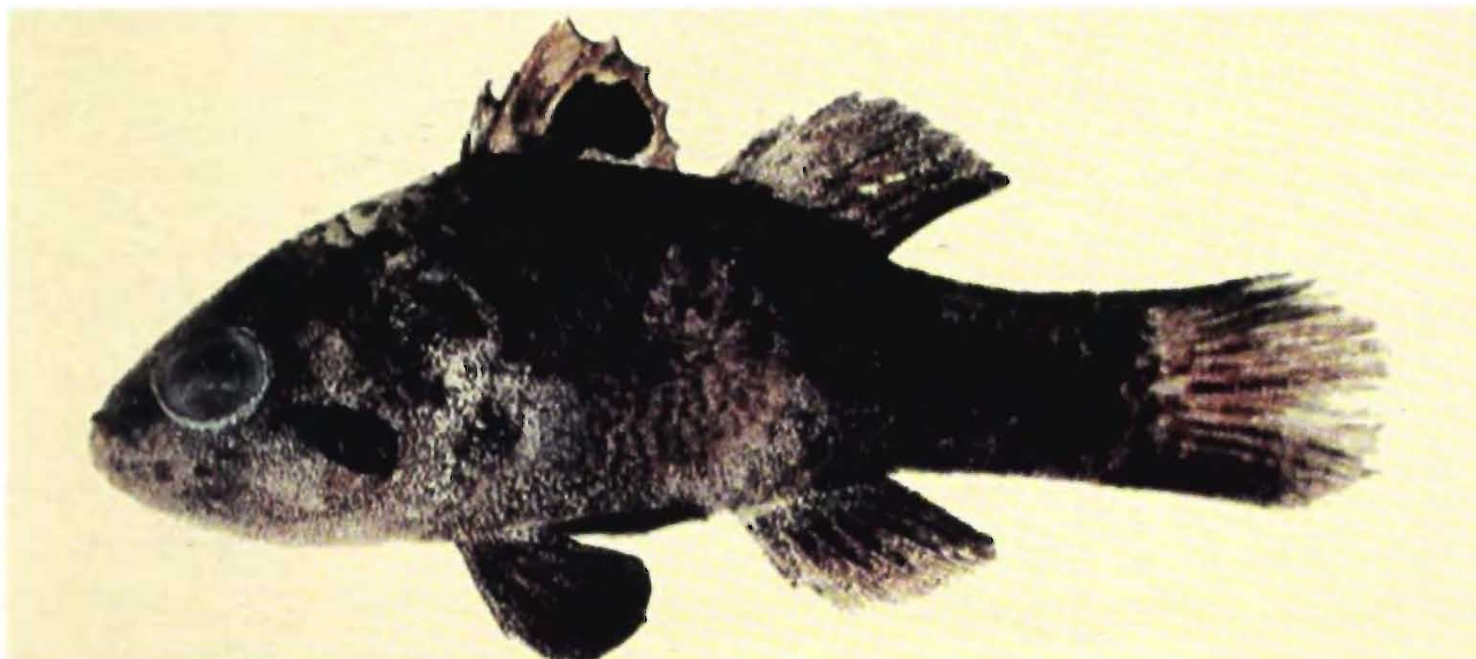


Fig. 61. *Apogonichthys ocellatus*



Fig. 62. *Cheilodipterus quinquelineatus*



Fig. 63. *Sillago sihama*



Fig. 64. *Alectis ciliaris*

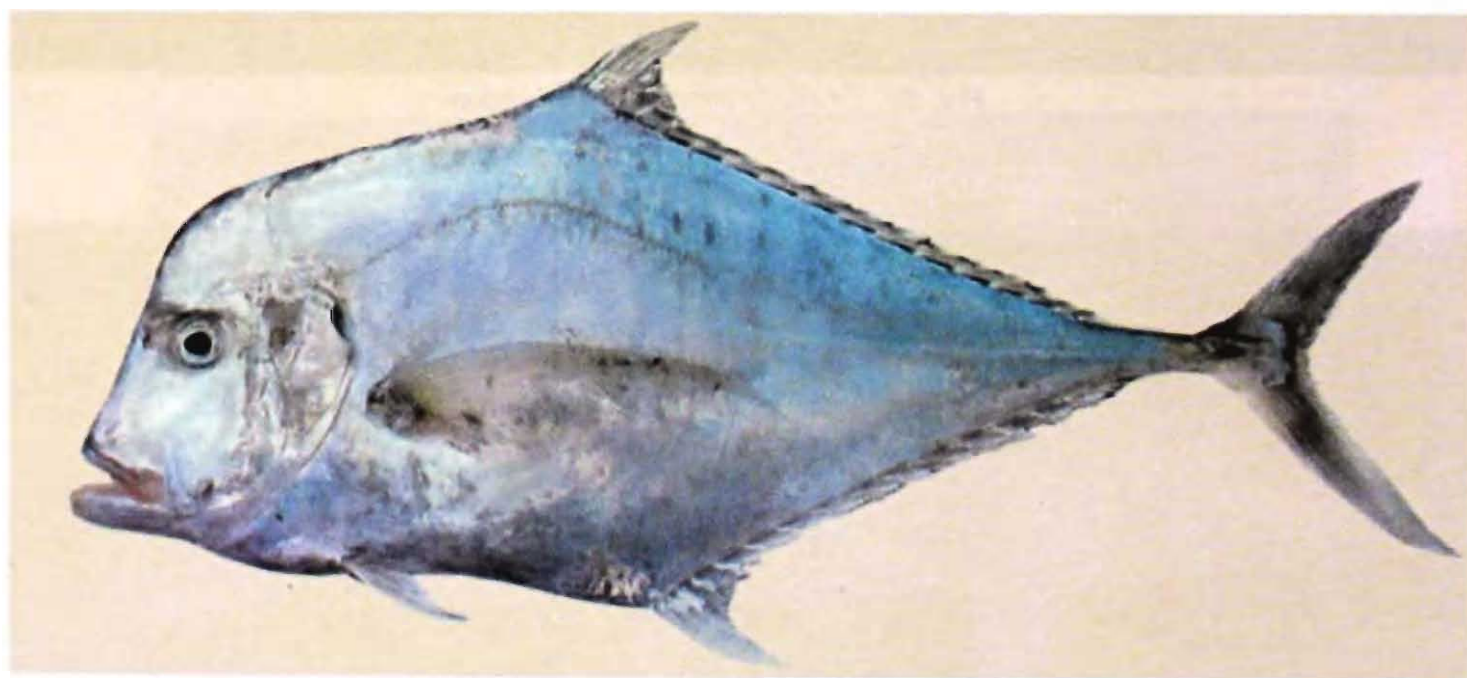


Fig. 65. *Alectis indicus*



Fig. 66. *Carangoides malabaricus*



Fig. 67. *Caranx ignobilis*



Fig. 68. *Caranx sexfasciatus*

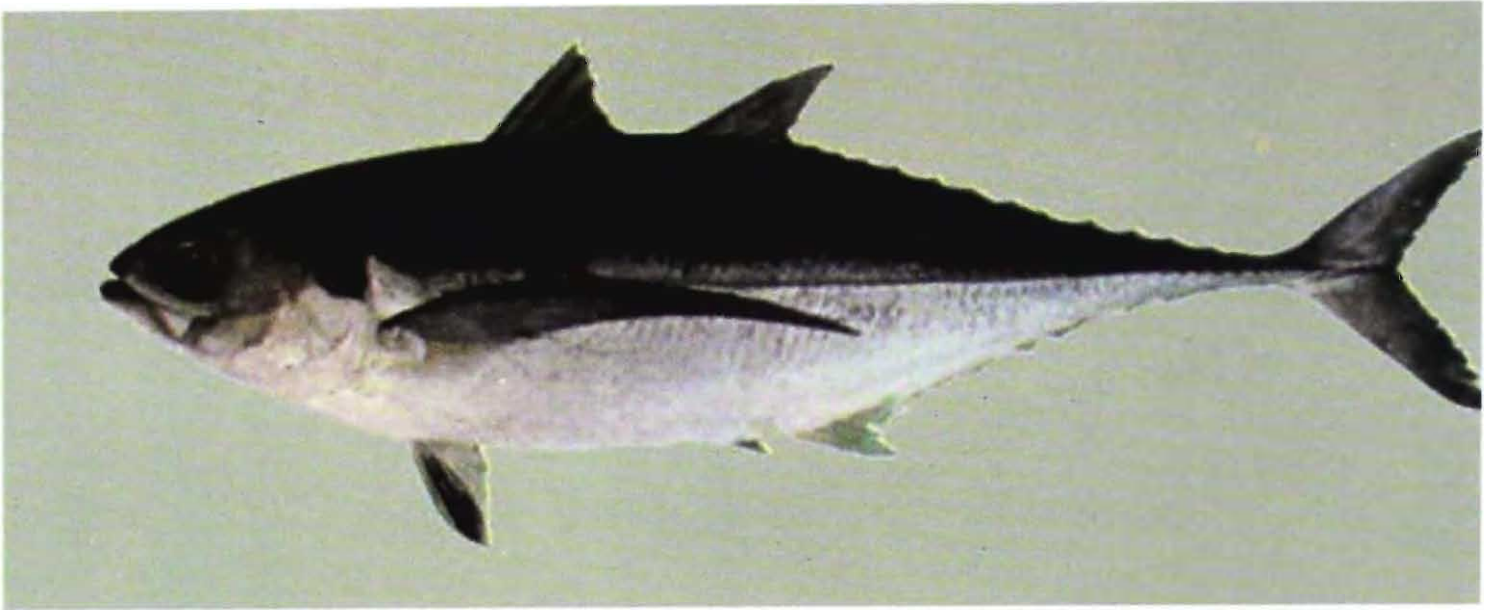


Fig. 69. *Megalaspis cordyla*



Fig. 70. *Scomberoides lysan*

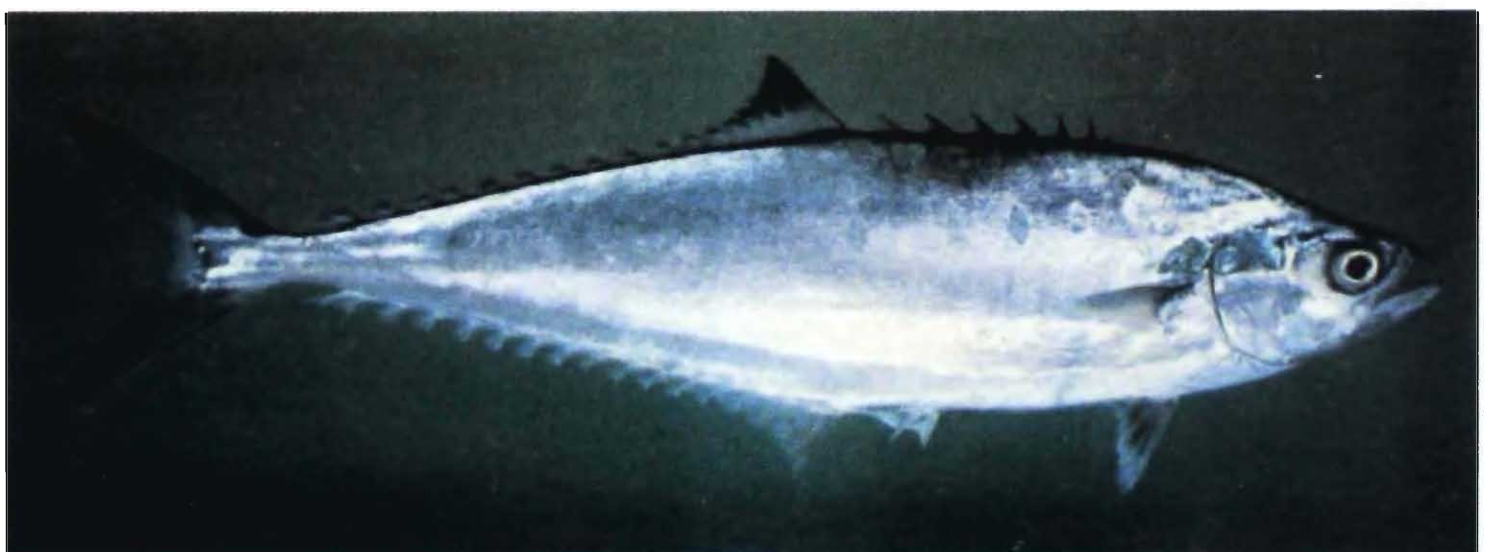


Fig. 71. *Scomberoides tol*



Fig. 72. *Seriolina nigrofasciata*

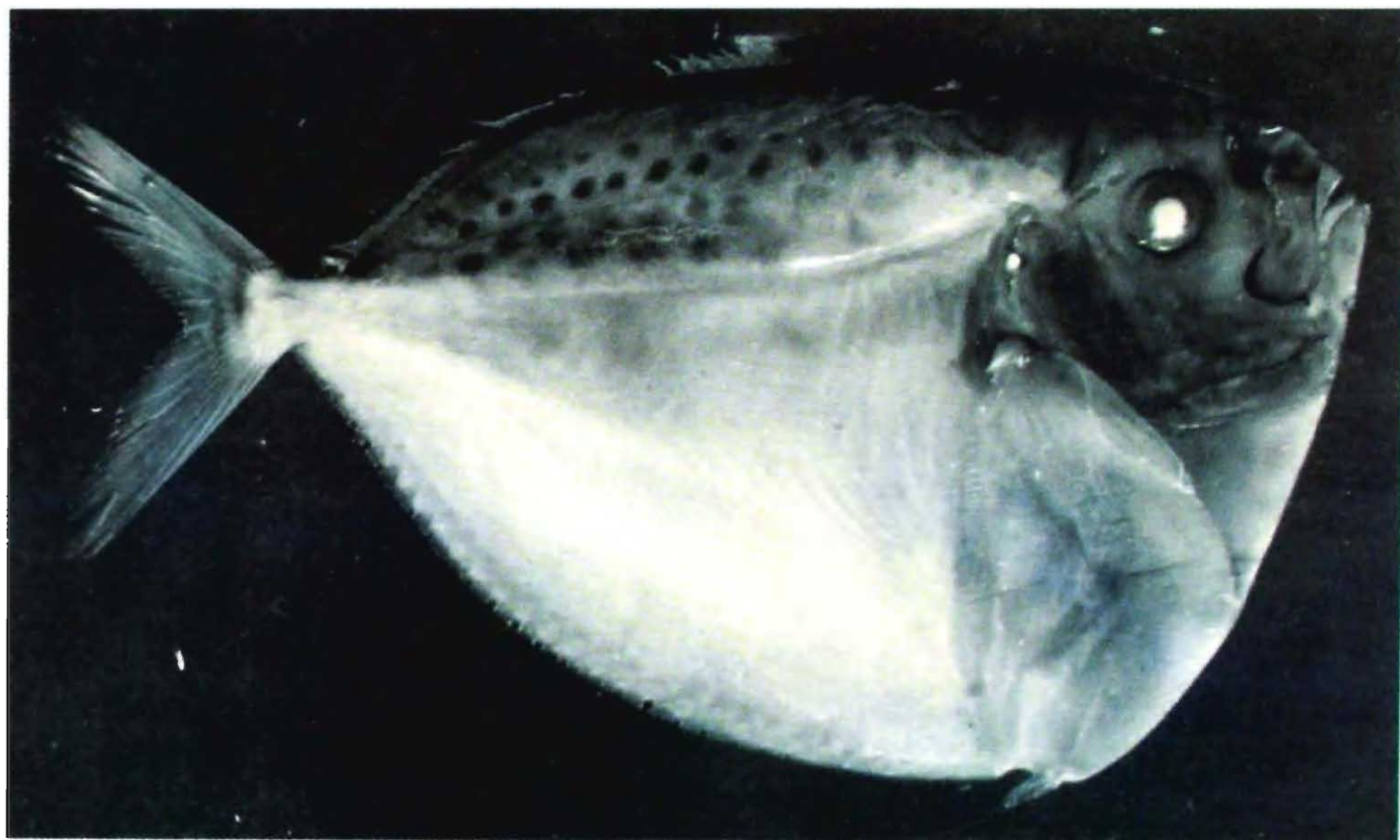


Fig. 73. *Mene maculata*



Fig. 74. *Leiognathus equula*



Fig. 75. *Leiognathus fasciatus*



Fig. 76. *Secutor insidiator*



Fig. 77. *Lutjanus bohar*

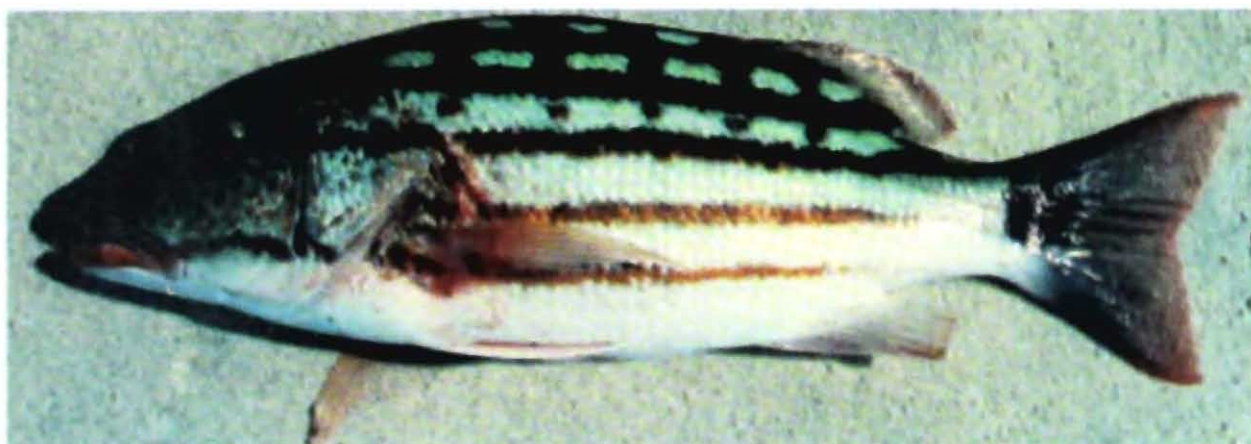


Fig. 78. *Lutjanus decussatus*



Fig. 79. *Lutjanus ehrenbergi*



Fig. 80. *Lutjanus fluviflamma*



Fig. 81. *Lutjanus fulvus*



Fig. 82. *Lutjanus gibbus*



Fig. 83. *Lutjanus kasmira*



Fig. 84. *Lutjanus lutjanus*



Fig. 85. *Lutjanus malabaricus*



Fig. 86. *Lutjanus rivulatus* (Juvenile)



Fig. 87. *Lutjanus russelli*



Fig. 88. *Lutjanus sebae*



Fig. 89. *Gerres abbreviatus*



Fig. 90. *Gerres filamentosus*



Fig. 91. *Gerres oblongus*



Fig. 92. *Gerres oyena*



Fig. 93. *Plectorhynchus gibbosus*



Fig. 94. *Pomadasys maculatum*

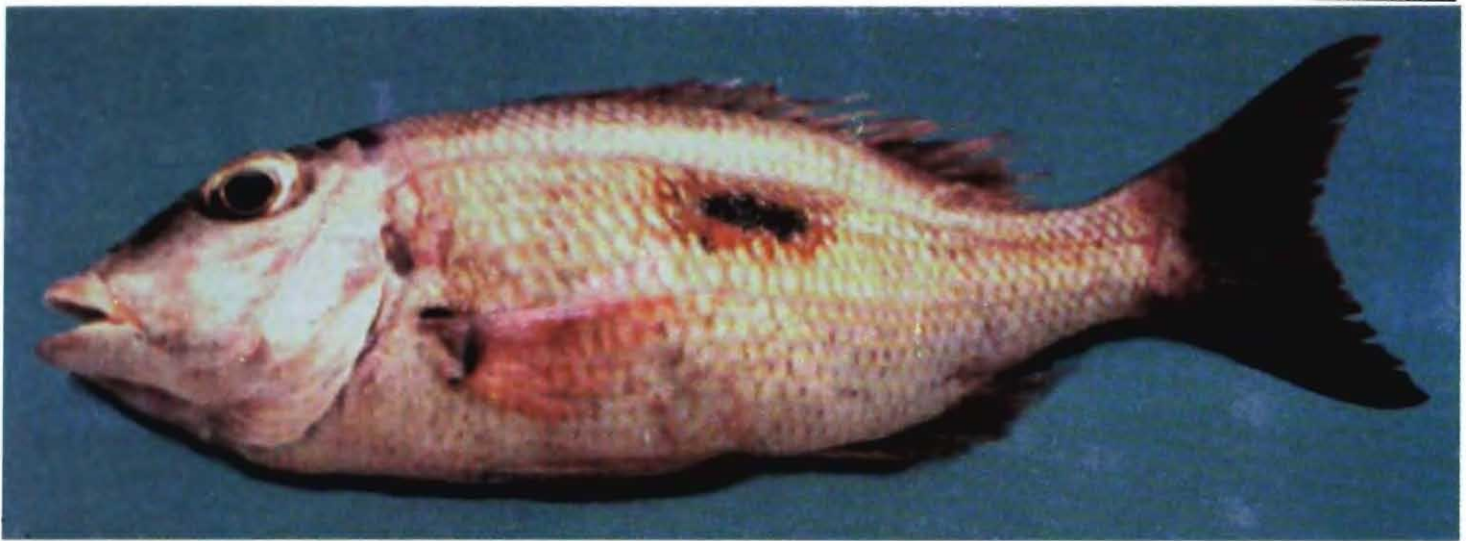


Fig. 95. *Lethrinus harak*



Fig. 96. *Lethrinus lentjan*



Fig. 97. *Lethrinus nebulosus*



Fig. 98. *Lethrinus obsoletus*



Fig. 99. *Lethrinus ornatus*



Fig. 100. *Scolopsis bilineatus*



Fig. 101. *Dendrophysa russelli*



Fig. 102. *Johnius amblycephalus*



Fig. 103. *Mulloides flavolineatus*



Fig. 104. *Parupeneus barberinus*



Fig. 105. *Upeneus sulphureus*



Fig. 106. *Upeneus tragula*



Fig. 107. *Upeneus vittatus*

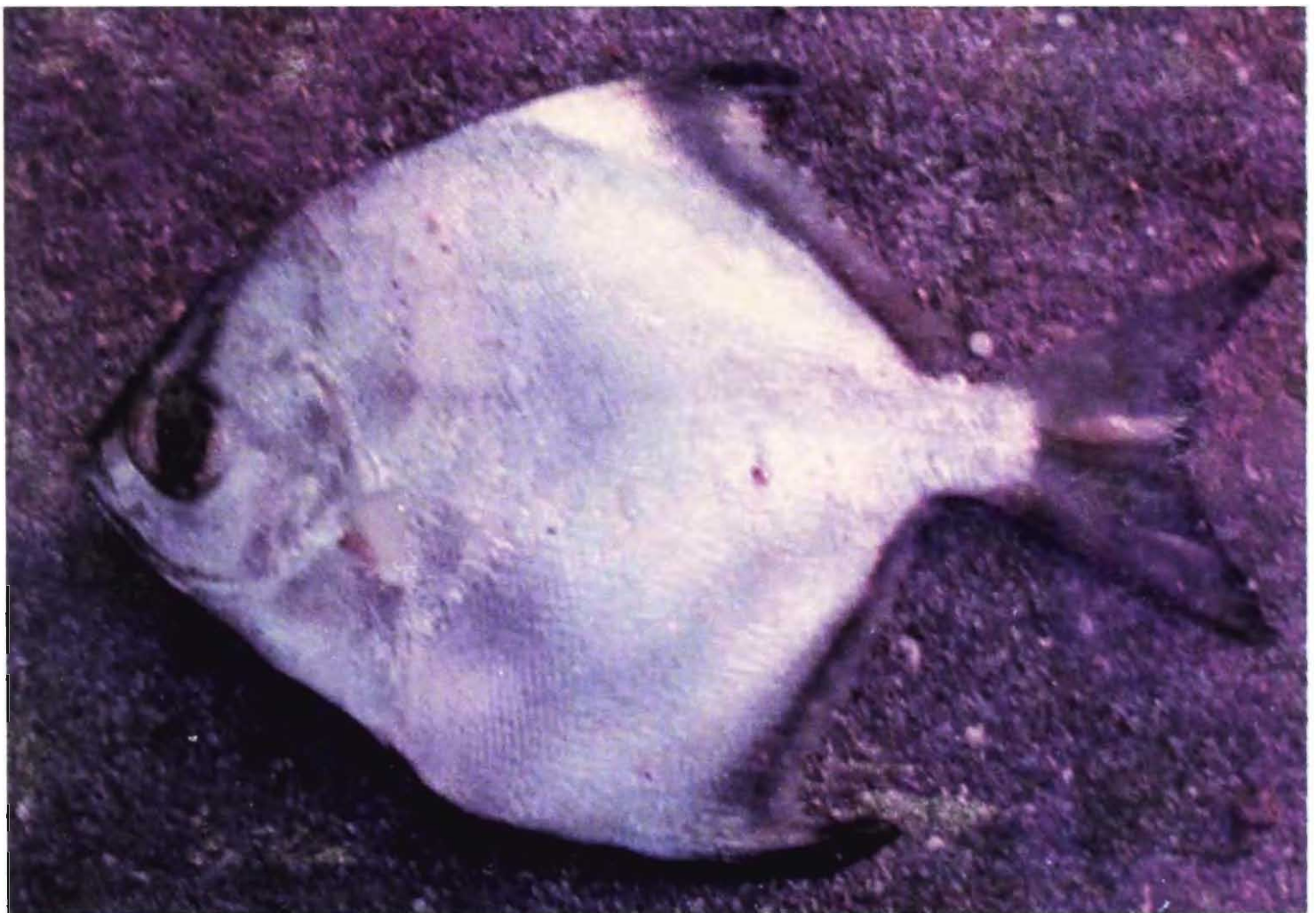


Fig. 108. *Monodactylus argenteus*



Fig. 109. *Toxotes jaculator*

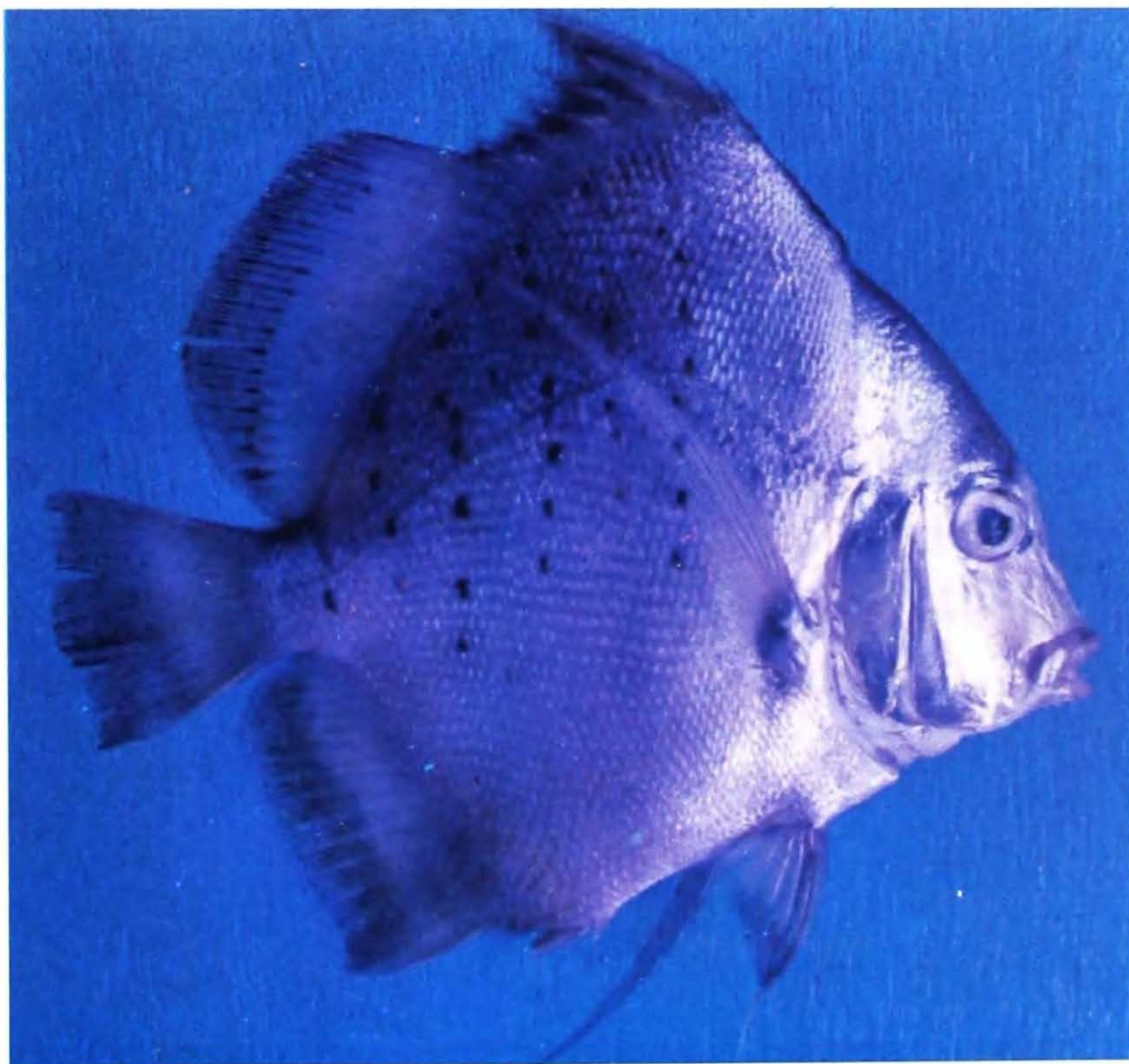


Fig. 110. *Drepane punctata*



Fig. 111. *Platax orbicularis*



Fig. 112. *Platax pinnatus*



Fig. 113. *Scatophagus argus*



Fig. 114. *Abudefduf bengalensis*



Fig. 115. *Abudedefduf septumfasciatus*



Fig. 116. *Crenimugil crenilabis*



Fig. 117. *Liza macrolepis*



Fig. 118. *Liza melanoptera*



Fig. 119. *Liza vaigiensis*



Fig. 120. *Valamugil cunnesius*



Fig. 121. *Sphyraena barracuda*

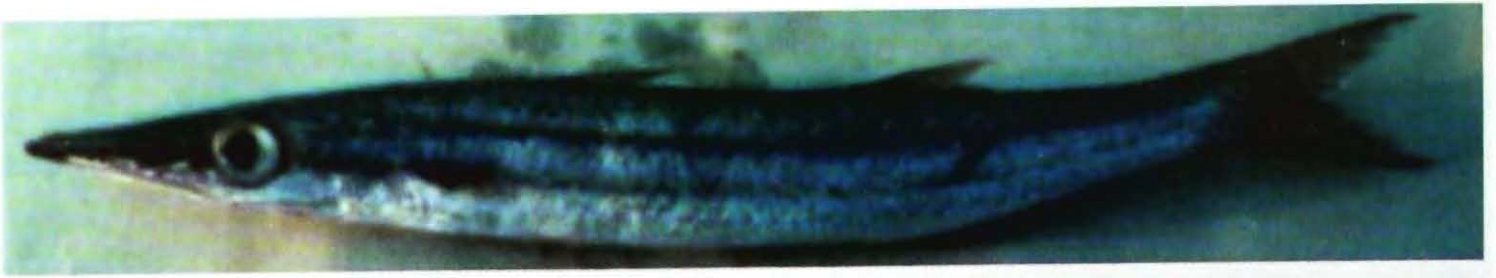


Fig. 122. *Sphyraena flavicauda*

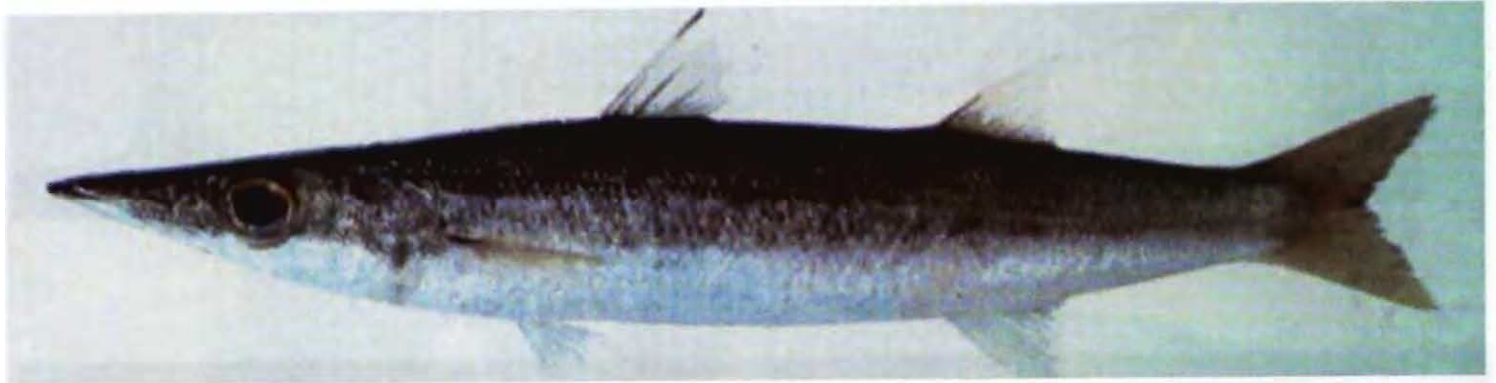


Fig. 123. *Sphyraena obtusata*



Fig. 124. *Acentrogobius bontii*



Fig. 125. *Acentrogobius viridipunctatus*



Fig. 126. *Callogobius hasseltii*



Fig. 127. *Glossogobius giuris*



Fig. 128. *Istigobius goldmanni*

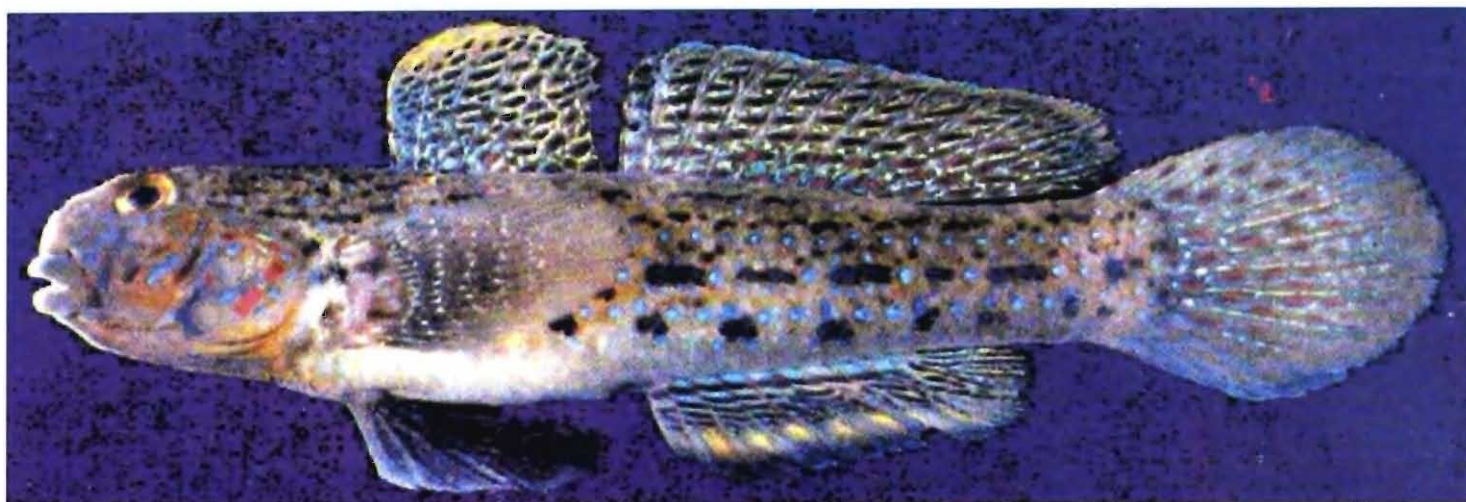


Fig. 129. *Istigobius ornatus*



Fig. 130. *Oxyurichthys papuensis*



Fig. 131. *Oxyurichthys tentacularis*



Fig. 132. *Parachaeturichthys polynema*

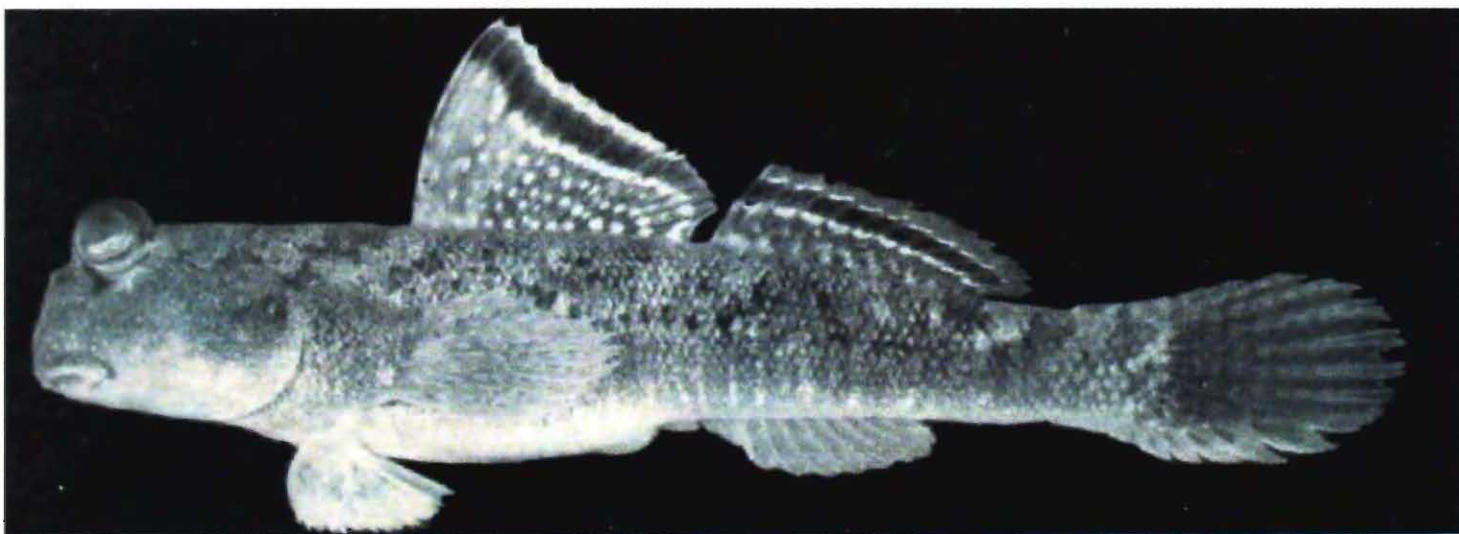


Fig. 133. *Periophthalmus argentilineatus*

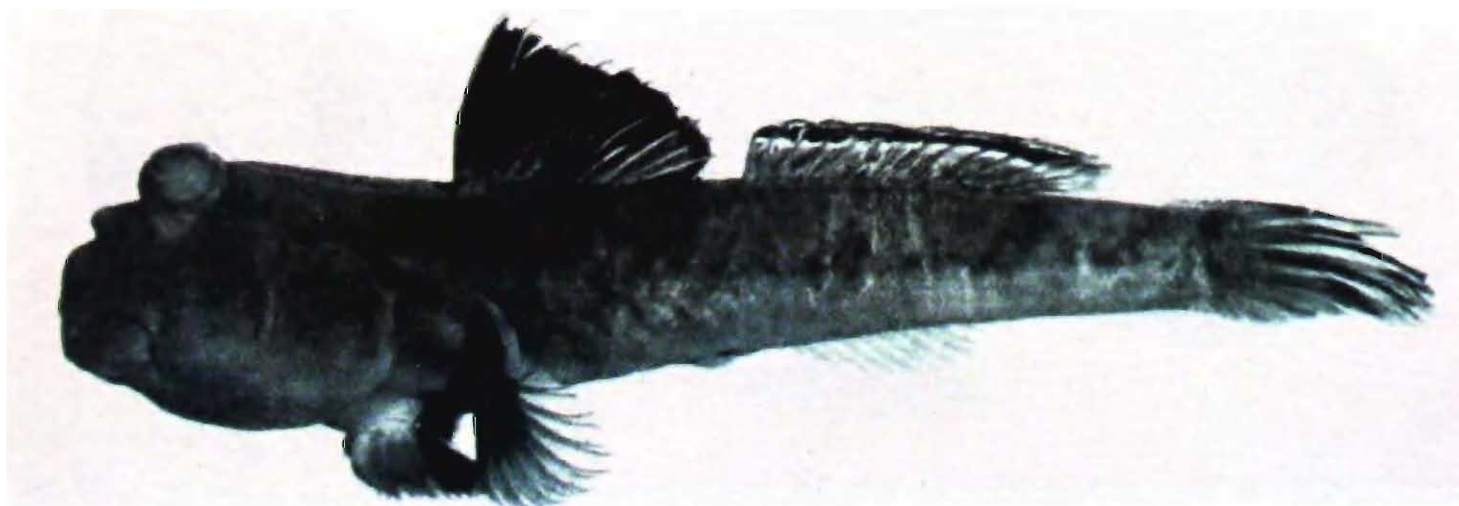


Fig. 134. *Periophthalmus barbarus*

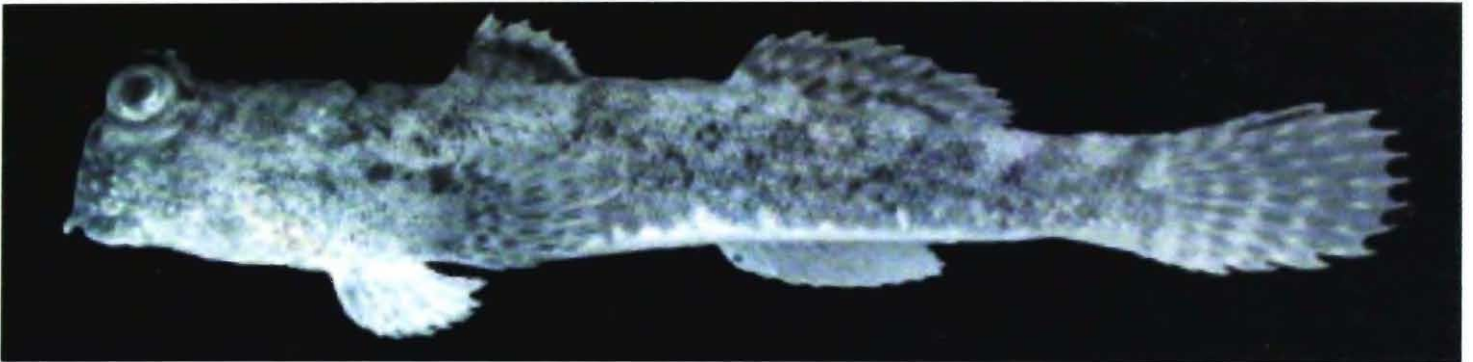


Fig. 135. *Periophthalmus kalolo*

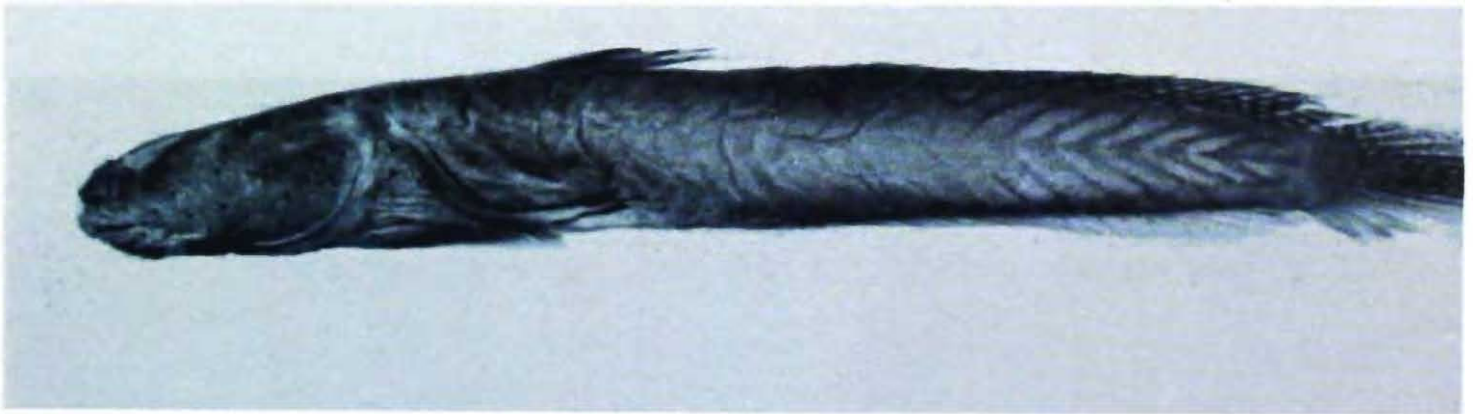


Fig. 136. *Scartelaos cantoris*

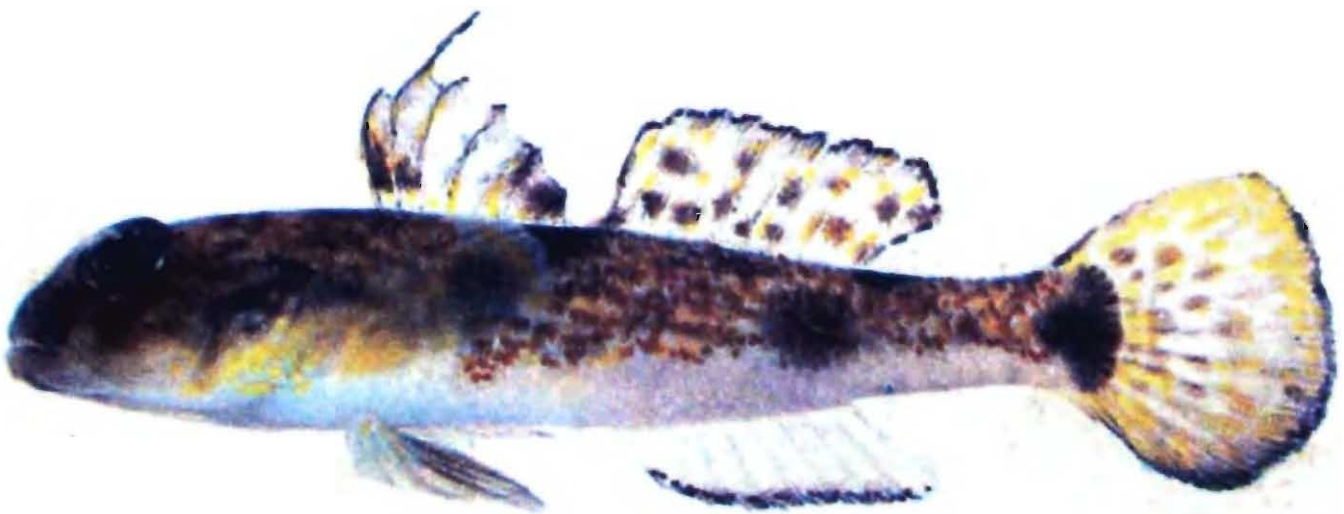


Fig. 137. *Yongeichthys criniger*



Fig. 138. *Butis butis*

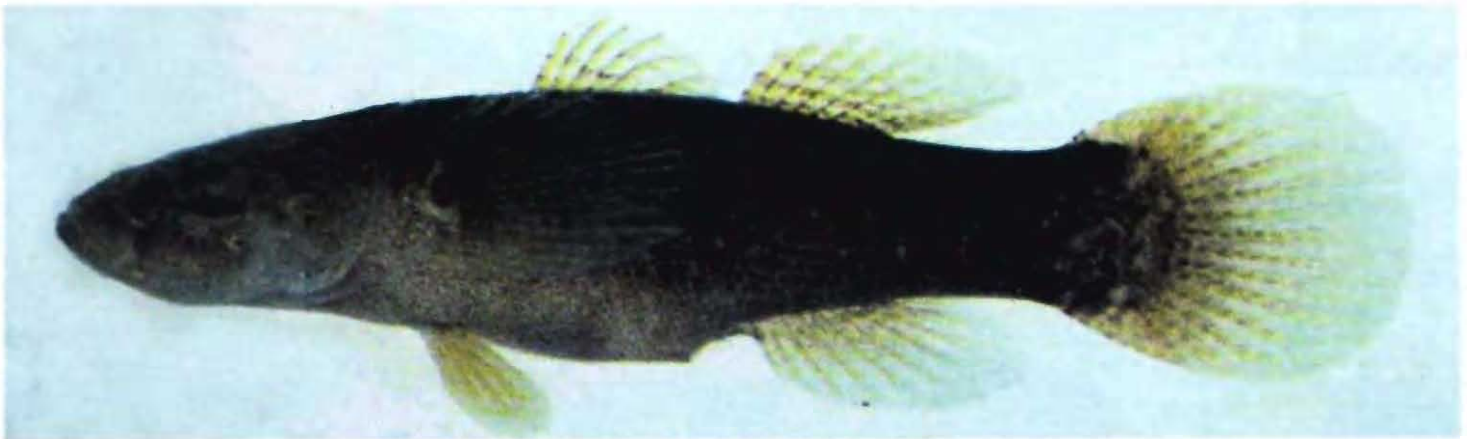


Fig. 139. *Eleotris fusca*



Fig. 140. *Ophieleotris aporos*

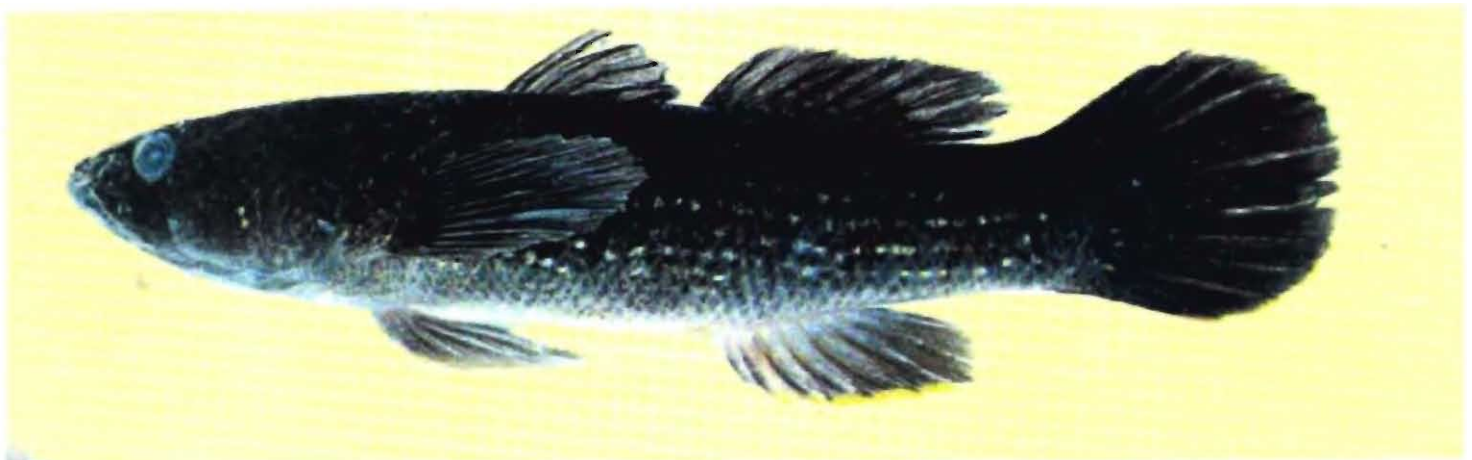


Fig. 141. *Ophiocara porocephala*



Fig. 142. *Acanthurus mata*



Fig. 143. *Acanthurus triostegus*



Fig. 144. *Acanthurus xanthopterus*



Fig. 145. *Siganus canaliculatus*



Fig. 146. *Siganus guttatus*



Fig. 147. *Siganus javus*



Fig. 148. *Siganus spinu*

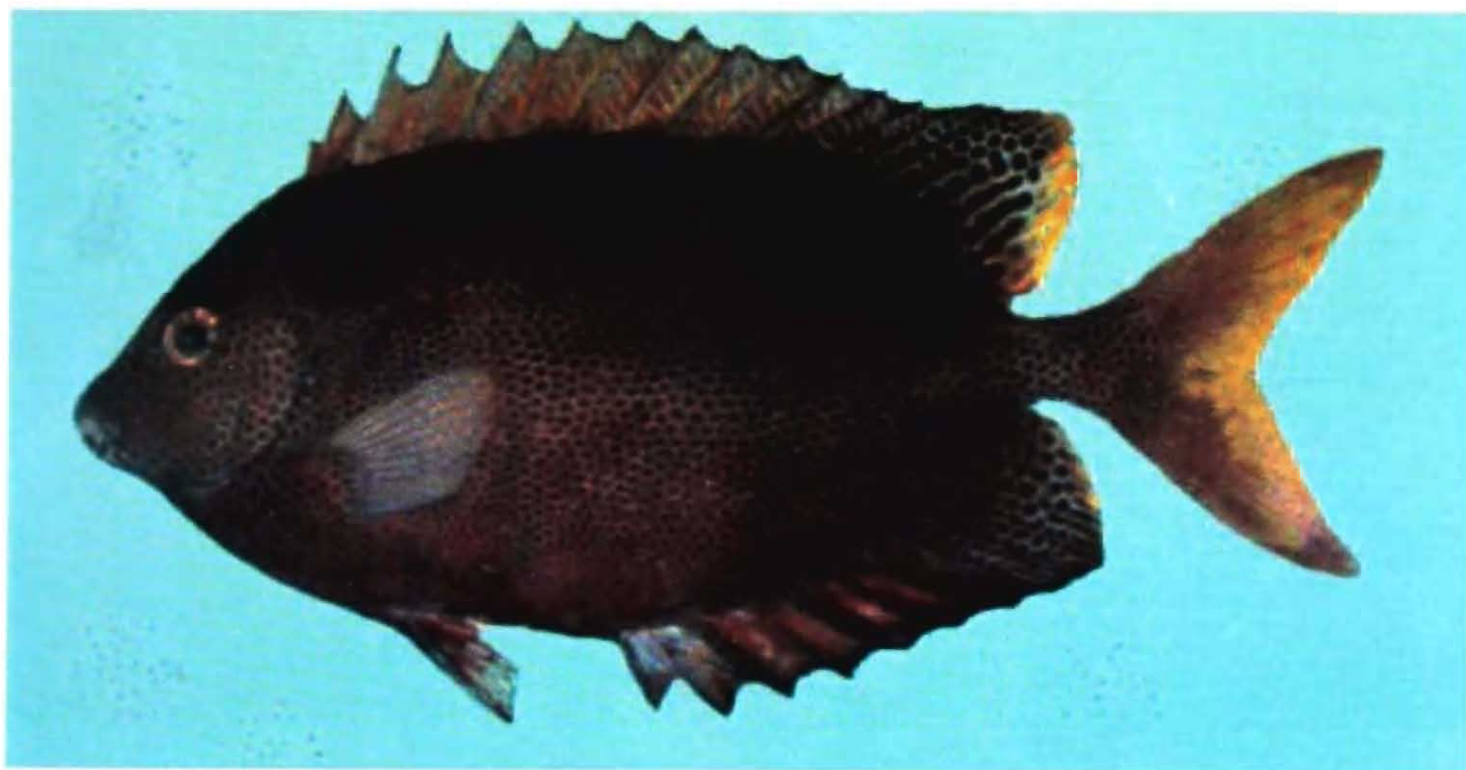


Fig. 149. *Siganus stellatus*



Fig. 150. *Siganus vermiculatus*



Fig. 151. *Psettodes erumei*

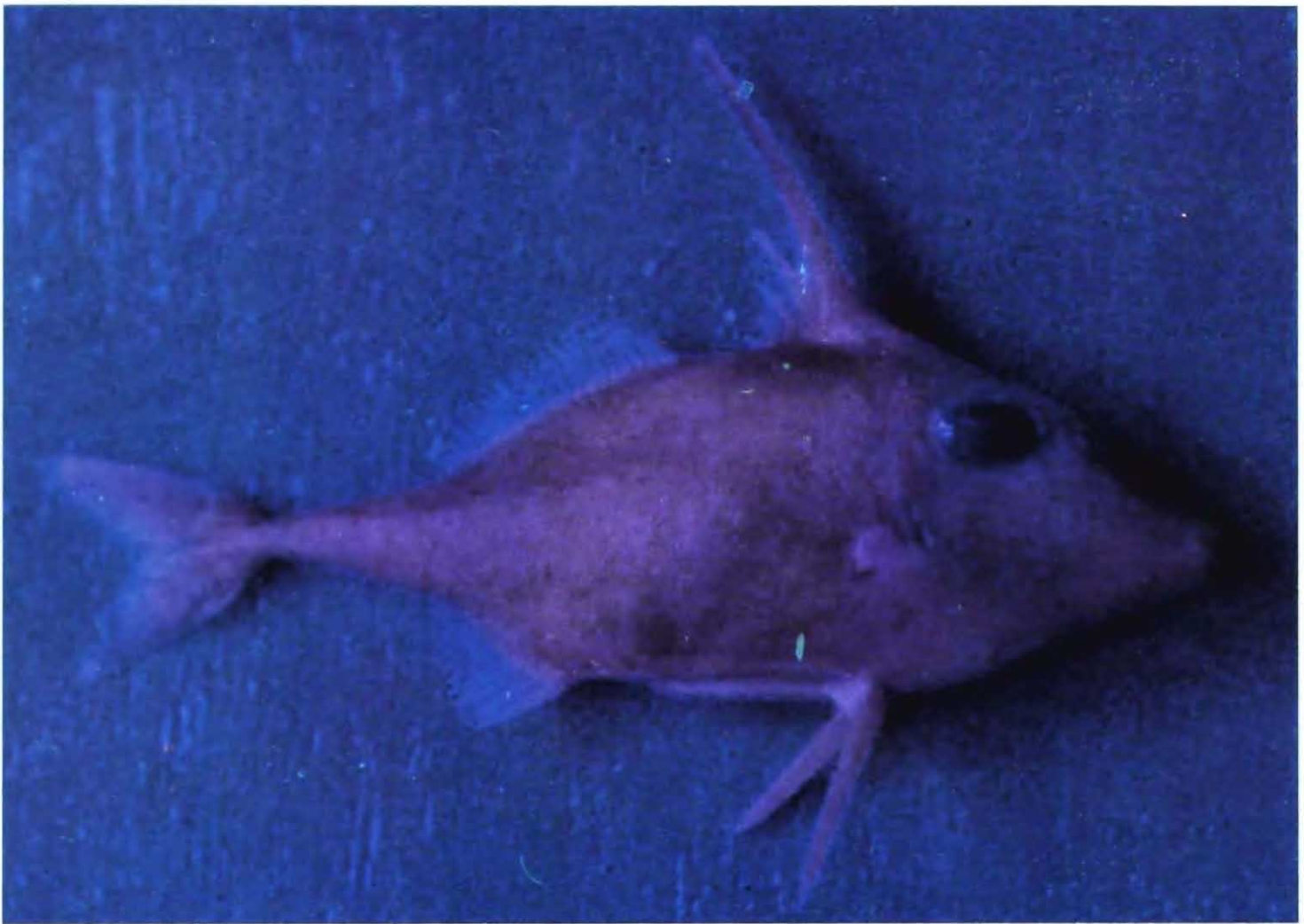


Fig. 152. *Pseudotriacanthus strigilifer*



Fig. 153. *Lactoria cornuta*



Fig. 154. *Arothron hispidus*

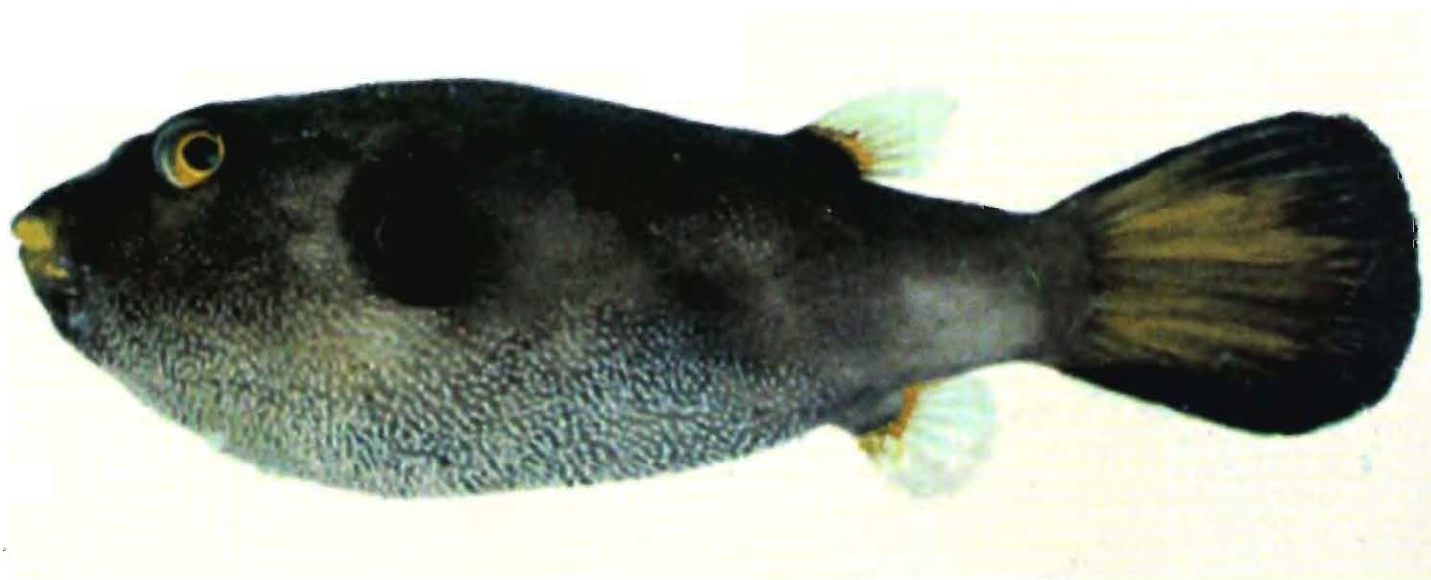


Fig. 155. *Arothron immaculatus*



Fig. 156. *Arothron reticularis*



Fig. 157. *Arothron stellatus*



Fig. 158. *Chelonodon patoca*



Fig. 159. *Lagocephalus lunaris*

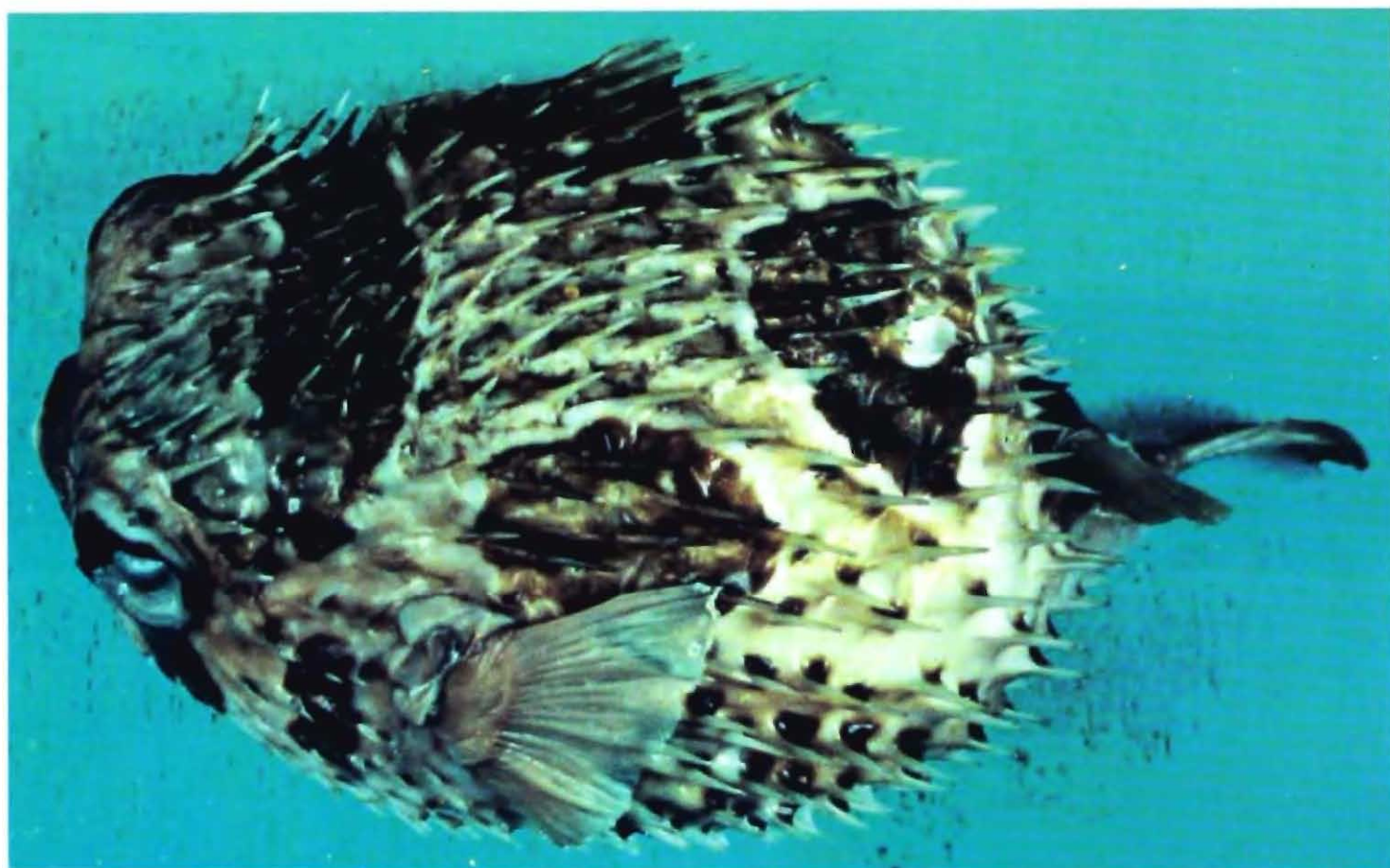


Fig. 160. *Diodon liturosus*