

## GLOSSARY

**Adipose eyelid:** immovable transparent outer covering or partial covering of the eye of some groups of bony fishes, such as mullets and trevallies, which performs protective and streamlining functions.

**Adipose fin:** a small fleshy fin without rays found on the back behind the dorsal fin of some primitive teleost fishes such as the lizardfishes.

**Antrorse:** pointing or turned anteriorly.

**Antrorse spine:** a small bony projection directed anteriorly (present on the lower preopercular margin of some serranids).

**Anus:** the posterior external opening of the digestive tract from which wastes are voided; sometimes called the vent.

**Axil:** the acute angular region between a fin and the body; usually used in reference to the underside of the pectoral fin toward the base. Equivalent to the armpit of man.

**Band:** an oblique or irregular marking (compare “bar” below).

**Bar:** an elongate colour marking of vertical orientation, the size of which are usually more-or-less straight (although they need not be parallel).

**Barbel:** a slender tentacle-like protuberance of sensory function which is often seen on the chin of some fishes such as goatfishes and some of the croakers.

**Benthic:** referring to the benthos, the fauna and flora of the sea bottom.

**Benthopelagic:** living near, or ecologically associated with the bottom but also often found a substantial distance above the benthos during part of the day.

**Bifurcate:** split or divided into two parts; bifid.

**Biserial:** arranged in two separate rows or series.

**Body depth:** greatest depth of body. Body depth at origin of pectoral fins, pelvic fins and first anal fin is sometimes is also used.

**Branched tubules:** refers to the lateral-line scale tubules which divide into two or more branches.

**Canine:** a prominent slender sharp-pointed tooth.

**Carapace:** a rigid shield encasing the body.

**Carnivore:** a flesh-eating animal.

**Caudal fin:** the tail fin. The term tail alone generally refers to that part of a fish posterior to anus.

**Caudal peduncle:** the part of the body between the posterior basal parts of the dorsal and anal fins and the base of the caudal fin. The usual vertical measurement is the least depth; the length measurement herein is horizontal, generally from the rear base of the anal fin.

**Cephalopod:** a group of molluscs, including squid and octopus, which have a tubular siphon under the head and a group of muscular suckered arms around the mouth.

**Cheek:** area between the eye and the edge of the preopercle bone.

**Chondrichthyes:** a class of the vertebrates which includes the cartilaginous fishes (sharks, rays and chimaeras).

**Ciguatera:** a type of poisoning from eating coral-reef fishes; unpredictable and sometimes fatal; known in the western Indian Ocean only at Mauritius and Reunion islands.

**Cirrus:** a small slender flexible fleshy protuberance; the plural is cirri.

**Compressed:** laterally flattened; often used in reference to the shape of the body - in this case deeper than wide.

**Continental shelf:** the sea bottom from the shore out to a depth of 200 m.

**Copepods:** tiny planktonic crustaceans of major importance in marine food chains; some species are parasitic.

**Corselet:** the large thick scales that cover the anterior part of the body in advanced scombrids.

**Crenulate:** wavy or scalloped, in reference to the shape of an edge (as of a lip).

**Crustacean:** an animal of Class Crustacea, Phylum Arthropoda; includes crabs, lobsters, shrimps and copepods.

**Ctenoid scales:** scales of bony fishes which have tiny tooth-like projections along the posterior margin and part of the exposed portion. Collectively these little teeth (or ctenii) impart a rough texture to the surface of the scales.

**Cuspidate:** bearing a pointed projection (cusp); generally used in reference to sharks teeth with more than one cusp.

**Cycloid scales:** scales of bony fishes, the exposed surfaces and edges which lack any small tooth-like projections; they are, therefore, smooth to the touch.

**Demersal:** sinking to or living on the sea bottom.

**Denticles:** tooth-like projections such as the scales which cover the bodies of cartilaginous fishes.

**Denticulate:** having the appearance of teeth or teeth-like structures.

**Depressed:** dorsoventrally flattened. The opposite in body shape of compressed.

**Depth:** vertical measurement of the body of a fish; most often employed for maximum height of body excluding fins.

**Distal:** outward from the point of attachment; the opposite of proximal.

**Diurnal:** pertaining to the daytime, active during the day.

**Dorsal:** toward the back or upper part of the body; the opposite of ventral.

**Dorsal fin:** a median fin along the back which is supported by rays. When there are two or more dorsal fins the most anterior one is designated the first.

**Double emarginate:** with a double-notched margin.

**Echinoderm:** an aquatic marine animal of the Phylum Echinodermata; radially symmetrical with a skeleton composed of calcareous plates (may be reduced to spicules); many move via their numerous tube feet; includes starfishes, brittle stars, sea urchins and sea cucumbers.

**Elasmobranch:** a subclass of cartilaginous fishes including sharks, skates and rays.

**Elongate:** extended or drawn out.

**Emarginate:** concave; used to describe the posterior border of a caudal fin which is inwardly curved.

**Endemic:** native; in reference to an animal or plant restricted to a certain area.

**Epipelagic:** the upper region of the open ocean extending from the surface to depths of around 200 m.

**Esca:** the bait or lure of lophiiform fishes (see illicium).

**Falcate:** sickle-shaped; used to describe the shape of fins.

**Family:** a major entity in the classification of animals and plants which consists of a group of related genera. Family words end in “idae”, such as Gobiidae for the goby family; when used as an adjective, the “ae” is dropped, thus gobiid fish.

**Fang:** a long sharp tooth situated in the frontal part of the upper jaw, by which prey is seized.

**Filamentous:** thread-like.

**Finlets:** small individual fins posterior to second dorsal and anal fins.

**Fin membrane:** the thin membranes between the spines of the first dorsal fin.

**Fork length:** the straight-line distance from the front of the snout to the distal end of the shortest middle caudal fin ray.

**Forked:** inwardly angular; used in describing the shape of a caudal fin which is divided into two equal lobes, the posterior border of each of which is relatively straight.

**Fusiform:** spindle-shaped; used in reference to the body shape of a fish which is cylindrical or nearly so and tapers toward both ends.

**Gas bladder:** a tough-walled gas-filled sac lying in the upper part of the body cavity of many bony fishes **just** beneath the vertebral column, the principal function of which is to offset the weight of the heavier tissues, particularly bone. The organ is also called the swim bladder.

**Genus:** a group of closely related species; the first part of the scientific name of an animal or plant. The plural is genera.

**Gill arch:** the bony and cartilaginous support for the gill filaments and gill rakers. Normally there are four pairs of gill arches in bony fishes.

**Gill slits:** gill openings.

**Gill opening:** the opening posteriorly and often also ventrally on the head of fishes where the water of respiration is expelled. Bony fishes have a single such opening on each side whereas cartilaginous fishes (sharks and rays) have five to seven. The gill openings of sharks and rays are called gill slits.

**Gill rakers:** stout protuberances of the gill arch on the opposite side from the red gill filaments; they function in retaining food organisms. Gill rakers vary greatly in number and length and are important in the classification of fishes.

**Gonads:** reproductive organs.

**Gorgonian:** a sessile animal of the Subclass Alcyonaria, Class Anthozoa, Phylum Coelenterata; includes sea fans and sea whips.

**Habitat:** the place where a species normally lives.

**Head length:** the straight-line measurement of the head taken from the front of the upper lip to the membranous posterior end of the operculum.

**Herbivore:** a plant-feeding animal.

**Holothurian:** sea cucumber, an elongate soft-bodied relative of the starfish.

**Homonym:** the scientific name of an organism which is the same as that given to another organism; the second of these two identical names is invalid.

**Illicium:** the “fishing pole” and “lure” of lophiiform (pediculate) fishes which is used to attract prey close to the mouth.

**Incisiform:** chisel-like; used to describe teeth which are flattened and truncate with sharp edges like the front teeth of some mammals such as man.

**Inferior:** the position of the mouth when it is on the underside of the head.

**Inferior tail ridge:** a bony ridge along the lower edge of the tail in pipefishes.

**Inferior trunk ridge:** a bony ridge along the lower edge of the trunk of the body in pipefishes.

**Interdorsal ridge:** a tough fold of skin that runs along the middle of the back between the dorsal fins of some sharks.

**Interopercle:** one of the bones comprising the operculum; bordered anterodorsally by the preopercle and posterodorsally by the opercle and subopercle.

**Interorbital space:** the region on the top of the head between the eyes; measurements maybe taken of the least width, either fleshy (to the edges of the orbits) or bony (between the edges of the frontal bones which rim the orbits).

**Interpelvic process:** a fleshy process between the inner edges of the pelvic fins. The process may be single or bifid, small or large.

**Invertebrate:** An animal lacking a vertebral column; includes the vast majority of animals on earth such as the corals, the worms and the insects.

**Isthmus:** the throat region of a fish which extends forward from the ventral part of the chest (thorax) and narrows anteriorly.

**Keel:** a lateral strengthening ridge posteriorly on the caudal peduncle or base of the caudal fin; typically found on swift swimming fishes with a narrow caudal peduncle and a broadly lunate caudal fin.

**Labial:** pertaining to the lips.

**Labial furrows:** grooves around the outer edges of the lips that are prominent in some sharks.

**Lanceolate:** lance-shaped, hence gradually tapering to a point; used to describe a caudal fin with very long middle rays. An unusual fin shape most often seen among the gobies.

**Lateral:** referring to the side or directed toward the side; the opposite of medial.

**Lateral line:** a sensory organ of fishes which consists of a canal running along the side of the body and communicating via pores through scales to the exterior; functions in perceiving low frequency vibrations, hence provides a sense which might be termed "touch at a distance".

**Lateral-line scales:** the pored scales of the lateral line between the upper end of the gill opening and the base of the caudal fin. The count of this series of scales is of value in the description of fishes. Also of value at times is the number of scales above the lateral line (to the origin of the dorsal fin) and the number below the lateral line (to the origin of the anal fin).

**Lateral trunk ridge:** a bony ridge along the middle part of the anterior body of pipefishes.

**Lower limb:** refers either to the horizontal margin of the preopercle or to the ventral part of the gill arch.

**Lunate:** sickle-shaped; used to describe a caudal fin which is deeply emarginate with narrow lobes.

**Maxilla:** a dermal bone of the upper jaw which lies posterior to the premaxilla. On the higher fishes the maxilla is excluded from the gape, and the premaxilla bears the teeth.

**Median fins:** the fins in the median plane, hence the dorsal, anal and caudal fins.

**Mesopelagic:** the region of the open ocean below the epipelagic zone, between the depths of around 200 m to 1000 m.

**Midlateral scales:** refers to the longitudinal series of scales from the upper edge of the operculum to the base of the caudal fin. Generally used for fishes without a lateral line.

**Mimic:** an organism that closely resembles another, usually unrelated, organism which is protected from predation for same reason.

**Molariform:** shaped like a molar, hence low, broad and rounded.

**Mollusc:** an animal of the Phylum Mollusca; unsegmented with a muscular “foot” and visceral mass; often protected by one or two shells; includes gastropods (snails and nudibranchs), pelecypods (bivalves such as clams and oysters), cephalopods (such as squids and octopuses) and amphineurans (chitons).

**Mucus:** a slimy substance secreted by the skin of fishes.

**Naked:** without scales.

**Nape:** the dorsal region of the head posterior to the occiput.

**Nasal barbel:** tentacle-like protuberance located close to the nasal opening

**Nasal fossa:** cavity or pit containing the nasal organ.

**Nasoral groove:** a cleft or furrow between the nostril and mouth in some sharks.

**Neritic:** the shallow pelagic zone over the continental shelf.

**Nictitating eyelid:** a moveable transparent membrane which serves to protect the eye of elasmobranch fishes.

**Nictitating membrane (nictitans):** the movable inner eyelid of sharks.

**Nocturnal:** active at night.

**Oceanic:** pertaining to the open ocean beyond the continental shelf.

**Ocellus:** eye-like marking with ring of one colour surrounding spot of another.

**Omnivore:** an animal which feeds on both plant and animal material

**Opercle:** the large bone which forms the upper posterior part of the operculum; often bears one to three backward-directed spines in the higher fishes.

**Operculum:** gill cover; comprised of the following four bones; opercle, preopercle, interopercle and subopercle.

**Orbital:** referring to the orbit or eye.

**Order:** a major unit in the classification of organisms; an assemblage of related families. The ordinal word ending in the Animal Kingdom is “iformis”.

**Origin:** the beginning; often used for the anterior end of the dorsal or anal fin at the base. Also used in zoology to denote the more fixed attachment of a muscle.

**Ovary:** the female reproductive organ that produces eggs.

**Oviparous:** producing ova (eggs) that hatch after leaving the body of the mother; the mode of reproduction of the great majority of bony fishes.

**Ovoviviparous:** producing eggs which hatch within the body of mother; mode of reproduction of most sharks and rays.

**Paired fins:** collective term for the pectoral and pelvic fins.

**Palatine:** a paired lateral bone on the roof of the mouth lying between the vomer and the upper jaw; the presence or absence of teeth on this bone is of significance in classification of fishes.

**Papilla:** a small fleshy protuberance.

**Pectoral fin:** the fin usually found on each side of the body behind the gill opening; in primitive fishes such as herrings, this pair of fins is lower on the body than in advanced forms.

**Pelagic:** pertaining to the open sea (hence not living inshore or on the bottom); oceanic.

**Pelvic fin:** one of a pair of juxtaposed fins ventrally on the body in front of the anus; varies from abdominal in position in primitive fishes such as herrings to the more anterior locations termed thoracic or jugular in advanced fishes. It is sometimes called the ventral fin.

**Perinasal groove:** cleft or furrow around the nasal opening in some sharks. Also called circumnarial groove.

**Plankton:** collective term for pelagic animals and plants that drift with ocean currents; many are motile but are too small or swim too feebly or aimlessly to resist the sweep of the current. By contrast, the animals of the nekton are independent of water movement.

**Polychaete:** an animal of Class Polychaeta of Phylum Annelida; a segmented worm with setae (bristles), which may move about freely or live permanently in a tube. Polychaete is from the Greek meaning many hairs or bristles.

**Polyp:** the sedentary form of coelenterate animals consisting of a tubular body with one external opening (the mouth) rimmed with tentacles; may be one of a colony; the soft part of a living coral.

**Posterior:** the rear of hind portion.

**Predator:** an animal that captures and eats other animals.

**Predorsal scales:** the scales on the midline in front of the dorsal fin origin. These scales are counted as the scale rows which intersect the midline from the anterior point of the dorsal fin to the anterior point of the supratemporal band of scales.

**Premaxilla:** the more anterior bone forming the upper jaw. In the higher fishes it extends backward and bears all of the teeth of the jaw. It is this part of the upper jaw which can be protruded by many fishes.

**Preopercle:** a boomerang-shaped bone, the edges of which form the posterior and lower margins of the cheek region; it is the most anterior of the bones comprising the gill cover. The upper vertical margin is sometimes called the upper limb, and the lower horizontal edge the lower limb; the two limbs meet at the angle of the preopercle.

**Preorbital:** the first and usually the largest of the suborbital bones; located along the ventroanterior rim of the eye. Sometimes called the lachrymal bone.

**Produced:** drawn out to a point; lengthened.

**Protrusile, protrusible:** capable of being thrust out or extended forwards.

**Proximal:** toward the centre of the body; the opposite of distal.

**Ray:** the supporting bony elements of fins; includes spines and soft rays.

**Rhomboid:** wedge-shaped; refers to a caudal fin in which the middle rays are longest and the upper and lower portions of the terminal border of the fin are more-or-less straight; essentially the opposite of forked. It is an uncommon fin shape.

**Rostrum:** a projecting snout or beak; protracted anterior part of the skull in sharks and rays.

**Rounded:** refers to a caudal fin in which the terminal border is smoothly convex.

**Rudiment:** a structure so deficient in size that it does not perform its normal function; often used in reference to small nodular gill rakers at the ends of the gill arches.

**Salp:** a planktonic tunicate.

**Sargassum:** brown algae that drift in the open ocean.

**Seta:** a bristle or bristle-like structure; the plural is setae.

**Scute:** an external bony plate or enlarged scale.

**Segmented rays:** the soft rays of the fins which bear cross striations, at least distally.

**Serrate:** notched along a free margin; like the edge of a saw.

**Sexual dichromatism:** a condition wherein the two sexes of the same species are of different colour.

**Snout:** the region of the head in front of the eye. Snout length is measured from front of the upper lip to the anterior edge of the eye.

**Soft ray:** a segmented fin ray which is composed of two closely joined lateral elements. It is nearly always flexible and often branched.

**Spatulate:** flattened with a rounded end, sometimes used to describe tooth shape.

**Species:** the fundamental unit in the classification of elements and plants consisting of a population of individuals which freely interbreed with one another. The word "species" is both singular and plural.

**Spine:** unsegmented bony process consisting of single element, usually rigid and sharply pointed. Those spines which support fins are never branched.

**Spinule:** a small spine (but not used to refer to this spines in fins).

**Spiracle:** an opening between the eye and the first gill slit of sharks and rays which leads to the pharyngeal cavity.

**Standard length:** the straight-line length of a fish from the front of the upper lip to the posterior end of the vertebral column (the last element of which, the hypural plate, is somewhat broadened and forms the bony support for the caudal fin rays).



**Stripe:** a horizontal straight-sided colour marking.

**Subopercle:** an elongate flat dermal bone which is one of the four comprising the operculum; lies below the opercle and forms the ventroposterior margin of the operculum.

**Suborbital depth:** the distance from the lower edge of the eye to the nearest edge of the upper lip.

**Subspecies:** a taxonomically and geographically distinct subgroup within one species.

**Supraorbital:** the region above the upper edge of the eye.

**Supraorbital ridge:** bony crest above eye.

**Symbiosis:** the living together in close association by two dissimilar organism. This term includes commensalism whereby one organism derives benefit from the association but the other does not (though it is not harmed), parasitism where the association is disadvantageous to one of the organisms and mutualism where both organisms exist to mutual advantage.

**Symphysis:** an articulation, generally immovable, between two bones; often used in reference to the anterior region of juncture of the two halves of the jaws.

**Synonym:** invalid scientific name of an organism proposed after accepted name.

**Tail:** the part of an animal posterior to the anus (disregarding the hind limbs of quadrupeds).

**Teleost:** refers to teleostei, the highest superorder of rayfin bony fishes. The other superorders are the Chondrostei (surgeons and paddlefishes are living representatives) and the Holostei (the bowfin and true gars are contemporary forms). Teleosts represent about 96% of extant fishes.

**Terminal:** pertaining to a mouth at the anteriormost part of the head.

**Thermocline:** the distinct interface between surface waters and cooler deeper waters.

**Thoracic:** referring to the chest region.

**Total length:** the maximum straight-line length of a fish; generally taken from the front of which whichever jaw is most anterior to the end of the longest caudal fin ray.

**Transverse scales:** series of scales in a vertical row. often counted between the dorsal and anal fin bases.

**Truncate:** square-ended; used to describe a caudal fin with a vertically straight terminal border and angular or slightly rounded comers.

**Uniserial:** arranged in a single row.

**Upper limb:** refers either to the vertical free margin of the preopercle or the upper part of the gill arch.

**Ventral:** toward the lower part of the body; the opposite of dorsal.

**Vertical scale rows:** see midlateral scales.

**Villiform:** like the villi of the intestine, hence with numerous small slender projections. Used to describe bands of small close-set teeth, particularly if slender. If the teeth are short, they are often termed cardiform.

**Viviparous:** producing living young which develop from nourishment directly from the mother.

**Vomer:** a median unpaired bone toward the front of the roof of the mouth, the anterior end of which often bears teeth.

**Yolk:** the nutritive material (rich in fatty substances) of an egg.

**Zooplankton:** the animals of the plankton.

## BIBLIOGRAPHY

- Allen G.R. & Emery A.R. (1985) A Review of the Pomacentrid Fishes of the Genus *Stegastes* from the Indo-Pacific, with Descriptions of Two New Species. *Indo-Pacific Fishes*, 3: 31pp.
- Allen G.R. & Talbot F.H. (1985) Review of the Snappers of the Genus *Lutjanus* (Pisces: Lutjanidae) from the Indo-Pacific, with the Description of a New Species. *Indo-Pacific Fishes*, 11: 87pp.
- Allen G.R. (1975) *Damselfishes of the South Seas*. TFH, New Jersey. 237pp.
- Allen G.R. (1985) *FAO Species Catalogue. Vol. 6. Snappers of the World. An Annotated and Illustrated Catalogue of Lutjanid Species Known to Date. FAO Fish. Svnop., (125) Vol. 6: 208pp.*
- Allen G.R. (1985) *Butterfly and Angelfishes of the World. Mergus Verlag, Germany (Third Edition in English). Vol. 2: 145-352.*
- Anderson R.C. & Hafiz A. (1987) *Common Reef Fishes of the Maldives. Part 1. Novelty Publishers, Male. 83pp.*
- Anderson R.C. & Hafiz A. (1989) *Common Reef Fishes of the Maldives. Part 2. Novelty Publishers, Male. 85pp.*
- Anderson R.C. & Hafiz A. (1992) *Common Reef Fishes of the Maldives. Part 3. Novelty Publishers, Male. 85pp.*
- Anderson R.C. & Ahmed H. (1993) *The Shark Fisheries in the Maldives. Ministry of Fisheries and Agriculture, Male and FAO, Rome. 73pp.*
- Anderson R.C. (1992) *Divers' Guide to the Sharks of the Maldives. Novelty Publishers, Male. 63pp.*
- Anderson R.C. (1996) *Common Reef Fishes of Sri Lanka. Wildlife Heritage Trust of Sri Lanka, Colombo. 80pp.*
- Burgess W.E & Axelrod H.R. (1973) *Fishes of Sri Lanka (Ceylon), the Maldiv Islands and Mombasa. Pacific Marine Fishes. Book 3. TFH, New Jersey. Pp. 562-839.*
- Carpenter K.E. (1987) Revision of the Indo-Pacific Fish Family Caesionidae (Lutjanoidea), with Descriptions of Five New Species. *Indo-Pacific Fishes*, 15: 56pp.
- Carpenter K.E. (1988) *FAO Species Catalogue. Vol. 8. Fusilier Fishes of the World. An Annotated and Illustrated Catalogue of Caesionid Species Known to Date. FAO Fish.Synop., (125) Vol. 8: 75pp.*
- Carpenter K.E. & Allen G.R. (1989) *FAO Species Catalogue. Vol.9. Emperor Fishes and Large-eye Breams of the World (Family Lethrinidae). An Annotated and Illustrated Catalogue of Lethrinid Species Known to Date. FAO Fish.Synop., (125) Vol. 9: 118pp.*

- Collette B.B. & Nauen C.E. (1983) *FAO Species Catalogue. Vol. 2. Scombrids of the World. An Annotated and Illustrated Catalogue of Tunas, Mackerels, Bonitos and Related Species Known to Date.* FAO Fish.Synop., (125) Vol. 2: 137pp.
- Compagno L.J.V. (1984) *FAO Species Catalogue. Vol. 4. Sharks of the World. An Annotated and Illustrated Catalogue of Sharks Species Known to Date. Part 1. Hexanchiformes to Lamniformes.* FAO Fish.Synop., (125) Vol. 4, Pt. 1: 1-249.
- Compagno L.J.V. (1984) *FAO Species Catalogue. Vol. 4. Sharks of the World. An Annotated and Illustrated Catalogue of Sharks Species Known to Date. Part 2. Carcharhiniformes.* FAO Fish.Synop., (125) Vol. 4, Pt. 2: 25 1-455.
- De Bruin G.H.P., Russell B.C. & Bogusch A. (1995) *The Marine Fishery Resources of Sri Lanka. FAO Species Identification Field Guide for Fishery Purposes.* FAO, Rome. 400pp. 32 colour plates.
- Fischer W. & Bianchi G. (Eds.) (1984) *FAO Species Identification Sheets for Fishery Purposes. Western Indian Ocean; (Fishing Area 5 1).* DANIDA and FAO, Rome. 5 Vols., pag. var.
- Gloerfelt-Tarp T. & Kailola P.J. (1 984) *Trawled Fishes of Southern Indonesia and Northwestern Australia.* Australian Development Assistance Bureau; Indonesian Directorate General of Fisheries; German Agency for Technical Cooperation. 406pp.
- Grant E.M. (1985) *Guide to Fishes.* Department of Harbours and Marine. Brisbane, Queensland, Australia. 896pp.
- Gubanov Y.P (1978) *The Reproduction of Some Species of Pelagic Sharks from the Equatorial Zone of the Indian Ocean.* *Journal of Ichthyology*, 18(5): 78 1-792.
- Heemstra P.C. & Randall J.E. (1993) *FAO Species Catalogue. Vol. 16. Groupers of the World. (Family Serranidae, Subfamily Epinephelinae). An Annotated and Illustrated Catalogue of the Grouper, Rockcod, Hind, Coral Grouper and Lyretail Species Known to Date.* FAO Fish.Synop., (125) Vol. 16: 382pp.
- Debelius H. (1993) *Indian Ocean Tropical Fish Guide.* IKAN, Frankfurt. 32 lpp.
- Hutchins J.B. (1986) *Review of the Monacanthid Fish Genus Pervagor-, with Descriptions of Two New Species.* *Indo-Pacific Fishes*, 12: 35pp.
- Jones S. & Kumaran M. (1980) *Fishes of the Laccadive Archipelago.* Nature Conservation and Aquatic Sciences Service, Trivandrum. 760pp.
- McAllister D.E., Anderson R.C. & Alfonso N. (1992) *Guide to Selected Fishes of the Maldives.* International Centre for Ocean Development, Halifax, Canada. 92pp.
- MRS (1986) *Catalogue of Fishes of the Maldives. Vol. 1: 1 - 160.* Marine Research Section, Ministry of Fisheries, Male.
- MRS (1987) *Catalogue of Fishes of the Maldives. Vol.2: 161-330.* Marine Research Section, Ministry of Fisheries, Male.
- MRS (1988) *Catalogue of Fishes of the Maldives. Vol. 3: 331-494.* Marine Research Section, Ministry of Fisheries, Male.

- MRS (1992) Catalogue of Fishes of the Maldives. Vol. 4: 495-664. Marine Research Section, Ministry of Fisheries and Agriculture, Male.
- MRS (1996) Guide to Aquarium Fishes of Maldives. Marine Research Section, Ministry of Fisheries and Agriculture, Male. 127pp.
- Murdy E.O. & Hoese D.F. (1985) Revision of the Gobiid Fish Genus *Istigobius*. Indo-Pacific Fishes, 4: 41 pp.
- Nakamura I. (1985) FAO Species Catalogue. Vol.5. Billfishes of the World. An Annotated and Illustrated Catalogue of Marlins, Sailfishes, Spearfishes and Swordfishes Known to Date. FAO Fish. Synop., (125) Vol.5: 65pp.
- Nakamura I. & N.V. Parin (19) FAO Species Catalogue. Vol. 15. Snake Mackerels and Cutlassfishes of the World (Families Gempylidae and Trichiuridae). An Annotated and Illustrated Catalogue of the Snake Mackerels, Snoeks, Escolars, Gemfishes, Sackfishes, Domine, Oilfish, Cutlassfishes, Scabbardfishes, Han-tails and Frostfishes Known to Date. FAO Fish. Synop. (125) Vol.15: 136pp.
- Nelson J.S. (1994) Fishes of the World. Third edition. John Wiley & Sons. 600pp.
- Pietsch T.W. & Grobecker D.B. (1987) Frogfishes of the World: Systematics, Zoogeography and Behavioral Ecology. Stanford University Press. 420pp.
- Randall J.E. (1983) Red Sea Reef Fishes. IMMEL Publishing, London. 192pp.
- Randall J.E. (1986) Sharks of Arabia. IMMEL Publishing, London. 148pp.
- Randall J.E. (1992) Diver's Guide to Fishes of Maldives. IMMEL Publishing, London. 193pp.
- Randall J.E. & Anderson R.C. (1993) Annotated Checklist of the Epipelagic and Shore Fishes of the Maldive Islands. Ichthyological Bulletin of the J.L.B. Smith Institute of Ichthyology. 59: 47pp.
- Randall J.E. & Emery A.R (1983) A new labrid fish of the genus *Cirrhilabrus* from the Chagos Archipelago, Indian Ocean. Journal of Aquaculture and Aquatic Sciences. 3: 2 1-24.
- Randall J.E., Allen G.R. & Steene R.C. (1990) Fishes of the Great Barrier Reef and Coral Sea: The Complete Divers' and Fishermen's Guide. Crawford House Press, Australia. 507pp.
- Russell B.C. (1990) FAO Species Catalogue. Vol. 12. Nemipterid Fishes of the World. (Threadfin Breams, Whiptail Breams, Monocle Breams, Dwarf Monocle Breams and Coral Breams). An Annotated and Illustrated Catalogue of Nemipterid Species Known to Date. FAO Fish.Synop. (125) Vol. 12: 149pp.
- Smith M.M. & Heemstra P.C. (Eds.) (1991) Smiths' Sea Fishes. Southern Book Publishers, Johannesburg. 1048pp, 144pls.
- Steene R.C. (1985) Butterfly and Angelfishes of the World. Vol. 1. Second Edition in English. Merlag Verlag, Germany. 144p.
- Stromme T. (1983) Cruise Report Dr. Fridtjof Nansen: Survey of the Abundance and Distribution of the Fish Resources in the Coastal Waters off Maldives. Institute of Marine Research, Bergen, Norway. 23pp.

- Whitehead P.J.P. (1985) FAO Species Catalogue. Vol. 7. Clupeoid Fishes of the World. An Annotated and Illustrated Catalogue of the Herrings, Sardines, Pilchards, Sprats, Anchovies and Wolfherrings. Part 1: Chirocentridae, Clupeidae and Pristigasteridae. FAO Fish.Synop., (125) Vol. 7(1): 1-303.
- Whitehead P.J.P., Nelson G.J & Wongratana T. (1988) FAO Species Catalogue. Vol. 7. Clupeoid Fishes of the World. An Annotated and Illustrated Catalogue of the Herrings, Sardines, Pilchards, Sprats, Anchovies and Wolfherrings. Part 2: Engraulidae. FAO Fish.Synop., (125) Vol. 7(2): 305-579.
- Eschmeyer W.N. ( 1990) Catalog of the Genera of Recent Fishes. California Academy of Sciences, San Francisco. 697pp.
- Winterbottom R. & Anderson R.C. (1997) A Revised Checklist of the Epipelagic and Shore Fishes of the Chagos Archipelago, Central Indian Ocean. Ichthyological Bulletin of the J.L.B. Smith Institute of Ichthyology, 66: 28pp.
- Winterbottom R., Emery A.R. & Holm E. (1988) An annotated checklist of the fishes of the Chagos Archipelago, Central Indian Ocean. Royal Ontario Museum Life Sciences Contributions, 145: 226pp.

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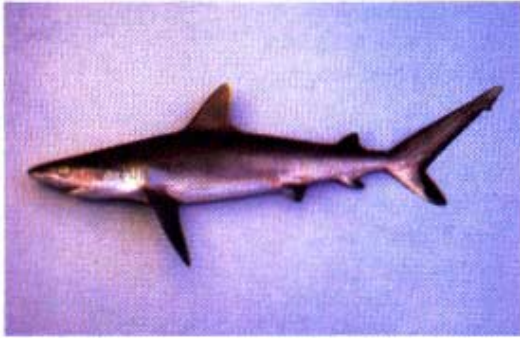
Yellow boxfish 367  
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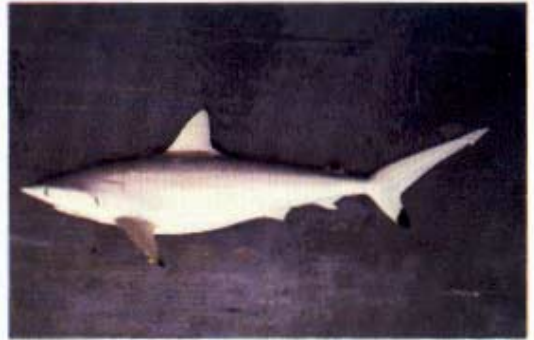
## Z

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PLATE 1



a. *Carcharhinus amblyrhynchos*



b. *Carcharhinus sorrah*



c. *Galeocerdo cuvier*



d. *Sargocentron spiniferum*



e. *Aethaloperca rogae*



f. *Anyperodon leucogrammicus*



g. *Cephalopholis argus*



h. *Cephalopholis leopardus*



PLATE 2



a. *Cephalopholis miniata*



b. *Cephalopholis sonnerati*



c. *Cephalopholis urodeta*



d. *Epinephelus areolatus*



e. *Epinephelus caeruleopunctatus*



f. *Epinephelus chiorostigma*



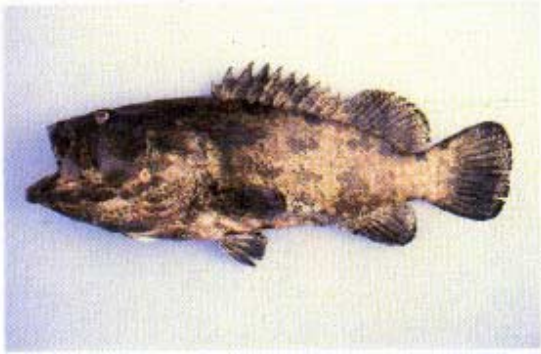
g. *Epinephelus*



h. *Epinephelus flavocaeruleus*



PLATE 3



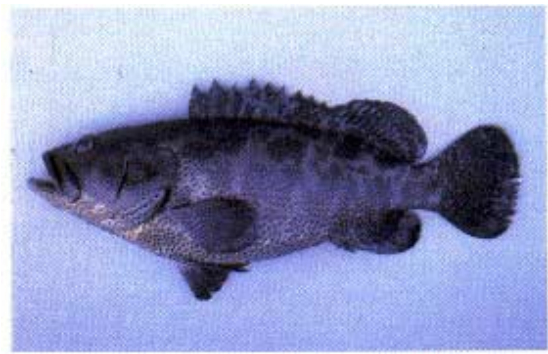
a. *Epinephelus fuscoguttatus*



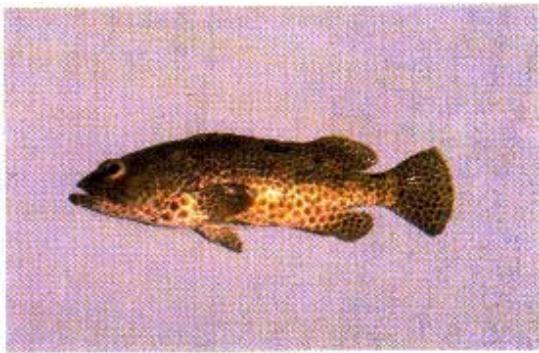
b. *Epinephelus multinotatus*



c. *Epinephelus ongus*



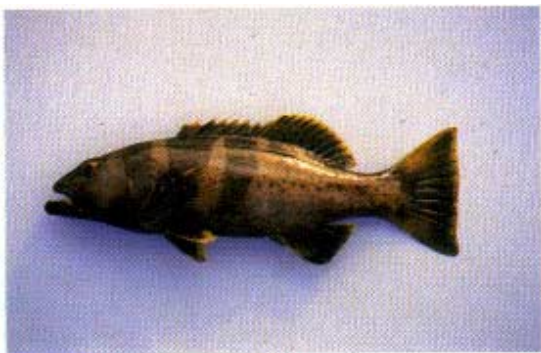
d. *Epinephelus polyphemadion*



e. *Epinephelus spilotoceps*



f. *Plectropomus areolatus*



g. *Plectropomus laevis*



h. *Plectropomus pessuliferus*

**PLATE 4**



*a. Variola albimarginata*



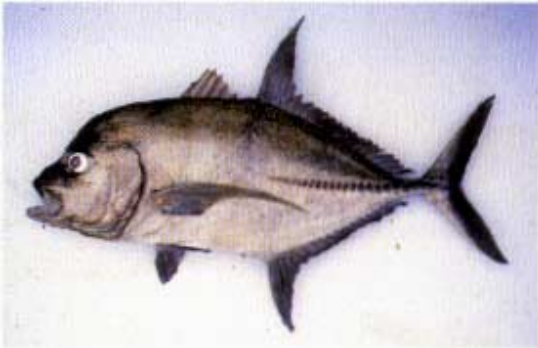
*b. Varila louti*



*c. Carangoides orthogrammus*



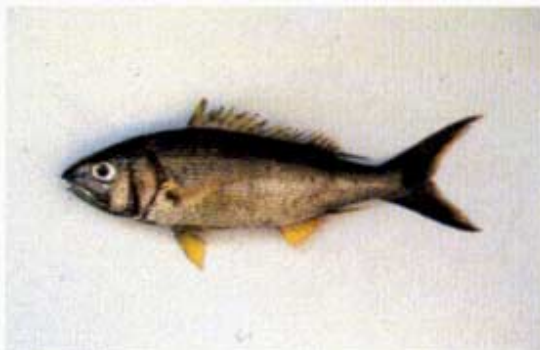
*d. Caranx ignobilis*



*e. Caranx lugubris*



*f. Elagatis bipinnulata*



*g. Aphareusfurca*



*h. Aphareus rutiians*



PLATE 5



a. *Aprion virescens*



b. *Lutjanus bohar*



c. *Lutjanus fulvus*



d. *Lutjanus kasmira*



e. *Lutjanus sebae*



f. *Pristipomoides filamentosus*



g. *Lethrinus conchliatus*



h. *Lethrinus rurioperculatus*

PLATE6



a. *Chaetodon collar*



b. *Chaetodon madaskariensis*



c. *Chaetodon oxycephalus*



d. *Forcipiger flavissimus*



e. *Forcipiger longirostris*



f. *Apolemichthys trimaculatus*



g. *Pomacanthus imperator*



h. *Pygoplites diacanthus*