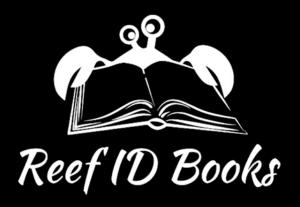
RED SEA MARINE LIFE

FREE PREVIEW

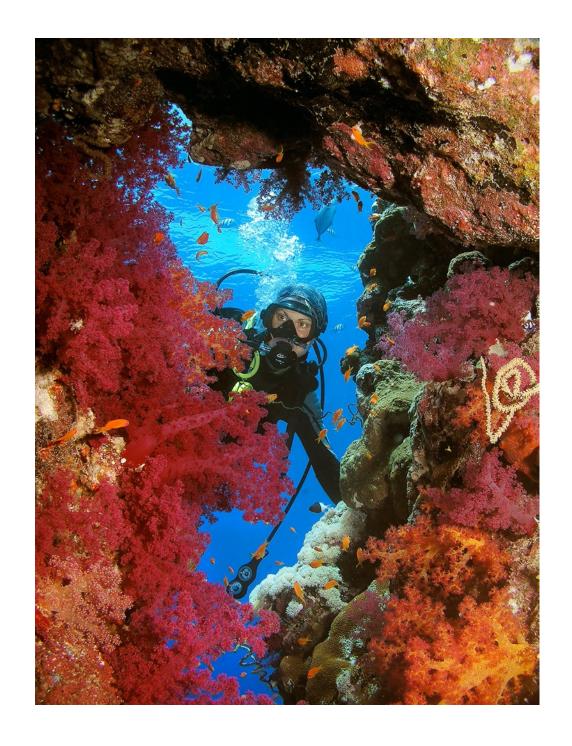


SELECTED PAGES



Andrey Ryanskiy

Red Sea Marine Life



Photographic guide with 2100+ species

Andrey Ryanskiy

INTRODUCTION, COPYRIGHT, ACKNOWLEDGMENTS

INTRODUCTION

Basics. The Red Sea is a semi-enclosed young ocean basin between Asia and Africa, about 2000 km long with a maximum width of 355 km, with unique environment and biology. The Red Sea is bordered on its western shore

by Egypt, Sudan, Eritrea and Djibouti and on its eastern shore by Israel, Jordan, Saudi Arabia and Yemen.



10 facts to know about the Red Sea:

- The Red Sea is a rich and diverse ecosystem that harbours over 1200 species of fish and 360 species of scleractinian coral.
- Of these, 15% of the fish species, 17% of ascidians and 7% of the coral species are endemic. Peripheral regions, such as the Red Sea, are extremely important as "evolutionary incubators" that contribute unique genetic lineages to other regions of the Indo-West Pacific.
- It is the northernmost tropical sea in the world.
- The extremely low rainfall over the Red Sea and its coasts and high surface temperatures make it one of the warmest and saltiest saltwater bodies in the world.
- No significant rivers or streams drain into the sea. This results in much better visibility than in other seas, including South-East Asia.
- It has an average depth of 490 m, and in the central Suakin Trough it reaches its maximum depth of 3,040 m.
- The name of the sea may signify the seasonal blooms of the red colored algae near the water's surface. Some scholars think that the name red is referring to the direction south, just as the Black Sea's name may refer to north.
- The 101-mile-long Suez Canal links the Mediterranean Sea to the Red Sea. It resulted in the migration of marine species across the Suez Canal, usually from the Red Sea to the Mediterranean Sea, and more rarely in the opposite direction. More than 300 species native to the Red Sea have been identified in the Mediterranean Sea.
- The Red Sea is one of the most popular dive destinations in the world with crystal clear water, the world's most beautiful coral reefs, plentiful marine life, and highly diverse sites to dive.
- Marine Protected Areas are very important in protecting Red Sea natural resources and marine biodiversity. Ras Mohammed,

Nabq, Abu Galum, Gebel Elba, Wadi El Gemal in Egypt, Sanganeb and Dungonab Bay in Sudan - all of them are impressive reef formations and areas of great natural beauty. Diving centers in the area operate under environmental-friendly procedures.

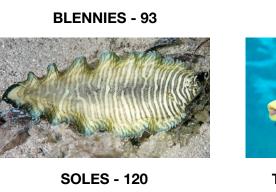
10 facts to know about the Red Sea Marine Life Book

- Two hundred years ago, in 1822, Dr. Eduard Rüppell of the Senckenberg Museum in Frankfurt collected fishes in the Red Sea for his book, "Fishes des rothen Meeres", featuring 161 species. This book continues the tradition, at the modern technical level.
- A comprehensive pictorial guide: 2900 full color photographs of 2100+ species, including 810+ fish species, 250 cnidarians (corals and relatives) and near 350 species of nudibranchs and sea slugs.
- New species of fish, nudibranchs, sea slugs and other invertebrates were discovered by the author during the work on this book.
- Several well-known Western Pacific species have been recorded for the first time in the Red Sea. Some important and interesting species were photographed for the first time in their natural environment.
- Important discoveries were made by the author's colleagues and friends, many of whom contributed wonderful and unique photographs to this book.
- Live photo of hundreds of species have never before appeared in field guides or popular books.
- The book covers the region from the Agaba and Eilat to Farasan Islands, South Sudan and Erithrea.
- Red Sea Marine Life serves to fill a gap in the general public's understanding of Red Sea marine life in the two
 decades since the previous guides were published.
- This book does provide its readers with basic information about the biology and taxonomy, serving mainly as a visual guide to their identification. Validity of the species names was checked with the help of the World Register of Marine Species (WoRMS).
- Convenient pictorial guide at the beginning will help readers navigate through the book.

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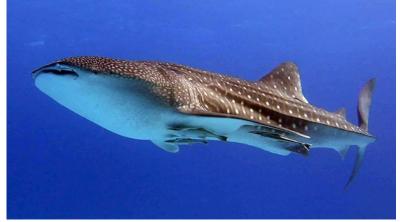


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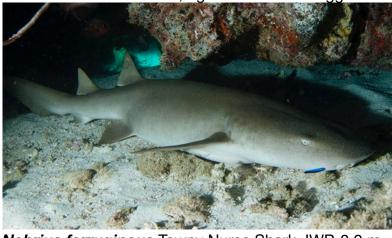




Rhincodon typus Whale Shark, Circumtropical, average length 5-10 m. Harmless pelagic plankton feeder. Most often visits the Northern Red Sea in May-June. Photo on the left ©Sven Kahlbrock, right ©Nicole Lindegger



Stegostoma fasciatum, Zebra Shark, IWP, 2.8 m. Grey-yellow with dark brown spots ©Keith D. P. Wilson

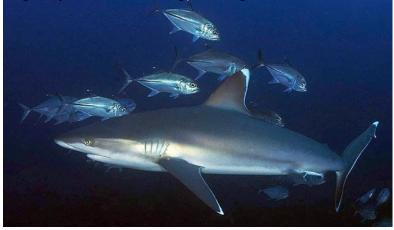


Nebrius ferrugineus Tawny Nurse Shark, IWP, 3.2 m. Mouth with suction power to vacuum up food ©AR





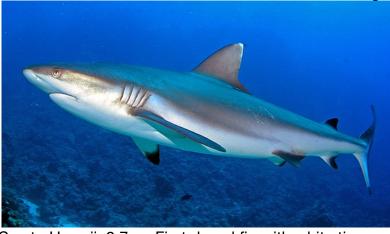
Alopias pelagicus Pelagic Thresher, IP, 3.3 m. Feeds on fishes, stunned with whip-like strikes of its elongated tail. Regularly observed visiting cleaning stations on Brother Islands ©Elke Bojanowski (left), ©Sven Kahlbrock (right)





Carcharhinus albimarginatus Silvertip Shark, Indo-Pacific, 3 m. Tips of dorsal, pectoral and caudal fins white. Occurs near steep drop-offs. Dangerous shark. Known for attacks on humans. ©Sven Kahlbrock, left, ©AR, right





Carcharhinus amblyrhynchos Grey Reef Shark, IP, Red See to Hawaii, 2.7 m. First dorsal fin with white tip, caudal fin with black posterior margin. Feeds on fishes, may be aggressive when provoked. ©AR, Sudan

CARCHARHINIDAE

RHINCODONTIDAE

GINGLYMOSTOMATIDAE

ALOPIIDAE





Antennatus coccineus Scarlet Frogfish, IP: Red Sea and East Africa to East Pacific, 13 cm. White esca (or "lure"), sometimes a large dark spot at dorsal fin base. ©Rafi Amar (left), ©Sven Kahlbrock (right)





Antennarius commerson Giant Frogfish, Red Sea to Hawaii and E. Pacific, 40 cm. Often found near big sponges, imitating their color and texture. Feeds on fish. Capable to consume prey as large as itself. ©Rafi Amar, Eilat





Antennarius commerson (continued) Coloration variable, may change color within a few weeks to match the environment. Esca (fishing lure) is a small tuft of flattened appendages ©Rafi Amar, Eilat (left, juvenile) ©AR, right



Antennatus nummifer Spotfin Frogfish, Red Sea to Hawaii, 13 cm. Dark spot at dorsal fin base ©AR, Bali



Antennatus rosaceus Rosy Frogfish, IWP, 6 cm. Esca with a tuft of long filaments. ©AR, Sangeang



Chaetodon auriga Threadfin Butterflyfish, IP, 23 cm. Two-ways diagonal stripes on sides ©AR, Tiran Straits



Chaetodon fasciatus Diagonal Butterflyfish, Red Sea endemic, 25 cm. Feeds on coral polyps, algae ©AR





Chaetodon austriacus Exquisite Butterflyfish, WIO: Red Sea to Oman, 14 cm. Yellow body with 14 dark stripes, oval spot on the 4th line. Feeds on coral polyps. Photo on the right - juvenile. ©AR, Marsa Shagra.



CHAETODONTIDAE - BUTTERFLYFISHES

Chaetodon larvatus Orangeface Butterflyfish, Red Sea to Oman, 12 cm. ©AR, Wadi Lahami.



Chaetodon leucopleura Somali Butterflyfish, S. Red Sea to Seychelles, 18 cm. ©Dawn Goebbels (Kenya)



Chaetodon lineolatus Lined Butterflyfish, IWP, 30 cm (the largest butterflyfish!) Feeds on coral polyps. ©AR



Chaetodon melannotus Blackback Butterflyfish, Red Sea to Japan, 15 cm. Tail base with black saddle ©AR



Chaetodon melapterus Arabian Butterflyfish, Red Sea to Persian Gulf, 12 cm ©Keith D. P. Wilson, Oman



Chaetodon mesoleucos Paleface Butterflyfish, Red Sea endemic, 12 cm ©Danielle Heitz, Saudi Arabia





Stenella longirostris Spinner Dolphin, occurs worldwide between 40°N and 40°S. Eye-to-anus stripe is thickening and darkening with age (yellow arrow). Reaches 235 cm. ©Sarah O'Gorman, Marsa Shagra





Stenella longirostris Spinner Dolphin (continued) The commonest Red Sea dolphin. Another distinguishing feature is a dark patch on the lower lip, photo on the left ©AR, Sudan



OCEANIC DOLPHINS - DELPHINIDAE

Stenella attenuata Pantropical Spotted Dolphin, in big groups, reaches 2.5 m ©GPA Photo Archive CC-BY-2.0



Tursiops truncatus Common Bottlenose Dolphin, Pantropical, 4 m. Short, blunt rostrum ©NASA CC-BY-2.0





Tursiops aduncus Indo-Pacific Bottlenose Dolphin, Red Sea, East Africa to Australia. Reaches 2.5 m. Greyspeckled belly, white beak tip. Smaller than *T. truncatus* (above) ©Dov Zingerman (left), ©Roman Hurghada





Sousa plumbea Indian Ocean Humpback Dolphin, Red Sea to India, 2.8 m. Coastal, shallow water species with distinctive hump on the back. Photo on the left ©Amina Cesario, Hamata. Right: ©Keith D. P. Wilson, Musandam

SEA TURTLES

DUGONGS - DUGONGIDAE





Dugong dugon Dugong, IWP, between the 40th parallels, reaches 3 m and 420 kg. Herbivorous, harmless animal, hunted to near-extinction in many regions. They live up to 73 years. ©Roman Hurghada, Abu-Dabab





Chelonia mydas Green Sea Turtle, IP and Atlantic, reaches 153 cm. Mature turtles (left) are herbivorous, feeding on seagrass. Young turtles (right) are found on the reefs, feeding on sponges, gastropods, algae, tunicates. ©AR





Eretmochelys imbricata Hawksbill Sea Turtle, IP and Atlantic, reaches 1 m. Easily recognizable by its curved beak. Found on coral reefs, feeding on mostly on sponges. ©AR, Sudan



Lepidochelys olivacea Olive Ridley Sea Turtle, IP, Atlantic, 61 cm. ©Thierry Caro, CC BY 3.0, Reunion



Dermochelys coriacea Lute Turtle, cosmopolitan, 1.8 m. Rare in Red Sea. ©Claudia Lombard, Virgin Islands

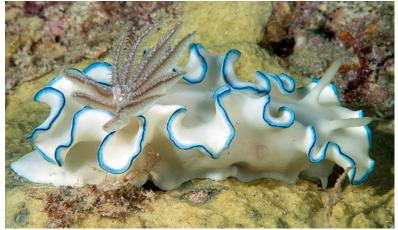
Hexabranchus sanguineus Spanish Dancer, IP: Red Sea to Australia and Hawaii, 600 mm. Capable of swimming by body flexions and mantle undulations. Six separate gill branches that can not retract into a gill pouch. Nocturnal, feeds on red sponges, hiding in reef crevices during the day. Common in the Red Sea. The Red Sea population is distinguished by its bright red coloration, without opaque white patterns. The Emperor shrimp, *Zenopontonia rex* is often found on *Hexabranchus sanguineus*.

Photo "f": juvenile.

HEXABRANCHIDAE

a-d: ©AR, E: ©Rafi Amar, f, g, i: ©Sven Kahlbrock, h: ©Irina Sevriuk







Glossodoris kahlbrocki Red Sea, 60 mm. Milky-white with dark blue marginal band and sky blue submarginal band. It feeds on a mustard-colored sponge, photo on the left. ©AR, Sharm El Naga



Glossodoris pallida WIO, 40 mm. Yellow marginal band, central opaque white markings ©AR, Dahab



Goniobranchus pseudodecorus Red Sea, 16 mm. Orange margin with white patches. ©AR, Sinai





Goniobranchus annulatus IWP, 100 mm. White with orange spots and two large purple circles surrounding the gills and the rhinophores. ©AR, Naama Bay







Goniobranchus charlottae Red Sea, 60 mm. Reddish-brown with scattered circles and three marginal bands. ©Sarah O'Gorman (photo on the left), ©Sven Kahlbrock (upper right), ©Rafi Amar (bottom right, juvenile)



Bullina sp. 1 Red Sea to Samoa, 10 mm. Close to *B. lineata* but lacks an operculum. ©AR, Sharm El Sheikh



Hydatina zonata IP, 50 mm. Shell with white spiral bands. Feeds on polychaetes. ©Arik Diamant, Eilat





Hydatina physis Circumtropical, 60 mm. Red with bluish edges, striated shell. Feeds on polychaetes. Nocturnal, hides in the sand during the day. Photo on the left ©Rafi Amar, photo on the right ©Nicole Lindegger





Atys naucum IP, 40 mm. White with grey-brown dots and white area around eyes. Juveniles with thin brown lines across the shell. ©Rafi Amar, Eilat



Atys semistriatus IWP, 13 mm. Body with brown dots, shell with red spots. ©AR, Marsa Nakari



Roxaniella multistriata IWP, 10 mm. Body and shell with white pigment, red spots. ©C. Frey and C. Ullrich





Bulla arabica IWP, 50 mm. Shell light brown with white and dark brown blotches. Body orange or brown with opaque white spots. Nocturnal, found on shallow reefs. Photo on the left ©AR, Sinai, right - ©Rafi Amar, Eilat

CEPHALASPIDEA - HAMINOEIDAE

ACTEONOIDEA - APLUSTRIDAE



Bistolida erythraeensis WIO: Red Sea to Zanzibar, 22 mm. Feeds on algae, sponges.©AR, Marsa Nakari



Bistolida kieneri IWP, 24mm. Anterior white transverse band irregular in shape, crosses all the bluish area ©AR



Cypraea pantherina Red Sea, 120 mm. Shell with brown spots, mantle with dark lines. ©AR, Safaga



Luria isabella IP: Red Sea to Hawaii, 54 mm. Beige to pale brown shell, translucent-black mantle. ©AR



Lyncina leviathan IP, 100 mm. Similar in appearance to L. carneola, but larger. Rare. ©S. Johnson, PO



Bistolida hirundo IWP, 24 mm. Anterior white transverse mark in the form of a swallow. ©AR, Naama Bay



Cribrarula cribraria IWP, 35 mm. Shell brown or orange with round white spots, mantle orange. ©AR



Erronea caurica IP, 70 mm. Creamy shell with palebrown transverse bands. ©AR, Dahab



Lyncina carneola IP, 66 mm. Shell orange-brown with pale bands, mantle mottled reddish-brown. ©AR



Lyncina lynx IP, 85 mm. Shell white to tan with brown spots. Translucent mantle, branching papillae. ©AR





Octopus cyanea Reef Octopus, IP: Red Sea to Hawaii, 140 cm, has a lifespan of 12–15 months, dies after eggs hatch. Feeds on crabs, fish, gastropods, active at dawn and dusk. ©Amir Abramovich (left), Rafi Amar (right)



Thaumoctopus mimicus Mimic Octopus IP, 60 cm. Eyes with distinct "horns" ©Jenny Lord, Dahab





Callistoctopus macropus White-Spotted Octopus, Red Sea to Hawaii, Mediterranean Sea, Atlantic. Armspan of up to 200 cm. Red with white spots down the arms. Feeds on fish and crustaceans ©R. Hurghada, Abu Dabab





Macrotritopus defilippi Lilliput Longarm Octopus, Indian Ocean, Atlantic. Small species with cirrus over each eye, ID tentative. Photo on the left ©AR, Dahab, photo on the right ©Rafi Amar, Eilat



Macrotritopus sp. Red Sea, arm span 18 cm. Eyes without cirri, nocturnal. ID tentative ©AR, Dahab



Abdopus abaculus Mosaic Longarm Octopus, IWP, 20 cm. ID tentative ©Rafi Amar, Eilat





Dendronephthya hemprichi Red Sea endemic, 70 cm. Coloration variable: pink, red, orange, maroon. The

most common shallow water soft coral in the Red Sea. ©AR, Marsa Shagra





Dendronephthya hemprichi (continued) Feeds on phytoplankton. Azooxanthellate, can exist without





Litophyton arboreum IWP, 70-80 cm. Coloration variable, usually pale olive or grey. Smooth stalks with clusters of branches and densely arranged polyps. Zooxanthellate. ©AR, Wadi Lahami





Scleronephthya sp. 1 IWP, 25 cm. Widely distributed species with marbled pale orange or yellowish stem and distinct yellow polyps with orange centers. ©AR, Wadi Lahami, Straits of Tiran.



Siphonogorgia variabilis WIO, 40 cm. Yellow branches shading into pink, crown and points purple. ©AR, Egypt



Siphonogorgia cf. variabilis Red Sea, 35-40 cm. Pink branches, yellow polyps. ©AR, Ras Mohammed

STICHODACTYLIDAE





Entacmaea quadricolor Bubble-Tip Anemone, IP: Red Sea to French Polynesia, 40 cm, 1-40 m. Swollen

tentacles are usual in the shallows. Photo on the right: juvenile, 1 cm. ©AR, Sinai





Heteractis crispa Beaded Anemone IP: Red Sea to French Polynesia, 35 cm. Tentacles with irregular swellings. Found on sand or rubble areas, often buried. The taxonomy of this group needs revision. ©AR, Dahab





Heteractis magnifica IP: Red Sea to Polynesia, 50 cm (disc), 5-40 m depth. Feeds on small fish and invertebrates with the help of tentacles. Uses the energy of photosynthesis with the help of symbiotic zooxanthellae. ©AR, Sudan



Stichodactyla gigantea Saddle Carpet Anemone, IWP, 80 cm. Close to S. mertensii but shorter tentacles. ©AR

Stichodactyla mertensii Mertens' Carpet Anemone, IWP, 100+ cm. Brown, often with white bands. ©AR



Stichodactyla tapetum Mini Carpet Anemone IP, 10 cm. Spotted pattern with pale "spokes" ©M. Marinina



Thalassianthus hemprichii Multicolored Sphere Anemone IWP, 30 cm. @Marina Marinina, Ras Soma



Acropora austera IP: Red Sea to Polynesia. Arborescent colonies, with often fused in the center, tapering

branches. Colors variable, cream, yellow or blue. ©AR, Marsa Shagra





Acropora hemprichi IO: Red Sea to India. Brown or pinkish-brown colonies with upright or prostrate branches can reach 200 cm. Outer reef slopes, shallow rocky areas. ©AR, Wadi Lahami, Marsa Shagra



STONY CORALS, SCLERACTINIA



Acropora digitifera IP: Red Sea to Tuamotu, digitate plate colonies, 100 cm+. Variable colors: pale brown, pale blue, purplish. Small branches, sometimes subbranches. ©AR, Wadi Lahami.



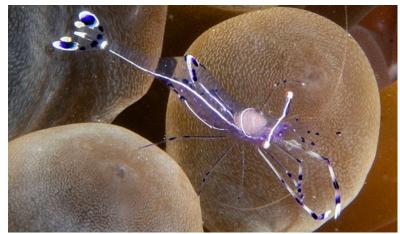
Acropora maryae IP, 60 cm. Cream or bluish colonies with a lot of subbranches. ©AR, Sharm El Sheikh

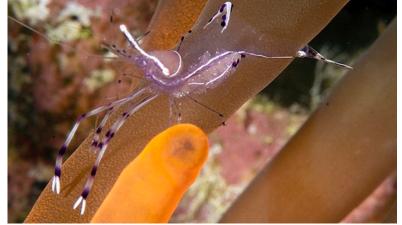


Acropora gemmifera IP, digitate colonies with thick tapering branches, brown, cream or pink ©AR, Sinai



Acropora humilis IP: Red Sea to Tuamotu, 80 cm. Digitate colonies with thick, slowly tapering branches, cream, brown or purplish. Exposed shallow reef slopes. ©AR, Sharm El Sheikh





Ancylomenes longicarpus, Red Sea endemic, 2.5 cm. Translucent with white-purple spots on tail and saddle. Associated with sea anemones, *Entacmaea quadricolor, Heteractis aurora* and *Megalactis hemprichii.* ©AR





Brucecaris tenuis IP, 1 cm. Translucent with two wide stripes, upper one is shorter. Associated with several species of crinoids. Nocturnal. ©AR, Marsa Shagra



Ancylocaris brevicarpalis IP, 4 cm, on sea anemones. Tail with 5 large purple spots. ©AR, Wadi Lahami



Coralliocaris superba IP, 1,5 cm, on branching corals. Distinctive white carapace. ©Rafi Amar, Eilat



Harpiliopsis depressa IP, 1,2 cm. Flattened carapace with fine red-brown lines. ©AR, Dahab



Lipkemenes lanipes IP, 1 cm. On basket stars. Brownish with light bands. ©AR, Marsa Shagra



Pontonides ankeri IP, 1.5 cm. Associated with wire corals. Species group needs revision. ©Itai Grisaru



Actaea polyacantha IP, 1 cm. White appendages and carapace with short spines. ©Marinina Marina, Dahab



Actaeodes tomentosus IP, 2 cm. Smooth opaque violet carapace with red dots near eyes. ©I. Sverdlova



Chlorodiella barbata IWP, 2 cm. Brown or red carapace, white spots in antero-lateral area. ©Irina Sevriuk, Egypt



Cyclodius ungulatus IWP, 3 cm. Pointed tubercles on claws, hairy legs, dark fingers. ©AR, Ras Mohammed



Luniella pugil IP, 3 cm. Rounded tubercles on claw arms, hairy legs with brown bands. ©AR, Marsa Nakari



Actaea sp. 1 Red Sea, 2.5 cm. Carapace, chelipeds with rows of orange granules. ©AR, Straits of Tiran



Pseudoliomera speciosa IP, 2 cm, lives on branching corals. Pale with orange patches. ©AR, Sharm El Naga



Chlorodiella cytherea IP, 2,5 cm. Brown carapace with almost fused anterolateral teeth.©AR Marsa Alam



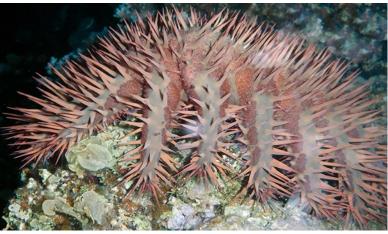
Liocarpilodes armiger IWP, 2.5 cm. Crevices and worm tubes, shallow reefs. ©AR, Sharm El Naga



Pilodius sp. 1 Red Sea, 2 cm. Associated with Tubastraea micranthus coral. ©AR, Wadi Lahami

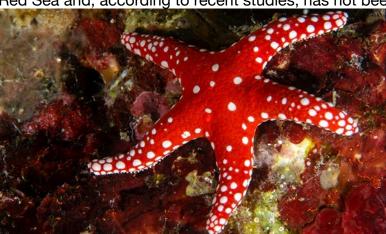
ACANTHASTERIDAE

GONIASTERIDAE





Acanthaster sp. 1 Crown-of-Thorns Sea Star - part of the Acanthaster planci species complex, occurs in the Red Sea and, according to recent studies, has not been described. Up to 14 arms, less toxic spines, 80 cm ©AR





Fromia ghardagana Ghardaga Sea Star, WIO, Red Sea to Mauritius, 8 cm. Red with scattered bluish spots, nocturnal. Photo on the right - oral view. ©AR, Naama Bay, Marsa Nakari

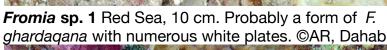






Fromia cf. nodosa Red Sea, 10 cm, undescribed. Pale orange with white spots. ©AR, Marsa Shagra







Dactylosaster cylindricus Cylindrical Sea Star, IO: Red Sea to Andaman Isl, 20 cm. ©P. Bourjon, Reunion





Gomophia egyptiaca Egyptian Sea Star IWP, 10 cm. Conical sharp tubercles on tubular tapering arms, several color morphotypes - reddish, purplish, brownish. ©AR, Wadi Lahami, Sharm El Naga

PSEUDOCEROTIDAE





Waminoa sp. 1 IP, up to 6 mm. Translucent orange with pale spot near the edge. Occurs on soft corals. Feeds on tiny crustaceans, mostly copepods. Asexual, reproduce mostly by fragmentation. ©Rafi Amar, Eilat



Acanthozoon fuscobulbosum IO, 15 mm. Bulbous papillae, margin w/transverse white lines.©I. Sverdlova



Thysanozoon nigropapillosum IP, 30 mm. White outer margin, yellow-tipped papillae. ©I. Khlopunova



Acanthozoon or Thysanozoon sp. 1 IWP, red with black tips, white outer margin. ©S. O'Gorman (sp.14 MF)



Acanthozoon or Thysanozoon sp. 1 IWP, 2.5 cm. Red with white dots, round papillae ©I. Sverdlova (sp.14 MF)



Bulaceros porcellanus IP, 2.2 cm. White with orange outer margin and black spots. ©Brindusa Eisele



Pseudobiceros damawan IWP, 3 cm. Mottled cream with widely scattered black spots. ©Rafi Amar, Eilat

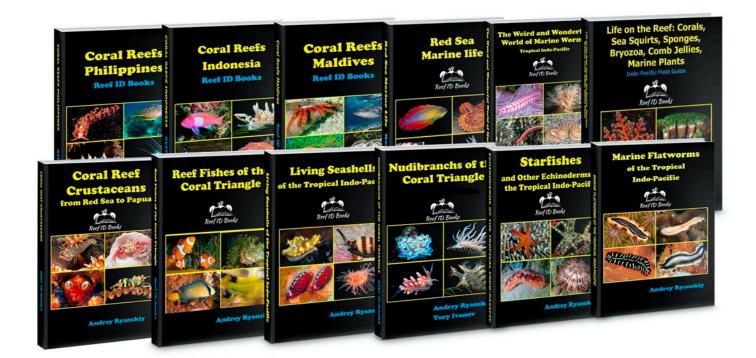


Pseudobiceros fulgor IWP, 7 cm. Orange to brown with fine white broken lines, black margin. ©AR Dahab



Pseudobiceros gratus IP, 5 cm. Transparent brownish with 3-4 dark stripes, dark margin ©Rafi Amar, Eilat

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