

Heteractis magnifica (Quoy & Gaimard, 1833)

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IDENTIFICATION

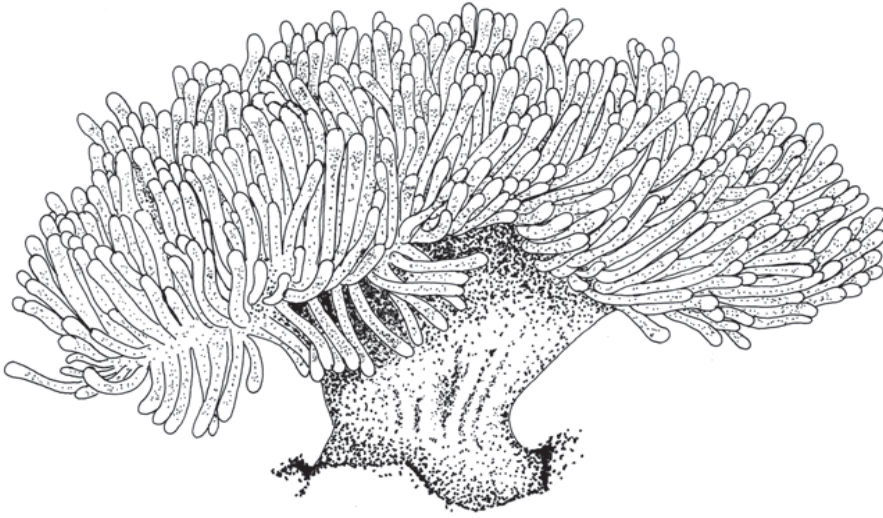
Order	: Actinaria
Family	: Stichodactylidae
Common/FAO Name (English)	: Magnificent sea anemone



Local names: Not available

MORPHOLOGICAL DESCRIPTION

Heteractis magnifica lives its entire life in the polyp form (cylindrical column with tentacles). It has a sticky foot on a pedal disc, and an oral disc which contains the mouth and surrounding tentacles. The oral disc is as small as 1.25 cm and reaches 1 m in diameter. Its size ranges from 300 to 500 mm in diameter. The oral disc is yellow, brown, or green. Many tentacles (to 75 mm long) surround the oral disc, which are located within 20-30 mm of the mouth. Lower portion of tentacles is of same colour as the oral disc (usually shade of brown); the terminal portion yellow, green, or white; some tentacles bifurcate or are with side branches. It has a cylindrical column of



uniform bright colour (commonly blue, green, red, white or chestnut brown). The column is with longitudinal rows of translucent verrucae, with the same colour as column or slightly lighter or darker. The animal is capable of almost complete contraction so that only a tuft of tentacles is visible in the centre.

PROFILE

GEOGRAPHICAL DISTRIBUTION

Heteractis magnifica is found in the Indo-Pacific region, extending from the Red Sea, south-east Asia, northern Australia to the western Pacific regions including Ryukyu Islands and French Polynesia. In India it is seen in the Andaman and Nicobar Islands.

HABITAT AND BIOLOGY

It is found in marine reefs in areas up to 50 m deep with a preferred temperature range of 24 to 32 °C. This species resides in clear waters with a strong current, typically occupying an exposed area and attached to a solid substrate. Smaller and solitary forms are found near the surface whereas colonies are formed in deeper areas. Identically coloured individuals form extensive beds in certain areas.

Anemones have stinging cells called nematocysts which release ichthyotoxins that keep away most predators. Magnificent sea anemones are hosts to many symbiotic clownfish, which protects the anemone

from certain predators. The clownfish in turn are immune to the ichthyotoxins and gain protection within the anemone. *H. magnifica* is known to associate with 13 species of anemone fish.

Heteractis magnifica is carnivorous, feeding on small fishes, shrimps, isopods, amphipods, mussels, sea urchins, and plankton, which are caught using the stinging cells. The anemone also absorbs nutrients from the waste produced by the symbiotic clownfish associated with the anemone. Anemones also have symbiotic algae which provide the anemone with nutrients.

Heteractis magnifica reproduces sexually as well as asexually. In sexual reproduction, the male releases his sperm first which then stimulates the female to release her eggs. Fertilization is external and a ciliated planula larvae is formed eventually. Asexual reproduction can occur by budding, binary fission or pedal laceration. Asexual reproduction is more common during winter. The presence of the symbiotic clown fish, *Amphiprion* sp., increases the occurrence of asexual reproduction and growth.

The spawning of *Heteractis magnifica* has been reported from the Great Barrier Reef, Australia. Generally spawning occurs at night, during which, the oral disc becomes more conical in shape. Eggs range from 100 to 500 μm and are green in colour. They are given out either individually or attached as strings. Spawning continues for an hour and generally spawning was observed three days before and after the three-quarter moon.

PRODUCTION SYSTEMS

BREEDING IN CAPTIVE CONDITIONS

Information not available

LARVAL REARING

Information not available

FOOD AND FEEDING

It needs regular feeding and seems to favour shrimps and other crustaceans over fish and molluscs. Depending on their size, anemones require feed at different frequencies. Large anemones need to be fed daily, medium sized individuals need to be fed 5 times a week and smaller sized individuals need to be fed upto 4 times a week.

GROWTH RATE

Information not available

DISEASES AND CONTROL MEASURES

Whenever light, water movement and water quality are low, anemone will detach from the substratum and look for other better conditions. Predators include other anemones, nudibranchs, sea stars, some angel fishes and bristle worms.

PRODUCTION, MARKET AND TRADE

PRODUCTION

Information not available

MARKET AND TRADE

Heteractis spp. along with *Lysmata* spp. and *Stenopus* spp. contributes to 15 % of the world trade of marine invertebrates. During 1998-2002, *Heteractis* spp. traded globally ranged from 54,369-1,49,025 numbers. The major countries exporting the species were Mexico, Indonesia, Singapore, Fiji, Sri Lanka, Philippines, Solomon Islands, Palau and Vanuatu. Major destinations were USA, UK, Netherlands, France, Germany, Italy, Canada, Taiwan, Japan and Hong Kong.

CHALLENGES TO MARICULTURE

Captive breeding for the propagation of *Heteractis magnifica* is the major researchable issue.

FUTURE PROSPECTS

Extraction of specialized proteins from this species for use in biotechnological research is a promising area in addition to the aquarium trade. Hence coral aquaculture is a prioritized solution for reducing the harvesting pressure on natural coral reefs. The cultured corals may adapt better to aquarium conditions than wild caught corals.

SUGGESTED READING

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