

Palythoa caribaeorum (White Encrusting Zoanthid)

Order: Zoantharia (Zoanthids)

Class: Anthozoa (Corals and Sea Anemones)

Phylum: Cnidaria (Corals, Sea Anemones and Jellyfish)



Fig. 1. White encrusting zoanthid, *Palythoa caribaeorum*.

[<http://www.gettyimages.com/detail/photo/white-encrusting-zoanthid-alacranes-reef-high-res-stock-photography/121810128>, downloaded 8 October 2016]

TRAITS. Zoanthids can be thought of as similar to sea anemones but are much smaller; a disk is approximately 0.6-1.3cm across. Unlike the sea anemones which are solitary polyps, the zoanthids live in colonies. Each polyp has a cylindrical body column with a flat oral disk at the top with two rings of short tentacles (Fig. 1.); one ring is usually held upwards while the other lies flat. Their colour ranges from white to a creamy-yellow and shades of brown. Zoanthids do not have a hard skeleton like hard corals but rather have leathery tissues which are partly composed of chitin.

DISTRIBUTION. Zoanthids are typically found in tropical waters but the white encrusting zoanthid is also found in the temperate waters of the north-eastern Atlantic Ocean as well as the Caribbean Sea and western Atlantic Ocean.

HABITAT AND ECOLOGY. Colonies of white encrusting zoanthid usually occur in a wide range of tropical and subtropical habitats. They inhabit places where they can grow over hard substrates like coralline algae or clam shells, in places such as hard bottoms, tide pools, reef flats and rocky shorelines. The species may also be found in the intertidal zone, where at low tides it is completely exposed to air. While shallow habitats are ideal for zoanthids they can also occur at considerable depths of approximately 3-12m on any hard substrate on a coral reef. According to where the species is found, its shape varies. The ones that live in the presence of strong waves have a tendency to be short and hug the surface. The ones located in deeper, calmer waters tend to be taller and have longer tentacles. White encrusting zoanthids feed via two methods. The first being photosynthesis which is done by the zooxanthellae (symbiotic algae) inside their bodies which contribute nutrients to the polyp. The second method is by capturing plankton and particulate matter with their tentacles. Zoanthids may also ingest small crustaceans and worms.

REPRODUCTION. Zoanthids may reproduce both sexually and asexually. Sexually by means of producing gametes, released for external fertilization as in hard corals. They reproduce asexually by budding, where polyps divide to enlarge the colony.

BEHAVIOUR. The oral cavities of the white encrusting zoanthids are usually closed when it is not feeding and is a response mechanism for when it is disturbed. It also retracts its tentacles when it is exposed at low tides and looks like a jelly blob. Even though zoanthids may appear harmless, some of them may contain powerful toxins as a protection mechanism against predators. Palytoxin which is a marine poison and thought to be the most toxic was actually discovered in a zoanthid. This palytoxin can kill or even paralyse you in the minutest quantities especially when handled and there is break in the skin. It is believed however that the palytoxin is not produced by the zoanthids themselves but rather by a bacteria which may be present in the polyps and reside symbiotically.

APPLIED BIOLOGY. Palytoxin, even though very dangerous, has been extracted and utilised to obtain a better understanding of the human body. There are hopes though that it can provide a better treatment of heart disease, high blood pressure and other diseases. Zoanthids are a common animal of interest with persons in the live aquarium trade. While zoanthids are not listed as endangered species, their habitat of the intertidal zone can be affected by human activities, the most common of which is pollution. Visitors to these areas usually trample over the zoanthids rather carelessly and cause damage or even death to them.

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