



MARINE LIFE PROFILE: UPSIDE-DOWN JELLY

Scientific names: *Cassiopea* spp.
Distribution: Western Pacific, introduced to Hawai‘i
Size: to 8 inches (20 cm) in diameter
Diet: microplankton, nutrients from symbiotic algae

The upside-down jelly (also known as a jellyfish) belongs to the invertebrate Phylum Cnidaria, a diverse group of stinging animals whose members all possess stinging cells for feeding and protection. Jelly relatives include the sea anemones, corals, and Portuguese man-of-war. They are all simple, soft-bodied organisms with just two major tissue layers arranged around a central gut cavity. Individual animals are radially symmetrical, with a ring of tentacles around the central mouth. The tentacles bear stinging cells that are used for food capture and defense.

In the Cnidarians, there are two basic body forms the **polyp** form, like the familiar sea anemone, and the free-floating **medusa** form. Sea jellies, or jellyfish, illustrate the medusa body form: a gelatinous, bell-shaped body with mouth and tentacles hanging down from the undersurface of the bell. The jelly-like central layer of a medusa is 95% water, with protein and elastic fibers for gel and flex. Jellies are not attached to the bottom, but are carried by ocean currents, floating and swimming weakly by means of muscular contractions of the bell. However, the life cycle of most jellies includes a small polyp stage.

The upside down jelly is unusual among jellies. Rather than floating in the water, it spends much of its time resting on the flattened surface of its bell on the sandy flats of protected lagoons and harbors. As it rests upside-down, it pulses, creating water currents that carry food particles up to the feathery “mouth arms.” These feathery structures contain many small openings that lead into the digestive cavity. This species feeds on minute plankton and organic particles and has a rather mild sting*. Longer, club-shaped structures rise between the mouth arms – these are not tentacles, but their function is uncertain. The animal’s brownish tint comes from symbiotic algae called zooxanthellae living within its tissues. The jelly receives some nutrition from the photosynthetic activity of the zooxanthellae. This species can reach diameters of 8 inches (20 cm).

Native to the Philippines and other areas of the western Pacific, the upside-down jelly is considered as an accidental introduction to Hawai‘i. It was first reported in Hawai‘i at Pearl Harbor between 1941 and 1945 and probably arrived by ship. It has since spread to other shorelines.

*Swimmers should still be alert when these jellies are present since some people are sensitive even to mild. If stung, many lifeguards and doctors recommend rinsing the area with seawater, or apply vinegar to the sting to deactivate the toxin. If this doesn’t help, hot packs or a hot shower. Ice packs sometimes help alleviate the pain.

*Caution: Some individuals may be highly allergic to jellyfish or man-of-war stings and need physicians care. Others may be sensitive to the treatment listed here. Consult your physician in all cases.

Classification:

Kingdom Animalia
Phylum Cnidaria (Coelenterata)
Class Scyphozoa
Order Rhizostomae
Family Cassiopeidae
Genus Cassiopea
Species medusa and mertensi

Suggested Reading:

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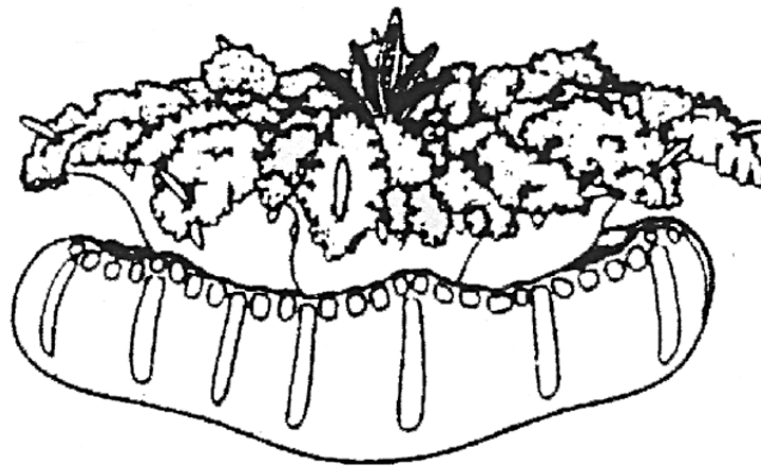
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