

Surge in number of the Portuguese man-of-war (*Physalia physalis*) washed up on Juhu and Girgaum beaches, Mumbai, Maharashtra

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After the onset of South-west monsoon along the west coast of India, swarming of blue bottle jelly fish the Portuguese man-of-war (*Physalia physalis*) is observed at Juhu and Girgaum beaches, Mumbai almost every year. Portuguese man-of-war, though often mistaken as a jellyfish, is a marine Cnidarian of the family Physalidae. Its venomous tentacles can deliver painful sting. In July, 2013 sudden strong winds and high tide had brought in several bluebottle jelly fish (Fig 1). For several people, a walk by the seaside at Juhu and Girgaum beaches during first week of July, 2013 ended in redness of skin, swelling, irritation, itching, blisters and severe body ache. The daily news papers carried news items on the marine venomous creature, Portuguese man-of-war and their venomous sting threat to public.

This article attempts to gather information including classification, habitats and distribution and clinical effects of envenoming with appropriate first aid and definitive medical treatment.

The name “man of war” comes from 18th century armed sailing ship. The bluebottles have



Fig. 1. *P. physalis* washed ashore

resemblance to the Portuguese version at full sail. In other languages it is simply known as the ‘Portuguese war-ship’ (Dutch: *Portugees oorlogsschip*), the ‘Portuguese Galley’ (German: *Portugiesische Galeere*, Hungarian: *portugál gálya*), or the ‘Portuguese Caravel’ (Portuguese: “*Caravela Portuguesa*”, Italian: “*Caravella portoghese*”).

Despite its outward appearance, the man-of-war is not a true jellyfish (true jellyfish are those that belong to the class Scyphozoa) but a Siphonophore, which differs from jelly fish in that it is not actually a single organism, but is actually a colony of numerous organisms called polyps (or zooids) that are so specialized that they cannot live without each other.

The Portuguese man-of-war lives at the surface of the ocean. The gas-filled bladder remains at the surface, while the remainder is submerged. It has no means of propulsion and moved by a combination of winds, currents and tides. Although it can be found anywhere in the open ocean (especially warm water seas), it is most commonly found in the tropical and subtropical regions of the Pacific and Indian oceans and in the northern Atlantic Gulf Stream.

Strong winds drive them into bays or onto beaches. It is rare for only a single Portuguese man-of-war to be found; often the finding of one results in the finding of many. Attitudes to the presence of the Portuguese man-of-war vary around the world. Given their sting, however, they must always be treated with caution and the discovery of man-of-war washed up on a beach may lead to the closure of the whole beach in the western world.

Portuguese man-of-war is composed of four types of polyp. One individual polyp becomes the

large gas-filled bladder called the pneumatophore (commonly known as sail) that sits horizontally on the surface of the ocean and enables the organism to float.

The other three polyp types are known as dactylozoid (defensive/prey capturing tentacles), gonozoid (reproduction) and gastrozoid (feeding). These polyps are clustered. It is believed that man-of-wars spawn together in large numbers, with each colony (being either all male polyps or all female polyps) releasing gametes into the water to be fertilized. The resultant larvae then go through asexual budding to produce a new man-of-war colony.

The Portuguese man-of-war possess microscopic stinging cells called nematocysts. These structures are numerous on the tentacles or body of the animal and are used to capture prey. A small dose of venom contained within each nematocyst is discharged in response to chemical or mechanical stimulation. Nematocysts from many jellyfish (Scyphozoa) do not penetrate human skin and/or their venom is not toxic to humans; encounters with these therefore do not produce a significant reaction. However, the stinging, venom-filled nematocysts in the tentacles of the Portuguese man-of-war can paralyze small fish and other prey and *Physalia* nematocysts do penetrate human skin and envenoming may lead to systemic effects. Detached tentacles and dead specimens (including those that wash up on shore) can sting just as painfully as the live organism in the water and may remain potent for hours or even days after the death of the organism or the detachment of the tentacle.

Most victims of *Physalia* envenoming will display no signs and symptoms other than localised pain and pruritus. Characteristically, stings cause a linear collection of elliptical blanched weals, with a surrounding red flare (resembling a “string of beads”). Extensive stinging (more likely from larger specimens) may lead to systemic symptoms including nausea, vomiting, headache, chills, drowsiness, breathing difficulties, cardiovascular collapse, or death; however, systemic symptoms are rare.

Treatment - Initially the victim should be prevented from rubbing the area or performing vigorous muscular activity, as this will lead to greater discharge of attached nematocysts and venom movement into the general circulation. On-site first aid consists of flushing the affected area with sea water to help remove any adherent tentacles; careful removal of tentacles with forceps may be required.

Traditionally, ice or cold packs were recommended for pain relief following *Physalia* stings; however, a recent randomised controlled trial has shown significant benefit of hot water over cold packs. Hot water immersion or showers should now be considered the treatment of choice for *Physalia* envenoming. The technique as described for fish stings should be followed, or alternatively a hot shower may be all that is required to alleviate pain. The local fishermen at Mumbai use lemon and Calcium hydroxide $\text{Ca}(\text{OH})_2$ (Locally called as “Choonā”) to treat the victims of *Physalia*.