Sea Wasp: *Chironex fleckeri*

Deadly King of the Cubozoans

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Distribution:

Chironex fleckeri is typically found in Northern Australian and Indo-Pacific waters.[6] The sea wasp distribution corresponds to the greater box jelly (Cubozoan) distribution which is generally restricted to the tropics and sub-tropics.

A map showing the general distribution of Cubozoans

http://maps.of.net/the_world/static-maps/png/indo-pacific-biogeographic-region-map

Phylum
Cnidaria

Class
Cubozoa

Order
Chirodropida

Family
Chirodropidae


http://www.marineblo.net/marinescience/04benthon/crgbr.htm

Habitat:

Sea wasp medusae are mostly confined to near-shore areas that correspond to their prey distributi
below).[5,6] This includes shallow mangrove channels, creek mouths, and near and offshore sandy b

Chironex fleckeri shallow water habitat has both recreational and scientific implications.[4,5] The
popular human swimming grounds in Australia and the surrounding beaches of the Indo-Pacific in
probability of the occurrence of sea wasp stings and human mortality.[4] Conversely, their apparent
proximity to shore is precisely what makes *Chironex fleckeri* sought after by scientists. Scientists h
place sea wasps in captivity in order to acquire and study their powerful nematocyst toxin in additi
feeding, swimming, etc. behavior.[5]

Reproduction:

While the life cycle is well known, reproduction in Cnidarians has been little studied. Researc
occurrence of both external and internal fertilization in sea wasps.[10] External fertilization occ
gametes into the water column. Internal fertilization may occur through similar means as the
Carybdea sivickisi male transfer of a spermatophore to the female who inserts it into her ma

Life Cycle:

The life cycle of a sea wasp corresponds to the Chirodropid life cycle which exhibits seasonal
generations between freshwater and saltwater. In the marine environment, a male adult me
sperm to fertilize the eggs of an adult female medusa. After fertilization, the embryo develop
swimming planula larvae in freshwater. Once the larvae reaches an area with suitable resour
onto the sediment and transforms into a polyp. Rather than transforming into a schyphiston
produces other polyps that "bud off" and transform into the adult medusae.[8]

http://www.jcu.edu.au/interest/stingers/biology%202lifecycle.htm

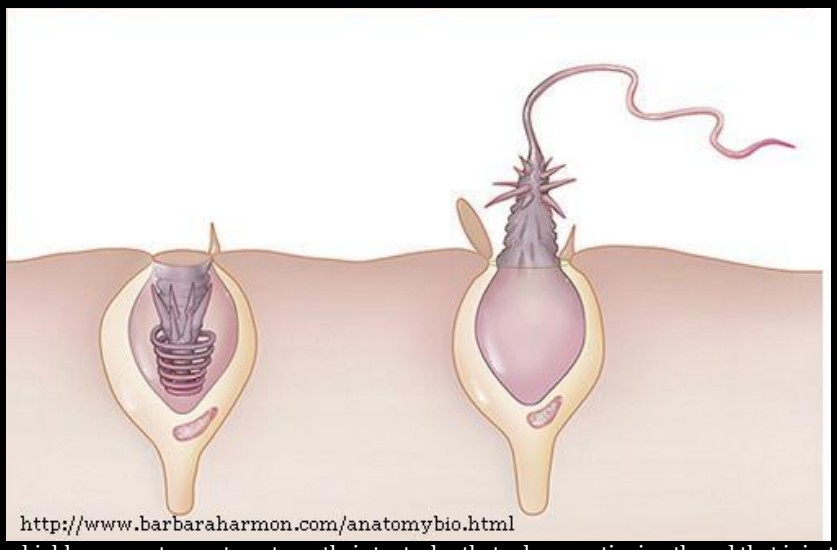
The *Chironex fleckeri* life cycle consists of an esuarine and coastal phase.

Food habits:

Sea wasps feed mainly on prawn and fish species.[5,6] They capture their prey using long tentacles p nematocysts containing extremely powerful toxins.[7] After neutralizeing the prey by triggering of t the sea wasp then contracts to bring the prey towards the bell for consumption and digestion.[4] Th the prey after reaching up into the manubrium of the medusa bell and moving the food towards th cavity.[5]

Toxin

Chironex fleckeri is extremely dangerous and deadly due to their unique toxin used in capturing prey. The toxin is comprised of at least 2 toxic proteins and resembles a more powerful version of the toxin released by *Physalia physalie* (an Atlantic toxic jellyfish).[3]



Sea wasps have highly compact nematocysts on their tentacles that release a stinging thread that injects toxin into its prey.

Economic Importance:

Although they fail to produce direct economic impacts (i.e. fishing, food, industry, etc.), sea wasps secondary effects on human activities. As mentioned in the habitat section above, *Chironex flecke* recreational and scientific sectors.

Due to their apparent threat to other organisms with their incredibly powerful toxin, sea wasps ca recreational near-shore activities and the resident/tourist income associated with them.[5]

Australia and other Indo-Pacific nations regularly close beaches due to the presence of sea wasps.

Additionally, due to interest in solving these issues of human safety, sea wasp venom has inspired (which also obviously comes with its own monetary concerns). Scientists focus on analyzing the p toxin in the hopes of determining an effective antivenom and lessening the health and recreationa associated with the presence of sea wasps.[1]

Chironex fleckeri stings are extremely painful and can pose a lethal threat to humans.

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