

NEWSLETTER

ELSS SS, HKUSU

Text **RAY SO**

Acknowledgement **Dr. Vengatesen Thiyagarajan**
 Assistant Professor, School of Biological Sciences, HKU

A Globe Engulfed by Jelly

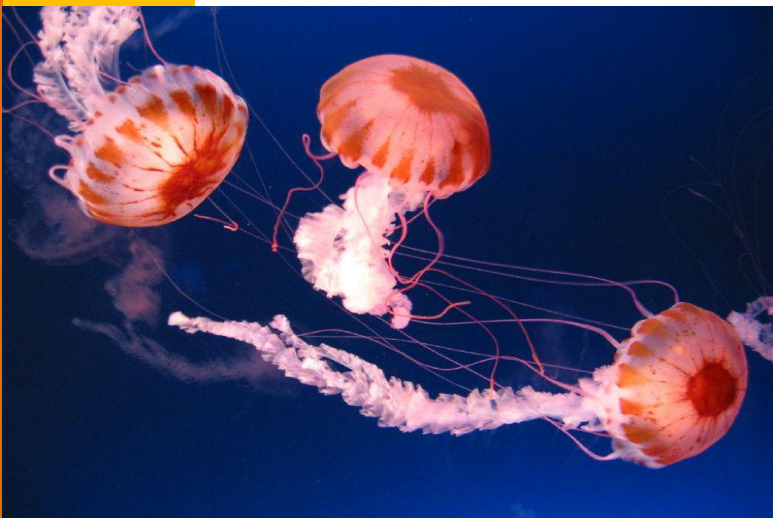
The blue ocean, with pristine water that we take for granted, could one day turn into a sea of sticky, slimy jelly! This is no story-telling—hordes and hordes of giant jellyfish, the Nomura's Jellyfish, are swarming the seas of Japan.

These oversized jellyfish can grow up to 2 metres in diameter and weigh up to 200 kilograms, dwarfing basketball players in height and Sumo wrestlers in weight. Its population in the western seas of Japan bursts to such a level that in one fishing net, as many as 1000 such giant jellyfish can be

Trapped. This mass of jelly, with weight up to $200 \times 1000 = 200,000(\text{kg})$, not only damages fishing nets and human skins, but also poisons and slimes the fish caught and deprives it of its commercial value. What's more, jellyfish are filling the seawater cooling system of a nuclear power plant in Japan, affecting its operation. Presumably, the evolution of a radioactive jellyfish doesn't seem that impossible.

Consequently, the Japanese combat the problem with innovative ideas: turning the jellyfish caught into fertilizers, crab food and even meals to be served. You can have a feast of Nomura's Jellyfish all day with jellyfish sashimi, jellyfish sushi, pickled jellyfish with cucumbers and even jellyfish ice-cream! The government even set up a committee to combat the surge in jellyfish population. It seems, very reasonably, that such evil sea monsters are to be exterminated. Or, are they?

Evil is not the jellyfish itself, but the excessive population of them. And what's helping them proliferate? Yes,



Another species of jellyfish. (photo: Sunny Wong)

it's human again. Not to mention the rise in sea temperature caused by global warming that favours the reproduction of jellyfish, nutrient-rich run-off from farms and industry that feeds them, the decrease in the number of fish(which are their larvae's natural predators) by over-fishing, and the increase of artificial structures along coast lines to which jellyfish larvae can attach^(*). Fishermen who chop the Nomura's Jellyfish caught into pieces think they are effective in controlling its population, while, in fact, they are doing the exact opposite. When killed or under attack, the jellyfish release billions of sperms and eggs. The obvious result is, more and more individuals are produced and caught and chopped on the decks of fishing boats and reproduce again. No wonder why it's not impossible that the ocean can one day become a jelly sea.

Anyone that has a mind knows a mindless jellyfish can't be evil. And yet, a rat or a cockroach equals an evil enemy in most people's minds. It's true that such

notorious creatures are nuisance to us. But have people ever think how they became what they are today in the first place? Some of such creatures existed well before the presence of modern humans. They are just like any other organisms that perform its ecological function and connect the food chain. In this light, they are not nuisance, but contributors in an ecosystem. They simply happen to be suited to city-dwellers as we humans do. What's the point of blaming a mindless creature while the blaming is the one who gives rise to the blamed?

Simply eating jellyfish never gets deep enough to the root of the problem. It's the human disturbance to the delicate balance in nature that is creating problems. Fixing proximal problems and leaving behind the ultimate causes not only helps create a globe engulfed by jelly, but also a world with ever worsening environmental problems.

() Additional information:*

1. One theory suggests that the rise in sea temperature has slowed down or stopped some part of the oceanic current, resulting in the formation of stagnant seas, or the so-called "dead zones". In these regions, oxygen is depleted due to the lack of water movement. This helps sweep competitors or predators of the jellyfish, such as turtles and fish, off the dead zones. Jellyfish survive well in low-oxygen zones due to its ability to absorb oxygen directly from their skin, so they thrive in dead zones.
2. Larvae of many jellyfish species need to anchor themselves to firm surfaces so that they can develop into polyps, the part of the life cycle in which they gather nutrients to bud(to make new individuals asexually) or to develop into the medusa stage(the jellyfish form that we are familiar with). Such surfaces can be, as mentioned, artificial structures like pier, floats or boat-bottoms. The larvae can even attach themselves to shells of crabs and shrimps, living in symbiosis with their hosts.

Reference and sites where you can find more information:

http://news.nationalgeographic.com/news/2006/01/0119_060119_jellyfish.html

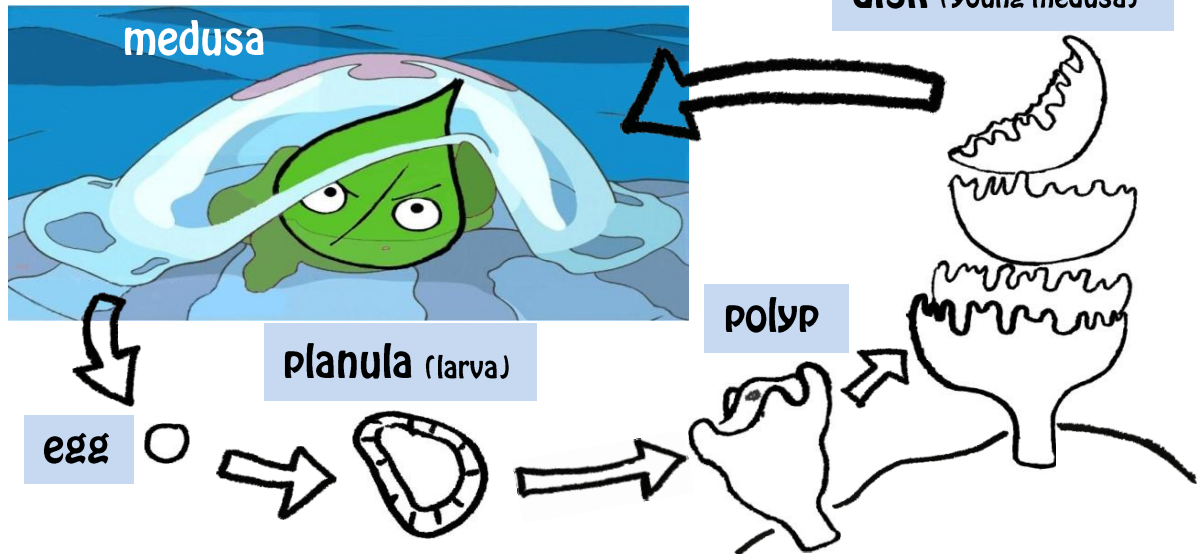
<http://www.pinktentacle.com/2006/08/chefs-prepare-for-annual-giant-jellyfish-invasion/>

<http://www.timesonline.co.uk/tol/news/world/asia/article749446.ece>

<http://news.bbc.co.uk/1/hi/world/asia-pacific/5197846.stm>

More about Jellyfish

Sea jellies are invertebrates and belong to the phylum **Cnidaria**. They have two body forms, swimming medusae and sessile polyps, some even grow from polyps to medusae.



Therefore, the jellyfish we usually refer to is medusa.

Upcoming event

E-magazine Volume 1 will be published by the end of February, with soft-copy being sent by emails and uploaded to the society website.

生動・心動 a joint-university photo-competition will be held from early March. The objective of event is to encourage students to appreciate nature. Further details will be announced in later updates.



Issues of our NEWSLETTER can be found on <http://web.hku.hk/~elsshku/newsletter.htm>.

Please feel free to express your comment or discuss on the issue @ our society forum chit-chat.fun.

