

Thème 1A – DIVERSIFICATION DES ETRES-VIVANTS

THE GOLDEN JELLYFISH

What are the differences between the Golden jellyfish and other most common jellyfishes?
How is it possible to explain them?

Doc 1: The golden jellyfish

5 The millions of golden jellyfish that pack Palau's Jellyfish Lake spend much of their lives on the move during a daily migration that follows the sun's arc across the sky.



10 <https://www.nationalgeographic.com>, Photograph by Michael Melford

Doc 2 : Characteristics of Golden jellyfish.

15 The golden jellyfish is a remarkable creature that only lives in Jellyfish Lake on the tiny Micronesian Republic of Palau. They are most closely related to the spotted jellyfish that live in nearby lagoons. Golden jellyfish are a unique subspecies of jellyfish that used to roam¹ the oceans similar to other jellies, catching and eating zooplankton. When they became trapped in the lake, they evolved to be able to photosynthesize, something almost no other animal on earth has the ability to do.

20 As juveniles, golden jellyfish engulf² thousands of algae-like organisms called zooxanthellae, which give the jellies their beautiful golden glow. When the jellies grow, they form a symbiotic relationship with these organisms, who in turn provide their host with energy as a byproduct of their photosynthesis. As such the jellyfish spend much of their day following the sun's arc across the sky pumping water through their bells³ as a kind of jet propulsion and turning gently in the water to give all their algae an equal measure of sunlight. Depending on sunlight golden jellies avoid the shaded lake shore areas. Luckily for them, because in doing so these fascinating creatures avoid their primary predators, namely anemones.

30 Due to the lack of predators and abundance of sunlight, the jellies can safely propagate. Their numbers have reached over 20 million already. Because of their confinement in the lake and use of photosynthesis, golden jellyfish have almost completely lost their tentacles and completely lost their sting. They are actually quite tiny, being the relative size of a teacup.

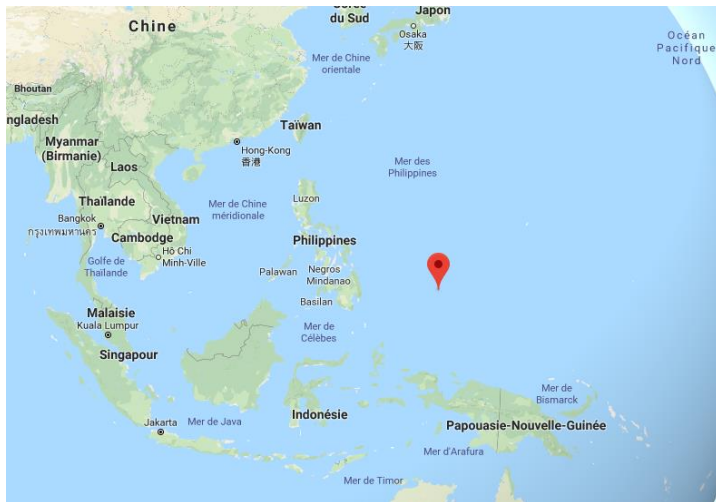
February 6, 2013 - <https://weirdandfascinatingcreatures.wordpress.com>

¹ roam: travel

² Engulf: absorb

³ bell: here, largely gelatinous structure that forms the main part of the body of the jellyfish

Doc 3 : The jellyfish Lake



<https://www.google.com/maps>

5 Jellyfish Lake is one of the isolated, stratified (picture a) marine lakes. The lake's edge is lined with mangrove trees and their roots are covered with a colorful assortment of marine invertebrates. Jellyfish Lake is 400m long and 30m deep. Between 13-15m, there is a pink layer of bacteria and below that, there is no light and no oxygen. The bottom water layer is filled with poisonous dissolved hydrogen sulfide gas. The lake has indirect connections with the lagoon and then the ocean. There are typically about 5 million golden jellyfish in the lake.

<https://coralreefpalau.org>