

## The Blue Chinese Dragon -- A 'solar-powered' sea slug Special

Posted Nov 15, 2012 by [Igor I. Solar](#)

**The sea-slug known as the Blue Chinese Dragon is a remarkable marine creature capable of surviving for long periods without food by using the nutrients provided by its own garden of unicellular plants growing and multiplying inside its body.**

Previous articles on Digital Journal have introduced to interested readers some remarkable marine creatures. We have shown the amazing beauty of the Blue Dragon (*Glaucus atlanticus*), the charming cuteness of the splendid Chromodoris, and the elegance of an extraordinary fish known as the Weedy Sea Dragon.

In this occasion, I will share with Digital Journal readers another fascinating marine animal. Most divers in the distribution range of this underwater wonder know this organism as the "Blue Chinese Dragon". Using the binomial nomenclature, scientists know it by its Latin name *Pteraeolidia ianthina*.

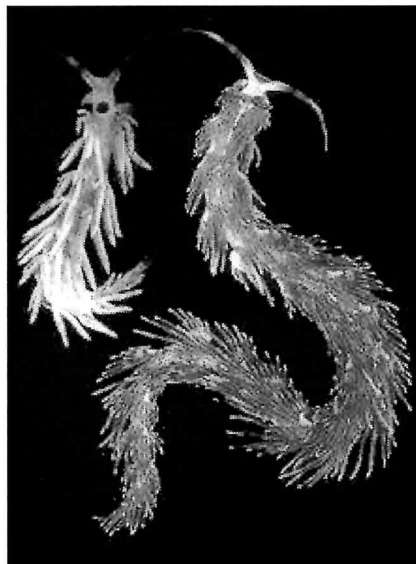
### The Chinese Dragon

The Blue Chinese Dragon is a widely distributed sea creature belonging to the group generically known as nudibranchs or sea slugs. It is found in diverse habitats including sea-sponge patches and among shallow coral reefs throughout the Southwestern Pacific Ocean, from Hawaii to the Philippines, also extending to Northeast Australia and New Zealand waters.



Jason Shelley

Blue Chinese Dragon. Details of the two long cephalic tentacles.



W.D. Rudman

Juvenile (left) and adult Blue Chinese Dragon (*Pteraeolidia ianthina*). (The Sea Slug Forum).

Adult *Pteraeolidia ianthina* measures about 7 centimeters and have a rather elongated body with many clusters of blue-edged curved arches called *cerata*. Their general appearance resembles a Chinese Dragon. It also looks like a centipede. Their typical coloration is often translucent beige or brown, except the juveniles which are mostly white. As all nudibranchs (meaning “naked gills”), they have exposed respiratory organs protruding from their back end. The front end has two long cephalic tentacles with purple-blue rings, and two sensory organs, called *rhinophores*, with a purple-blue tip.

### A "solar-powered" organism

The most remarkable feature of the Blue Chinese Dragon is their capacity of going for long time without food intake. How do they do it? Most sea slugs are carnivorous, but the Blue Chinese Dragon has evolved the ability of capturing and “farming” in their digestive system a large number of unicellular algae (microscopic plants) known as Zooxanthellae.

The sea slug obtains an initial supply of the microscopic algae which they keep alive within their body. Both organisms, slug and zooxanthellae, establish a symbiotic relationship. The microalgae can multiply within the slug's body and, as most plants do, they can transform the sun's energy into Chlorophyll, sugars and other nutrients. They use some of the generated nutrients themselves and pass on a significant portion to the sea-slug for its own nourishment.

name/date/period

## The Blue Chinese Dragon A Solar Powered Sea Slug

1. What is the scientific name of this creature?
2. Give another name for nudibranchs.
3. Where are nudibranchs found?
4. What does the name “nudibranch” mean?
5. How do these creatures survive for long periods without food intake?
6. What type of symbiotic relationship is this?
7. Describe the process as if you could do this by eating a salad for lunch.
8. Don't you think this is cool?