

Cyerce sp.
sacoglossan
sea slug, or
butterfly sap-
sucking slug,
Green Island,
Taiwan.

Text and photos by Wesley Oosthuizen

Many divers, and especially macro underwater photographers, adore the lovely, colorful, and photogenic sea slugs found in the deep. We often call them nudibranchs, the “butterflies of the sea.” But not all sea slugs are nudibranchs. Have you ever heard of the sacoglossan? Underwater photographer Wesley Oosthuizen takes a closer look at a special sacoglossan species—the butterfly sap-sucking slug.

“Don’t you mean ‘nudibranch,’ Wesley? Because that looks very much like one,” you may say, cocking your head to one side. Actually, I specifically do not mean “nudibranch.” In fact, after so many years, I am now just becoming aware of how incorrect many of my IDs were, when I boldly claimed a sea slug species was a nudibranch, when it most certainly was not.

When people see most sea slugs, they (myself included, until not too long ago) will (if they know anything about sea slugs) probably refer to them by what most know as a nudibranch. Nudibranchs are characterized by having a *nudi* (naked) *branch* (gill), which one can see sticking out

of the backend of them. The butterfly sap-sucking slug (see photo), however, is actually a sacoglossan and not a nudibranch, as it does not possess a gill at the rear of its body.

Yes, sacoglossans belong to the phylum Mollusca (mollusc) and the class Gastropoda, like snails do, but they

are not the same as nudibranchs in many ways. Take, for instance, the fact that nudibranchs are carnivores, but sacoglossans are herbivores, as they only eat sap from seaweed leaves (hence, the name “sap-sucking slug”). Of course, I could go on and on about the differences, but what I really want

to do is dive a little deeper into the characteristics of the sacoglossans, and why this specific one is called the butterfly sap-sucking sacoglossan.

First a little backstory.

I found this little wonder on Green Island, thanks to butterfly sacoglossan specialist and macro dive guide

Michael Chen, who took me to a site where he himself had personally discovered a new kind of butterfly sacoglossan, which is currently going through analysis to be included in the world database of animals. If I were him, I would be blown away to discover a new creature not yet known



Butterfly Sacoglossan

The Sap-Sucking Slug



Cyerce sp. sacoglossan sea slug, or butterfly sap-sucking slug, Green Island, Taitung, Taiwan. Camera gear: Olympus OMD EM1 MarkII, M.Zuiko 60mm f/2.8 Macro lens, Olympus PT-EP14 housing, dual AOI UCS-Q1 compact strobes, Orcatorch D900V focus light. Exposure: 1/160s, f/14, ISO 100. Postproduction software: Lightroom Classic and Adobe Photoshop.

to science. And on top of that, he gets to name it!

The back story is done, so let's continue.

Why butterfly?

What's the reason for people calling this a butterfly sacoglossan? It is named so because when the wing-like appendages (called parapodia) on its back fold down, it looks like a butterfly with its wings spread wide open. I saw it first-hand on this dive but did not manage to get an image, worthy of the name, that I could justify sharing with all of you here.

Hopefully, I will get to make another trip to the same location in the winter, and then I can get some better shots. Now that I know where to find them when I go back, I know where I will be diving every dive I possibly can. That site really has a lot of gorgeous gifts just waiting to be found. I feel it in *me bones*, I tell ya!

Characteristics

Sap-sucking slugs, like nudibranchs, come in a huge swathe of shapes and sizes. While the majority are 1cm or less in length, there are larger sacoglossans out there.

Some of these slugs have small external or internal shells as well, even though they are not snails per se, but the majority have a pair of wings or flaps, called parapodia (as I mentioned earlier about the butterfly sacoglossan). The parapodia can be large and leafy, tucked around the long body, or they can even have structures on them.

It can be tricky to spot a sap-sucker, as they often take on the shape and colour of the seaweed they eat. Couple that with their small size, and you truly have to stare at something until your eyes can adjust to the fact that an animal is literally looking you slap-bang in the face, but you have no idea that it is actually even there.

Able to retain chloroplasts

Ok, this is where this slug becomes truly remarkable.

Not all, but some of these slugs have the ability to retain chloroplasts (which have chlorophyll), and sacoglossans that consume brown or red seaweed even keep the parts of the seaweed alive that are able to photosynthesize! If you are still a bit confused about what that means, it means this: It is able to **FARM ITS OWN FOOD**.

I had to emphasize that last part, because I seriously doubt many people would think an animal like this can do a thing like that. I am pretty amazed, myself!

So, I told you that bit, but here is the thing: Up until recently, it was thought that the chloroplasts basically continued to photosynthesize and only supply the sacoglossans with more nutrients. However, in more recent studies, researchers now believe that something far more complicat-

ed is going on. Let's hope they figure it out soon.

Defense mechanism

And there is one more thing: Some sacoglossans will even retain the poisons that the seaweed uses for self-defence and will excrete them to repel its own potential predators.

Common name

So now that we know all about what this little slug can do in terms of storing chloroplasts and using the power of the sun to farm crops for food, and furthermore—inside itself, I would now like to tell you about this kind of slug's common name,

which many use.


Usually, one will hear it being referred to as the "solar-powered nudibranch," but after all we have learned today, we should know by now, it should be more correctly called the "solar-powered sacoglossan." The reason for the name should be fairly self-evident at this point, so warrants no further explanation.

Hermaphrodite

Lastly, these slugs are hermaphrodites (having both male and female parts) and can fertilize eggs as well as carry them. When the slug performs its male role, a white tube (or penis)

comes out of its neck and is then inserted into the female genital pore. In others, they simply pierce the body anywhere with this appendage, to impregnate their partner. After internal fertilization has taken place, they will then lay their eggs in a ribbon. ■

Wesley Oosthuizen is an internationally published professional underwater photographer, originally from East London, South Africa, who is now based in Taiwan, where he founded a production company. For more information, visit: [facebook.com/WJOart](https://www.facebook.com/WJOart)



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