

opinion

Hypselodoris infucata is a brilliantly colored sea slug that some of our friends have dubbed the “birthday cake nudi.” They range in size from less than 10mm to about 40mm in length.

Text by Simon Pridmore
and Steve Wolborsky
Photos by Steve and MJ Wolborsky

Muck diving on Guam was little known by divers until a few years ago when local residents started posting images online from muck dives. Simon Pridmore and Steve Wolborsky tell the tale.



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Juvenile yellow boxfish (*Ostracion cubicum*)

It's a Small, Small World on Guam

Twenty-five years ago, I opened a dive center in Guam called Professional Sports Divers. This was the first dedicated technical diving

center in the Western Pacific, but we also taught people to dive and took fun divers out to see Guam's reefs and wrecks.

Around the year 2000, I came across the term “muck diving” on a trip to Papua New Guinea and did a couple of wonderful long dives look-

ing for and finding—with the help of sharp-eyed guides—some rare, beautiful little creatures in unusual places, such as ugly patches of sea-



Harlequin shrimp, *Hymenocera picta* (right); Longnose filefish (*Oxymonacanthus longirostris*), are usually found in and around staghorn corals (below); Robust ghost pipefish, *Solenostomus cyanopterus* (bottom left)



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bed where you would not usually take fun divers. I also saw a pygmy seahorse for the first time. It was a Bargibant's seahorse, of course. At that time, it was the only one anybody had ever found.

On my return to Guam, I had a brief look around to see if similar creatures lived in Guam waters, but it was a fruitless quest, soon abandoned. After all, my main jobs were to run the business and teach people how to dive deep and penetrate shipwrecks safely, not spend hours looking for tiny things that might not even be there.

When I left Guam in 2003, there was still no muck diving there and I never gave it another thought. Over the following 15 years or so, my wife Sofie and I dived all around our new home country of Indonesia, did hundreds of muck dives and saw some astonishing animals.

Then, a couple of years ago,

I started seeing some amazing macro images being posted on Facebook by Guam residents Steve and MJ Wolborsky.

I messaged Steve:

"Where were these taken?" I asked. "Lembeh? Dumaguete?"

"This is Guam," he told me.

I was absolutely stunned.

"Man!" I told him. "We were diving in the wrong places all those years ago."

Then he told me where the pictures were taken and it turns out that we had been diving in all the *right* places, we just didn't have the knowledge then to find these creatures nor the equipment to record them.

Steve and MJ have plenty of both. This is the tale of how they did it and these are their pictures.

I'll let Steve take up the story...

Steve and MJ's story

There are two particular sites



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Boxer or pom pom crab (above); *Roboastra gracilis*, a small nudibranch, around 10 to 12mm long (top right). All nudibranchs are hermaphrodites, possessing male and female genitalia, and pass both sperm and eggs to one another when they mate. The sex organ is on their right sides, so when you find two together, right side to right side like this, they are probably mating.

Octopus cyanea showing its blue coloration, hence the name “cyanea” (right).



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Our first Guam “Shaun the Sheep” sea slug (*Costasiella kuroshimae*), spotted on 13 July 2020 (above); Juvenile *Octopus cyanea* in old-style boxing pose (center); Juvenile warty frogfish (top right); Leaf fish (far left)

where we have gained considerable experience and knowledge of Guam’s tiny underwater world—Piti Channel/Tunnels and Outhouse Beach.

Piti Channel/Tunnels

Near the southern edge of the Piti marine preserve area, the outline of Piti Channel is visible as a dark blue path snaking through beautiful scenery. The channel flows under a road via five tunnels and these tunnels

have been the main object of our exploration.

We started with night dives in the otherwise barren sand channel on the ocean side of the site, which is less than 5m deep in most places, allowing for extended bottom times. It comes alive after dark with shrimp, crabs, eels, octopus, scorpionfish and leaf fish (*Taenianotus triacanthus*). While doing these initial dives, we noticed that the terrain approaching the tunnels became more mixed, with

coral, several species of algae, and more sea life overall.

So, we started to investigate the tunnels more thoroughly, diving mostly during the day and occasionally at night. We developed a classification system, numbering the tunnels from 1 to 5 running east to west, with an ocean side and a shore side for each. This allowed us to quickly compare notes post-dive, e.g., “I saw that nudibranch in tunnel 3, east wall, 1/3 of the way in from the ocean side,

and 1/4 of the way up the wall.” The tunnels are all about 4m wide and 4m high, save one that has significant sand berms undulating down its

length. Each tunnel seems to have a relatively unique ecosystem, with some species occurring only or predomi-



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The highly photogenic *Glossodoris* nudibranch

Juvenile *Octopus cyanea* making its home in an abandoned bottle (above); The tiny *Costasiella fridae*, a relatively new classification (right)

nantly in one tunnel. Other species are prevalent across the site. The tunnels are encrusted with brilliantly colored corals, coralline algae, plants and sponges (among other things like beer bottles, abandoned underwear, and snorkel gear). Our weather lets us dive most days, so, over time, we have documented seasonal and other time-based changes, as well as significant differences between day and night. To date, we and our dive buddies have identified 99 distinct species of sea slugs and nudibranchs there. This is also so far, the only place in Guam where we have seen harlequin shrimp (*Hymenocera picta*) and pom-pom or boxer crabs (*Lybia tessellata*). We have also seen far more leaf fish and robust ghost pipefish (*Solenostomus cyanopterus*) here than anywhere else.

A New Dive Book from Simon Pridmore

"Simon Pridmore's new book, 'Technically Speaking' is an outstanding tour de force from one of modern diving's most accomplished practitioners and best-selling authors."

— David Strike, Oztek & Tekdive Convenor

"Simon has completed a complex task with consummate skill and has accurately unravelled the when's, the who's and some of the why's, much of which would have been unjustifiably lost in the mists of time if not for this work."

— Kevin Gurr, Technical Diving Inventor & Innovator

"It will take some doing to better this account of tech's first steps...

as no matter how much you know or think you know; you will still find many obscure historical gems..."

— Kevin Denlay, Early Adopter & Wreck Finder

Technically Speaking is the latest book from best-selling Scuba series author Simon Pridmore. It is a selection of themed talks telling the early history of technical diving—where it came from, how it developed, how it expanded across

the world, who the important movers were and how, in the decade from 1989 to 1999, the efforts of a few determined people changed scuba diving forever.

These ten years saw the greatest shake-up the sport has ever seen but technical diving's road to universal acceptance was anything but smooth, many obstacles had to be overcome and there were times when even viewed in retrospect, it seemed that its advocates might fail in their mission. Ultimately, success came down to per-

severance, people power, good timing and more than a little luck.

Available in hardback, paperback and ebook at **Amazon Worldwide, Apple, Kobo, and Tolino**. See **SimonPridmore.com**



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Peacock mantis shrimp, *Odontodactylus scyllarus*, with brood of eggs

TOP LEFT TO RIGHT: *Roboastra tentaculata* nudibranch; *Costasiella usagi* (2cm) under *Avrainvillea* leaf; *Costasiella kuroshimae* (1cm)

Our journey of discovery reached an apex when, in July 2020, I noticed an *Avrainvillea* algae leaf in the sand on the ocean side of the channel itself. This leaf is the habitat for *Costasiella* species sap-sucking slugs (sacoglossans), popularly called “Shaun the Sheep” due to their resemblance to the eponymous character from the Wallace and Gromit children’s series. I investigated more in hope than expectation and, to my surprise, discovered a tiny *Costasiella kuroshimae*, my first Shaun on Guam. Since then, we have found multiple species at different sites.

The tunnels house octopus in a large range of sizes, but we’ve only seen one species so far, *Octopus cyanea*. The smaller individuals can be found inside abandoned beer bottles or skittering along the bottom

of the tunnels, especially at night. The tunnels are also the only place we have found frogfish (*Antennarius* sp.) on Guam.

Outhouse Beach

Outhouse Beach sits on the northern arm of Guam’s Apra Harbor, on the Glass Breakwater. It is the go-to site for most local instructors since it has a lot of shallow areas with few obstacles and navigation is simple.

When we started shooting macro there, we found few worthwhile subjects and thought of it just an OK backup site when the tunnels were not dive-able. Then, one day in early 2021, on a whim, rather than going east as usual, we headed west, and, to our delight, found many nudibranchs there that we had never seen before. Since then, for the past two-plus years, we have been diving

Outhouse on average four to five times a week, finding and identifying sea slugs and nudibranchs. As I write, we are up to a total of 63 species. Some, like *Hypselodoris infucata* and *Roboastra tentaculata*, we have found nowhere else on Guam. Plus, we have found and identified at least four species of *Costasiella* slugs.

Outhouse also has a lot of other photo-worthy subjects. It is home to cephalopods like *Octopus cyanea* and the cuttlefish *Sepia latimanus*, as well as superpower crustaceans like the peacock mantis shrimp (*Odontodactylus scyllarus*). We have recently found numerous mouth-brooding cardinalfish such as *Ostorhinchus luteus* and many colonies of tiny skeleton shrimp (*Caprella* spp.), all no wider than a human hair and no longer than 3mm.



Skeleton shrimp, *Caprella* spp. (right); Mouth-brooding yellow cardinalfish, *Ostorhinchus luteus* (center); Broadclub cuttlefish, *Sepia latimanus* (below)



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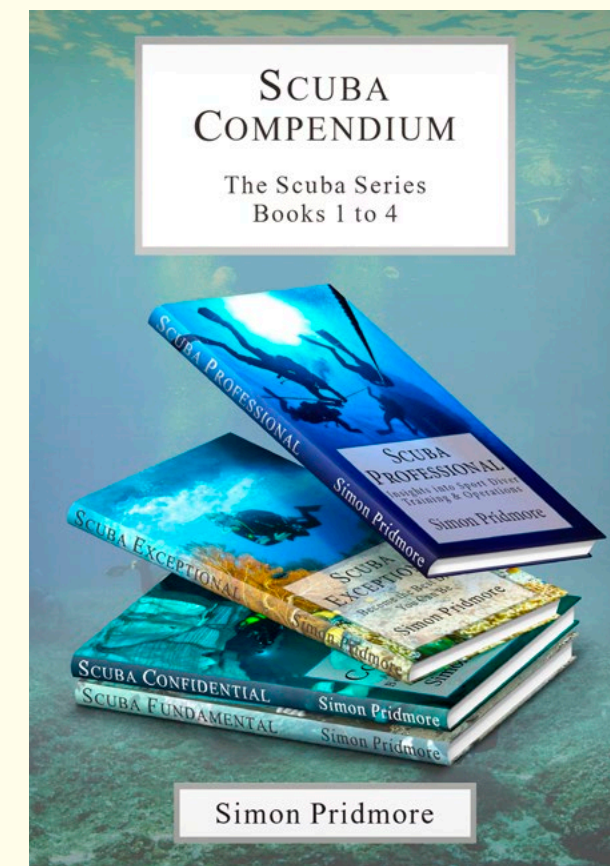
NEW 4 in 1!

Simon Pridmore has released a new single-volume e-book, bringing together four books in his bestselling Scuba series:

- *Scuba Fundamental – Start Diving the Right Way*
- *Scuba Confidential – An Insider's Guide to Becoming a Better Diver*
- *Scuba Exceptional – Become the Best Diver You Can Be, and*
- *Scuba Professional – Insights into Sport Diver Training & Operations*

As Simon puts it, this is “a remastering and repackaging of the original albums rather than a greatest hits.” Nothing is missing. *Scuba Compendium* gives e-book readers the advantage of being able to access all the knowledge contained in the four books in one place, making this a unique and easily searchable work of reference for divers at every level.

Simon has always promoted the idea of safer diving through the acquisition of knowledge, which is why he has chosen to release this highly accessible version. If you have read his work before, you will know that he provides divers with extremely useful advice and information, much



of it unavailable elsewhere; his points often illustrated by real life experiences and cautionary tales. He examines familiar issues from new angles, looks at the wider picture and borrows techniques and procedures from other areas of human activity.

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Putting Guam on the Macro Map

Local dive operators have never promoted the island as a destination for macro and muck diving, but that may change as we discover more potential sites. Inshore areas of Guam's fringing reefs have great potential as a habitat for small creatures and serve as a nursery for juvenile fish

and invertebrates. While the sites are perhaps not as robust in sheer quantity of subjects as their counterparts in the Philippines and Indonesia, they are quite viable and likely to yield many more surprises.

Our exploration continues. □

Simon Pridmore is the author of the international bestsellers *Scuba Fundamental: Start*

Diving the Right Way, Scuba Confidential: An Insider's Guide to Becoming a Better Diver, Scuba Exceptional: Become the Best Diver You Can Be, and Scuba Professional: Insights into Sport Diver Training & Operations, which are now available in a compendium. He is also the co-author of the Diving & Snorkeling Guide to Bali and the Diving

*& Snorkeling Guide to Raja Ampat & Northeast Indonesia. His recent published books include The Diver Who Fell From The Sky, Dive into Taiwan, Scuba Physiological: Think You Know All About Scuba Medicine? Think Again! and the Dining with Divers series of cookbooks. For more information, please see his website at: **SimonPridmore.com.***

The only *Goniobranchus kuniei* I have ever seen on Guam was at Outhouse. Some people call it “the Marilyn Monroe nudii” because it often flaps its mantle up, like the famous photo from the film *The Seven-Year Itch*.