



*Limenendra bernosii* is a deeper dwelling nocturnal nudibranch, which seems a bit benign in coloration and nothing overly exciting. But once your light has alerted the sea slug of your presence, it unfolds and begins to move about, revealing its true neon colors. The hunt for this nudibranch is done in an exclusive manner, with a dive plan that involves staying OFF the bottom and restricting fin kicks, as these sea slugs love silty bottoms.

Text and photos by Mike Bartick

**Nudibranchs are a worldwide favorite for macro photographers, often leading divers on a “wild slug hunt” across the globe. Once these little gems capture your attention, it is very hard to break out of their magical spell. A gateway critter, if there ever was one, the nudibranch combines the beauty of our ocean and natural history in a photogenic and scientific symphony like no other marine animal.**

Often referred to as slugs due to their evolutionary path, the grand designs of nudibranchs are as fascinating and varied as there are slugs themselves. Each one of them has evolved in a special

manner to survive and reproduce in the many different and challenging habitats in which they are found. Cold water to warm water, benthic or pelagic and at every depth, nudibranchs occur glob-

ally and have even been found in brackish rivers.

Shooting photos of sea slugs is often the way many macro shooters start out. They shoot various finds from each dive, then look

them up in a marine species identification book. This often results in a collection of basic ID photos. While this is a common path for an underwater photographer to take in learning the craft, it often

sets one up for bad habits down the road. There eventually comes a time when shooters have the desire to take their images to a different level, but breaking the habit of shooting ID photos can



# Nudibranch Macro *Going Beyond the ID Photo*



## photo & video

*Miamira alleni* is a recently renamed slug, which resembles coral. Oftentimes, divers swim over or even look past these sea slugs, due to its clever camouflage in its extreme mimicry of its surroundings. The *alleni* can get huge and divers often refer to them as "battleships". They tend to be a longer living slug and have been seen on habitats that range from algae-covered sea bottoms to hard corals, walls and flat sea floors.

often be a challenge. One of the things that has helped me to shoot more creative images of nudibranchs began with learning about them first.

Knowing the food source of a nudibranch is an elementary yet effective way for hunting nudibranchs. Tunicates and algae are a great place to start, followed by hydroids and so on. It also helps to know a little about the anatomy and biology of nudibranchs.

### Anatomy in a nutshell

**Gill plume and cerata.** The word

"nudibranch" actually breaks down to two parts: "naked" and "gill". Most sea slugs have some kind of gill, or gill-like structure, which are clearly visible. Some (gill structures) are protected and therefore not visible, like in the case of plurobranchs or sidegill slugs. Different gill structures help to differentiate the species. Dorids have a visible gill plume while aeolids have cerata. Each makes direct contact with water in various ways and enables the sea slug to respire through conventional gas exchange.



*Kalinga ornata* is a true "lie and wait" predator, which hides just below the sand, with only the tips of its cerata exposed. Its prey—brittle stars—pass over them, unexpectedly alerting the *ornata* into action. The *ornata* suddenly emerges from the sand just behind the star and quickly tracks it down, snatching it up with quick vacuum action. And just as quickly as it emerged, it once again burrows down beneath the sand to wait for its next victim.



**Rhinophores.** This is a sensory organ located at the front of the subject that helps nudibranchs smell and detect food or prey. Rhinophores are varied in shape, depending on the species. Some are finned, some are smooth. Some retreat into a protective crown, while others retreat into a protective sheath. For photographic purposes, the rhinophores should be regarded as the eyes of the nudibranch.

**Coloration and texture.** The gaudy colors of a nudibranch serve as a visual defensive mechanism, which repels and warns predators of certain discomfort or death if they bite or consume the nudibranch. The small decorative dots along the foot of the nudibranch are oftentimes acid-secreting glands.

**Behavior.** Mating takes place when two nudibranchs of the

same species align themselves along the right sides where the reproductive organs are found. Mimicry of soft or hard corals, algae, even sponge make good subject matter for images. Egg laying is also a great behavior to capture. Oftentimes, the eggs are brightly colored, being just as colorful as the slug that has laid them.

**Diet.** Nudibranchs are extremely selective in their diets, feeding on only one food source. There are those that feed only on sponges or hydroids. There are also cannibal egg feeders and cannibals that feed on other nudibranch species.

### Photo techniques

For shooting sea slugs, technique can vary based on the species or size of the slug you find or set out to find. The macro, super-macro and wide-angle macro effect are

the three main ways of shooting them.

**Macro.** Standard macro using a 60mm lens is where many shooters enter the nudibranch world, using an SLR for the first time. Offering a close working distance and slightly wider angle of view, a 60mm lens is very forgiving and perfect for hunting random sea slugs.

**Super-macro.** Macro with a longer lens, such as the Nikon 105mm or Canon 100mm, is a bit more specialized, offering a narrowed angle of view with a slightly longer working distance. The narrow angle of view makes "filling the frame" a bit easier, and the longer working distance permits the use of diopters for super-macro. For that reason alone, it is a game changer. Both the 60mm and 100/105 offer the same magnification of 1:1. It is only the angle of view within the frame and working

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*Cyerce sp.* Any of the sacoglossid slugs pose a challenge to photograph due to transparency and the manner in which they move. In "herky-jerky, stop-start" movements, the cyerce lunges forward then stops, flopping its cerata over its facial features. Just as your camera focuses, it repeats the movement again. Back lighting helps to illuminate transparent subjects and brings out some of the subtle and intricate colors and patterns. Found near the base or hidden among Halameda green macroalgae, the cyerce are a tough bunch to find and photograph.

distance that set these two lenses apart.

**Wide-angle macro.** The wide-angle macro effect is achieved using a wide-angle lens, either with or without a teleconverter. I use the Tokina 10-17mm fish-eye lens behind a Zen port. If I add the teleconverter, I also need to remember that my focal length will now be fixed, as the book gear will not mesh. And more importantly, I need to remember to use an extension ring.

Good super-macro images can be very frustrating to create, as there are a couple of challenges that beset the shooter. Depth of field can be extremely

narrow using diopters. This is exaggerated even more by the nearness to the subject. Stopping down to a minimum of  $f/22$  is a good start to gain some depth of field, as desired.

Lighting becomes an issue when stopping down. If you need more light, use the ISO setting and increase it to 100-160. Be careful with the  $f$ -stop, as diffraction now becomes extremely relevant.

### Movement and super-macro

Technique is vital to stabilize your camera when releasing the shutter. Make your camera light enough to eliminate wrist fatigue but heavy enough underwater



*Cyerce nigra*



to get stable. Placing your left hand under the lens port also helps to stabilize the camera.

Choose calm days or situations for super-macro shooting and avoid surge at all costs. Pay attention to the caliber of your subject's rhinophores or orientation within the frame.

Macro and super-macro is so much more than just making small things big. Try to create different compositions or use a variety of  $f$ -stops on the same subject to get a feel for what can be done to create

*Melibe colemani* is truly one of Nature's finest works. Resembling a ball of string, the developed muscle lines of this nudibranch are opaque yet held together within a translucent tissue. Its mouth opens like a massive fishing net, which it casts over the sand or soft corals to feed and to drag itself forward.



*Lobiger sp.* nudibranchs are found living on their food source, which is calaurpa algae. These sea slugs still have a visible shell, which has not been internalized. The lobes or cerata help the nudibranchs remain hidden or disguised, oftentimes right in the open. Take your time when shooting this sea slug and try to isolate the subject away from its habitat to create a stronger composition.

something a little different. Study your subject and try to bring out any unique behavior and function.

Once your subject is located, shooting photos of it takes on a whole new challenge. Something that looks very simple can sometimes become quite frustrating, as these little guys can put up quite an opposition once the

strobes begin to fire. The light from a modeling torch used for focus can also irritate a sea slug and cause them to turn their heads away from the lens.

### Drama with lighting

**Strobe angle and power** are always my first choice for creating drama in an image. Employ this, coupled with capturing

nudibranch behavior and using correct technical settings, and suddenly your standard ID photo becomes something unique and beautiful.

**Snoots.** Another tool that I tend to rely upon for lighting is a snoot. Using a snoot does a couple of things, which include eliminating the immediate surroundings in



your image. This is particularly helpful for subjects in a busy habitat. A snoot also works well with translucent subjects, as it creates a glowing effect that seems to radiate from within the subject.

**Wide-angle macro.** For larger nudibranchs, the wide-angle macro effect can open your

portfolio into a whole new realm. Wide-angle macro, or WAM, allows a shooter to create different compositions and can be plenty fun to do.

Similar lighting methods and strobe angles for the WAM effect prevail. I prefer using a Tokina 10-17mm fisheye lens on a crop sensor camera and using a small dome to get the wide-angle

macro effect. Keeping the outside edge of the strobe head in line with the front edge of the housing and aiming slightly back is very effective. Keep the shutter speed high to control the ambient light and watch for strobe flaring. If flaring occurs, adjust the strobes in a bit farther. I like to use my index finger just in front of the lens port to protect it from



*Alleni sp.* nudibranch and sun ball





## photo & video

Glow effect using side lighting (right); Filling the frame effect (below)

bumping the reef when making the approach. High *f*-stops or low, the depth of field is much greater and more forgiving than a macro lens.

### Composition ideas

**Alleni and sun ball.** After seeing a few images posted on public media of a sun in the frame with a nudibranch, I decided I had to try this myself, however, not on a composite or double exposure. I wanted to capture this image naturally, in the camera and on a single frame. We set out to explore and found one of my favorite Anilao superstar slugs to practice this technique. I could not have been happier with the results and have tried to recreate this image many times.

**Filling the frame.** This is one of my favorite techniques for shooting macro. The object is to fill the frame with the entire subject in a way that is



creatively appealing. This technique is great for creating the WOW factor or the appearance of a monster slug. I love bright colors as well for this type of image as it adds brightness and a punch of color to the ordinary black background portfolio. Flatworms work well for this too, so don't be a snob and share the love.

**The glow.** The glowing effect will take a little practice, mostly in recognizing the subjects it will work with the best. As mentioned, translucent subjects will carry the light well, using a side lighting method with your strobe, get close, get low and try to shoot up in a way that there is nothing behind your subject.

**Making it "black in back".** Very simply, shooting anything where there is nothing behind it allows you to capture your subject with a black background. By the same token, you can also get blue or pastels.

Background or ambient light

is controlled through shutter speed: 1/200 in an SLR will create a jet-black background, so nothing is behind your subject. If it is a nice sunny day, try slowing down the shutter and letting in the blue, like a dimmer switch on a lamp. For pastel colors, wide open *f*-stops, such as *f*/5.6 or *f*/7.1, are great for creating colorful bokeh effects, or out-of-focus areas as backgrounds.

### Afterthoughts

At the end of the day, hunting for sea slugs is almost as much fun as creating images of them. Challenge yourself to break away from old habits and dare to try something new. You might be surprised at what happens within the camera instead of what is achieved through Lightroom and Photoshop software. The above techniques and ideas work well with any critter, so experiment a little and have some fun. Now get out there and have an adventure! ■

*Mike Bartick is a widely published underwater photographer and dive writer based in Anilao, Philippines. A small animal expert, he leads groups of photographers into Asia's underwater realm to seek out that special critter. For more information, visit: [Saltwaterphoto.com](http://Saltwaterphoto.com).*



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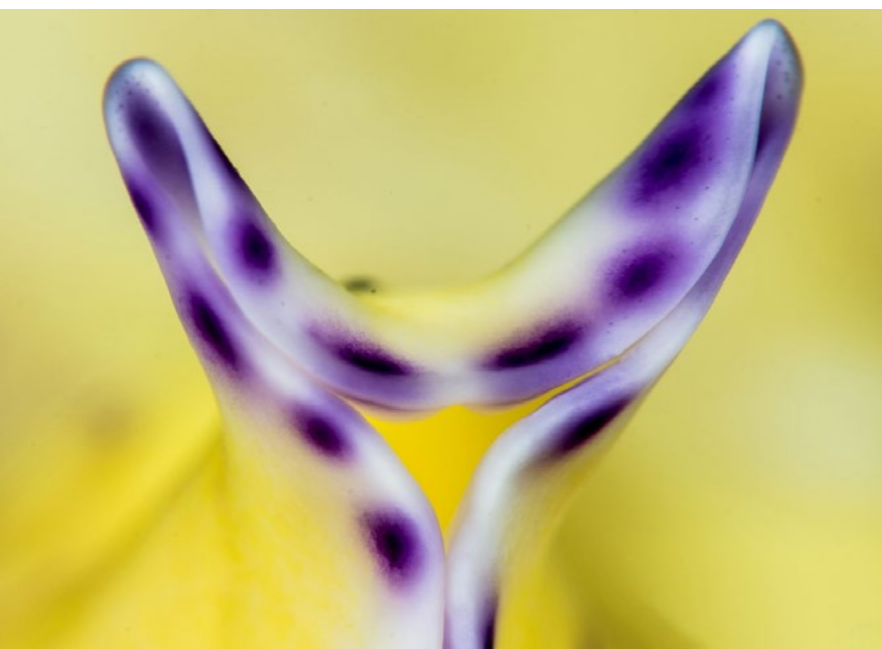
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# photo & video

Edited by Peter Symes

## Leo for phones

Fabio Benvenuti, principal of Italian brand Easydive, easily counts among the most innovative entrepreneurs I know in the industry; I always seem to be able to spot some interesting new pieces of kit whenever I find the company at expos. This year's Boot Show in Germany was no exception, and this time on display was an ultra sleek housing for smart-phones—both iPhones and Android models—called Leo3 Smart. Nicely machined and with a fine finish, the housing felt robust and trustworthy, yet sleek and lightweight.



Accessories (some are optional extras) include battery packs, arms, fisheye and wide-angle kit lenses (external), carbon arms and flash/lamp. The housing, which is depth rated to 150m, can also be provided with a vacuum test system. [Easydive.it](http://Easydive.it)

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## Inon UCL-67

Compared to the INON UCL-100, which it supercedes, the new UCL-67 high magnification close-up lens offers three major benefits. These include increased magnification, improved image quality and interchangeable mounts. The UCL-67 is a 15 dioptre strength lens and this provides a magnification ratio, with a true 1:1 macro lens, of 2.7. The new UCL-67 uses four lens elements, compared to two in the UCL-330 and 165 and three in the UCL-100. It is also the first INON UCL lens to be designed for underwater use only. This level of correction is needed to keep pace with improvements to sensors in pro level cameras, especially full-frame and 4K models. With SLR cameras using 35mm size sensors now considered to provide the resolving power of some medium format cameras, the quality of lens systems is becoming an issue. This is why INON has corrected the UCL-67 specifically for shooting through water. As you would expect, the lens elements are glass and multi-coated to control flare, ghosting and chromatic aberration. The focus distance is set at about 50mm. [shop.inonuk.com](http://shop.inonuk.com)



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## Retra

The sleek-looking flash from Slovenia-based manufacturer Retra, best known for their optical snoots and other innovative accessories, is an attention-grabber in several ways. It is a similar size to Inon's Z-240 and Sea & Sea D1/D2 flashes but has a much cleaner control panel on the back (see small photo right). The right switch has nine manual exposure settings. Underwater photographer Alex Mustard recently took a pre-production model through its paces (see report posted on [Wetpixel](http://Wetpixel)), and among other things he pointed out, was how wide and even the illumination this strobe produced.

The tough aluminium housing takes four AA batteries, which will last for 200 flashes at full power and drive the 300 lumen pilot light for up to three hours. The flash can either be connected via electrical cable, with either a standard 5 pin or S6 connector—or optical cable. The beam angle is 95 degrees, or 110 degrees with wide diffuser, which affixes with a bayonet mount. The flash is depth-rated to 100m. The Retra is currently in early production, with first orders expected to start shipping in June 2017. [Retra-uwf.com](http://Retra-uwf.com)



## Fantasea wet lenses

Fantasea and AOI have also just released a new selection of three quality macro wet lenses. The lenses mount on the housing lens port and can be installed and removed during the course of the dive. They can be mounted on 67mm threaded lens ports and other dimensions by using an adaptor: the UCL-05LF wet macro lens with a +6 diopter; the UCL-06LF with a +12 diopter; and the UCL-09F super macro with a +12.5 diopter. Lens barrels are made from durable aluminium alloy with black hard coating. The AR (anti-reflection) coating on all glass elements assists in avoiding lens flare from the sun or artificial light sources.

[Fantasea.com](http://Fantasea.com)

