

Lembeh's Critter Camouflage

by Sam Robertshaw

The Lembeh Strait is celebrated worldwide as a premier destination for muck diving and underwater photography. Divers flock to this unique region to encounter its extraordinary array of critters, well known for their remarkable camouflage abilities. The sandy and rubbly seabeds of Lembeh conceal a myriad of fascinating creatures, from tiny pygmy seahorses to intricate nudibranchs, making it a haven for underwater photographers seeking unusual and captivating subjects.

Camouflage serves as a crucial survival strategy for marine life, especially in the challenging environment of Lembeh, which is teeming with predators and competitors. By blending in seamlessly with their surroundings, critters can avoid detection by predators hunting for prey. This ability not only enhances their chances of survival but also allows them to efficiently hunt for food without alerting potential prey.

Various types of camouflage are employed by marine creatures in Lembeh to achieve this remarkable adaptation. Background matching is one such tactic, where organisms match their colours and patterns to

their immediate environment, making them indistinguishable from the substrate or surrounding environment. Disruptive coloration involves bold patterns or contrasting colours that break up the outline of the organism, making it harder for predators to recognise them as prey. Mimicry, another effective camouflage strategy, involves organisms resembling other objects or organisms in their environment to avoid detection or gain protection.

Lembeh Strait is home to a variety of marine species known for their incredible camouflage abilities, making it a treasure trove for underwater photographers. Some standout species, such as the Pygmy Seahorse, Mimic Octopus, and Hairy Frogfish, are particularly notable for their mastery of disguise.

The Bargibanti's Pygmy Seahorse (*Hippocampus bargibanti*) is a prime example of extraordinary camouflage. Measuring just about 1 to 2 centimetres in length, this tiny seahorse resides exclusively on gorgonian corals. Its body closely mimics the texture and colour of the coral polyps, making it nearly indistinguishable from its host.



Pygmy Seahorse - Bargibanti Pygmy Seahorse are abundant in Lembeh, once you (or your guide) has found them, the challenge of keeping them in your viewfinder begins. A stunning subject with equally beautiful surroundings.

*Canon R5, Nauticam Housing, INON Z330 x 2, 100mm lens
1/200, f/8, ISO 100*



Mimic - Mimic Octopus are thought to camouflage in a different manner to other cephalopods, by actively mimicking other animals found in the substrate. There is still some debate whether this is a conscious effort by these octopus, or whether they just happen to share the appearance of animals such as flounders or sea kraits whilst going about their daily business.

*Canon R5, Nauticam Housing, Backscatter MF2 with snoot, 100mm lens
1/200, f/14, ISO 100*

This symbiotic relationship not only provides the Pygmy Seahorse with protection from predators but also offers a fascinating subject for underwater photographers.

One of the most famous camouflaging creatures in Lembeh is the Mimic Octopus (*Thaumoctopus mimicus*). Unlike the Pygmy Seahorse, which relies on static camouflage, the Mimic Octopus takes

mimicry to a whole new level. This intelligent cephalopod can imitate the appearance and movements of various marine species, such as lionfish, flatfish, and sea snakes. By contorting its body and changing its coloration, the Mimic Octopus can deceive predators and prey alike.

The Hairy Frogfish (*Antennarius striatus*), with its unique and bizarre appearance, is yet another favourite



Hairy Frogfish - Hairy Frogfish are arguably the most iconic Lembeh critters and ones that gained that unique appearance all for camouflage. The hairy appendages provides incredible camouflage against algae and seagrass beds, allowing them to hunt effectively whilst remaining invisible to predators.

Canon R5, Nauticam Housing, INON Z330 strobe with INON LF650h-N torch, 100mm lens. 1/200, f/5, ISO 10

here in Lembeh. Covered in hair-like appendages, this frogfish can resemble a piece of algae or a clump of seaweed, allowing it to blend perfectly into the sandy and rubble-strewn substrates of its habitat. Like other frogfish species, their body can slowly change colour to match its surroundings, further enhancing its disguise. Hairy Frogfish are ambush predators, lying in wait for

unsuspecting prey to come close before striking with lightning speed.

Another fascinating example of camouflage in Lembeh's waters is found in the Robust and Ornate Ghostpipefish (*Solenostomus cyanopterus* and *Solenostomus paradoxus*). These remarkable fish are masters at blending in with their surroundings, often mimicking the appearance of floating debris,



Ornate GP - There are fewer critters that blend in quite like Ornate Ghostpipefish, usually hiding amongst the arms of feather stars or hydroids. This yellow individual is one of the rarer colour variations, yet it still manages to find a matching host. Canon R5, Nauticam Housing, INON Z330 x 2, 100mm lens. 1/200, f/5, ISO 100

crinoids, or seagrass. The Robust Ghostpipefish has a more solid, leaf-like appearance that allows it to blend seamlessly with algae and other plant matter. In contrast, the Ornate Ghostpipefish displays intricate patterns and frills that closely resemble the fine details of feather stars or soft corals. These adaptations not only provide excellent camouflage from predators but also make them nearly invisible to the untrained eye.

Cuttlefish in Lembeh also display exceptional camouflage

capabilities. These cephalopods can rapidly change their skin colour and texture to match their surroundings, thanks to specialised cells called chromatophores. Whether blending in with coral reefs, sandy bottoms, or rocky outcrops, cuttlefish use their camouflage for both hunting and evading predators. Their ability to display a wide range of colours and patterns makes them a favourite subject for photographers looking to capture the marvels of marine camouflage.



Crinoid Cuttlefish - No matter which species of cuttlefish you come across or what substrate, they will almost certainly find a way to camouflage with their surroundings. This stunning crinoid cuttlefish changing both its colours and skin texture to match with the soft coral. Canon R5, Nauticam Housing, INON Z330 x 2, 100mm lens. 1/200, f/5, ISO 100

Spotting camouflaged animals is one of the most challenging aspects of this style of diving. A great guide is certainly a huge help; at NAD Lembeh, there is a 2:1 guest-to-guide ratio where the guides have well over 100 years combined diving in the strait.

One effective technique for searching is to look for movement in the substrate, panning to see if any camouflaged critters give themselves away. Pay attention to unusual shapes or patterns that stand out from the surrounding environment, as these

may indicate the presence of a hidden critter. Diving slowly and methodically through the area, taking your time to scan each section, can increase your chances of spotting these elusive animals.

When it comes to capturing camouflaged critters in Lembeh, having the right equipment is essential. Macro lenses are a must-have for photographing the small and intricately patterned creatures that inhabit these waters. A lens with a focal length of 60mm to 100/105mm is

ideal for getting close-up shots while maintaining a comfortable distance, and increasing magnification with diopters is another option too. In addition to your lens choice, being familiar with your camera's focus systems to help lock onto subjects quickly with either auto or manual focus is key. A small aperture (f/13 to f/20+) ensures adequate depth of field to capture the details of these tiny subjects while a wider aperture (f/2.8-f/11) can isolate the camouflaged critters from messy backgrounds.

Once you've located a camouflaged critter, composing your shot and using lighting effectively is important to capturing stunning images. Aim to position your camera at eye level with the subject to create a more engaging and natural perspective. Utilise strobes or continuous lights to illuminate the creature, highlighting its unique features without overwhelming its natural habitat. Experiment with different lighting angles to avoid harsh shadows and bring out the textures and colours of the critter. The use of snoots and other narrow-beamed torches are particularly popular nowadays, pinpointing the light on the subjects without lighting up any distracting elements that surround the animal.

There is no "right" answer when it comes to shooting underwater macro photos. One of the most exciting aspects of this genre of photography is the multitude of ways that you can take photos of a single subject. With the abundance of critters in Lembeh, you always have plenty of time with each critter to experiment and see which style of photo and/or lighting you prefer.

Camouflaged species play a crucial role in Lembeh's marine ecosystem and ecosystems around the world, contributing significantly to the biodiversity and health of the reef. These creatures often serve as both predators and prey within



Tozeuma - As with many other species of shrimp, *Tozeuma Shrimp* seek camouflage for survival. They do it in a unique way with their texture, colours and even body patterns mimicking the sponges where they reside.

Canon R5, Nauticam Housing, INON Z330 x 2, 100mm lens 1/200, f/11, ISO 100

the food web. For instance, a well-camouflaged predator like the Hairy Frogfish can control the population of smaller fish and invertebrates, preventing any one species from becoming too dominant. Conversely, camouflaged prey species provide essential food sources for higher trophic level predators, thus supporting the overall balance



Goby Sea Pen - A wide variety of coral and ghost gobies can be found amongst all kinds of substrate. This one on a sea pen where the goby's colour and patterns camouflage perfectly.

Canon R5, Nauticam Housing, INON Z330 x 2, 100mm lens. 1/200, f/8, ISO 100

of the reef. Their unique adaptations also promote a diverse range of interactions and symbiotic relationships, enriching the complexity and resilience of the ocean environment.

Preserving camouflaged critters and their habitats is vital to maintaining the delicate balance of our marine ecosystems. These creatures rely



Coleman Shrimp - Even critters as beautiful and brightly coloured as Coleman Shrimp have mastered camouflage. Their plain white colouration mixed with dark red or brown spots merge seamlessly with the nasty spines of fire urchins.

Canon R5, Nauticam Housing, INON Z330 x 2, 100mm lens. 1/200, f/8, ISO 100

heavily on the health of their surroundings to thrive. For instance, corals provide essential habitat for hundreds of species of camouflaging fish, while seagrass beds offer refuge and feeding grounds for a whole host of other species. Human activities such as overfishing, pollution, and habitat destruction pose significant threats to these delicate environments. Conservation efforts

aimed at protecting these habitats, along with responsible diving practices, are essential to ensure the continued survival of these fascinating creatures and the overall health of the reef ecosystem.

In summary, Lembeh is a treasure trove for underwater photographers and marine enthusiasts, offering a unique glimpse into the world of camouflaged critters. These creatures, from the

minuscule Bargibanti's Pygmy Seahorse to the enigmatic Hairy Frogfish, showcase remarkable adaptations that allow them to blend seamlessly into their environments. Camouflage serves as a vital survival strategy, enabling these species to evade predators and ambush prey. Understanding the various types of camouflage, such as background matching and mimicry, enhances our appreciation of these fascinating animals. Capturing their beauty through photography requires patience, skill, and a keen eye for detail, but the rewards are immense.

I encourage all divers to explore Lembeh's camouflaged critters, whether you are new to these minute subjects or not. Appreciate the intricate beauty and ecological significance of these unique marine species. As you embark on your underwater photography adventures, remember to practice responsible diving and contribute to the preservation of these delicate ecosystems. The challenge of spotting and photographing camouflaged creatures is not only thrilling but also deeply rewarding, offering a deeper connection to many species that non-divers all around the world may not be familiar with.



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