

A large, brown, mottled cuttlefish is the central focus of the image, resting on a coral reef. The cuttlefish has a yellowish-green eye and a prominent, curled mantle. The background is filled with various types of coral, including branching and table corals, in shades of brown, orange, and white. The lighting is dramatic, highlighting the textures of the cuttlefish and the surrounding reef.

Critter Central Lembeh Strait

Text and photos by
Andrea & Antonella Ferrari

— *Fantastic Muck Diving in Indonesia*



Large paddle-flap scorpionfish shows its unmistakable gargoyle-like profile



PREVIOUS PAGE: Cuttlefish in defensive posture. Kungkungan Bay Resort (above)

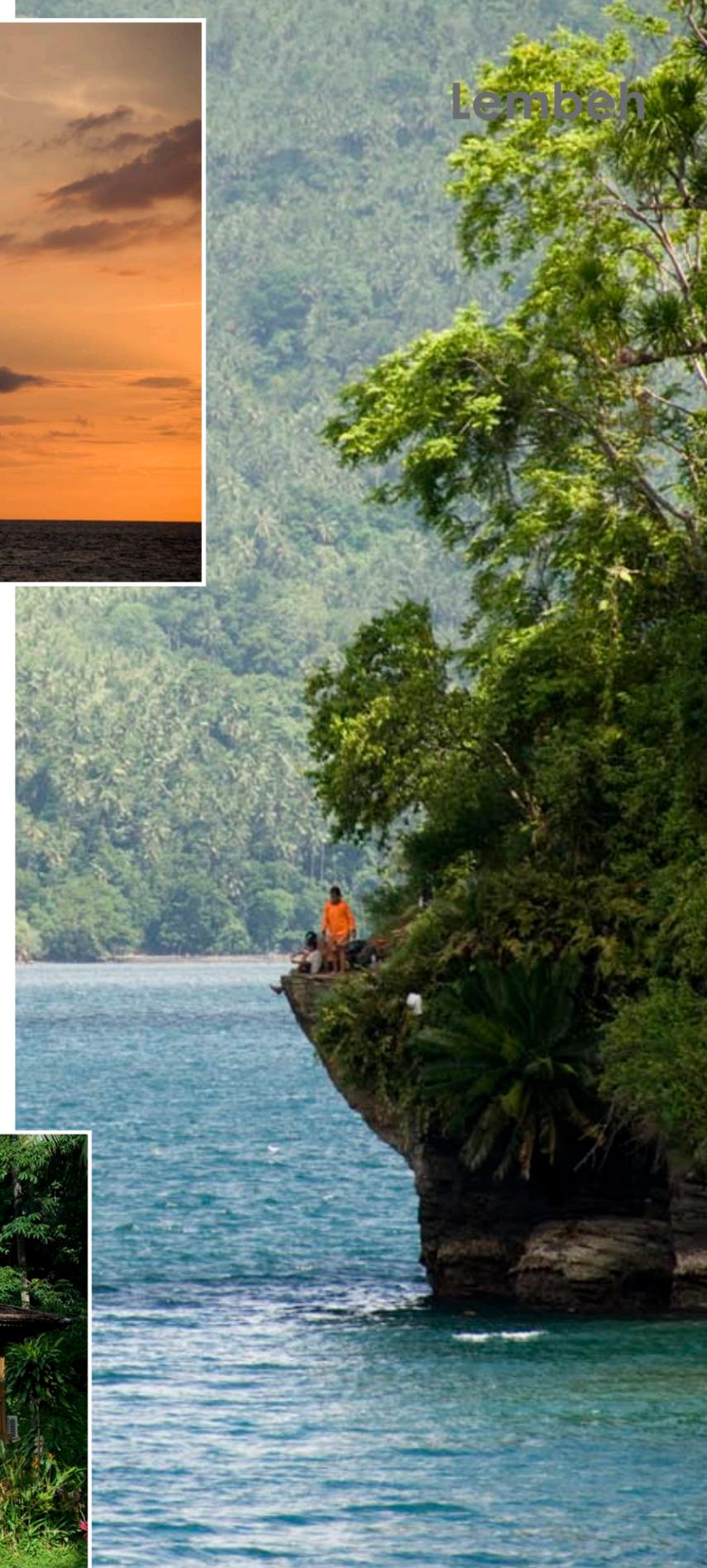
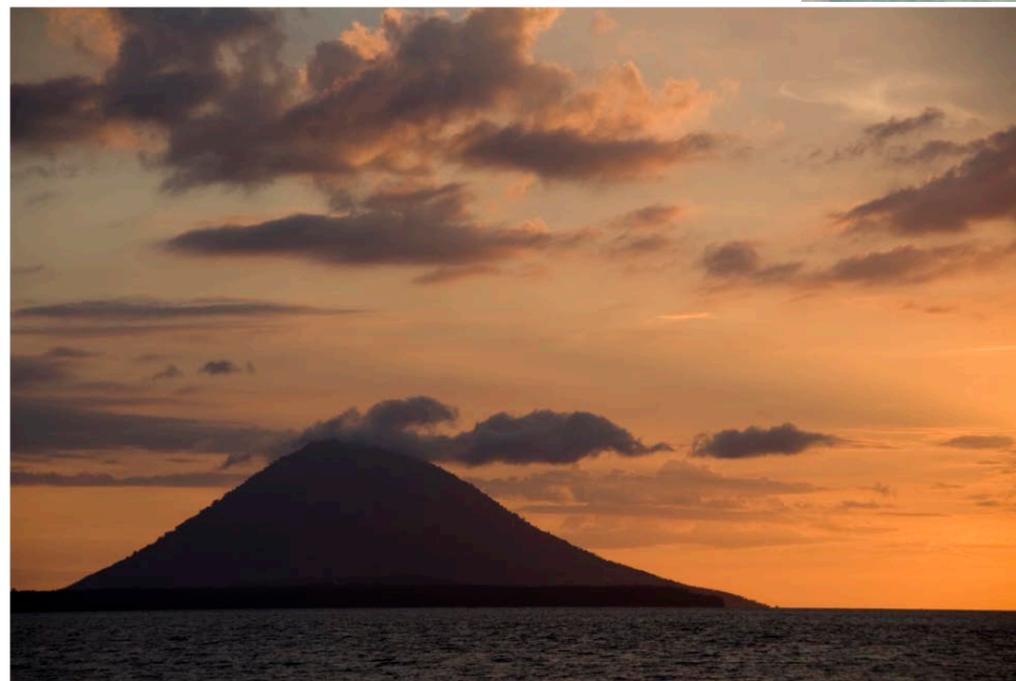
The world's full of triangles. There's the Love Triangle, the Golden Triangle, the Bermuda Triangle... and then of course, most relevant of all to us divers, there's the Macrolife Triangle, that blissful figure made up by the Malaysian islands of Lankayan and Kapalai and—at the northern tip of the Indonesian island of Sulawesi—the Strait of Lembeh. Everybody today knows about muck diving—the concept of looking for strange and grotesque macro critters in coral-poor areas with medium or downright bad viz—but not everybody knows this is where it all began, circa 15 years ago.

A young American diver and entrepreneur just happened to discover the then-unknown place—a sea channel less than 40 meters at its deepest and less than one mile at its widest, leading from the harbor town of Bitung to the open sea on the eastern coast of

Northern Sulawesi—at the same time falling in love with a plantation set in an idyllic little bay between a rugged, jungle-covered rocky slope at its back and the black volcanic sand beach on its front. Ditto, the legendary Kungkungan Bay Resort (KBR) was born!



Giant frogfish nestled in sponge



professional DSLR underwater photographers, a new price policy put in place has given KBR

covered in thick greenery, sea eagles soaring above and colorful local fishing boats passing by.

But it's the diving which makes Lembeh so unique. Being close to a very deep water area featuring daily cold-water upwellings, the sandy and silty sea bottoms of the Strait of Lembeh host an enormous variety of rare species, which are common here but almost unheard of everywhere else.

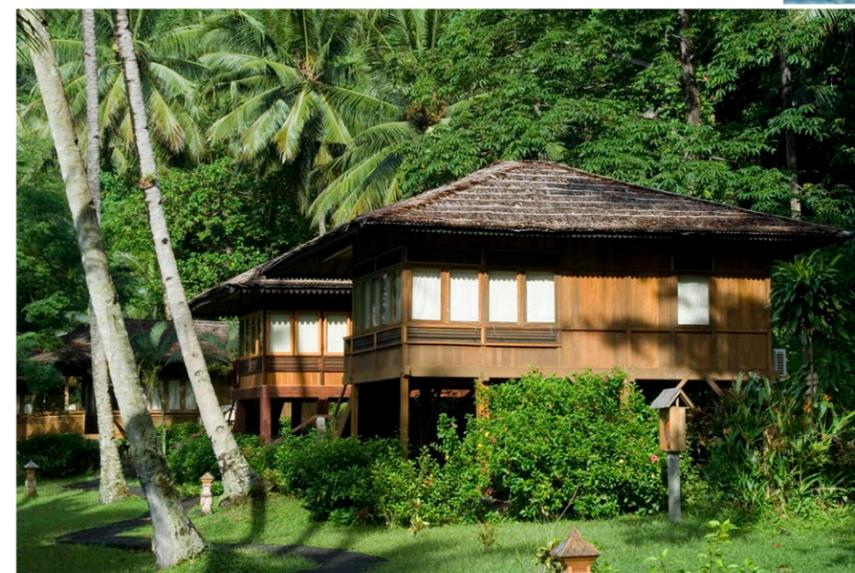
Even common species here come in dazzling and unique color phases, this fact being due both to the dark volcanic sand on which they live and some other undiscovered factor. The weird, the grotesque, the rare

a new lease of life. People are flocking to the place and its lovely bungalows by the sea, and a beautiful swimming pool has been added to the grounds.

With several more top level dive resorts now springing up close by and the Lembeh Strait soon to be declared a Marine National Park by the Indonesian authorities, the future of this very special dive destination seems at last truly assured.

A unique location

What is so special about the place? Well, everything. KBR, being the first dive resort, was able to pick the best location, and its setting is truly idyllic. The surrounding panorama above water is simply enchanting, with steep, rocky slopes



It soon became a famed destination all over the world for unusual, spectacular species, especially for those in the most affluent areas of the United States—but the catch was

in its very high price policy, which put it outside the range of common mortals.

Now, luckily for both the crowds of point-and-shoot users and the more

THIS PAGE: Scenes from Kungkungan Bay Resort



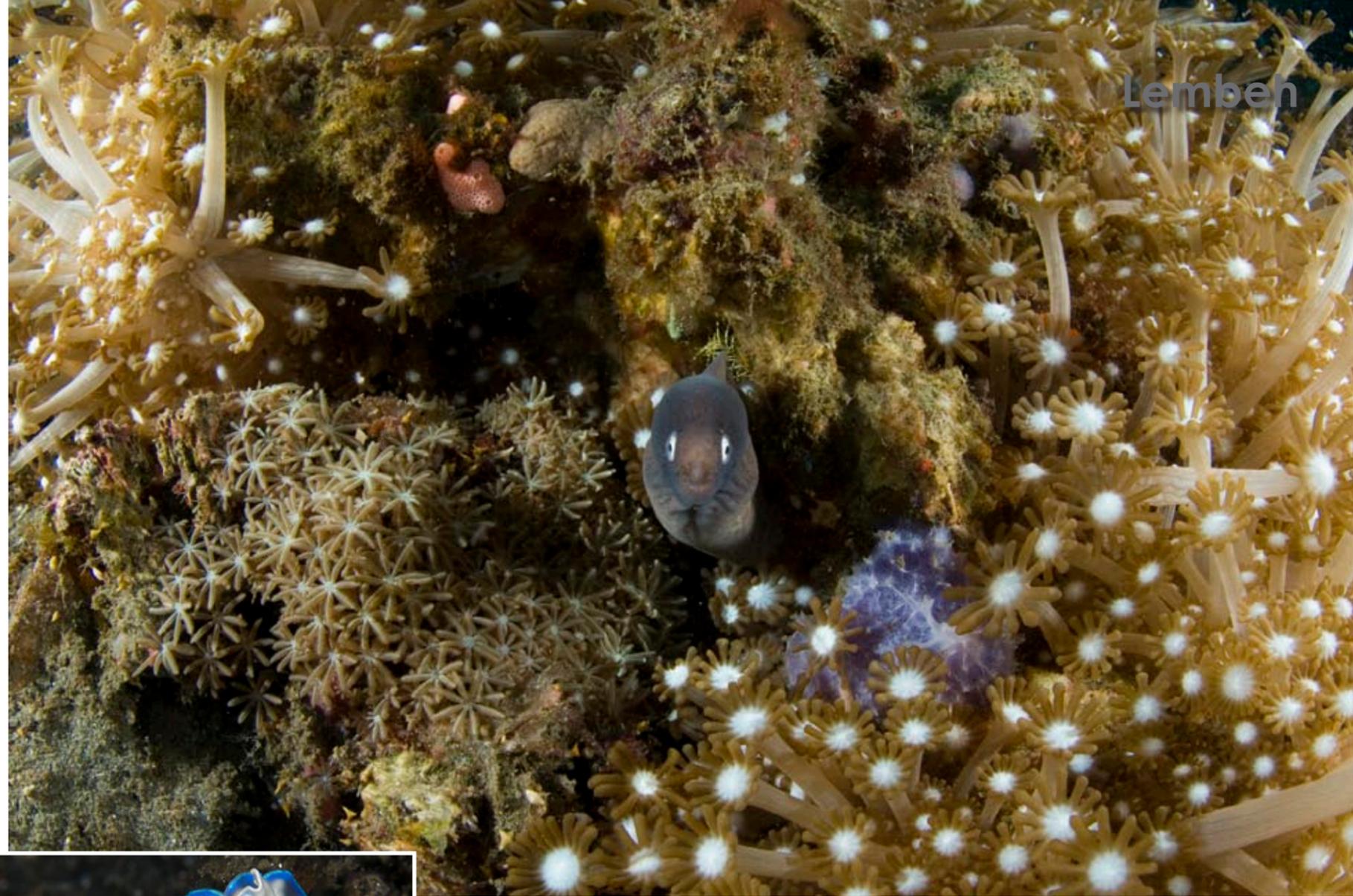


Lemon yellow leaffish (left); Moray eel peers out of its lair in the reef (right); A bubble shell sea snail prowling at night (center inset); Hairy frogfish on Lembeh's dark volcanic seabed (lower left)

and the downright absurd are a daily occurrence at its dive sites.

This is a destination where it's not uncommon to find holy grails like weedy and paddle-flap rhinopias, Ambon scorpionfish, mimic octopus and wonderpus, pygmy seahorses, blue-ring octopus, hairy octopus, flamboyant cuttlefish, boxer crab and tiny orange-rimmed baby batfish on a daily or weekly basis—it's a place where after a few days, it's easy to become so spoiled that you'll just give a passing glance and no more to uncommon species like painted and clown frogfish, thorny seahorse, cockatoo waspfish or mandarinfish.

But that is not all, as the Lembeh Strait, which has become so famous for its world-class muck diving, offers in fact first-rate coral reef dives on quite a few spots, such as Angel's Window or California Dreaming. We know. We've been able to photograph there



some very rare species of butterflyfish and wrasse we'd never seen anywhere else!

In any case, and whatever you're looking for (well, except for big sharks—but in fact we have seen large eagle rays there!) the Lembeh Strait offers unsurpassed photographic opportunities.

The diving is very, very easy—shallow water, no currents, unbelievably good and very experienced dive guides. Most dive sites are just a few minutes away by KBR's speedboats—and after



Angry devil scorpionfish in defensive display to intimidate intruders





Orange mantis shrimp hiding in volcanic substrate (above); Orang-utan crab (top center); Tiny coin-size wonderpus in display to intimidate intruders (right)

night dives (something you do not want to miss here!) you'll always find a warm, dry towel and a mug of hot chocolate waiting for you back on the boat.

KBR and the other resorts normally offer three daily dives—two in the morning and one in the early afternoon, plus night dives and unlimited house reef diving. Groups are kept to a mini-

mum—no more than four divers for each guide (in some resorts no more than three), for maximum freedom and photo opportunities.

Given the tight dive schedules (and the longer than usual dives you'll be enjoying, even if the official limit is 45 minutes) being on time at dive boat departure time is of paramount importance for everybody, so be punctual.

One last recommendation: the fascinating array of Lembeh mari-

ne species requests some reading beforehand to be fully understood and appreciated, so be good and do your homework. There's plenty of great guidebooks out there to prepare you for this bit of underwater paradise!

A fragile ecosystem

The Lembeh Strait is an almost unique ecosystem, and as such it deserves all the protection we can give it. While most resorts

Lembeh



Richly populated reef garden with blue seastar

Halgerda nudibranch



CLOCKWISE FROM LEFT: Giant frogfish; Zebra crab sitting well protected among the highly venomous spines of a fire urchin; Thorn-back cowfish; Snout of a blue ribbon eel



Strait one mostly dives in, well, garbage) it is a fact that the success of the place has led to an exponential increase in the numbers of resorts and consequentially visiting divers.

Some dive sites—especially the most famous ones—risk being overdived, provoking the disappearance of those same rare species people are coming to see. Declaring the area to be a National Park soon is very good news indeed, but at the same time it is imperative for all

the dive operators in the area to agree on common, strict rules: divers, especially photographers, must learn not to pester their dive guides with obsessive requests (which will lead to excessive disturbance of the environment to satisfy their gluttony) and a firm rotation on the most frequently visited dive sites like Hairball, Jahir or Nudi Falls must be enforced as soon as possible.

Lembeh is a fragile masterpiece, and none of us wants to see it broken to pieces by visiting, uneducated divers or over-enthusiastic dive operators.



are today enforcing a strict no-gloves dive policy (something we actually do not agree with, as we believe fingertip

control can actually avoid damage by clumsy divers—it also seems a rather ridiculous request when in the Lembeh

Brilliant in Black.



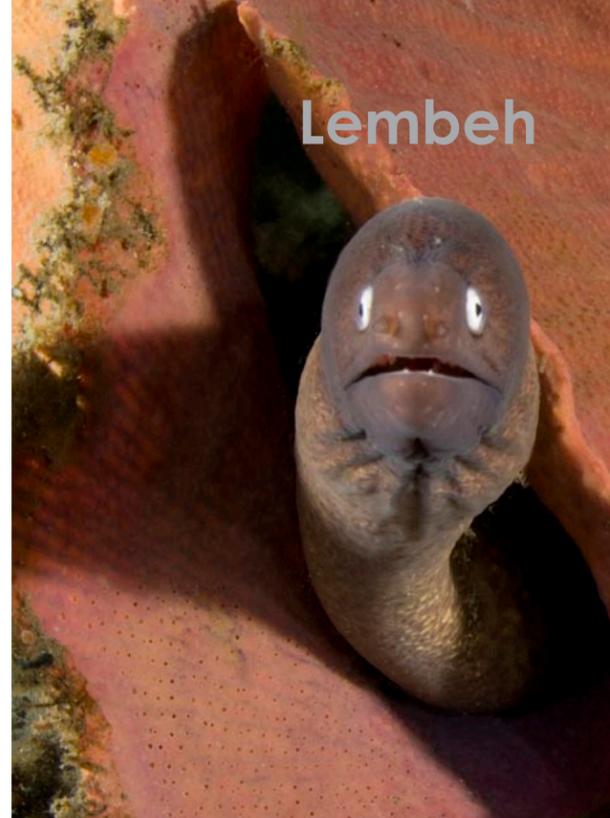
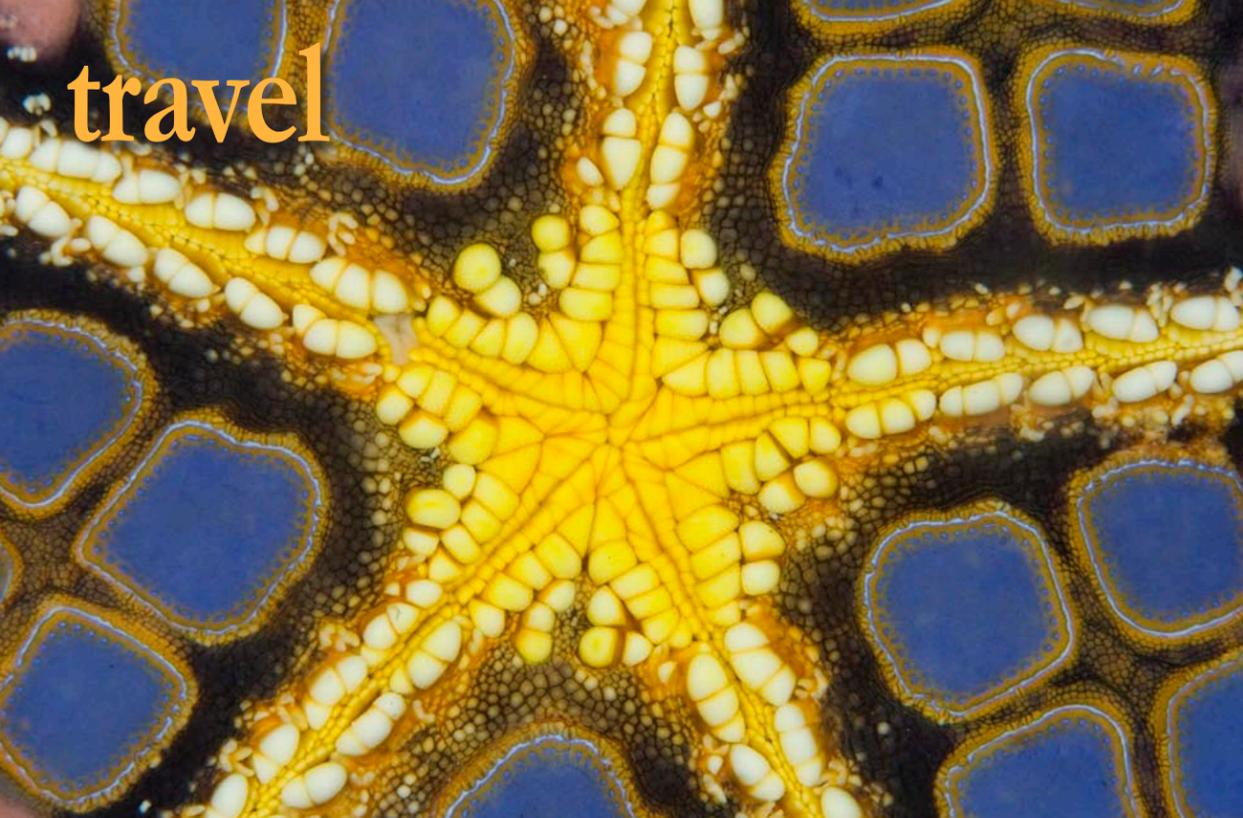
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MERIDIAN

The styling of a luxury wristwatch with the soul of our most advanced dive computer; now with exclusive, rugged Black Tech PVD finish. Find out more about Meridian's features like heart rate integration at: scubapro.com or your local authorized SCUBAPRO retailer.

SWISS DESIGN
ENGINEERING

SCUBAPRO



Zebra batfish juvenile



General information

Kungkungan Bay Resort (www.kungkungan.com) and several other dive resorts on the Lembeh Strait can be easily reached with a couple of hours drive from Manado. Your travel operator will arrange everything from you.

One word of advice: water temperature in the Lembeh Strait is appreciably lower on average than the rest of Indonesia (think 24-27°C) so a 5mm wetsuit or a vest under a 3mm wetsuit will be handy. A full hood will also help in avoiding head- and neck-aches in the cold water.

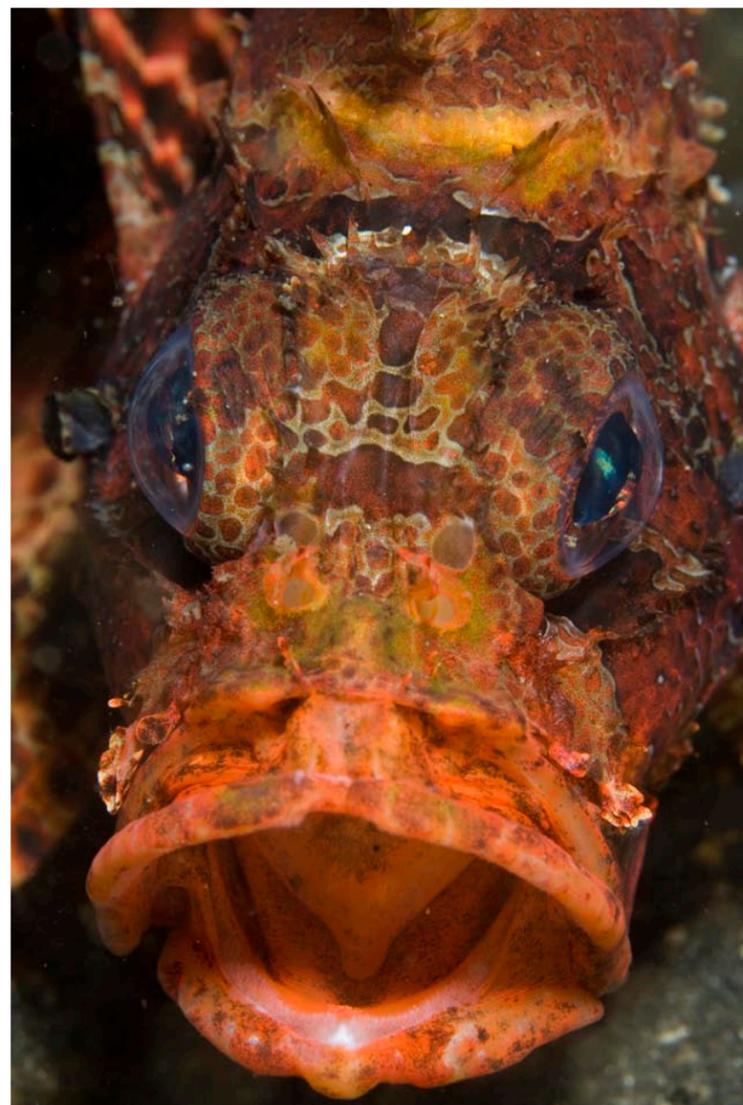
camera room by the dive center where shutterbugs can leave their equipment overnight to dry and re-load batteries. Power is on 24 hours a day; 220 and 110 volts are both available.

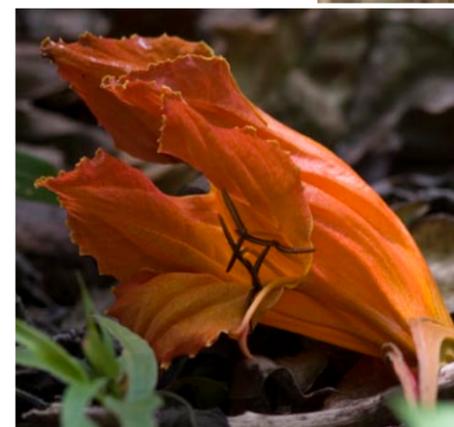
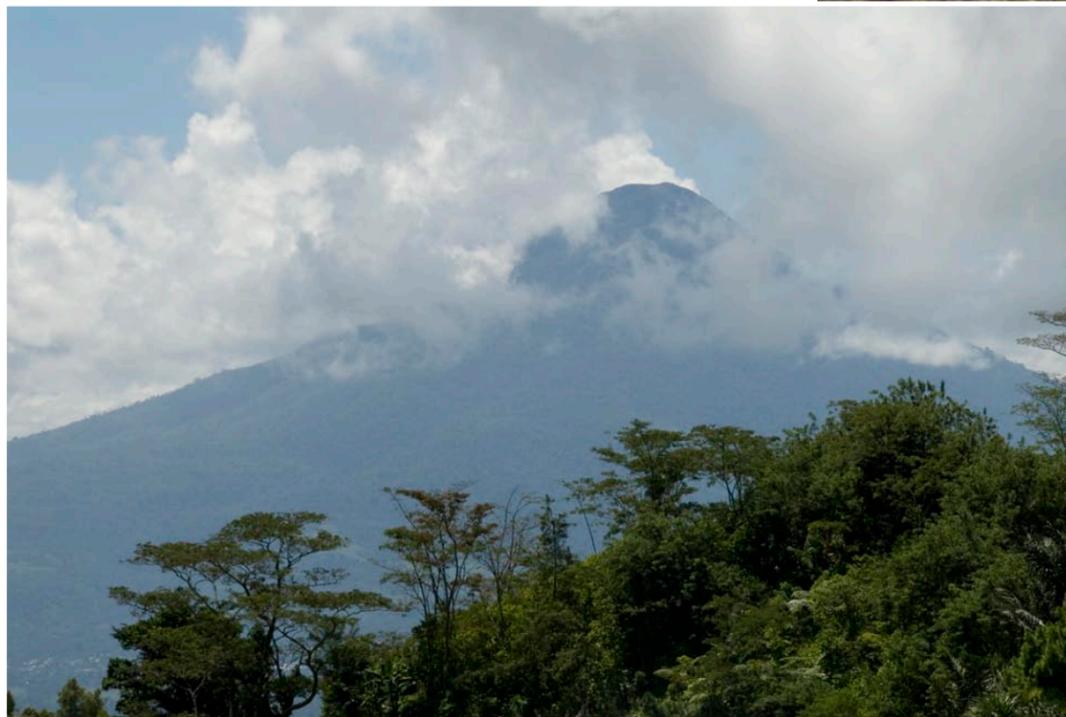
Dive guides—especially the younger guys—are generally eagle-eyed

CLOCKWISE FROM TOP LEFT: Close-up of the tiled bottom face of the pincushion seastar; Close-up of wonderpus in full display; The mad-doctor glare of a white-eyed moray eel; The ominous yawn of a small dwarf lionfish; The nocturnal Napoleon snake eel; Pair of cockatoo waspfish on dark volcanic substrate

and highly motivated, being very proud of working here. This is a place where a good tip is mandatory.

No visas are needed upon entry in Indonesia, but nationals of several western countries have to pay a hefty fee in Manado Sam Ratulangi Airport's immigration office both when entering and exiting the country.





THIS PAGE: Scenes from Tangkoko National Park including the highly social black or crested Sulawesi macaque (far left) and the strictly nocturnal Sulawesi tarsier (right)

Land excursions

Northern Sulawesi encompasses a large area of exceptional natural beauty, with breathtaking landscapes and unique fauna. Divers have the bad habit of seldom looking around when on holiday, but on this occasion, it would really be a pity not to engage in some hiking or car touring, especially since most dive resorts readily offer affordably-priced excursions with excellent English-speaking guides and

extremely comfortable transportation. Two destinations the discriminating traveller cannot afford to miss while in the are Tangkoko National Park and the Minahasan highlands. The first can be reached by a one- or two- hour scenic drive from most resorts in the Lembeh Strait and then can easily be visited on foot.

The coastal lowland deciduous forest is the home of at least three large troops of the endemic and highly

sociable black or Sulawesi macaque (*Macaca nigra*) and the haunt of several family groups of the fascinating Sulawesi tarsier (*Tarsium spectrum*), the smallest primate in the world, which lives inside the hollow trunks of strangling figs and which can be reliably observed at several locations inside the park at twilight. Longer (from three to five hours) hikes in the forest will also result in sightings of shy but spectacular hornbills, reptiles and insects.

The second trip lasts all day and will take you to the cool and beautiful Minahasan highlands, rich in local culture and scenic landscapes. One of the highlights of the excursion is the midday visit to the colorful and noisy local market at Tomohon, which offers many interesting opportunities to photographers.

Just make sure to avoid the



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“meat” section of the market, where unaware visitors will be faced by the gruesome and heart-rending spectacle of desperately yelping dog puppies being slaughtered for the table, together with roadside stands offering kebabs of freshly grilled jungle rats and half-roasted, scorched fruit bats. Telling your guide in advance will guarantee you’ll be spared most of these shocking sights if you—like us—would rather avoid facing them.

Besides the market, you’ll also enjoy spectacular sights of rice paddies,

terraced cultivations and jade-green volcanic lakes. The local Minahasans inhabiting this verdant, fertile area are very active in farming, pottery making and wood-working. They are also quite good looking, exceptionally friendly and said by other Indonesians to be of Cambodian origin. ■



THIS PAGE: Scenes from the colorful local market at Tomohon



Painted frogfish
masquerades
as an orange
sponge

Fish-Eye for Critters

In the Lembeh Strait

Text and photos by
Andrea & Antonella Ferrari

The apparently contradictory choice of adding teleconverters to fish-eye lenses to obtain arresting “wide-macro” images has long been adopted by many rainforest and insect specialists—notably Frans Lanting, the grand master of them all—while several Japanese authors have pioneered its use in underwater photography since the last decade. This unusual combination allows an extremely close approach to small subjects, offering at the same time the opportunity to keep a large area of surrounding environment or background in the image frame, with little or no peripheral distortion and with the added bonus of an absolutely spectacular depth of field.

Simply put, this technique allows the photographer to obtain truly unique and very personal images, which deeply contextualize the subject in its natural habitat—something most macro lenses, such as the 60mm and the much-loved 105mm, rarely

permit in this age of reduced size digital sensors.

I had long been intrigued by this visionary technique since admiring many close-up and truly arresting rainforest reptile and insect images taken by Lanting more than 15 years ago. But the long years of work

undertaken to put together all the images necessary to publish our books, *A Diver's Guide to Underwater Malaysia Macrolife* and *A Diver's Guide to Reef Life*, had restricted us to documentary-style profile shots to be strictly used for identification purposes by other divers and photogra-

phers—a hugely enjoyable job, which, however, prevented us from experimenting with more creative options.

Having just completed our new book, *A Diver's Guide to the Art of Underwater Photography*, we recently decided to go back to the Lembeh Strait in Northern

Sulawesi, Indonesia—a favourite spot of ours for relaxing muck diving and interesting new or rare species. Making our base at the much-loved Kungkungan Bay Resort for the fourth time, I soon found myself strangely and strongly dissatisfied by my 105mm—a lens that for many years





The bright colors of the zebra lionfish (above) and the clownfish in anemone (top) stand out against the dark volcanic seabed of Lembeh Strait

past had become an object of cult for me. Macro portraits seemed, all of a sudden, to have lost visual power. Creative apathy had set in. Fiddling in frustration, I suddenly realized that going "wide-macro" could offer the solution to the impasse—even if by definition, this technique, as suggested by our friend Alex Mustard, might actually end up being severely restrictive in the choice of subjects and could also create a lot of backscatter problems in the notoriously murky depths of the Lembeh Strait.

Anyway, there seemed to be no real choice, so I set

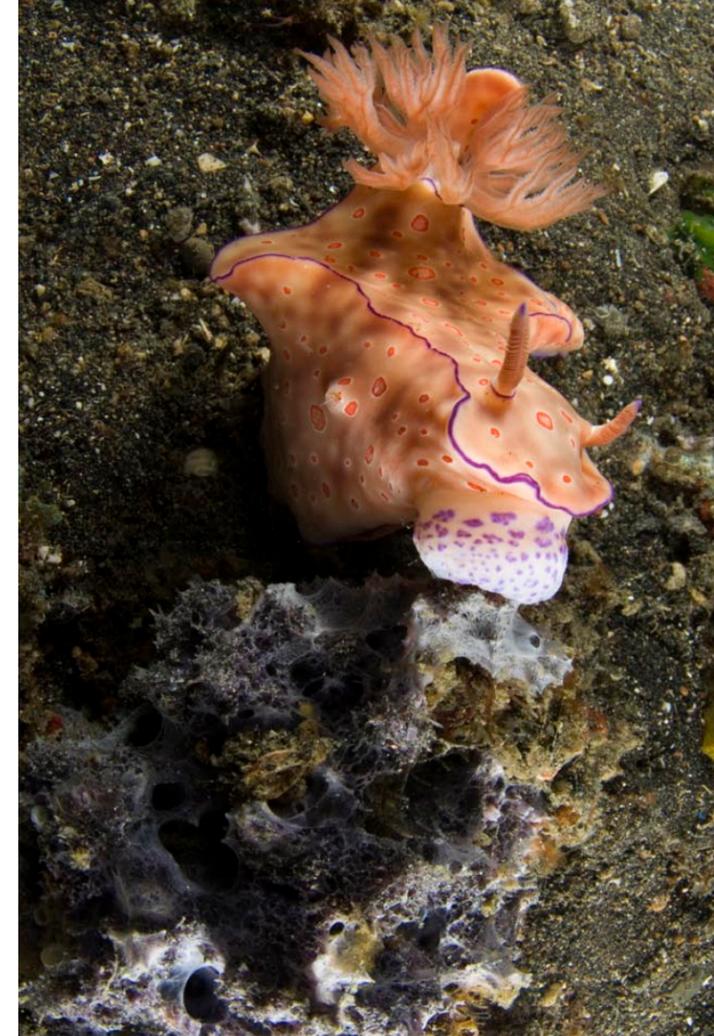
up my untried combo of the Nikon 10.5mm plus a 1.4 Kenko teleconverter and had it mounted on my D200 behind the smallish polycarbonate fish-eye dome of my Sea & Sea housing, which until now I had only been using with the 10.5mm alone or the 12-24mm zoom, in both cases with excellent results.

Intriguing results

Results were immediately intriguing. I have always been a strong supporter of the use of fish-eye lenses in shooting close-up images, but at the same time, I have also been regularly frustrated by the

Wide-Macro

Large *Ceratosoma trilobatum* nudibranch feeding on a sponge colony



strong peripheral distortion of the image created by the use of such extreme lenses.

With the new combination, I immediately found myself being able to get in physical contact with most subjects—actually brushing against cockatoo waspfish, devil scorpionfish, snake eels, frogfish and other critters—with the camera's dome, getting much closer than it had ever been possible in the past while using the 105mm flat port.

It was clear from the start that most species would not associate the approaching, reflective dome with an impending danger, and would



Paddle-flap scorpionfish



Strapweed filefish (above); Weedy scorpionfish (right) in its bright orange color phase is one of the most bizarre and sought after species of Lembeh—its richly ornamented livery makes it all but invisible among the coral rubble of the sea bottom; Napoleon snake eel (below) is a nocturnal predator

not perceive it as the gaping mouth of a looming predator as had always happened with the 105mm tubular port.

A slow and careful approach allows exceptional proximity to shy subjects. Now it became clear how rainforest photographers had obtained such spectacular images of tree frogs, gaping snakes and displaying praying mantises!

A few attempts immediately showed that to obtain the best results in lighting



and composition—particularly regarding later editorial use—required the subject to be strongly positioned off-center, as the usual rules suggest. This is easier said than done, however, at such short distances, and I suggest

photographers to focus on the subject's eye by half-pressing the shutter lever while it is in the center of the frame, and then to carefully recompose while keeping the shutter lever half pressed.

A slight peripheral distortion of the image becomes quite noticeable at

extremely short focusing distances, so framing becomes an enjoyable challenge—a few degrees above or under the horizontal will generate dramatic differences in the final composition.

Since most subjects in the Lembeh Strait are generally found lying camou-

flaged on the sandy, silty or rubble bottom and not on coral heads or walls as on a pristine reef elsewhere, one has to literally dig the lower third of the dome in the soft substrate to frame them more or less horizontally and not from above.

This is where a smallish polycarbonate



Porcelain crab and anemonefish on anemone (left); *Ceratosoma nudibranch* (below); White leaf-fish (bottom right); Yellow frogfish (bottom left)

Wide-Macro

next. I tried some creative experimenting here and there—holding the two Sea & Sea YS-120s close and in front, for example, as in normal macro photography, or above. But a few trial shots immediately revealed the presence of unwanted parasite reflections inside the dome (remember the

addition of the 1.4 teleconverter changes all the curvature ratios between the lens and the inner face of the dome) and an excess of backscatter “snowflaking” in the background.

I imagine the same problems—with possibly a slight reduction in the presence of unwanted



fish-eye or wide-angle dome wins hands down over a bigger and much more expensive glass one. There's little risk of scratching it while rubbing it against the coarse sand or even small sharp pieces of coral rubble, and even if this happens, the optical effects are quite negligible since small surface scratches can easily be erased later on (a glass dome would be ruined for good!).

This technique requires a delicate hand and some nerve, however, since sand ends up collecting

around the main o-ring grooves—a risky proposition. The remarkably short focusing distances involved also present the very real risk of actually bumping the dome into corals or rocks with serious risks of damage. So, I started closing in on the chosen subject while holding my left hand in front of the dome to protect it from car-crashing it somewhere unintended.

Lighting

Once the subject of composition had been mastered, lighting was



feature



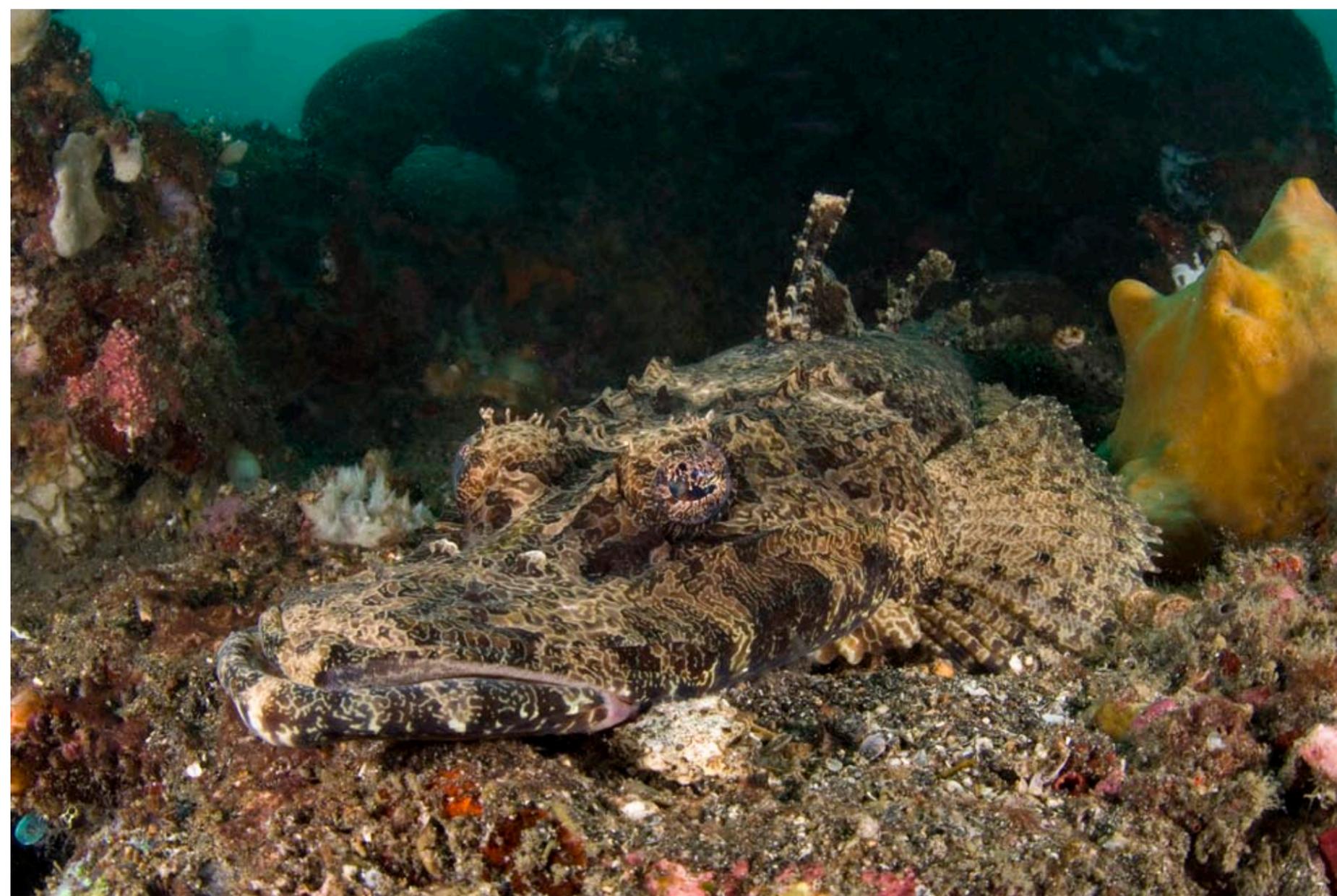
Wide-Macro

Limited subjects?

But what about the subject limitations I had been warned about? Again, it soon became apparent there was no need to worry. If correctly and creatively used, the fish-eye lens plus teleconverter combination can successfully handle any stationary subject in the range size from a couple of inches to more than two feet in length, i.e. anything from a reasonably large nudibranch to a crocodile fish.

It gives its most striking results in the middle range obviously. You'll be able to get arresting

CLOCKWISE FROM ABOVE: Longnose hawkfish; Weedy scorpionfish; Crocodilefish resting on seabed; Cockatoo waspfish



backscatter—would present themselves in clear water, too. My conclusion and suggestion is to use both strobes in "wide-macro" as they would be in normal fish-eye photography—widely spread and positioned as far behind the actual dome as the length of the strobe arms would allow.

We are talking about an f2.8 10.5mm lens here, so there's plenty of ambient light coming in—even in the gloomy

waters of Lembeh—and while shooting at ISO 200 with a -0.3 or even -0.7 exposure compensation on my Sea & Sea TTL converter, I could get perfectly exposed images at f11, f16 or f18, ensuring razor-sharp focusing and exceptional depth of field in all images.

This is another wonderful side effect of the combo. One is shooting in macro mode without having to worry too much about losing sharpness and correct focus.





Porcelain crab on anemone (left); Lone seahorse hangs tenaciously to its perch in the endless, gloomy seabottom of Lembeh (lower left)

ful one has to combine the “macro frame of mind” (visually focusing on the main subject) with the “fish-eye one” (i.e. taking into consideration the background)—an interesting and engaging exercise in creative flexibility,

which will presumably lead to more compelling visual results and Doubilet-ish photographic results.

I can only imagine the striking images this solution could generate on colorful, brightly-

lit pristine coral reefs in clear blue water, and I am personally hooked. I cannot wait to try this wonderful and unsung technique on some weird rainforest creatures during our next trip to the tropics! ■



shots of frogfish, lionfish, scorpionfish, sea snakes and especially octopus including wonderpus and mimic, all spectacularly contextualized in a wide expanse of their natural habitat, which will stretch all the way in the background, mostly in focus and—if you have been doing your homework and using diffusers—softly, uniformly lit (remember to always keep diffusers on both your strobes, this is an absolute must in such close-up work with digital cameras!).

Stationary or semi-stationary subjects offer the best opportunities obviously, but I've got great results shooting small groupers or even fast-moving large wrasses with this technique. One is free to experiment given the broad latitude in the focused area.

Most importantly, however, to be truly success-

Burrfish and large leather coral on reef



Indonesia's North Sulawesi

—*Buyat Bay & Lembeh Strait*

Text by Kelly LaClaire. Photos by Kate Clark





Panorama of Buyat Bay. PREVIOUS PAGE: *Hypselodoris* sea slug at The End

—*X-Ray* dive team Kelly LaClaire and Kate Clark explore the waters of North Sulawesi, Indonesia, visiting the undiscovered and unspoiled reefs of Buyat Bay and enjoying muck diving in Lembeh Strait.

There are very few places in the world that remain unknown to the dive community. Let's face it, scuba enthusiasts are nothing if not resourceful when it comes to finding new and uncharted waters to dive in. But chances are excellent that when you read the title of this article you asked yourself, "Buyat Bay? Where the heck is that?"

That was exactly my reaction when I was first told about

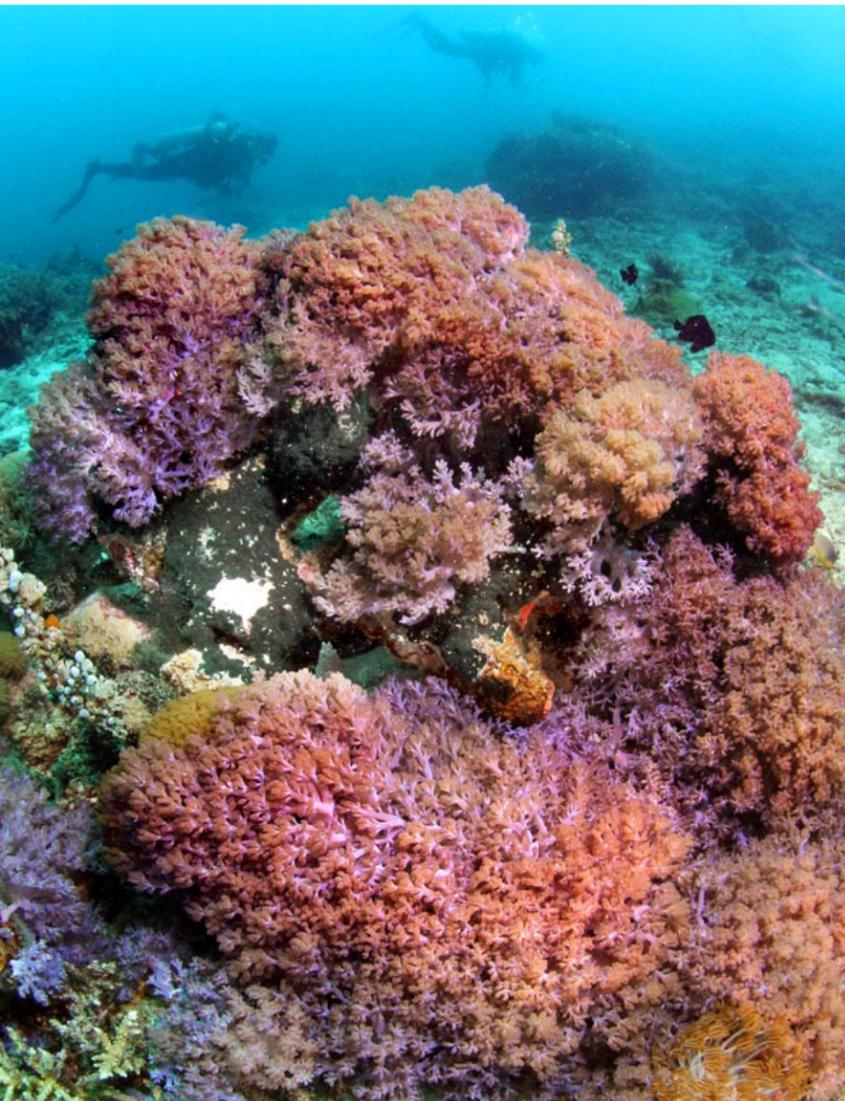
this vibrant and breathtaking stretch of sea three hours south of the Lembeh Strait just off the Sulawesi mainland in Indonesia. Of course, like nearly every diver, I had heard of Lembeh and the wondrous creatures that call that famous sliver of water home, but Buyat Bay? Nope. That was a name I was totally unfamiliar with.

So, when *X-RAY MAG* was invited to dive in this still unspoiled and undiscovered part of the world, well, we jumped at the chance.

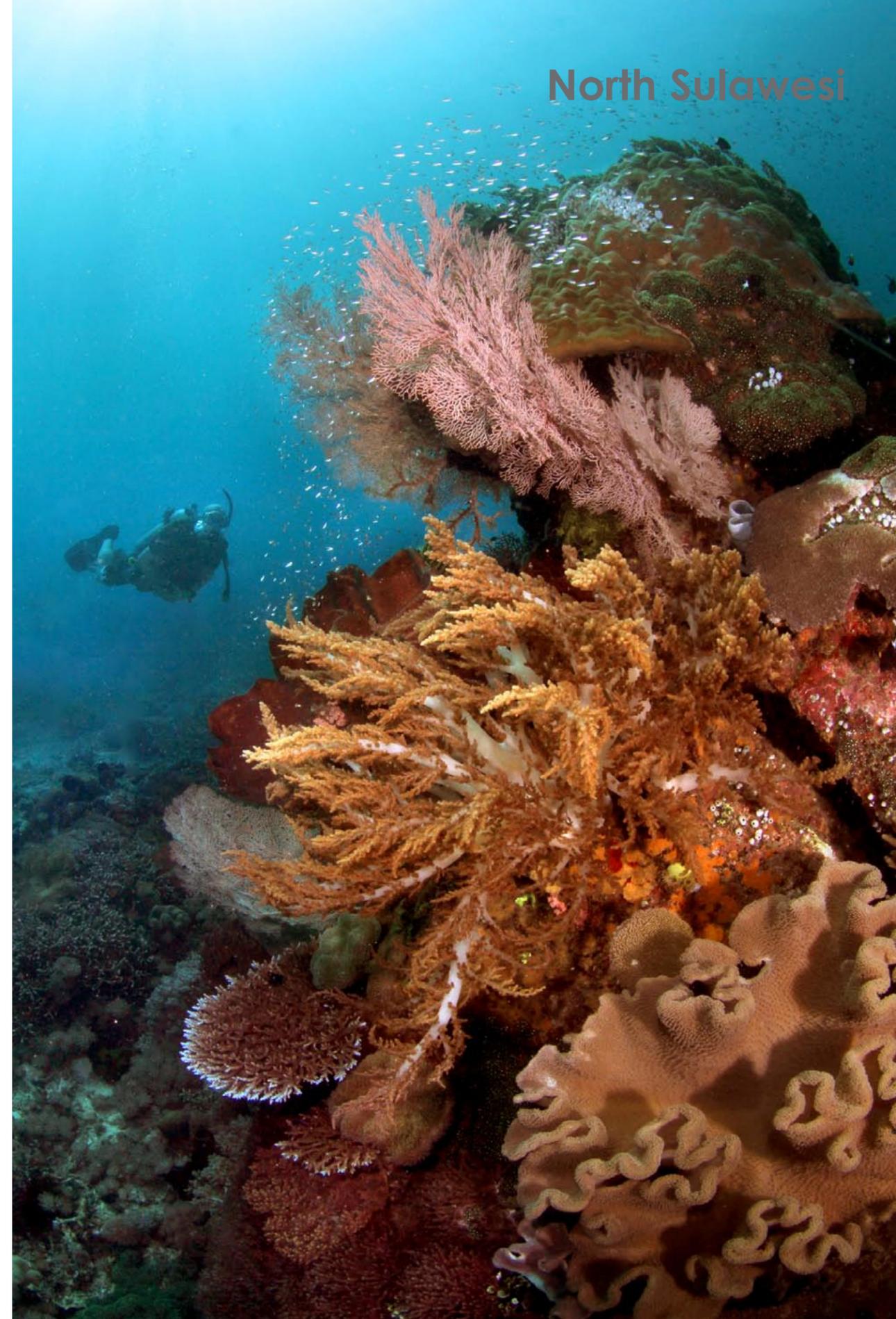
Endless coral

Kate, my cousin and photographer on this trip, was the first of our little group to roll off the dive boat, and as she was waiting for me to pass over her camera I saw her take a peek under the surface. "Oh my God!" she laughed, "Wait till you see this!"

The water was so clear in Buyat that it looked almost colorless through our masks, and as we drifted down, endless fields of staghorn coral



Purple soft corals at Pulau Rancun



Author, Kelly LaClaire, diving the coral gardens at Pulau Rancun



Glass sweepers at cleaning station, Pulau Tulang (above); Tricky-to-find tiny pigmy seahorse on muricella gorgonian (top center) can measure only 2cm; Banded pipefish at The End (right); Robe hem *Hypselodoris nudibranch* on green algae at The End (far right)

spread out below us, giving way to thriving meadows of dark green hard corals dotted with pink and yellow anemones. Colossal sea fans—deep purple and easily three meters across—scattered themselves across the rocky outcrops around the site. I'd never seen coral growth this prevalent or healthy. It was as if some master underwater gardener had sewn the purest and richest seeds in the most fertile seabeds on Earth and said, "Let there be coral!"

We levelled off a meter or two above the seafloor where a family of false

clownfish rushed at us, chomping and snapping at our masks, relentlessly defending their territory with heated vigor. Shifting schools of blue and yellow wrasse darted through our bubbles, while groups of triggerfish foraged for food and played tag below us.

Several moray eels were wavering sinusously back and forth in their rocky dens, and a blue-spotted stingray wriggled out of one of the rare sandy spots, giving us a menacing glance before quickly fluttering off. Kate put her first two fingers to her head and pulled an imaginary trigger

—"This is blowing my mind!"

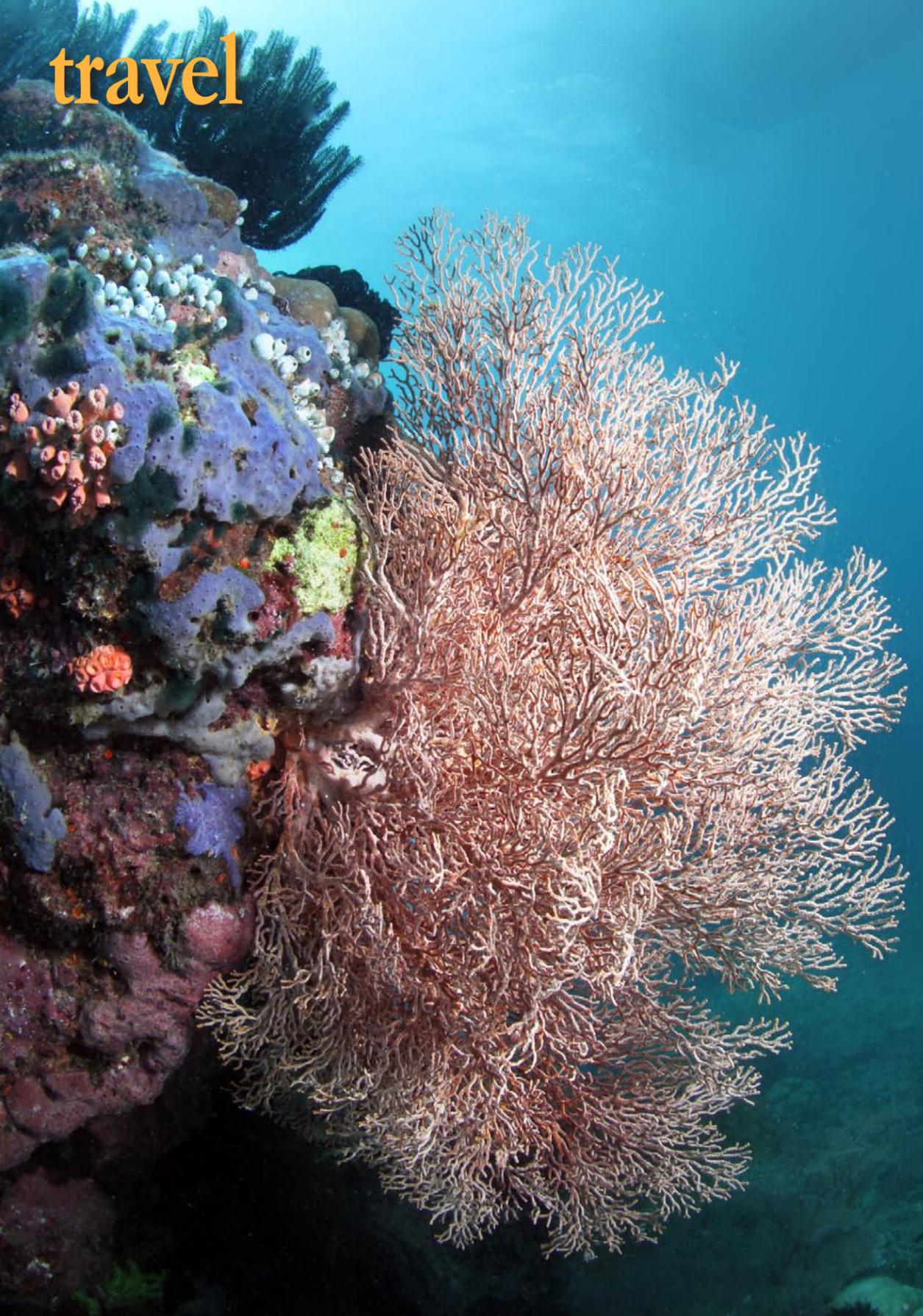
Our guide, one of several diving virtuosos from Critters at Lembeh dive center, shook a noise maker and pointed to a small pink mass of coral while flashing the "pygmy seahorse" sign. I got close, strained my eyes and shrugged, unable to see anything. He pulled out a long metal stick and pointed to a formless mass about the size of an apple seed. Still seeing nothing, I gave it up and swam off a bit, giving Kate the chance to capture it with her macro lens.

While she was setting up her shot, I

spotted a curious but timid cuttlefish a few meters away, and my body instantly responded with playful butterflies and lively, pulsing heart beats. I'd never seen a cuttlefish in the open ocean, but it

had been at the top of my bucket list for quite some time. He seemed to sense my excitement and obligingly began flashing colors like the world's most enthusiastic quick-change artist.





Kate moved in next to me, and I could hear her giggle behind her regulator. The timid cephalopod, unsure and wary,

turned a translucent white and raised two tentacles, but soon realized we were no threat and resumed showing off for the

camera after only a few moments.

Kate got a shot she was happy with and flashed me a wide grin I couldn't help but return. It was obvious we were both falling in love with Buyat.

Newmont Mining Camp

Our hosts, Miguel Ribeiro and Ana Fonseca, transplants from Portugal who manage Lembeh Resort to the north, joined us for our three-day stay at Buyat Bay and gave us a little history of our lodgings, as we headed to shore.

The area was originally an old mining camp for the Newmont Company that shut down operations in 2004. Now the small rustic cabins are used by Critters at Lembeh for short two- and three-day stays for customers who want a break from muck diving and the larger groups that fill the sites in the strait. We were the only boat in the area and the only guests on the trip, so we had the place all to ourselves.

The bungalows were small and aged but serviceable. Each came with a private bathroom and air conditioning but, honestly, this setting is not for everyone, and if a more refined, spacious resort is what you like when vacationing, then Buyat may not be the best choice. But if you're willing to rough it a bit—think sparse, summer camp living—then unspoiled water, endlessly rich coral and an open ocean devoid of tourists and other divers awaits you.

We spent the remainder of the evening getting to know the rest of our small group; three friends who belong to a dive club had gathered here to start an Asian diving tour of sorts, and they were just as excited as we were. Kate and I like them immediately, and we swapped cameras, *oohing*

Cuttlefish on reef (above); Pink gorgonian fan coral (left) and *Sarcophyton sp.* mushroom leather coral (top right) at Pulau Rancun



CLOCKWISE FROM LEFT: Community sack race; Kelly enters sack race; Fish farm harvest; Community bench at Buyat Bay; Girls playing together and piggyback race at community festival

their babies to pose with. Packs of teenagers shouted, "Hello!" and then ran off in fits of giggles. Little kids were hanging on our legs and asking us to swim with them. We spent an hour snapping photos, shaking hands and hugging total strangers who treated us like old friends come home from a long

swapping stories and culture over cold Bintang beer and exotic new foods is just about the best thing a person can do if they want to broaden their own viewpoint of the world—and I never tire of it.

New found fame

A yearly festival was taking place on the beach near the mining

camp. Local villagers were playing volleyball and soccer, while their children swam and splashed in the shallow waters of the bay. Kate and I wanted a few pictures, but we tried to keep our distance, cautious about intruding and becoming the bumbling, obnoxious tourists that make everyone cringe. Turns out, our fears were groundless.

As soon as we stepped on the beach, a crowd of people surrounded us as if we were members of a famous rock band. Nearly every person there wanted our picture, and mothers were passing us

journey.

Being a Caucasian male residing in the United States, I've never been a novelty or an object of any real interest, but suddenly our light skin was captivating and awe-inspiring. Dozens of

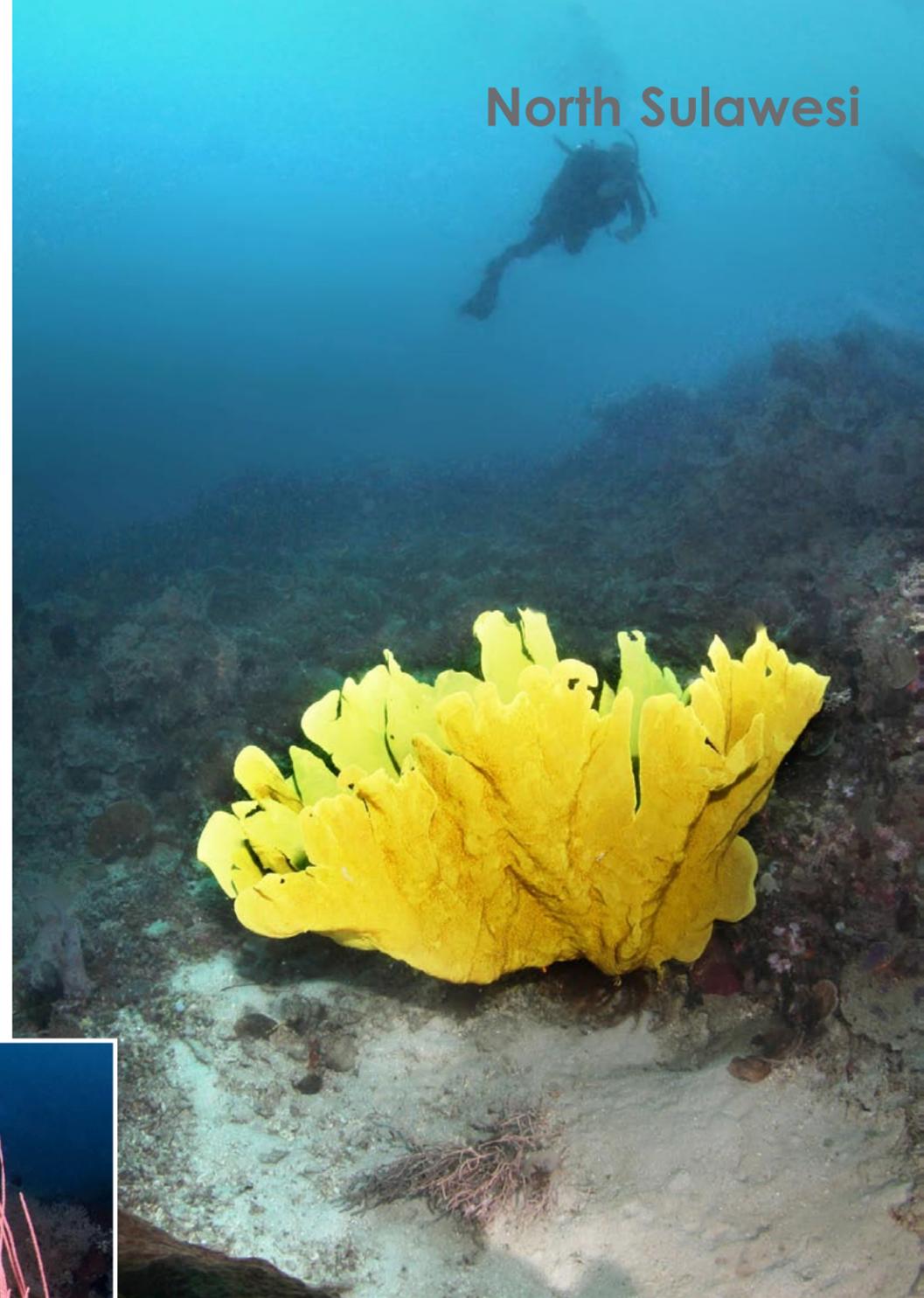
women were reaching out to touch Kate's blonde hair, and one older grandmother, who quite possibly had never seen a white girl before, actually began petting Kate's face and following her around wherever she went. It was surreal—no other word describes it.

The group insisted we participate in their piggy back contest (which we won) and the potato sack race (which we lost miserably) followed by more photos and quick touches on the back or shoulders from the villagers. We left in the highest of spirits, and I can't remember being



and *ahhing* over the images we saw on the various displays.

It's these moments that define the scuba experience for me, not just the diving alone. I know it sounds trite, but sitting down with folks from half a world away,



North Sulawesi

CLOCKWISE FROM LEFT: Coral garden with tomato anemonefish at Pulau Racun; Chamberlain's nudibranch, The End; Diver with yellow elephant ear sponge on reef at Pulau Haglow; Pink whip coral at Pulau Hogow

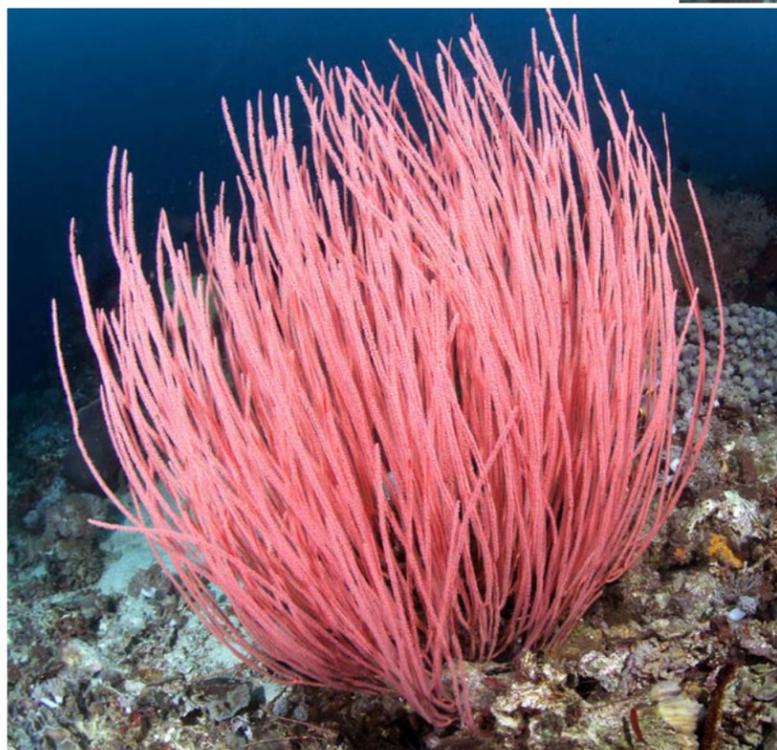
den cove where we shut off the motor and began gearing up. Under the surface, we descended into a maze of towering granite boulders covered in soft yellow and pink corals. Our guide pointed out a school of glass sweepers hiding in a rock fissure. The tiny, gleaming fish numbered in the thousands, and they pressed back into the small cave in one fluid motion.

We let the slight current take us through the giant rocks and found a large yellow-spotted moray eel peering at us from his home in a giant tube sponge. Kate tried to entice him out, but the grumpy eel was obviously in no mood for photos.

I looked down and saw a good-sized mantis shrimp peeking out of his sandy home. The colorful little guy didn't seem

to have any reservations about the camera and crawled out of his hole, posing and dancing energetically.

We scanned the deeper drop-offs around the site hoping to find a few white tip sharks, but we didn't see any. I had supposed that these remote waters would be full of sharks, but Indonesia,



it seems, has been stripped of many of their various shark species. Of course, like most Asian seas, they are fished relentlessly, and the toll is evident. In almost a dozen dives we didn't spot a single shark. My heart is still sad about that; ten years ago, these waters

were teeming with them. As we ascended, a large group of giant trevally swam by. They were big and confident—about a meter each—and they reminded me of a small town street gang arrogantly assessing their territory. They owned that area, and they knew it. They got close enough to give us a few dismissive glances, and then they headed to deeper waters; apparently we weren't

so cordially welcomed and warmly embraced by any group of people before or since.

Unfond farewell

The next morning, Kate and I climbed a few hundred stone stairs to a local temple before one last dive. Later that afternoon, we were heading to Lembeh Resort for three more days of muck diving in the strait. It was early, but the sun was

already high, and a light breeze rustled through the large banana groves covering the hillsides. The waters of the bay sparkled, and the dappled greens and blues of the reefs were calling to us. We enjoyed fresh eggs and local fish for breakfast and soon were headed out with our three new friends and gracious hosts.

Our boat twisted through the lush, deserted islands that dot the coastline until we reached a hid-





Divers and swirls of scroll coral on reef at Pulau Tulang (above); Wire coral with diver at Pink Point (left)



While we chatted and exchanged stories, I looked out across the bay and realized we only had a little while longer before our captain turned north and set sail for Lembeh Resort in the straight. Kate and I wanted to spend every last moment in the water, so we put on our snorkels and fins and rolled off the side for more.

An hour later, our time had come to an end, and our friends had to physically pull us out of the water. We grumbled and said a sad goodbye to the crystal waters and unblemished beaches. Three days wasn't enough, and I secretly wished our motor would seize, stranding us for another week or so.

Buyat captivated me and leaving was tough. I knew that just to the north some of the most exotic and rare creatures on Earth were waiting, but the remote and

unspoiled dive sites of Buyat Bay had mesmerized me, and I wanted to explore the rest of the area before moving on.

Kate patted my shoulder sympathetically and offered me more taffy. "Here," she smiled. "Maybe this will make you feel better." It did of course—candy always does.

But as we left the bay, I promised myself I'd come back at least once before my diving days were done. I knew that the memories of the dramatic corals and playful villagers would tug at me.

Moreover, my pride had been damaged, and I had a burning desire to redeem myself from the crushing defeat in the potato sack challenge.

Lembeh Resort

—*Indonesian splendor*

We drifted slowly into the natural cove of Lembeh Resort, our little

boat pushing into the fine black sand and towering palms lining the property. Several smiling faces waved to us, as the staff began gathering our gear, taking it to personalized lockers situated next to the boat landing. Kate and I tried carrying our own bags, but the staff would have none of it.

Ana and Miguel showed us to our five-star bungalow perched on a small cliff overlooking the property. The area was shaded by swaying palms and flowering bushes, and our bags were already placed on the large, covered deck. I sipped on a cocktail that had been set out for our arrival, as Kate gushed over the ceiling-less bathroom that would allow for late night soaks with a



Inside-outside bath (above) and view outside room (top) at Lembeh Resort



Lembeh Resort twin bed room

important enough to be concerned with.

Back on the boat, Ana and Miguel passed out fruit wedges, hard candy and taffy, as Kate and I laughed and shared pictures with the rest of our little dive group.



Decorator crab (left);
Pygmy cuttlefish on
coral at Nudi Falls
(right)

could hear Kate gasp through her regulator, as she smiled at me, flashing our hand signal for “Holy crap, that’s awesome!”

Anyone who knows me will tell you, I am a certified octopus lover. I find them intensely fascinating and wondrously intriguing. It’s hard to explain, but I somehow lose myself in their weirdly beautiful movements and the primeval intelligence that flashes in their eyes. Usually blue-rings are timid and hide once spotted, but this one was guarding a bundle of eggs under her arms and remained out in the open for several minutes.

This brief moment was all it took—I was hooked. Muck diving took hold of me and hasn’t let go since.

We kept on finning slowly, and now I was eagerly searching the



North Sulawesi

view of the stars and trees.

Lembeh Resort has been ranked as the best resort in North Sulawesi by *Trip Advisor*, and it was obvious why. I can’t recall more relaxing and inviting accommodations on any dive trip I have ever been on, and Kate, having spent the better part of two years living in Asia, was absolutely captivated as she sunk into her soft, puffy bed.

To muck dive or not to muck dive

—That’s not even a question
The next morning, we headed out early into the famous straight. I

I had never experienced muck diving before, and I wasn’t sure what to expect. Honestly, hunting around for infinitesimal creatures hiding in the sand didn’t sound all that attractive to me (I am much more of a mega-pelagic, giant killer shark kind of a guy). In fact, I was worried I might find myself bored with the whole affair rather quickly. Our first dive thoroughly disabused me of that idea.

Only ten meters down we hit the black sand bottom and within seconds our guide, with eyes like high powered microscopes, had spotted a blue-ringed octopus. I



Blue-ringed octopus



Flamboyant cuttlefish eggs



Coconut octopus (left); Mandarinfish at Bianca (above); Bald hairy frogfish (right)

sands for signs of movement. After only a few meters, I spied a long-armed octopus peeking out of his hole. "It's scuba Christmas!" I thought to myself, and our guide began brushing a thin metal pointer in the sand trying to coax the chary creature out.

A curious arm, thin and delicate, wiggled from the hole, followed by another. The arms grasped the pointer, and a light game of tug o' war ensued, as our guide pulled the octopus gently out of his hiding place. Obviously feeling exposed, the little guy puffed up in a show of aggression, his long arms contracted and thickened before shooting off backwards like a miniature rocket.

I spent the next hour wide-eyed and giggling. I know that sounds ridiculous, but I did; I felt like a child left overnight in an ice cream store. Everywhere we turned there were more absurdly fascinating and wonderfully bizarre creatures scurrying along the sand or hiding behind the few anemones and soft corals that grew out of the dark seabed.

When we surfaced, all I wanted was a fresh tank and another two hours to explore. The boat crew said that was fine, but they were required to feed us first.

A photographer's paradise

Critters at Lembeh, the dive center attached to Lembeh Resort, knows that nearly every diver coming to stay will be bringing a camera, and most of those will not be your average underwater point-and-shoot but seriously technical and seriously expensive equipment. For this reason, they provide visitors with an entire bungalow dedicated to you

and your camera.

Over 20 stations—all replete with charging racks, storage shelves, extra plug-ins and a work area—are prepared for any guest to use at anytime. Most divers left their gear disassembled overnight to dry, and every plug seemed to be full with some apparatus recharging for the next dive. Kate wasn't just impressed, she was downright flabbergasted at the extensive set-up.

The resort also boasts a photo center where high quality prints can be made, cameras and equipment can be rented, strobes can be borrowed, etc. And if something should go really wrong, a piece of your housing breaks for example, the dive center also has—get this—a 3D printer that can actually make custom pieces for your camera for any needed repairs!

Sascha Janson, a camera guru who runs the shop, gave us a close look at the remarkable printer and showed us how it worked. After only



Peacock mantis shrimp



Juvenile barramundi, House Reef





CLOCKWISE FROM LEFT: Golden spearing mantis shrimp; Bus stop chromodoris nudibranch; Critters At Lembeh dive shop; Orange painted frogfish at Bianca; Juvenile ghost pipefish at Goby-A-Crab



a few key strokes and quick set-up, he made a plastic octopus out of thin air. I still don't know how he did it, but believe me, it was the coolest thing I'd ever seen. He has made focus rings, housing buttons and a plethora of other camera parts for guests. Honestly,

it's a modern miracle out in the middle of the Indonesian jungle.

Janson also offers all kinds of photography and video courses, and I can't think of a better place to hone your craft than with the great folks at Lembeh Resort and Critters at Lembeh.

Muck madness

By the third day, I was a diver possessed. Muck diving had become my new passion, and I wanted more. The guides saw that I got it.

We were diving four times a day, and the critters kept coming out in droves to fuel my new



addiction. Cuttlefish became commonplace, as did mantis shrimp, candy crabs, seahorses, juvenile barramundi and hairy frogfish. Lembeh Strait, if you have never been, is a wonderland of the odd and astonishing.

Each dive revealed new and exciting creatures I hardly knew existed and more than a few I had never even heard of—eels of every size, color and shape, various scorpionfish and stonefish, Rhinopias, seamoths—fish so queer and peculiar I can't even begin to name them.

On our last dive of the afternoon,

Kate got a nice close encounter with a wonder puss, a creature she was dying to see. I just missed it, as I had—shocker—run out of air and was on the boat when it slipped out of its hole and showcased its long, banded arms and spotted mantle.

We ended the day, as one

does each night at Lembeh, in the refined but comfortable dining room, sipping top-shelf spirits and eating remarkably well prepared satays (and asking for second helpings of the unbelievable chocolate-avocado pudding) surrounded by excited conversation from the day's finds.



One group boasted that they had seen five flamboyant cuttlefish and seven octopi on one dive. We raised a glass and toasted their luck with laughter and good cheer.

Here again, I was reminded why I love traveling and diving as much as I do. I don't think any other activity brings so many people from around the world together in such a pleasing fashion. As we ate and talked about our underwater adventures, I could actually feel the life in each of the guests expand out and fill the

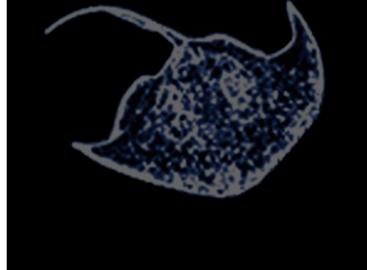
room with happiness and contentment. I know that comes across as a bit cheesy, possibly a trifle sappy and maudlin, but it also happens to be true. And if you haven't had that wave of joy after a day of diving wash over you in a while, I suggest you get out there and get back in your gear as soon as you can.

The water is waiting, and I'm quite sure you have earned it. ■

Editor Kelly LaClaire and underwater photographer Kate Clark are cousins based in Portland, Oregon, USA. They share a passion for worldwide travel, experiencing new peoples and cultures, as well as hacking one another's social media accounts.

CLOCKWISE FROM FAR LEFT: *Chromodoris magnifica* nudibranch; Candy crab on soft coral; Flying gurnard; Lembeh Resort restaurant; Yellow-edged moray eel in sponge; Cardinalfish in anemone

fact file



North Sulawesi, Indonesia



SOURCES: U.S. CIA WORLD FACTBOOK, NORTH-SULAWESI.ORG, D. SILCOCK

History Moslem merchants from Persia began visiting Indonesia in the 13th century and established trade links between this country and India and Persia. Along with trade, they propagated Islam among the Indonesian people, particularly along the coastal areas of Java. In 1511, the Portuguese arrived in search of spices after their conquest of the Islamic Empire of Malacca. They were followed by the Spaniards. Both began to propagate Christianity and were most successful in Minahasa/North Sulawesi and Maluku, also known as the Moluccas. However, it wasn't until the arrival of the Dutch in the early 17th century that Christianity became the predominant religion of North Sulawesi. From 1942 to 1945, Japan occupied Indonesia. Shortly before Japan's surrender in WWII, Indonesia declared its independence. However, it took four years of often brutal fighting, sporadic negotiations, and mediation by the United Nations before the Netherlands finally agreed in 1949 to transfer sovereignty. Strife continued in Indonesia's unstable parliamentary democracy until President Soekarno declared martial law in 1957. Soekarno was removed from power following a fruitless coup in 1965 by alleged Communist sympathizers.

President Suharto ruled Indonesia from 1966 until 1988. Suharto was toppled in 1998 following a round of riots, and in 1999, free and fair legislative elections took place. Indonesia is the world's third most populous democracy, Government: Republic. Capital: Jakarta.

Geography

Located in Southeastern Asia, Indonesia is an archipelago situated between the Indian and Pacific Oceans. Coastline: 54,716km. Terrain consists primarily of coastal lowlands, with interior mountains on larger islands.

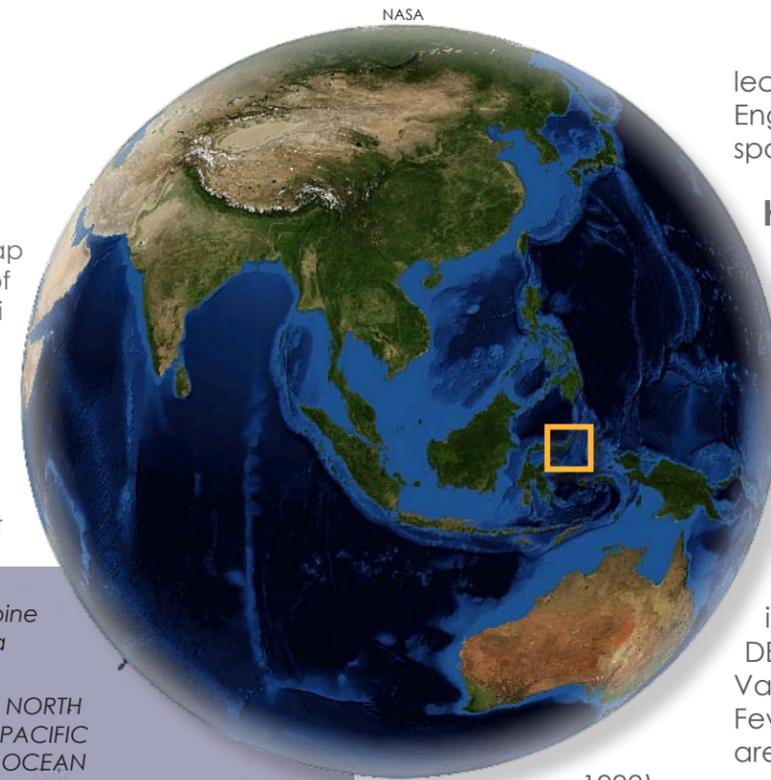
Climate Tropical, hot and humid, with more moderate climate in the highlands. The water temperature is normally 28-29°C (84-86°F) year round, with an occasional "chilly" 27°C (82°F) spot. Most divers use 1mm neoprene suits. However, some people prefer 3mm.

Environmental issues Challenges include industrial

waste water pollution, sewage, urban air pollution, deforestation, smoke and haze due to forest fires. Logging—the rainforests within the combined West Papua/Papua New Guinea land mass are second in size only to those of the Amazon, making it 'the lungs of Asia'. In 2001, there were 57 forest concession-holders in operation around the country and untold other forest ventures operating illegally. Mining—tailings from copper, nickel, and gold mining are real threats.

Economy A vast polyglot nation, Indonesia has experienced modest economic growth

RIGHT: Global map with location of North Sulawesi
BELOW: Location of North Sulawesi on map of Indonesia
BOTTOM RIGHT: Lance blennie makes its home in a bottle at Lembeh Strait



1999) are widely accepted. ATM machines in tourist areas offer the best exchange rates, Travellers cheques are becoming quite difficult to use except at banks. Exchange rates: 1EUR=12,723IDR; 1USD= 9,737IDR; 1GBP=15,127IDR; 1AUD= 9,972IDR; 1SGD= 7,908IDR

Population 251,160,124 (July 2013 est.) Ethnic groups: Javanese 40.6%, Sundanese 15%, Madurese 3.3%, Minangkabau 2.7%, Betawi 2.4%, Bugis 2.4%, Banten 2%, Banjar 1.7% (2000 census). Religions: Muslim 86.1%, Protestant 5.7%, Roman Catholic 3%, Hindu 1.8% (2000 census). Note: Indonesia is the largest Muslim country in the world. Visitors are encouraged to respect local traditions and dress modestly. Internet users: 20 million (2009)

Language Bahasa Indonesian is the official language, plus English, Dutch and local dia-

lects are spoken. In tourist areas, English, Spanish and German are spoken.

Health There is a high degree of risk for food or waterborne diseases such as bacterial diarrhea, hepatitis A and E, and typhoid fever, as well as vectorborne diseases such as chikungunya, dengue fever and malaria. Check with WHO or your dive operator for prophylaxis recommendations. Larium is not effective. Bring insect repellents containing DEET. International Certificate of Vaccination required for Yellow Fever if arriving from infected area within five days.

Decompression chamber

Manado: Malalayang Hospital tel: +62 0811 430913
Makassar: Rumah Sakit Umum Wahidin Sudirohusodo tel: +62 0411 (584677) or 584675

Travel/Visa/Security

Passport valid for six months beyond intended stay is required. There is a Visa-On-Arrival for 35 countries including USA, UK, most European and Asian countries. It is US\$25 for a stay of up to 30 days. Although there is an active independence movement in Papua, tourists have not been impacted.

Web sites

Indonesia Travel
www.indonesia.travel/en





Edited by
Peter Symes

Beyond the Muck

Text and photos by Mike Bartick

Muck diving is a term used quite frequently these days that can be applied to either a dive site, a type of diving or even an entire region like Lembah Strait in Indonesia or Anilao in the Philippines. These areas of the Indo-Pacific have consistently ranked amongst the highest in terms of high coral counts, reef fish and of course the high impact Holy Grail of critters.

The intertidal and estuary zones typically associated with muck dives provide much more overall for the eco-system than what meets the eye. Nutrients flowing into the ocean current mix to create an amazing bio-mass of diversity that ranges from bull rush sea grass to bull sharks. However, the critters most encountered while muck diving are typically benthic bottom dwelling organisms. These critters as we call them have

evolved elaborate and eccentric life styles to survive on the substrate and are unlike the ocean roving pelagic fish above them in many ways.

Pelagic fish hunt long range, tend to be bi-colored, are fast and are more adept to following the fluctuating current and food source. Benthic critters, on the other hand, are forced to adapt to their environs on the bottom with limited movement and hunt close range. These critters use a combination of "Lie and wait" hunting and "ambush attacks", relying heavily on aggressive camouflage that mimics or matches their surroundings. The same current lines that feed the higher chain (food grade fish) also brings food and organisms for the lower chain animals that are sought out to photograph.

The more productive dive sights that support an overall abundance of biota are intertidal sand flats, fringing reefs and tidal sand banks formed in-part by fluctuating current lines. These currents carve and shape the substrate that often mix within the intertidal zones and create an underwater oasis for encrusting sea life.

In the shallows, fringing beds of sea-grass supports a mix of critters like ornate and common pipefish, flatfish, frogfish, urchins, crustaceans, opisthobranchs, vertebrate and invertebrate sea life.

In addition the sponge, sea squirts, tunicates, sea fans and soft corals that also thrive here provide both food and protection, creating a unique habitat for an abundance of unique sea life on the bottom.

Like the big animal Holy Grail, there also exists the small animal Holy Grail that survives in this intertidal benthic realm with names that are almost as dazzling as their appearance. Rhinopias, hairy frogfish, stargazers all sound like they belong in a superhero comic book, and some even have the abilities to match. The evolutionary process has been both rigid and creative with these compelling creatures forcing them to adapt or pay the ultimate price.

The solitary juvenile pinnate spadefish (*Platax pinnatus*) survives by its color and rapid movements. Living between rocks and small crevices, it mimics the colors of a venomous flatworm. Found exclusively in the Indo-Pacific, its midnight



Juvenile pinnate spadefish side view (above) and front view (inset) mimics a venomous flatworm





In the photo at left, the smaller male (left) and the larger female (right) hairy frogfish meet in courtship to mate; A stargazer lies in wait to ambush passing prey (right)



third and final step, as it ambushes its prey with its lightning fast gape strike, often consuming them in one gulp.

When frogfish are found together, it is generally a strong indication that mating will occur soon. The female is almost always the larger of the two, as she needs to be a bit larger than the male in order to produce the mass of eggs. The smaller *A. striatus* (male) pictured above was attracted to this lovely female a day earlier by an irresistible pheromone.

black and vibrant orange colors will fade to a drab silvery coloration, as it enters into the second phase of its lifecycle.

The *Antenarius striatus*, or hairy frogfish, are a highly sought after Holy Grail critter due in-part to their photogenic behaviors and for their unusual appearance.

The *A. striatus* is a bit more sophisticated than many other fish for using a special method to hunt. Impossible to swim and hunt the *A. striatus* is able to do so with very little movement on their part and is achieved by exciting their prey.

First the hairy frogfish will release a scent, which alerts nearby fish or shrimp down current that food is near. This excites their prey, and as they follow the scent closer, the frogfish switches to its second strategy, visual stimulation using its lure.

The frogfish now relying on its lure drops it out and waves it around. This excites the victim even more, not knowing that the algae or soft coral it sees is actually a hairy frogfish, cunning and powerful. As the fish moves in for its meal, the hairy frogfish unleashes the



The female *A. straitus* actually selects the right male in a natural process that could involve either eating or just ignoring the rejected suitor.

Nocturnal critters

Muck dive sites can get even more interesting at night with the cast of nocturnal critters. The exact same dive site will yield a whole new team of characters after the sun sets and provides for some better than sci-fi photo ops.

The white margined stargazer (*Uranoscopus sulphureus*) is perhaps the most macabre looking of all the critters. Its name is derived from its appearance, as its eyes are situated on the top of their heads appearing as if casting a never-ending gaze upon the night sky above. A venomous ambush predator, the positioning of its eyes are very useful,

as they bury themselves under the sand to hunt. When another benthic fish or smaller unsuspecting fish swims closely overhead, the stargazer springs from its burrow and engulfs the fish in a flash, then quickly buries itself again. In addition to being venomous, the stargazer can produce an electrical charge and conceals a lure in its mouth—talk about equipped!

The bobbit

No write up on muck diving would be complete without something about the elusive bobbit worms (*Eunice aphroditois*). These carnivorous polychaete worms are the things that nightmares are made of. Growing up to six feet in length and a diameter of three inches, these creepy critters play for keeps.

The bobbit's calcified jawbone, tentacle feelers and chemical receptors all work in unison to attract and kill their prey. Often seen bobbing up and down in the sand on night dives, bobbit worms are highly sensitive to light. Lunging and snapping at unsuspecting prey seems

Hairy frogfish hunting with lure



Babbler worm bobs up and down, snatching fish right out of the water column

The tiny commensal pandalid shrimp, *Miopandalus hardingi*

to be its technique of choice, often snatching fish right from the water column, slicing them in half or pulling them down, below the sand.

Super macro

Super macro techniques have gained popularity in the last several years, giving us a closer look at some of the very small yet decorative shrimp, and other interesting critters. Sometimes called the insects of the ocean, they all seem to bind dives together and keep a photographer's shutter snapping. The bazaar



Muck

Cephalopods

The docile blue-ringed octopus and flamboyant cuttlefish are both highly sought after. Holy Grail finds that can turn any dive into a free-for-all very quickly. Each of these amazing cephalopods has enough bacterial neurotoxin to kill dozens of fully grown men. Tetrodotoxin (TTX) is a powerful digestive byproduct transmitted through saliva from a blue-



Red hairy shrimp

horned shrimp is a prime example of the incredible tiny creatures to be found, but can pose many challenges when trying to photograph them.

A commensal or partner shrimp (*Miopandalus hardingi*) is associated with brown or green gorgonians and are easily overlooked.

The very small hairy shrimp are part of the broken back complex (*Phycocaris sp.*). They can be extremely compelling and difficult to photograph. They are normally associated with algae growth of the same coloration but can also be found on small rocky outcrops, near the algae.



Algae shrimp, *Phycocaris simulans*



ringed (*Hapalochlaena maculosa*) octopus' bite. The flamboyant cuttlefish, on the other hand, (*Metasepia pfefferi*) is also docile yet deadly and can inadvertently transmit the TTX just by touching its skin tissue. Although not as effective as the bite, scientists still limit contact and exposure to them, keeping it to a minimum.

Scorpionfish

A member of the scorpionfish family, the *Rhinopias frondosa* can create very large ripple effect topside, wherever one turns up, especially in small communities like Anilao. It's nearly the equivalent of a gold rush, as guests flood in from all over the world for a chance to photograph one of these amazing critters. An ambush gape strike predator, they will drag themselves along the bottom toppling forward then rolling back mimicking an injured fish. When a predatory fish from above sees the oppor-



Blue-ringed octopus (far left) and flamboyant cuttlefish (left) eating. Both carry poisonous neurotoxins; Veined octopus or coconut octopus, *Amphioctopus marginatus*, on eggs (center)

Nudibranchs

The frontal view of the *Nembrotha kubaryana* nudibranch reveals its intricate textures and details. Its favorite food source is tunicates and are considered common.

A special class is reserved for the ever colorful and slow moving nudibranch. These special little gems are a dynamic bunch made for underwater photographers. The color patterns and textures, shapes and details can be show-stopping. But it's not just their looks but the science behind them, too, that



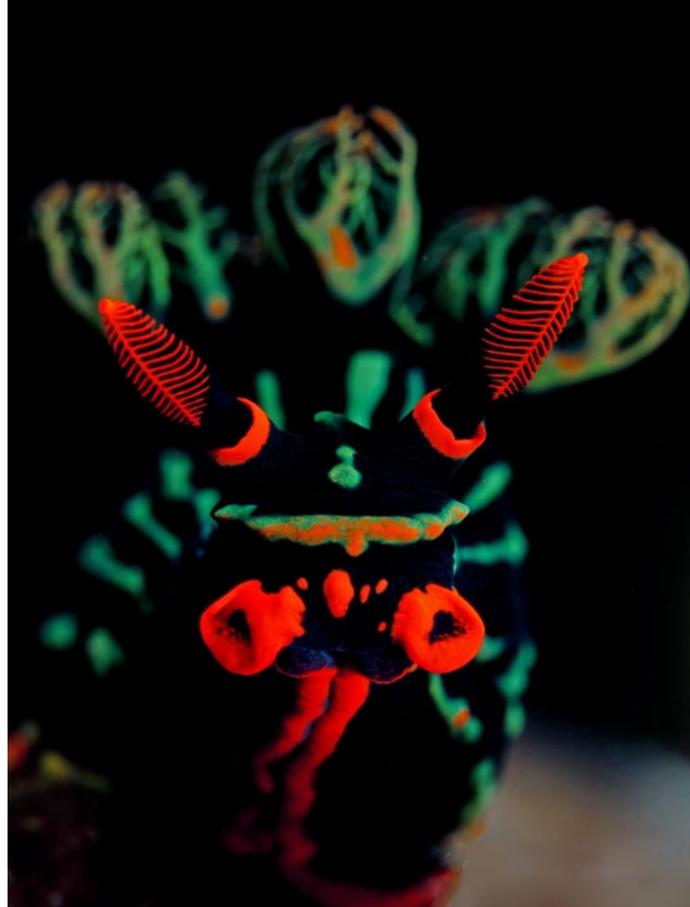
tunity of an easy meal below them, they swoop down to investigate. The *Rhinopias* unleashes its bucket mouth gape strike, inhaling the fish with haste, then trundling forward, it moves on.

is appealing. Terry Gosliner from the California Academy of Science calls them "the most diverse fauna on planet earth". I would have to conclude he's 100% spot on with that statement.



Muck

Rhinopias frondosa is a member of the scorpionfish family



Fish

The estuary batfish (*Haleutia sp.*) is truly a rare find amongst finds. The natural data on this fish just doesn't exist, unlike many of the other critters out there. It is believed to be a deep sea anglerfish. This one (shown above) was found in the shallows by my trusted assistant, Gladys, and later positively identified using the *Reef Creature ID* book. It was so cryptic and blended so well with the substrate that when I glanced away for a second, it was lost forever.

The spotted xenia pipefish (*Siokunichthys herrei*) is just one more amazing critter find from Anilao. Reliance on sharp guides nearly always pays off, time and time again. Experience has taught me not to be complacent and to always come when my guide waves me over. One of the advantages of working in the Indo-Pacific region is the opportunity to find and document rare creatures like these.

Beyond the Holy Grail are the oddities that only Mother Nature

allows us to see. I am often surprised at what is found while muck diving and quickly refer to the identification books afterwards. The sheer amount of opportunities of seeing something new or undiscovered is part of the main draw in muck diving.

Remember, research, hiring a professional guide and persistence pays off when hunting for that special critter. Communicate with your guide and the resort before your arrival and let them know what it is that you would like to see.

Now get out there and have an adventure! ■

A special thanks from the author goes to Crystal Blue Resort (www.divecbr.com). California native Mike Bartick is a widely published underwater photographer based in Anilao, Philippines. A small animal expert, he leads groups of photographers into Asia to seek out that special critter. For more information, visit: Saltwaterphoto.com



CLOCKWISE FROM TOP LEFT: Estuary batfish, *Haleutia sp.*; *Nembrotha kubaryana* nudibranch; Spotted xenia pipefish; *Hipseledoris sp.* nudibranch





Mexico's
Sea of Cortez
Text and photos by Matthew Meier — *Where the Wild Things Are*

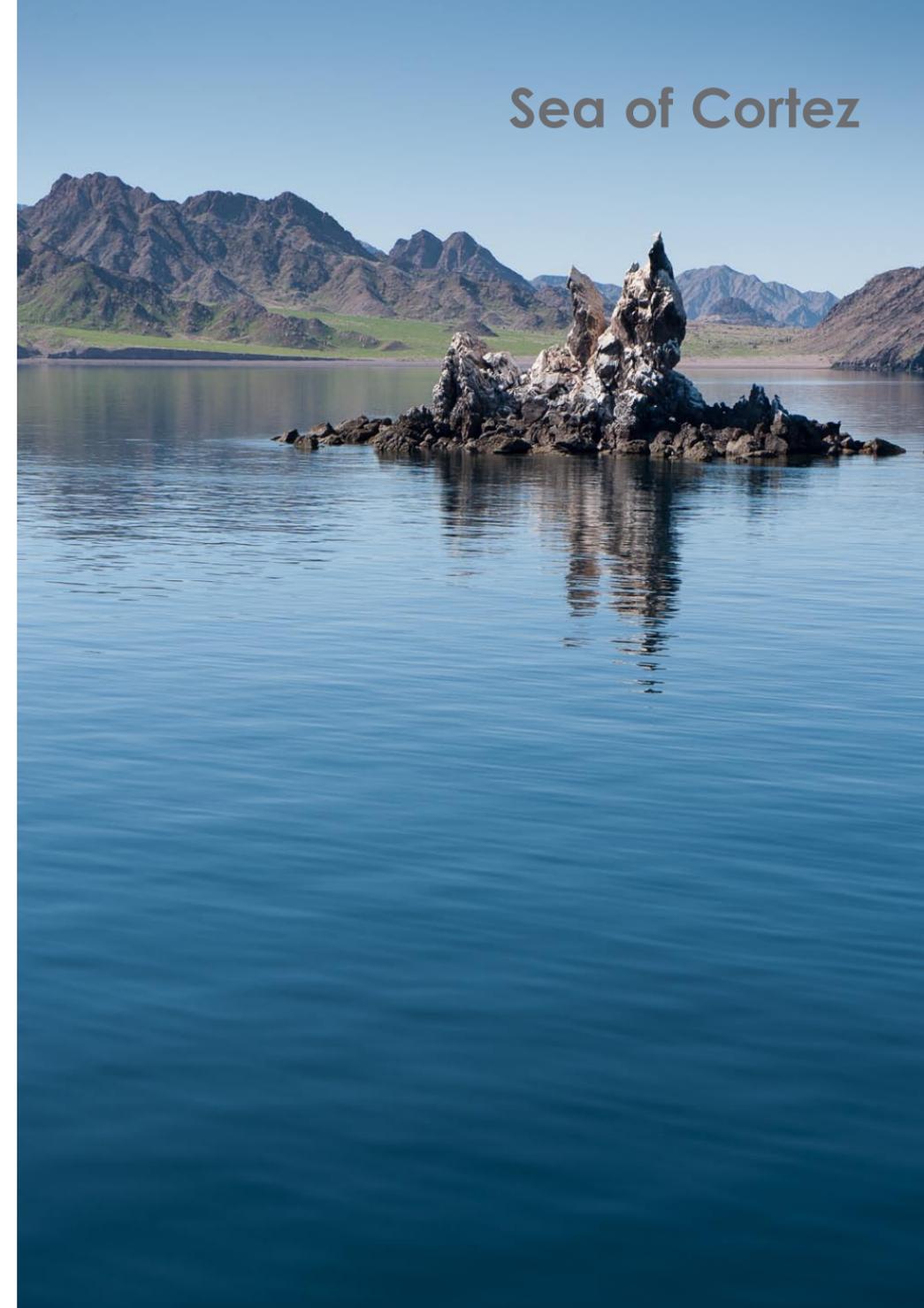


—Diving Mexico's Sea of Cortez, Midriff Islands and Baja California.

Whale shark, whale shark, whale shark! After several unsuccessful hours of searching the bay by small boat, these long-awaited words came as a welcome relief. Only a handful of us had heard the radio call after opting to stay behind and skip the last dive of the trip. The excited skiff driver making the transmission had just dropped off his divers when a 15- to 20-foot juvenile whale shark came up to investigate. An explosion of activity ensued as our remaining few frantically scrambled for snorkel gear and made last second camera checks before jumping into the now returning skiff in hopes of seeing the world's largest fish up close. For 16 magical minutes we were fortunate to have a very inquisitive youngster exhaust each of us in turn with its oversized version of follow the leader. The whale shark literally chased us in circles at the surface, as we passed the virtual baton, from one snorkeler to the next, in hopes of catching our breath before it came around again.



Head-on view of a juvenile whale shark just below the water's surface, Bahia de los Angeles (above); Panoramic view of Salsipuedes Island in late afternoon sunlight (top); Diver and yellow polyp black coral growing on rock wall at Andrea's Eagle off Angel Island. PREVIOUS PAGE: California sea lions circling each other at Ravijunco off San Pedro Martir Island



Sea of Cortez

CLOCKWISE FROM LEFT: Large fine spotted moray eel at Angel Island; Large organ pipe cactus in Sonoran Desert; Bullseye Stingray on sea floor at Andrea's Eagle, Angel Island; La Muela rock in Refugio Bay at the north end of Angel Island; Bluespotted jawfish at Los Cuervos, off Salsipuedes Island



this large, protected anchorage is also known as the Bay of the Angels and Bay of LA. The entrance to the bay is dotted with 16 separate islands and farther east, across the Canal de las Ballenas (Whales Channel), lays the southern portion of Isla Angel de la Guarda (Angel Island).

endemic to Baja California—is the world's largest cactus, growing as tall as 18m (60ft).

Angel Island

The second largest of the Midriff Islands, Angel Island is the northernmost landmass of the archipelago. This rugged, mountainous and uninhabited island is 69km (42.7mi) long, runs northwest to southeast, and contains no freshwater. The arid landscape supports various grasses, succulents and shrubs, along with a variety of birds and reptiles. The Angel Island speckled rattlesnake exists nowhere else, and the cardon cactus—nearly



Bahía de los Angeles

Whale sharks are commonly seen in this area from late July through September, and as this was the

first week of October—we were very lucky to have such an interaction. Located on the eastern shoreline of the Baja Peninsula,

Diving the Midriff Islands is accomplished by liveaboard dive boat. Trips typically run Saturday to Saturday from July through early October and include five and a half days of diving plus snorkeling opportunities with whale sharks and other pelagics when possible. Passengers are shuttled from the United States at Phoenix, Arizona's Sky Harbor International

Airport, through the Sonoran desert and the Organ Pipe Cactus National Monument, across the Mexican border and on to Puerto Penasco (Rocky Point), where guests board the boat for their overnight passage, traversing the Sea of Cortez.

We awoke that first morning to glassy sea conditions, while motoring into Refugio Bay, at the northern end of Angel Island.





Male orangethroat pikeblenny (left) displaying to attract a mate while in it's burrow off Angel Island; Aggregation (right) of juvenile blue-and-yellow chromis, scissortail chromis, Mexican hogfish and king angelfish swimming above the rocky reef at Andrea's Eagle, Angel Island; Angelfish swimming amongst yellow polyp black coral off Angel Island (below)

lions swam by for closer inspection. Lolo's Cove offered our first look at the endemic bullseye electric ray, and our guide pointed out a pair of seahorses that had taken up residence within the structure of an old lobster trap. A school of baitfish, corralled by circling barracuda, pro-



Sea of Cortez



Over the next two days we would explore several dive sites, rock outcroppings, bays and coves as the crew guided us down the western side of the island. Our first stop was La Muela (Molar Tooth) for a shallow check out dive. Here, we were treated to an array of bluespotted jawfish, living in burrows amid the rocky bottom, several species of stingrays and a fine spotted moray eel. Next came a drift dive along walls covered in gorgonians, hydroids and several schools of fish, all the while, dozens of curious California sea

and pelagics. Numerous colonies of California sea lions provide ample opportunities to dive and interact with these gregarious underwater acrobats. Whale sharks and sperm whales can be seen in the late summer and fall, along with pilot whales, dolphins, manta and mobula rays.

vided plenty of distraction on our safety stop.

The Sea of Cortez, or Gulf of California as it is also known, offers a varied mix of macro subjects, scenic rocky reefs

For those adventurous souls willing to jump into a cage at night, it is also possible to dive with humpoldt squid. Sadly, whether a product of climate change, over fishing or a simple change in their whereabouts, the squid have become increasingly hard to find.

Sharks are another species that are difficult to locate around the Midriff Islands, and unfortunately, mankind is very much to blame for their absence. From 1985-1995 over 200,000 sharks were killed by fishermen from camps in San Francisquito Bay, 50 miles south of Bahia de Los Angeles. Sadly, an equal amount of bycatch was also discarded in the process, and when it was over, the shark population was decimated. We were encouraged to see a couple of sharks swimming at the surface during our trip, and I hope that they make enough of a comeback to consistently be found underwater as well.

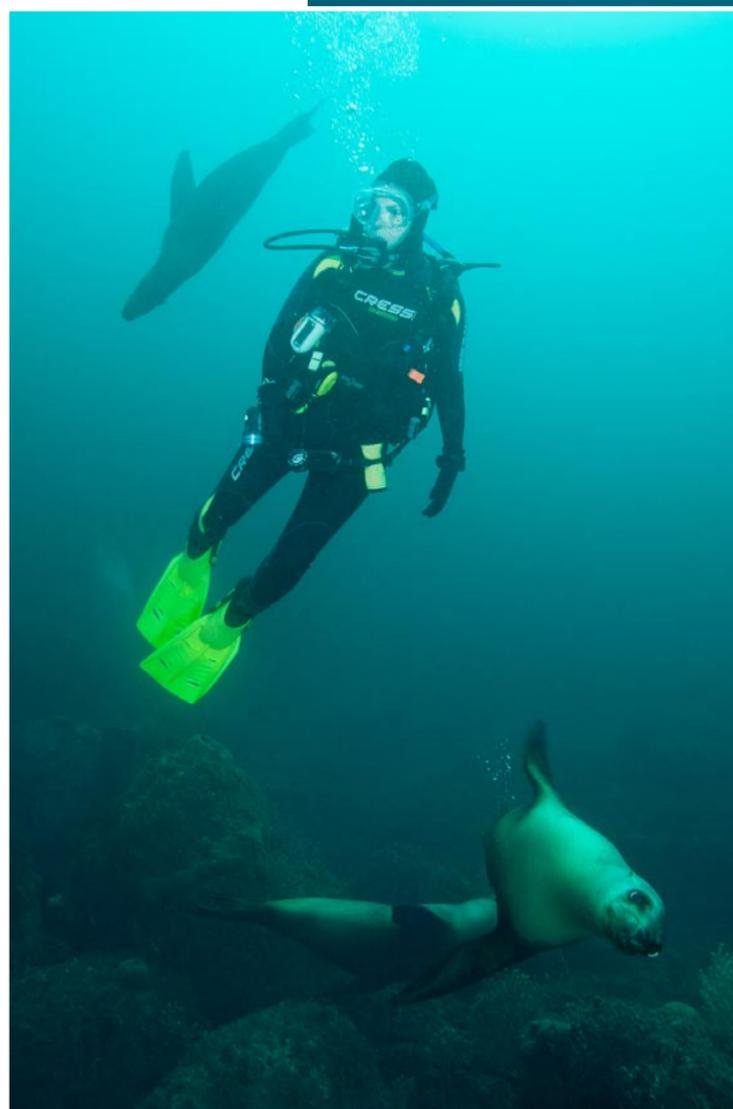


Fine spotted jawfish hiding in rubble burrow on sea floor off Angel Island



California sea lion (left) just below the surface at El Morro, San Pedro Martir Island; Raft of California sea lions (right) reflecting in the smooth surface of the water and diver (below) with playful California sea lions at Ravijunco, off San Pedro Martir Island

ders and abundant marine life. The crevices between the rocks allowed for plenty of hiding places for the various invertebrates and reef fish, while anemones,



Andrea's Eagle. Our second day of the expedition began with two dives at Andrea's Eagle, one of my favorite sites—so named for the osprey (fish eagle) nest on the cliffs overhead. Underwater, this rocky pinnacle provided an equal breadth of amazing wide-angle and macro subjects. Male orangethroat pike-blennys were displaying for a mate in the shallows, while a fine spotted jawfish—its head

the size of a baseball—hid in a burrow in deeper water. Large aggregates of blue and yellow chromis, Mexican hogfish and king angelfish pulsated above the rocky reef and Cortez angelfish swam through forests of pristine yellow polyp black coral at depth.

El Aquario. After lunch we had two dives at El Aquario, a site with piles of large bould-

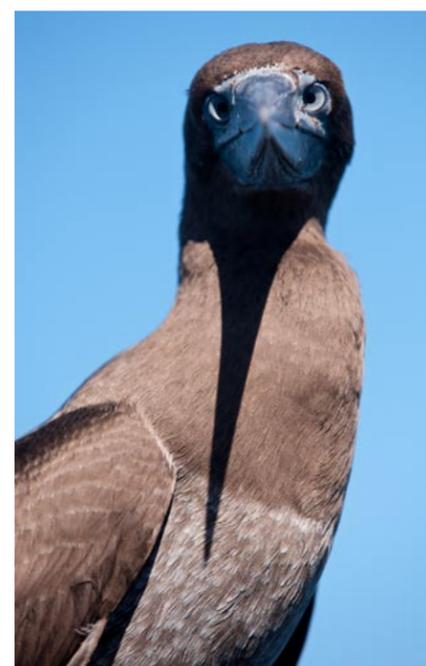
sponges, hydroids and gorgonians grew on the rocks themselves. A strong current came up for the night dive making macro photography all but impossible.

Diving the northern Sea of Cortez can be a bit of a challenge due to the varied conditions dive to dive, but that is also part of the adventure. Water temperature, visibility and current can change from one site to the next, between successive dives and occasionally during the dive itself.

Strong tidal currents produced by the lunar tides in the Pacific Ocean can create drift dive conditions and are especially robust during a full moon. These tidal currents also produce upwelling's that bring nutrients from the depths, which can affect visibility as well as temperature. Amongst the various dive sites, over the week of diving, we experienced a ten-degree difference in temperatures.

San Pedro Martir Island

Overnight, the boat moved south from Angel Island to the island of San Pedro Martir, and we were subsequently serenaded awake by hundreds of brown booby birds fishing for their breakfast.



Brown booby perched on boat



CLOCKWISE FROM LEFT: Stone Scorpionfish, with dorsal fin raised, at Ravijunco, San Pedro Martir Island; Tube-dwelling anemone tentacles flowing with current; Pacific creolefish resting in a crevice on the rocky reef at night; Giant hawkfish hiding in a crevice on the rocky reef off San Pedro Martir Island



dens. Countless scorpionfish, in a multitude of colors, dotted the reef, along with several giant hawkfish, tube-dwelling anemones and panamic cushion stars. After dark we returned to Ravi Junco, scouring the large rock formations to find sleeping fish, moray eels and scavenging pinto spiny lobsters.



followed closely by an aggregation of king angelfish and chromis, and then ultimately more sea lions joined us at our safety stop, posing for photos amidst the sun's rays.

El Arroyo. That afternoon we dove a site called El Arroyo where deep sand channels separate rock formations and black coral gar-



Panamic cushion star covered in hundreds of baby brittle stars

Ravi Junco and El Morro. The early morning was spent frolicking with sea lions at Ravi Junco as they swam circles around each other and us, often hovering above

unwitting divers, playing in their bubbles. From there we moved to a rocky pinnacle called El Morro, where a huge school of Pacific creolefish swam by to greet us,

El Morro II and Sharenly. Two more amazing rock pinnacles were explored the following morning at El Morro II and Sharenly. Each was covered in gorgonians, hydroids, sponges, black coral and large schools of reef fish. When compared to some of my previ-

ous destinations like the Socorro Islands, Cocos or the Galapagos, I found the colors and reef life here much more vibrant. While each of these locations has similar underwater topography and fish species, only the Sea of Cortez had reefs with such vitality and beauty.



CLOCKWISE FROM LEFT: Large gorgonian sea fan and pink barrel sponges at Shareny off San Pedro Martir Island; Balloonfish hiding in rocky reef; Pinto spiny lobster hunting on the rocky reef at night at Ravijunco, San Pedro Martir Island; Pyramid sea star amongst pink barrel sponges with scissortail chromis swimming overhead at Shareny off San Pedro Martir Island



Sea of Cortez

the water as a form of thermoregulation. We found many of the usual fish suspects, as we dove two more pinacles covered with marine life. New additions from the first dive included several finescale triggerfish protecting their nests in the sand and a pair of seahorses was discovered on the last dive of the day.

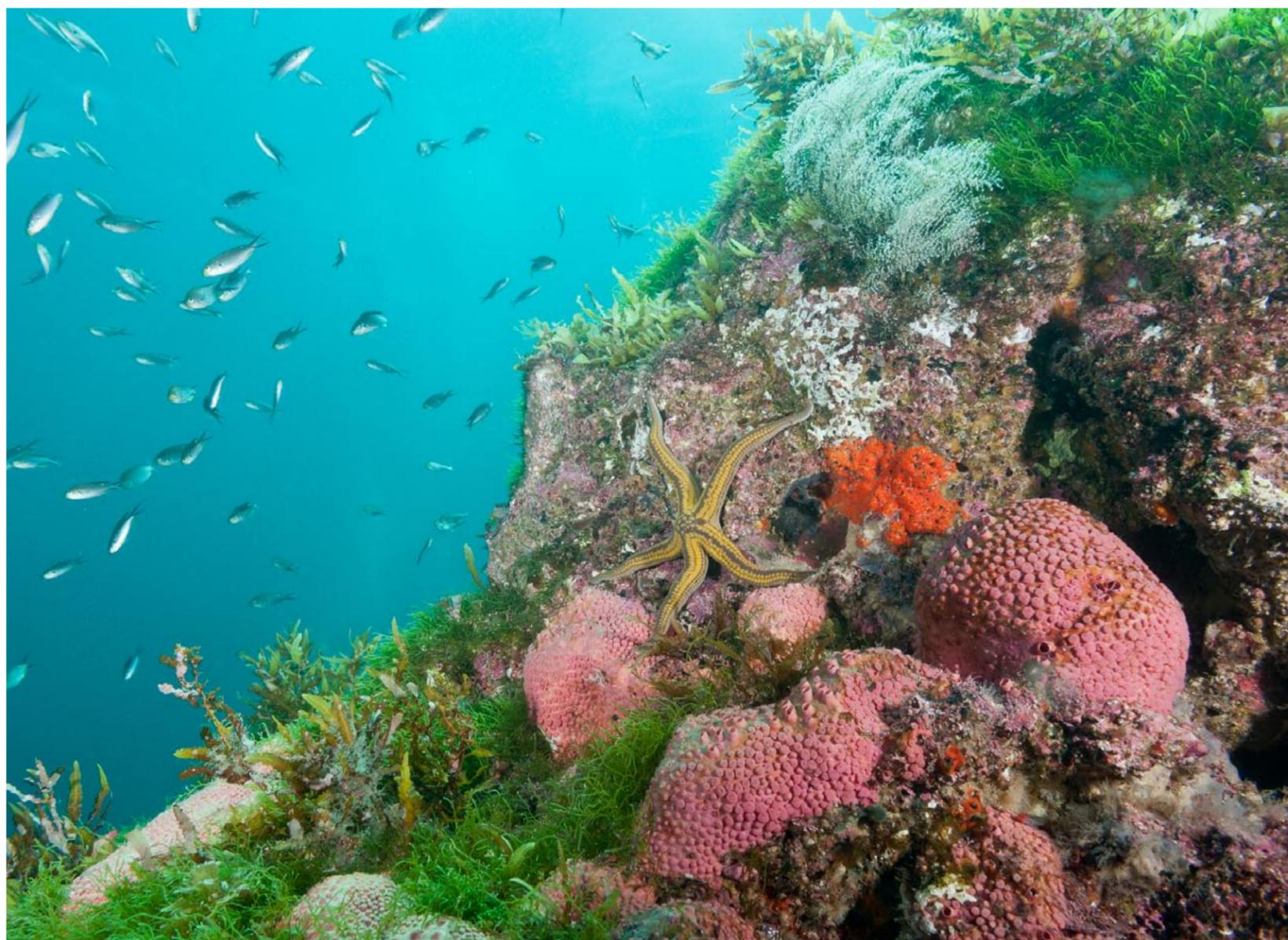
I skipped that last dive to hike and explore Salsipuedes Island and photograph the hundreds of brown pelicans lining its coastline. I also took advantage of being on dry land, using my tripod to create a panoramic image of the island itself and document several Sally Lightfoot crabs. At sunset, I was

Salsipuedes Island

The final full day of diving brought even larger numbers of sea lions, both floating in rafts on the surface and swim-

ming en mass underwater. The rafting behavior entails several sea lions floating together at the surface, often raising one or more of their flippers out of

fortunate to silhouette three pelicans on a rock outcropping against a beautiful orange sky reflected in the water's surface. While disappointed to have





missed the seahorses, I was very pleased with my land excursion and topside shots.

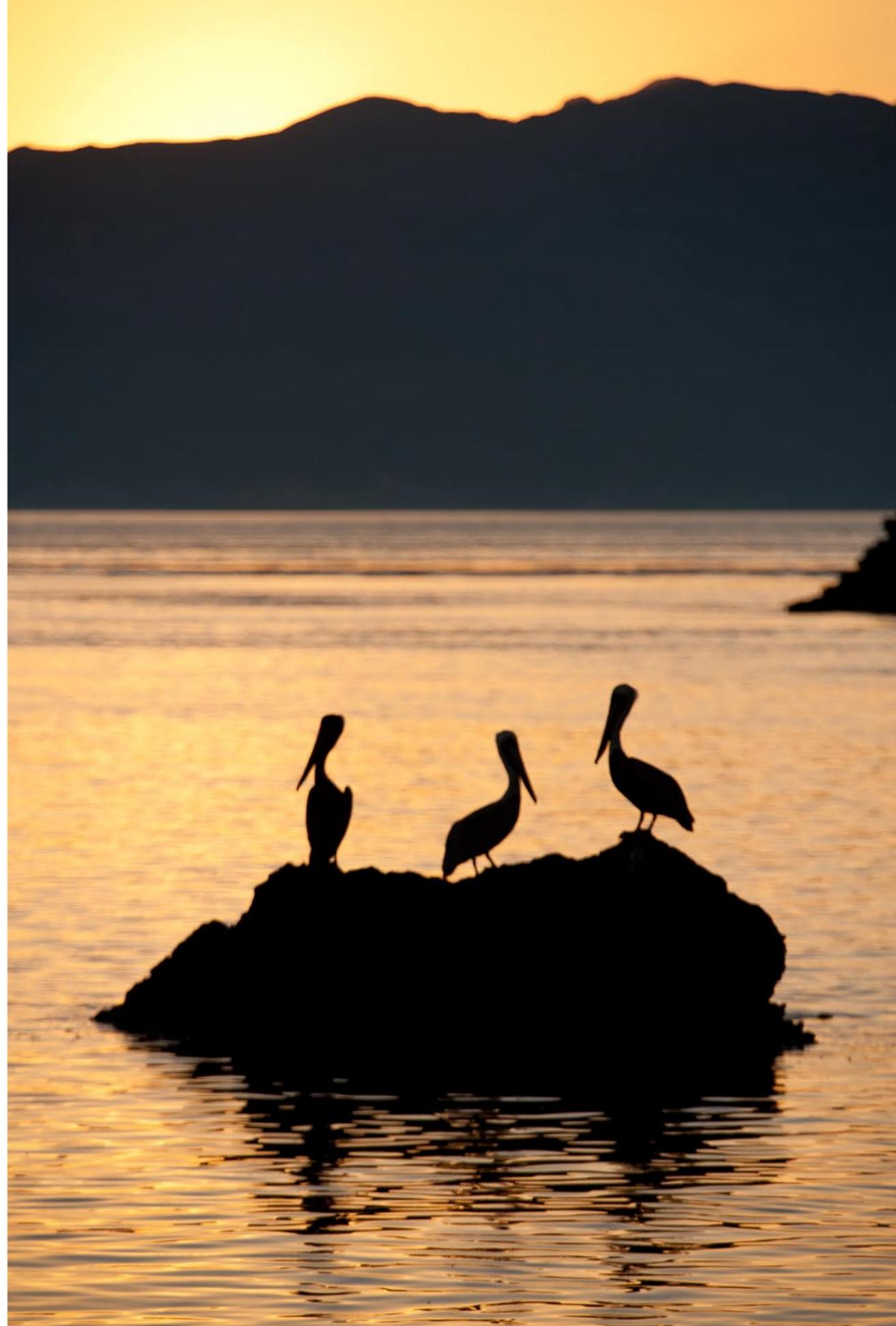
The Midriff Islands are remote and isolated, the terrain rugged and the scenery dramatic. Spectacular sunrises are only outshined with brilliant starry nights and the complete lack of light pollution or any sign

of civilization. Ours was the only boat we saw for days, and our only companions on the water were the dolphins that played in our wake during transports.

It is hard to put into words the peace and tranquility that comes from being so removed from daily life. The sights and

Scissortail chromis (above) over pink and yellow barrel sponges at Shareny, San Pedro Martir Island; Raft of California sea lions (top) near Salsipuedes Island; California sea lion (top left) over rock wall covered with barrel sponges and stinging hydroids at La Pared, San Pedro Martir Island; Sea lions (left) swimming close to each other underwater at El Caballo, Salsipuedes Island





Images this page from Salsipuedes Island. CLOCKWISE FROM LEFT: Sally Lightfoot crab on rocky shoreline; Flock of brown pelicans taking flight; Three brown pelicans silhouette against an orange sunset sky

To see more of his work and to order photo prints, please visit: Matthewmeierphoto.com

SOURCES: WIKIPEDIA.ORG
ROCIODELMARLIVEABOARD.COM
SEAWATCH.ORG/SEA_OF_CORTES/SHARKS_DEATH_CAMPS.PHP



sounds of the Sea of Cortez will remain with me for quite some time, and I very much look forward to my next visit. ■

The author extends a special thanks to the management and crew of the Rocio Del Mar (Rociodelmarliveaboard.com) for hosting this adventure. The author also thanks Blue Abyss Photo (Blueabyssphoto.com) for assisting with underwater photo gear.

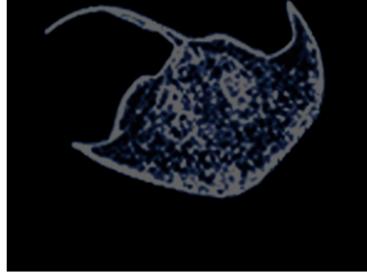
Matthew Meier is a professional underwater photographer and travel writer based in San Diego, California.



California sea lion barking while floating at the water's surface near San Pedro Martir Island, its flippers out of the water to regulate body temperature



fact file



SOURCES: U.S. CIA WORLD FACTBOOK, XE.COM

Sea of Cortez, Mexico



History Mexico was home to the Maya and Aztec people, along with several other advanced Amerindian civilizations, before Spain conquered and colonized the country in the early 16th century. For three centuries, Mexico was administered as the Viceroyalty of New Spain before gaining its independence in the early 19th century. Mexico lost a large portion of its territory to the United States at the end of the Mexican American War of 1846 and nearly a tenth of their population during their Mexican Revolution from 1910-1929. The country stabilized in the 1930s and was controlled by the Partido Revolucionario Institucional (PRI) party until 2000.

Geography Mexico is landlocked between the United States and Guatemala in North America and bordered by the Caribbean Sea and the Gulf of Mexico to the east and the North Pacific Ocean to the west. The Sea of Cortez is located between the Baja California Peninsula, one of the longest peninsulas in the world, and mainland Mexico. The sea is 700 miles (1,126km) long and between 30 to 150 miles (48 to 241km) wide, with a mean depth of 2,684 feet (818m). It contains 37 islands, most of which are found on the peninsular side of the gulf. One of the largest is Isla Angel

de la Guarda (Angel Island). The Gulf of California is a UNEXSO World Heritage Site.

Climate The Northern Sea of Cortez has a dry and arid climate that is hot in the summer months from May to October and milder in winter from November to May. Air temperature can range from 80°F to 100°F in summer months and 60°F to 95°F in winter. Water temperature can range from 72°F to 85°F in summer and often fluctuates depending on currents. A 3mm to 5mm wetsuit is recommended for diving.

Economy Mexico has a free market economy containing a mixture of industry and agriculture. Their per capita income is one third that of the United States and roughly 50% of the population lives below the poverty line. Imports from the United States have increased from 7% to 12% since the implementation of the North American Free Trade

Agreement (NAFTA) in 1994 and more than 90% of Mexico's trade is under free trade agreements. In the recent global economic downturn, Mexico's GDP dropped 6.2% in 2009. It rebounded with positive growth of 5.6% in 2010 and slowed to roughly 4% in 2011 and 2012. A comprehensive labor reform was signed into law in November 2012 in hopes it would prioritize structural economic reforms and competitiveness.

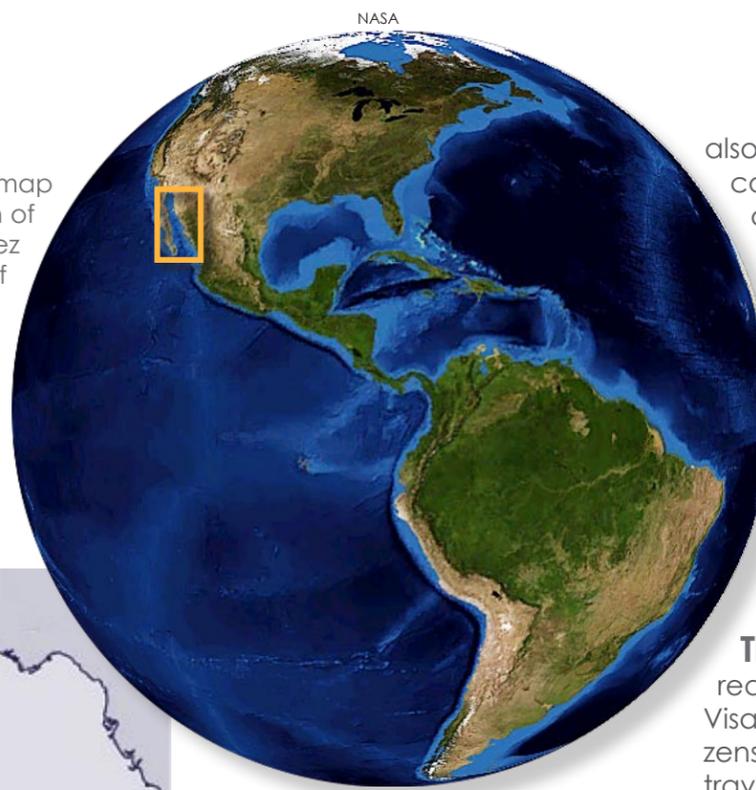
Currency Mexican Peso (MXN) U.S. Dollars and international credit cards are widely accepted at tourist destinations. Exchange rates: 1EUR=16.77MXN; 1USD=12.65MXN; 1GBP=19.48MXN;

RIGHT: Global map with location of Sea of Cortez
BELOW: Location of Gulf of California, or Sea of Cortez, on map of Mexico
LOWER RIGHT: Lizard triplefin camouflaged against the rocky reef at Los Cuervos off Salsipuedes Island



1AUD=11.70MXN; 1SGD=10MXN
Population Mexico has a population of 116,220,947 (July 2013 est.)—the majority of which are Roman Catholic. The capital, Mexico City, is the second largest urban agglomeration in the Western Hemisphere at 19,319 million. Conversely, the Midriff Islands in the Sea of Cortez are mostly uninhabited.

Language Spanish is the official language of Mexico, but there is still a small portion of the population that speaks indigenous and other regional languages. English is widely spoken in tourist areas.



also be able to use your home country's. The roads are generally paved and in good condition, though not necessarily well marked.

Decompression chamber The nearest hyperbaric chamber is located on the mainland in Puerto Penasco (Rocky Point). There are no chamber facilities on the Midriff Islands.

Travel/Visa A passport is required for entry into Mexico. Visas are not required for U.S. citizens but may be necessary for travel from other countries. Phoenix, Arizona's Sky Harbor International Airport (PHX) is the most convenient for boarding a liveaboard boat to the northern Sea of Cortez. Shuttles run between Phoenix and Puerto Penasco (Rocky Point) where guests board the boat for their transit down to the Midriff Islands.

Voltage 110 volts, with U.S. standard 2- and 3-prong plugs are available on the liveaboard dive boats.

Cuisine Mexican cuisine has a mixture of indigenous and European influences, mainly Spanish. Native corn, beans and chili peppers are staples, to which are added beef, pork, chicken and seafood, dairy products, herbs and spices. The food is tied to local conditions and culture and varies greatly by region. Corn is the most common starch and is usually served as a tortilla.

The menu on the liveaboard boat includes a variety of local dishes, fresh fish, fruits and vegetables and American style breakfasts.

Tipping A 10-15% tip is customary for shuttle drivers, dive guides and boat crewmembers, as well as wait staff in restaurants.

Driving Vehicles travel on the right side of the road. An international driver's license is accepted for renting a car, and you may

ADDITIONAL SOURCES:
EN.WIKIPEDIA.ORG/WIKI/GULF_OF_CALIFORNIA
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