The Strait of Lembeh is the name given to the narrow passage, 16 km long and 2 km wide, between the northern tip of the Sulawesi mainland and the inhospitable mountainous island of Lembeh. The waters that flow through the strait, between the Celebes (Sulawesi) and Molucca (Maluku) seas, carry huge concentrations of plankton that maintain the abundant and diverse marine life of the area. The nearby town of Bitung, a natural harbour and the principal port of northern Sulawesi, imports everything from fuel to foodstuffs, and it is also the departure point for ships carrying local products such as oil and tinned tuna.

The Lembeh Strait, off the northern tip of Sulawesi (formerly Celebes), Indonesia, is very rich in aquatic life forms, and the abundance of life to be seen during a single dive is almost unbelievable. The Swiss Franco Banfi has researched the area to bring this exclusive report and breathtaking photographic essay.

Text: Franco Banfi and Aquapress - Photos: Franco Banfi

The mountains adjoining the Strait of Lembeh are cloaked with vegetation, with palms dominating.
The surrounding area is dotted with small coastal villages and coconut palm plantations. The volcanic crater of Mount Klabat dominates the town, and the surrounding roads are crowded with minibuses and horse- or bullock-drawn carts. The market area is filled with local fruit, vegetables, and spices, and the main fish market, situated to the north of the port, sells fish caught the night before, brought in fresh every morning. Together the mountains of Lembah and the coast guard the strait, forming a natural barrier that protects the area from the worst of the monsoon, from the north-west and south-east, and making it possible to dive in the strait all year round, although the sea is calmest and the days sunniest in the months between May and October. Hence nearby Manado, the largest city in the northern “arm” of Sulawesi, attracts divers from all over the world, drawn to the strait by the splendid underwater precipices, the clear water, and the possibility of meeting with big fishes. In particular the fascination of the Lembah Strait lies in its unusual marine inhabitants and the ease with which these can be seen: for example, there are harlequin ghost pipefishes (Solenostomus cyanopterus) often seen in pairs, sheltering among gorgonians or amid the arms of crinoids. A number of different species of seahorse inhabit the strait: the common or spotted seahorse, which lives in shallow water, the thorny or spiny seahorse, which prefers deeper water, and the dwarf seahorse, which lives among some species of gorgonians. The last of these seahorses is very small and was discovered only accidentally in 1970, when a diver bringing a piece of gorgonian to the surface was amazed to find two minute sea horses attached to it. Soft corals and holothurians (sea cucumbers) play host to highly-coloured crabs, shrimps, and young fishes. More than 200 species of nudibranch have been reported in the Lembah Strait, and it is not unusual to see many different species during a single dive. As well as being a marvellous place for divers interested in these unique creatures and their habitat, the Lembah Strait also has much to offer those attracted by large marine animals. Migrating whales and groups of manta rays (Manta birostris) enter the strait at least twice a year to feed on the abundant plankton that can be found there in April and September as a sideeffect of the monsoon season. From time to time divers may also encounter humphead or giant wrasse (Cheilinus undulatus), small sharks, and turtles. Shoals of tuskfishes sporadically appear in the diving areas, opening their mouths in unison to feed all together. The wrecks of three ships from the Second World War can also be visited from depths of the strait.

The majority of dives take place in the northern part of the strait, in its narrowest section, as towards the centre of the channel strong currents exchange nutrients between the two seas that wash its two entrances. However, various dive sites are also to be found in more sheltered places, in the bays and curves along the coast. The area offers a great variety of habitats: small coral reefs, mangroves, sandy slopes and bays, and in such places it is possible to encounter most of the unusual creatures that the strait has to offer. The most effective diving technique involves descending slowly, closely observing the terrain in the minutest detail. On the reef, the struggle for survival is so intense that some creatures readily change their form or colour, camouflaging themselves against their current background in order to avoid the gaze of predators. Their mimicry is so perfect that a quick glance at the reef does not reveal their presence. Only close inspection at close quarters can reveal such delights as a tiny robust ghost pipefish mimicking a crinoid or a gorgonian, the tiny shrimps living symbiotically with a starfish, or the emperor shrimps living on the holothurians. Likewise the batfish (Platax sp.) may elude the onlooker’s first glance, but closer observation will reveal two eyes observing the observer...

The Strait of Lembah remains one of the most charming and least known places in southeast Asia. The area has become accessible to tourism only recently, but can easily be reached by car, crossing the peninsula from Manado to Bitung, a journey of only an hour. As we have seen, the waters offshore are home to some of the most fascinating and unusual sea creatures, from the great whales to the smallest and most fantastic fishes, and marine biologists believe that the area of sea between Sulawesi and Maluku in Indonesia may have the greatest biological diversity on Earth – starting from this hypothetical centre, the number of different species decreases in every direction. An unspoiled marine paradise and a fauna quite beyond compare, above or below water!
Fishes with rod, line, and bait: the frogfishes of the Lembeh Strait

Above: Frogfishes are without doubt amongst the strangest creatures in the sea. Left: Antennarius commersoni, and right: A. multicolorata.

Righthand page: Two frogfishes with different equipment. 1. A. pictus, with typical rod and line, the illicium and the esca (= bait), which the predator swings to and fro in order to attract its prey. 2. A. dorehensis has a different type of equipment, which looks rather like a worm but is actually the mobile anterior dorsal fin which all frogfishes use for their fishing. (More on the following pages.)
Fishes with rod, line, and bait: the frogfishes of the Lembeh Strait

For they do indeed go fishing, and this is essential to their survival. Because they are strictly bottom-dwellers, barely able to swim. Nature has not only provided them with a capacity for camouflage almost unrivalled in the animal kingdom, but has also given almost all of the 41 species in the family (Antennariidae) up to two methods of attracting prey. One is the “rod and line” from which Man has learned, and is actually the first dorsal ray, the so-called illicium (from the Latin llicere, to decoy); it is mobile, often very long, and thin as a hair. Almost all illicia end in an esca (the Latin word for bait). A rod and line of this sort, complete with bait, can be seen in photo 1. (Antennarius pictus) on page before. It is difficult to imagine a more perfect rod, and line! The mobile anterior dorsal can, however, also resemble a worm or a fish fry. Photo 2 on page before (A. dorehensis) clearly shows such a wriggling worm. This type of lure can be far larger and covered in lower lifeforms (see 3, 5 & 6 on these pages). Frogfishes share a number of other features, including a somewhat vertically compressed body, elbowed pectoral fins which they use as props, and a large upward-directed mouth into which they can suck the victims of their deception in less than 6 milliseconds - no other predatory vertebrate is known to be capable of such speed. In addition all frogfishes can camouflage themselves, colourwise, in every environment imaginable. Here are just a few examples: photos 1-4 & 6-9, 2 & 5 all show Antennarius pictus. Photo 6 is A. minusculus and photo 7-4 is A. striatus, one of the weirdest. None of the individuals shown is more than 10 cm long; and while A. commersoni can attain up to 33 cm, the smallest species, A. randalli, is just 10-20,5 mm long!
Seahorses, ghost pipefishes, etc in the Lembeh Strait

Common or spotted seahorse (Hippocampus kuda).

1&4. Likewise the robust ghost pipefish (Solenostomus cyanopterus), which often lives among sea grass, can match its colour to almost any surroundings. The little dragonfish (Eurycopeus draconis) can also “vanish”

against its background; it has a long rostrum with which it digs up tiny shrimps. 2&3. The harlequin ghost pipefish (Solenostomus paradoxus)

can change its colour very rapidly to match new surroundings.

2. This fantastic pair seem to be deeply in love! They are mandarinfishes (Synchiropus splendidus). 3. The short-finned dwarf flatfish (Dendrochirus brachypterus) is common on reef flats and in shallow lagoons.

3. The short-finned dwarf flatfish (Dendrochirus brachypterus) is common on reef flats and in shallow lagoons.

3&4. The harlequin ghost pipefish (Solenostomus paradoxus) can change its colour very rapidly to match new surroundings.

4. The leaf fish (Taenianotus tricirratus) is not very large (only 11 cm) but its colour-camouflage ability is excellent. 5. Bonapart’s marine eel (Ophichthus bonaparti) has its own special method of concealment - it buries itself in black sand. 6. The ribbon eel (Rhinomuraena quaesita) is pitch black as a juvenile, and only later changes to this splendid blue and yellow. Its strange snout has made it one of the most photographed fishes in the Indo-Pacific.
The monsters of the Lembeh Strait
1+3. The author was unable to identify this “monster” buried in the black sand. Perhaps it was a stonefish.
2. Head study of Beaufort’s crocodilefish (*Cymbacephalus beauforti*), which lies flat on the bottom like a crocodile.

Monsters and molluscs in the Lembeh Strait
4. Cephalopods were formerly thought to be monsters, but today they are a delicacy. This is a reef-dwelling *Sepia* species.
5. The nocturnally active sea slug *Pleurobranchus forskali* is often to be seen in the Lembeh Strait.
6. So is the egg cowrie (*Ovula ovum*), only 7 cm long, which has a snow-white shell beneath its black mantle.
Marine life in the Lembah Strait and how these creatures live in their habitat – to apply similar biotopes in the aquarium.

1. Cardinalfishes (*Rhabdamia* sp.) form a living halo around a coral outcrop richly festooned with soft corals, crinoids, and sea urchins.

2. Coleman’s shrimp, another commensal animal that is regularly seen on the surface of the fire urchin (*Asthenosoma varium*).


5. Lined surgeonfish (*Acanthurus lineatus*), Komodo Island.

6. The highly ornate mandarin fish (*Synchiropus splendens*) lives in reef crevices and is seldom seen.

7. The rare weedy scorpionfish (*Rhinopias frondosa*) is seldom seen by divers.

8. Commerson’s anglerfish (*Atennarius commersoni*), Rinca Island.

9. The beautiful blue sea squirt (*Neptheis fascicularis*) thrives below 15 m depth in cool waters off southern Komodo.

10. Aggregation of horned sea-stars (*Protoreaster nodosus*).

11. A 2 cm long goby (*Trimma macrophthalma*) shelters on a sponge next to a sea urchin.

12. Komodo’s southern shore is encrusted with an amazing variety of marine creatures. The dominant organism seen here is a blue sponge.

13. Hundreds of these 6 cm long sea cucumbers (*Pentacta lutea*) are seen on nearly every dive off southern Komodo.

14. Feather star, Komodo Island.

15. This new species of cardinalfish (*Apogon* sp.) is known only from the Komodo group.

16. Filamentous wrasse (*Cirrhilabrus filamentous*), a rare fish seen only in Indonesian waters.

17. Splendid dottyback (*Pseudochromis splendens*), western Flores Island.

18. Ribbon eel (*Rhinomuraena quaesita*), Kode Island.