

Frogfish Capital

躄鱼之都

One of the most desired subjects for macro photographers is the frogfish. A master of camouflage, a frogfish blends in with its surroundings so well that most divers will swim right past it without a second glance.

躄鱼是最理想的微距摄影对象。它极擅长伪装，如果隐藏在环境中，绝大多数潜水员都会目不斜视，径直错过它。

Text & Photo Daniel Geary



▼ A juvenile Ocellated Frogfish (*Antennatus* sp.) attempting to blend in with the surrounding sea grass
晴班福氏躄鱼幼鱼试图藏入周围的海草

Frogfish have a unique body shape. Most of them have no swim bladder, restricting their individual territory to a small area. Although they can swim, they rely on their pelvic and pectoral fins, which resemble limbs, to walk across the reef or sea floor. They have an upturned mouth and gills that are basically holes behind their pectoral fins. This gill location aids in movement by allowing them to swim by jet propulsion; they suck in water and expel it from their gills. They also have three dorsal spines above their head. The first dorsal spine is a modified rod and lure that frogfish use to catch prey, making them true anglerfish.

躄鱼的体型很奇特, 大多数都没有鱼鳔, 因此仅限于小范围活动。它们虽然会游泳, 但靠的是动物四肢一样的腹鳍和胸鳍, 在礁石和海床上爬行。它们的嘴向上翻卷, 鳃基本上就是胸鳍后面的孔。鱼鳃的位置有助于它们的活动, 因为它们使用鳃吞水吐水, 由此产生的气流可以起到推进作用。它们头上还有三道背棘, 第一道背棘是一根改良的捕猎杆, 用来“垂钓”猎物, 实属正宗的鮟鱇鱼。



▼ Freckled Frogfish (*Antennatus coccineus*) can be identified by the absence of a tail base
细斑躄鱼没有尾座, 很容易被辨认

Frogfish are found worldwide, except the Mediterranean, in tropical and subtropical waters. Only one species, the sargassumfish (*Histrio histrio*), can be found globally as it floats on the surface hiding in seaweed or other buoyant objects at the mercy of the currents. There are reports of sargassumfish as far north as Rhode Island in the United States and Norway in Europe. There are a few good spots in the Caribbean and Australia for frogfish sightings, but the best destinations are in the Indo-Pacific, especially Indonesia and the Philippines.

▲ A juvenile Randall's Frogfish (*Antennarius randalli*) small enough (1cm) to hide in the sand
一只约1厘米长的兰道氏躄鱼幼鱼, 躲在沙地里

躄鱼主要分布在全球除地中海之外的热带和亚热带海域。但裸躄鱼(*Histrio histrio*)除外, 在全世界海域都有分布, 因为它隐藏在海水表面的海草或其它浮游物体中, 随海流四处漂荡。据记载, 它的分布范围向北可达美国的罗德岛和欧洲的挪威。加勒比海和澳大利亚有一些不错的躄鱼观赏点, 但是最好的还是要数印度洋-太平洋区域, 尤其是印尼和菲律宾。

Dauin, located on the island of Negros in the Visayas of the Philippines, is one of the best locations in the world for frogfish, boasting of at least 11 species. There's an in-house marine biologist in Atmosphere Resorts that offers exclusive PADI Frogfish Specialist course. Ten species were found on the Atmosphere Resorts house reef this year and almost 400 individuals were found by their dive guides on the Dauin coast, documenting the dive site and depth with photos for identification.

菲律宾维萨亚斯群岛中内格罗斯岛上的道因是世界上观赏躄鱼最好的地点之一, 据称至少有11种躄鱼在此出现过。该地的Atmosphere Resorts有一位内行的海洋生物学家开设了PADI的躄鱼专长课。仅今年一年, Atmosphere Resorts的屋礁就发现了10种躄鱼, 约有400条, 均附有照片标示着具体的潜点位置和深度以供识别, 且均由度假村的潜导在道因海岸发现。



Frogfish are ambush predators preferring to wait patiently for prey to come and some not moving more than a few centimeters for weeks or months. Once the prey is close enough, the frogfish will open its mouth, increasing its volume up to 12 times to swallow its prey whole. This is achieved in six milliseconds which is almost too fast for most cameras. A frogfish can comfortably swallow prey its own size and, with a bit of effort, can swallow prey up to twice its size, although not always successful. Sometimes frogfish will eat each other if they get too close, especially after a male fails to convince a female to mate. Although fish and animals should never be touched to begin with, it is especially important to never move a frogfish closer to another frogfish as it could result in predation.

躑鱼捕猎的时候擅长打埋伏,通常都会耐心地等待猎物自己上门,有些甚至几周、几个月都不会挪动几厘米。等猎物足够近的时候,躑鱼就会迅速将嘴张大(最多能有原来的12倍大),将猎物整个吞进去。整个过程不过六毫秒,大部分相机都捕捉不到。一般来说,躑鱼可以轻轻松松吞下和自己体积相当的猎物,努力的话可以吞下两倍于自己的猎物(偶尔吞不下)。有时候两条躑鱼靠得太近就会开始相互蚕食,尤其是公躑鱼没能成功与母躑鱼交配时。无论何时我们都不应该碰触鱼类和动物,尤其不要将一条躑鱼移近另一条躑鱼,因为很可能导致其中一条被捕杀。

<div>i</div> Species	juveniles	adults
Painted 绒冠躑鱼	Dec - Apr	Mar - Aug
Giant 康氏躑鱼	Dec - Apr	Year Round
Clown 大斑躑鱼	Dec - Apr	Mar - Aug
Hairy 条纹躑鱼	Jan - Apr	Apr - Jul
Randalls 兰道氏躑鱼	Dec - Apr	Feb - Jul
Sargassumfish 裸躑鱼	Feb - May	May - Aug
Freckled 细斑躑鱼	Dec - Apr	Mar - June
Spotfin 钱斑躑鱼	Dec - Apr	Mar - Aug
Bandfin 网纹手躑鱼	Unknown	Unknown
Ocellated 睛斑福氏躑鱼	Dec - Apr	Mar - Jul

^ The growths on a Hairy Frogfish (*Antennarius striatus*) can mimic the surrounding habitat, such as algae or sea urchins

条纹躑鱼在生长时能模拟周围环境,譬如海藻或者海胆

About a week before a female frogfish is ready to mate, she will begin to visibly swell with eggs. A male suitor will approach and get her attention by extending all of his fins, shaking his body, and rapidly opening and closing his mouth. He will then attempt to touch her with his fin if she hasn't chased him away. Normally he will be rejected on the first few attempts as the female isn't ready to mate. Sometimes there are multiple males and they will fight. When the female is ready to accept the male, she is so bloated with eggs that she can barely move. The male is allowed to stand next to her and put his fin on her, signaling that he is ready. He will get a bit rough, pushing and shoving her in an attempt to get her to swim. When the female is finally ready, she will either start swimming off the bottom, or the male will physically push her up into the water column. The female rapidly spins around, releasing a gelatinous raft of eggs, while the male simultaneously fertilizes them as they both retreat to the seafloor. The egg raft, which is positively buoyant, will float away in the current.

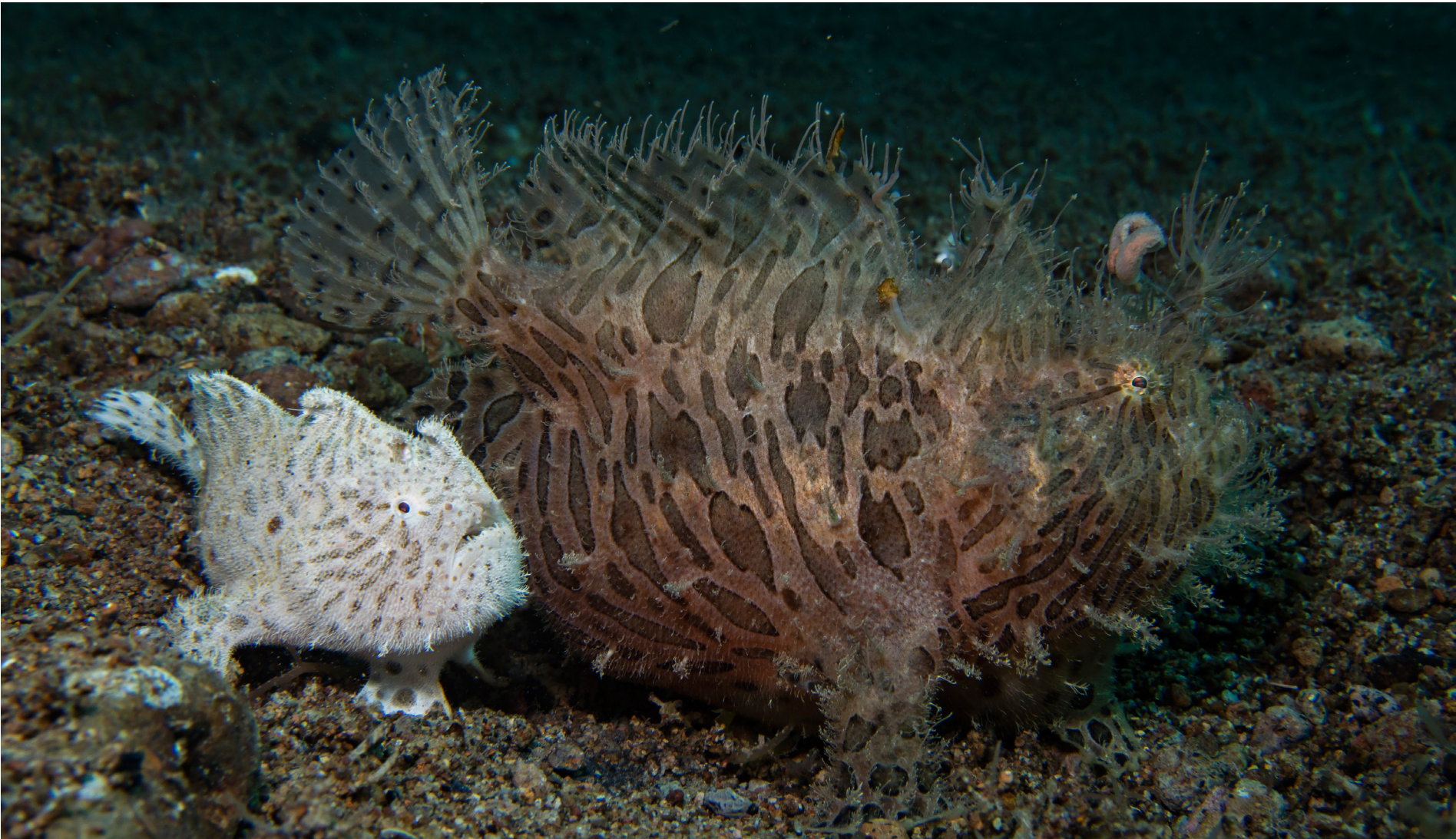
It is possible for two males to mate with a female – there is footage from Florida of two male frogfish simultaneously fertilizing the egg raft. The male will sometimes stay near the female, guarding her from other males throughout the mating season, but keeps his distance until she is pregnant again. In Dauin, Philippines, most of the mating action happens near the full moon. This is most likely due to the stronger currents and tides at this time, maximizing the dispersal of eggs throughout the area.

◀ A pregnant brown female Hairy Frogfish has attracted a smaller, white male who will stay next to her until they mate

一只怀孕的棕色条纹躑鱼吸引了一只体型较小的白色公鱼, 它会一直待在母鱼旁边等待交配

▶ Spotfin Frogfish (*Antennatus nummifer*) are nocturnal and are usually found in Dauin hiding beneath rocks in very shallow water

钱斑躑鱼是夜间活动的生物, 通常藏在道因浅滩的石头下面



▲ This juvenile Sargassumfish (*Hystrio histrio*) was found clinging to a floating piece of seaweed during a night dive

在夜潜时发现这只裸躑鱼的幼鱼, 它正攀附在漂浮的海草上

▶ Bandfin frogfish (*Antennatus tuberosus*) are extremely rare, have no lure, and have dorsal spines that are fixed in place

网纹手躑鱼非常罕见, 没有诱饵, 背鳍棘也是固定的

母躑鱼在交配前一周左右会开始排卵, 肚子明显隆起。公躑鱼得到信号便会靠近, 张开所有的鳍, 抖动身体, 而且嘴巴迅速地一张一合, 吸引母躑鱼的注意。之后如果对方不排斥, 它便会试图用自己的鳍触碰她。通常, 如果母躑鱼还没有准备好, 它的前几次触碰都会失败。有时候求偶的公躑鱼比较多, 它们就会打起来。母躑鱼准备好交配的话, 她的肚子就会膨胀到寸步难移。公躑鱼这时候就可以靠近她, 将鳍搭在她身上, 表明自己已经准备好。他会表现得有些粗暴, 连推带挤地试图将她推离海床。当母躑鱼完全就绪, 她就会游离海床, 或者由配偶将她强行推进洋流。然后, 她会飞速旋转, 排出一群胶状的卵, 与此同时, 公躑鱼一边给它们授精一边同母躑鱼落回海床。受精后的卵由于非常轻, 会随着洋流飘散。

两只公躑鱼也可以同时与一只母躑鱼交配, 有人就曾在佛罗里达州拍摄到两只公躑鱼同时在为鱼卵授精的场景。在交配季节, 公躑鱼有时候会守在母躑鱼旁边, 防止其它同类骚扰, 但母躑鱼再次怀孕之前它也会保持一定的距离。在菲律宾的道因, 大多数交配行为都在月圆前后, 很可能是因为这时候的洋流和潮汐更强, 可以将受精卵最大限度地分散开。

Frogfish begin their lives as plankton, floating in the currents for one or two months. The raft, whether due to weather or predation will break up and allow the baby frogfish to disperse over large distances. Once they reach a size of around 5mm, the baby frogfish will sink to the bottom, still nearly translucent, and rapidly change color to blend in with the environment. Divers usually find them when they are 6-7mm in size. Their dorsal spines are not in the correct position at this size so they have a big forehead. Baby frogfish are born with the ability to change color – There was a 7mm juvenile at the Atmosphere Resorts House Reef that changed color from orange to maroon in less than 18 hours.

Baby frogfish are normally found in the sand or seagrass with survival tactics including: blending into the environment, showing itself as dangerous, or mimicking an animal. Many babies look like rock or sand. Generally, babies with this coloration don't move much. Juveniles such as the painted frogfish (*Antennarius pictus*) and giant frogfish (*Antennarius commerson*) are red, yellow, or orange – an advertisement that they are dangerous and should not be eaten.

▼ *Sargassumfish have body patterns and texture that mimic Sargassum, a floating seaweed, and are very good swimmers*

裸躑鱼非常善于游泳，身上的图案和花纹都模拟马尾藻，一种漂浮的海藻

起初的一两个月，躑鱼像浮游生物一样漂浮在洋流里。然后在天气或猎食的影响下，鱼卵群会分开，躑鱼幼鱼可以分散得更远。它们长到5毫米长的时候就会沉到海底，此时仍是近乎透明的，但它们会迅速变换色彩融入周围环境。长到6至7毫米的时候潜水员们就能注意到它们了，但这时它们的背棘



还不在正位，因此看起来前额非常大。躑鱼幼鱼生来可以变色，Atmosphere Resorts度假村 House Reef潜点曾发现一条7毫米的躑鱼幼鱼在不到18小时的时间里从橙色变成了栗色。

躑鱼幼鱼通常在沙地或海草中出没。它们的生存技能有：隐入周围

环境，将自己表现得很危险或者模仿其它物种。很多躑鱼幼鱼的颜色跟岩石和沙子很接近，一般来说，这种颜色的躑鱼幼鱼不经常移动。躑鱼 (*Antennarius pictus*) 和康氏躑鱼 (*Antennarius commerson*) 的幼鱼颜色艳丽，有红色、黄色或橙色，表示自己很可能有毒，不可以误食。



▲ *A red male Painted Frogfish (Antennarius pictus) trying to push a pregnant female off of a sponge so they can mate*

一只红色的绒冠躑鱼公鱼，正在奋力将一只怀孕的母鱼推下海绵，这样它们才可以交配



▲ A juvenile Clown Frogfish (*Antennarius maculatus*) exhibiting one of the most common color variations of that species

一只大斑躄鱼的幼鱼, 这是该种类的躄鱼最常见的颜色

▼ Juvenile Giant Frogfish (*Antennarius commerson*) can usually be found camouflaged on or around sponges

康氏躄鱼的幼鱼, 通常会躲藏在海绵之上或附近

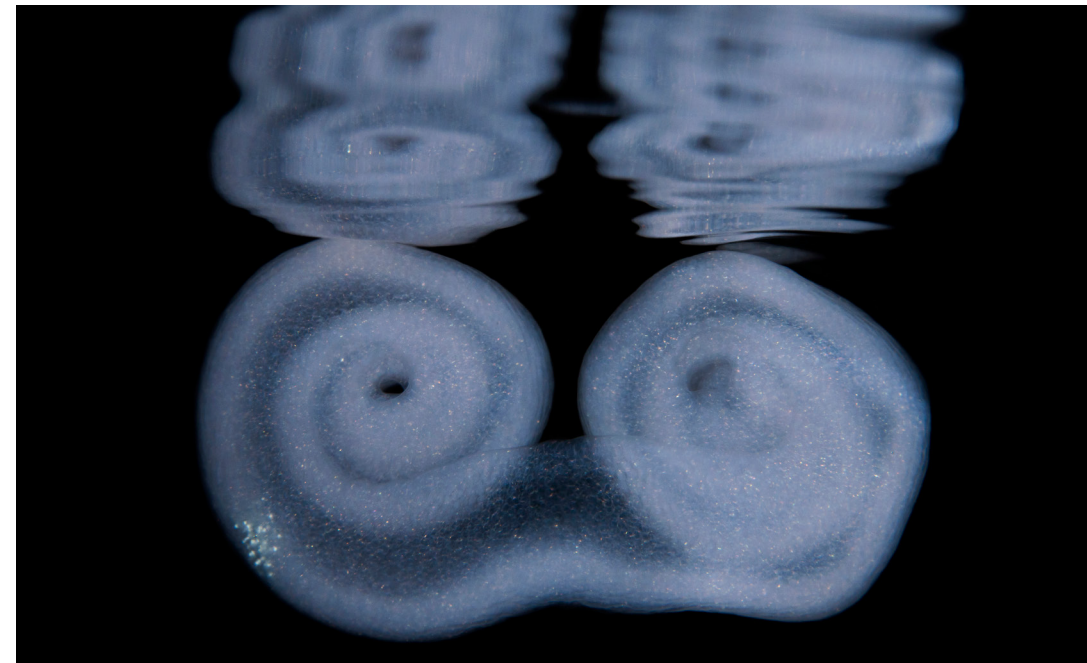


Clown frogfish (*Antennarius maculatus*) are known to utilize both coloration and behavior to mimic nudibranchs and flatworms. There are two juvenile color variations of this species: the normal base color is white or yellow, with a saddle pattern of red or orange, which mimics a nudibranch. A rarer coloration is a black body, blue outline around the fins, and orange polka dots. This is a direct mimic of Linda's flatworm which has the exact same body pattern. Both of these variations not only have the coloration of a flatworm or nudibranch, they also move around to enhance their mimicry. They wave their dorsal spines and dorsal fin while they walk which can be quite convincing, even to a diver.

Although frogfish are rare in many parts of the world, they can be found at almost every dive site in Dauin. Frogfish can be seen year round, with the best months for juveniles from December to March and the best overall season with juveniles and adults, happening between April and June. With consistent sightings, an abundance of species, and a marine biologist who specializes in frogfish, a trip to Atmosphere Resorts in Dauin is a must for any frogfish lover. **EZ**

大斑躄鱼的特点是在颜色和动作上都模仿海蛞蝓和扁虫。它的幼鱼有两种颜色:一种是白色或黄色打底,上面有块马鞍形的红色或橙色,类似海蛞蝓;另一种比较罕见,通体黢黑,鳍带有蓝色镶边和橙色波卡圆点,直接模仿了Linda扁虫的配色。它们不止模仿颜色,还游来游去来增加模仿的逼真度。它们一边爬行一边摇晃着背棘和背鳍,真是惟妙惟肖,连潜水员都分辨不出来。

虽然躄鱼在世界上很多地方都很罕见,但在道因,几乎每一个潜点都有它们的身影。这里全年都可以看到躄鱼,观看躄鱼幼鱼最好的月份是12月到来年3月;既能观看躄鱼幼鱼又能观看成年躄鱼的最好月份是4月到6月。道因的Atmosphere Resorts度假村有品种繁多的躄鱼连续不断地露面,还有一位专攻躄鱼的海洋生物学家,绝对是躄鱼控们的必游之地。



▲ A raft of frogfish eggs floating at the surface after the two Painted Frogfish on the previous page successfully mated

一圈躄鱼鱼卵浮在水面上,正是41页那两只绒冠躄鱼交配成功后产的卵



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