

MYSTERIOUS CREATURES OF THE DEEP

This cephalopod is the least seen of its group and only found in the oceans of the East Indian, West Pacific and the Coral Sea. Its deep water reef habitat in up to 500 metres was originally discovered through baiting by deep sea fishermen. Living at this depth the chambered nautilus is elusive to any human contact.

The nautilus dates back some 400 million years and fossils confirm that it has remained unchanged throughout this period. In prehistoric times there were approximately 10,000 different species but this has reduced to only six species being identified today. This strange looking creature is a member of the cephalopod family and a close relative to the octopus, cuttlefish and squid which have adapted over time to their particular environments but they all have one thing in common – jet propulsion. Water is taken into the gill chamber and is expelled through a siphon near the tentacles propelling it in the opposite direction away from predators in an explosive manner reaching a speed of up

to two knots. Its unique shell not only acts as an outer protection but contains several gas filled chambers that allow the nautilus to control its buoyancy by increasing or decreasing the volume of gases and liquid through a series of holes and tubes.

It was once thought that the nautilus could only survive in deep water pressures (up to 800m) but research has shown that they're more sensitive to water temperature and have survived at shallower depths providing the temperature is maintained between 18°C to 22°C. They rise to levels of 100 metres to feed at night as the water temperature falls, returning to the depths as the sun rises and before the temperature increases the next day. It appears that the dark depths in which they live ensures a safer habitat from predators that can easily capture them due to the slow nature of their movements - its protection being to fully withdraw into its smooth, white shell. Each individual has a unique

patterned shell and can be easily recognised when researched over periods of time.

The nautilus also differs from its cousins in having up to 90 tentacles. They are formed in two circles and are without suckers but are used actively to catch its prey of small crustaceans and fish which are then dispatched by its very powerful beak. Dead creatures of all types are another big food source and are located through an incredible sense of smell which compensates for their poor eyesight. The eye has no lens and is simply a small hole that lets in any ambient light. Fortunately, because the creature is very energy efficient in the water, it only needs to feed in limited amounts on a monthly basis.

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> ORIGINS DATING BACK SOME 400 MILLION YEARS ...



Considerable scientific studies have been carried out to establish their breeding patterns since the mid 80s. Mature adults breed each year. The male passes its sperm into the female via its four specialised tentacles known as *spadix*. They mate whilst facing each other, a process that can last up to 24 hours. The female then fertilises her eggs, approximately 12, and releases them in singles or as a group onto the reef. It's assumed that the fertilised eggs would be attached to the reef in shallower water as it's thought that the slight increase in water temperature at these shallower depths assists incubation. Eggs have never been seen in the wild and therefore current knowledge is based on laboratory controlled studies only. Once the eggs are released it takes between nine to 12 months for the embryos to fully develop and hatch to a size of between 25-30mm. The hatchlings drift in the water column and feed on passing plankton until the growth of their chambers are complete, then they move towards deeper

waters. The life span is unusually long and is thought to reach up to 20 years.

The Nautilus has experienced a massive decline in numbers as they've been collected for the shell trade for many years, but as pressures for conservation increases, the trade in these amazing creatures is slowing. Exporting of the shells in countries such as Indonesia is illegal.

Why not experience diving with the nautilus by joining an excursion arranged by specialist dive operators who will provide you with a unique, close up encounter with this mysterious creature of the deep?

Specialist Dive Operators - Palau
Fish'n Fins - www.fishnfins.com
Sam's Tours - www.samstours.com

Exploring the 30 metre seafloor near the bow of the *Liberty* shipwreck at Tulamben, Bali, I was essentially temporarily bored as I failed to find any subjects that suited my macro lens and excited me! So I turned my attention to the mirror basslets that were darting about as they are one of the most photogenic of this fish family and, though difficult and time consuming to capture, I decided I had nothing to lose.

After a few moments of spinning and twisting following the fish's erratic movements and shooting every time the auto focus locked on, I was rewarded when the fish stopped dead still in the water column, spread all its fins in a fantastic display that turned my mundane dive into a moment of magic. Anticipating this to be just a split-second moment I framed and shot just before a cleaner wrasse slipped perfectly into frame. At that point I realised the display had been a signal that the fish was receptive for the cleaner wrasse's attention. I shot another quick burst of images trusting that my strobes would keep up with the motor drive. It just proves that you never know when the next great image is going to present itself, but one thing is certain, it's often over in a split second!

Image by Kevin Deacon. Location: Liberty wreck, Tulamben, Bali. Genre: Macro

Photography Data: Nikon D7000, Nikkor 60 MM lens, Seacam housing, Dual Seacam strobes, Seacam flat port, manual exposure mode. ISO 100. Exposure f22 @ 1/125th second.

Photo Hints: Being successful at capturing images of fish active in the water column is a hit and miss affair requiring good buoyancy and diver skills. You'll need to shoot a lot as the action is so fast you might not be achieving perfect focus or framing and, on reviewing your images, it's not unusual to find you've cut off fins or tails. However, perseverance and patience has its reward and today's modern auto focus lenses give us an advantage we never had in the old days of manual focus. Then we wouldn't attempt such challenging subjects due to the degree of difficulty, cost of film, limited shots available and low success rate. These days I often find that investing more time with difficult subjects like this has its own reward. Unique images of a moment in marine life behaviour – the rarest images of all.

Equipment Comments: I would not have captured the magic moment when the

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THE BASSLET AND THE CLEANER WRASSE



cleaner wrasse was perfectly positioned without the exceptionally fast recycle times of Seacam Sea Flash 150 strobes. These strobes are currently the most powerful and versatile flash units in the world. Since they can still provide effective macro lighting at very low power settings, the strobes can often keep up with a photographer shooting fast action sequences.

Interesting Facts: The mirror basslet *Pseudanthias pleurotaenia* is the largest of

the basslets. They prefer the deeper coastal dropoffs compared to many other members of the family that are found schooling in large numbers on shallow coral reefs.

The cleaner wrasse *Labroides dimidiatus* is a specialist cleaner that occupies cleaning stations visited by fish large and small. However, many other fish have a part time role as cleaners, including butterflyfish and angelfish that are frequently seen attending to manta rays, sharks and giant sunfish.

Kevin Deacon is one of the pioneers of Australian underwater photography. His images have been published worldwide in prestigious books, magazines and advertising media. Kevin and Cherie Deacon along with their team of scuba and photo instructors, dive masters and tour guides operate Dive 2000 in Sydney, Australia's most experienced dive, travel and underwater photographic equipment centre. www.dive2000.com.au Dive 2000 is also the Australian importer, distributor and service centre for Seacam Products. www.seacam.com