



# ANIMA MUNDI

*Adventures in Wildlife Photography*

Issue 29, Year 8 - January 2018

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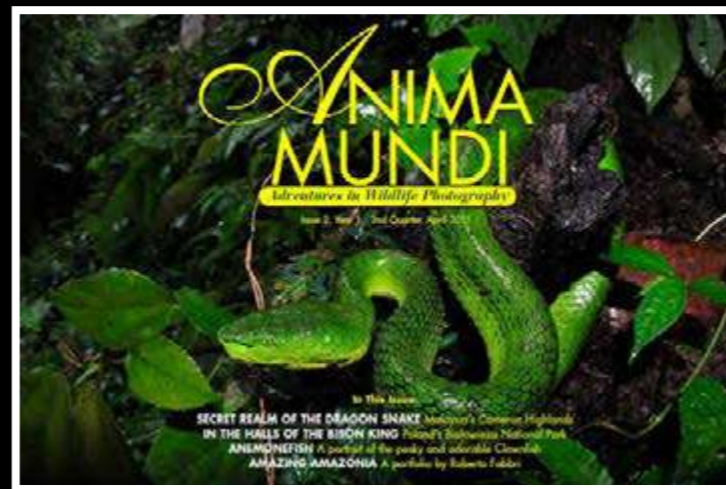
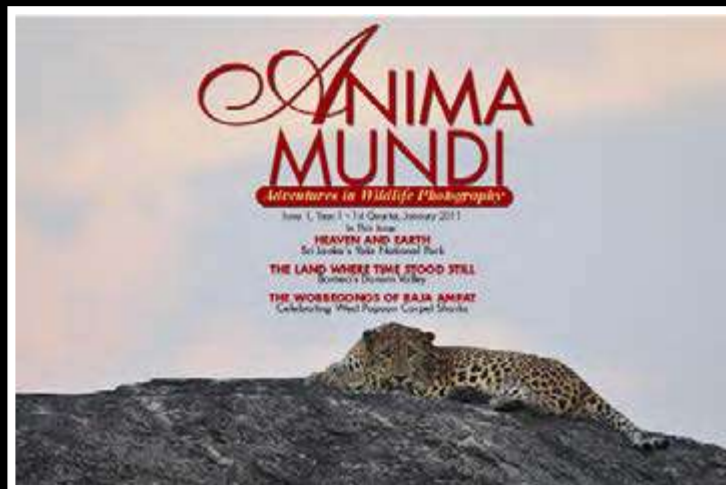
**SCOOP** A snake of legend

**SINGING IN THE RAIN** Sri Lanka's Sinharaja

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**THE LENS OF THE LAW** A Portfolio by Kuntala Roychoudhury

**AUSTRALIAN GIANT CUTTLEFISH** Sexy swinging sepias

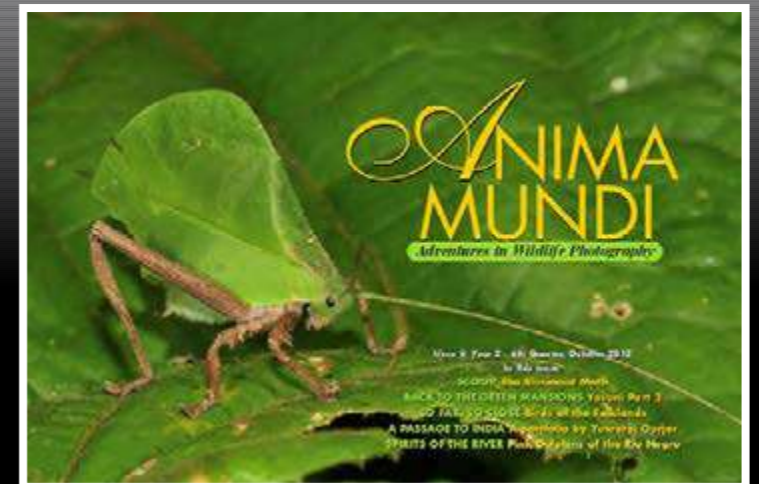
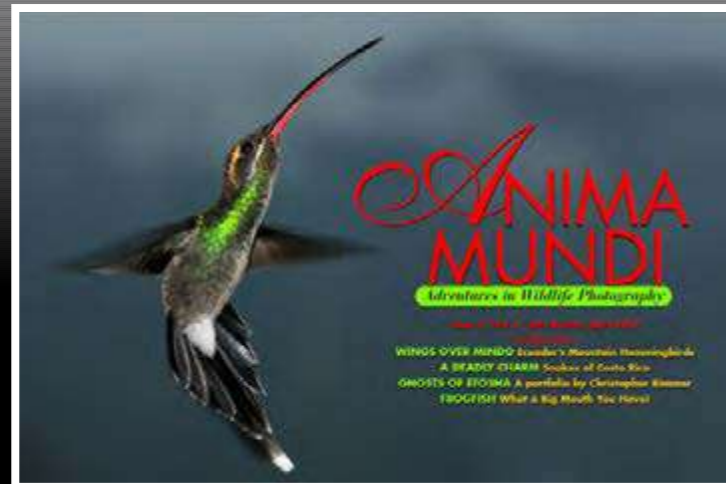
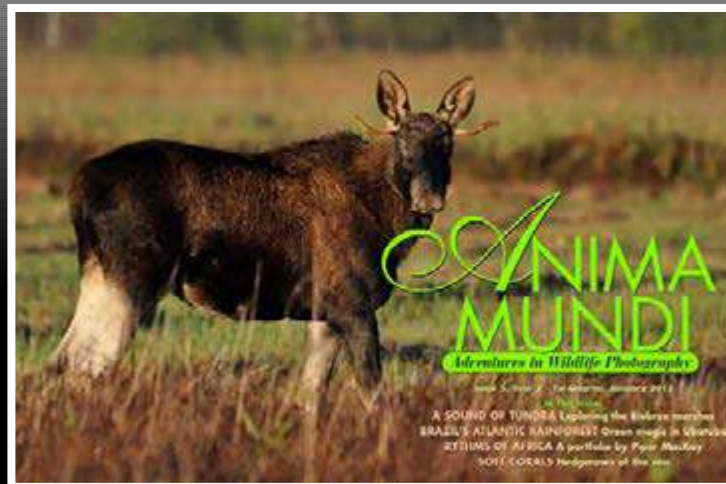


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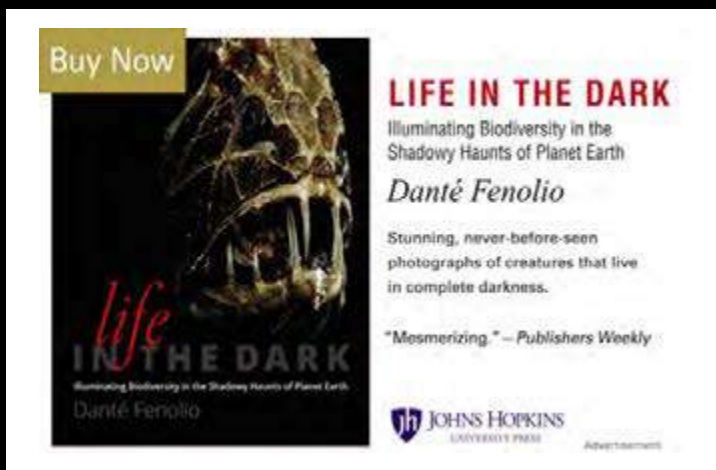
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*Dear Andrea & Antonella,*

*I have just finished reading your latest edition of Anima Mundi and I was inspired to write and say how much I am enjoying your publication and following your adventures. My wife and dive/photo partner Cherie and I were so inspired by your feature on Yala National Park that we booked a Safari with Eco Team and we had a fantastic time. It was exactly as portrayed in your article and we also followed your recommendations for visiting the cultural triangle in Sri Lanka. As we were leading one of our dive tours on a live aboard exploring the Maldives last June, a private side trip to Sri Lanka was clearly not to be passed up due to your information. So, I guess it's good news for you both that others are reading and responding to your work. So, we just wanted to give you some feedback, say hello and wish you all the best with your future adventures. Keep up the great work.*

Kevin & Cherie Deacon  
Dive 2000  
Sydney, Australia.  
[www.dive2000.com.au](http://www.dive2000.com.au)

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■ Pale-mandibled  
Araçari Pteroglossus  
erythrogygius, Andean  
cloud forest, Mashpi  
Lodge and Private  
Nature Reserve,  
Chocò, Ecuador -  
see page 49.



# ANIMA MUNDI

*Adventures in Wildlife Photography*

## A Dripping Wet New Issue

As we enter the eight year of our existence with this very issue, we cannot help adding our voice to that of those who - all over the world - are worrying and clamoring daily about climate change and lack of water. We live in Northern Italy - a notoriously rainy and foggy part of Europe - and yet as we are writing this editorial it has not rained for nine months in a row now. How can global climate change be denied? How can the human race be so blind to what is happening to our planet? To exorcise our worries, we have then assembled a dripping wet issue - you'll be hardly pressed to find a dry destination among these pages!

We start at page 4 with an exceptional scoop by our Indian contributor, herpetologist Vishal Santra, who tells us the story of his unique encounter with the very uncommon Kaulback's Pit viper in the humid montane forests of Arunachal Pradesh; we then take you - starting at page 8 - to Sri Lanka's glorious Sinharaja Natural Reserve, the island's only relict patch of surviving rainforest and surely one of the planet's wettest destinations - inhabited by spectacular endemics, dripping with water and dew, crisscrossed by a thousand streams, brooks and rivulets.

From there - starting at page 49 - we travel then to the opposite side of the world and take you to an equally beautiful and dripping wet travel

destination - the incredibly luxurious Mashpi Lodge of Ecuador's species-rich but severely endangered Chocò region, a steel and glass high-tech oasis of comfort hidden deep among the glistening mists of the Andean rainforest and a stunning example of habitat and environmental conservation successfully undertaken by a private company. Mashpi Lodge is a man's dream vision come true - and it shows!



At page 70 you can then enjoy Kuntala Roychoudhury's Personal Portfolio - there's some water there too! - and finally we'll take you under the surface of the ocean on page 79 thanks to our Bali-based contributor Don Silcock's truly stunning images and fascinating story about the surprisingly swinging sex life (it's true!) of the

Australian Giant cuttlefish *Sepia apama*.

Finally, let us remind you that our Parting Shot column is now open for publication to reader's photos. So if you would like to be featured in it and think you have clicked an interesting wildlife image, just send an email to [editor@animamundimag.com](mailto:editor@animamundimag.com) and we'll gladly take a look at it!

In the meantime...

Have a good trip!  
Andrea & Antonella Ferrari  
[www.animamundimag.com](http://www.animamundimag.com)

We appreciate your feedback  
- constructive criticism, useful  
suggestions and interesting  
contributions are welcome.  
Please drop us a line at  
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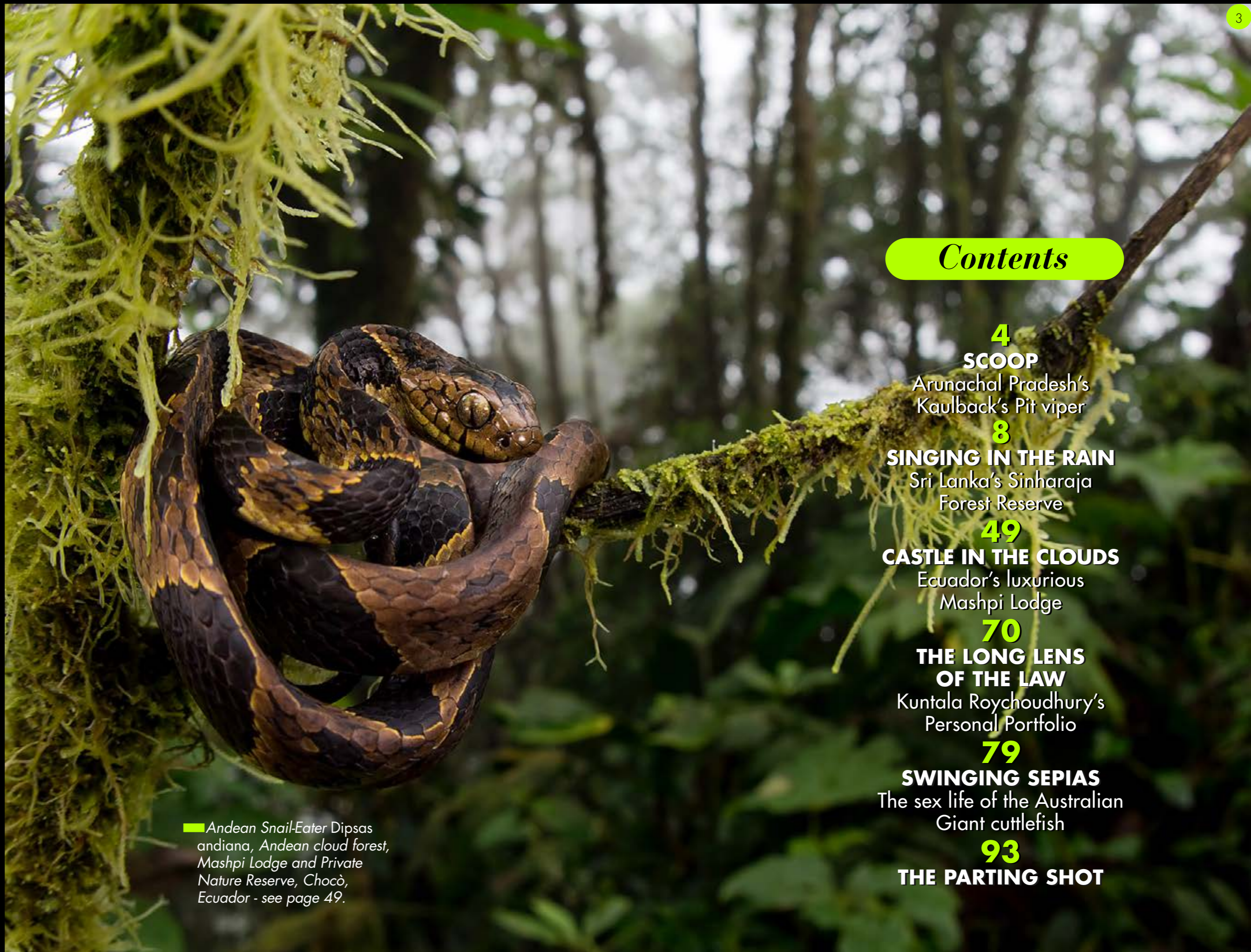
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■ *Andean Snail-Eater* *Dipsas andiana*, Andean cloud forest, Mashpi Lodge and Private Nature Reserve, Chocò, Ecuador - see page 49.

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**THE PARTING SHOT**



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Protobothrops kaulbacki's coloration is green dorsally, with a vertebral series of dark angular spots, which may be joined to form a zigzag stripe. The top of the head is black with yellow stripes. Ventrally, except for the whitish throat area, it is gray with large squarish or crescent-shaped yellow spots.

# INDIA'S KAULBACK'S LANCE-HEAD PIT VIPER **A SNAKE OF LEGEND**

VISHAL SANTRA ENCOUNTERS A VERY UNCOMMON AND MUCH FEARED SPECIES IN THE MISTY FORESTS OF ARUNACHAL PRADESH



The adult males of this beautiful and very rarely observed species may attain a total length of 134 cm (53 in), which includes a tail 22.5 cm (8.9 in) long. Females may grow longer: maximum total length 141 cm (56 in), tail 23 cm (9.1 in).

TEXT AND PHOTOS  
BY VISHAL SANTRA

*K*aulback's pitviper or Kaulback's lance-head pitviper *Protobothrops kaulbacki* is a very poorly known snake. Not much is known about its natural history or ecology. Mild temperament, slow moving but capable of sudden fast strikes. Known to hunt small to medium sized mammals and birds. The specimen we found in Arunachal Pradesh was almost 6 meters up on the crux of a tree. And during release we observed that it climbed more than that. Females fiercely guard their clutch of eggs. Eggs are laid inside tree hollows and under huge fallen logs. The Kaulback's pit viper is feared by the

Nyishi tribes of Arunachal Pradesh to insane levels. They call it the "Barta". Whenever the Nyishi tribals come across one, it is sure to be killed. The beauty of this species is physical as well as divine. I mean to say that the magnificence, the charm and aura that this species carries is greatly magnified by the type of location and habitat it is found in. If you get to travel deep into the lush evergreen forests of Arunachal Pradesh the splendor and smell of the forest takes over your mind and every living creature you come across becomes beautiful and magical. I have experienced this. Forests of this kind have

so much impact on you that you lose it. The incredible power and originality of such forests almost make me cry. And the most amazing thing is that when I stand in front of such lush magnificent forests I cry and till date I have not been able to figure out why I cry. It is just so powerful that tears roll down automatically and you feel blessed and at complete peace. Also another fact that makes *Protobothrops kaulbacki* more special is the fact that it has been encountered so less and by a handful of people. Myself being one of the lucky among them. It is indeed an incredible species to look at and admire. ●

This species is ■  
oviparous. The adult  
female lays a clutch of 6-32  
eggs in a hole in the ground,  
and then remains with the  
eggs to guard them.  
The hatchlings are 26-27 cm  
(about 10½ inches)  
in total length.





*Protobothrops kaulbacki* had originally been known only from the type locality, which is "Pangnamdim, north of the Triangle, Upper Burma" (Myanmar). In 2005 it was reported that it is also found in China, and now it has also been reported from Northeast India.

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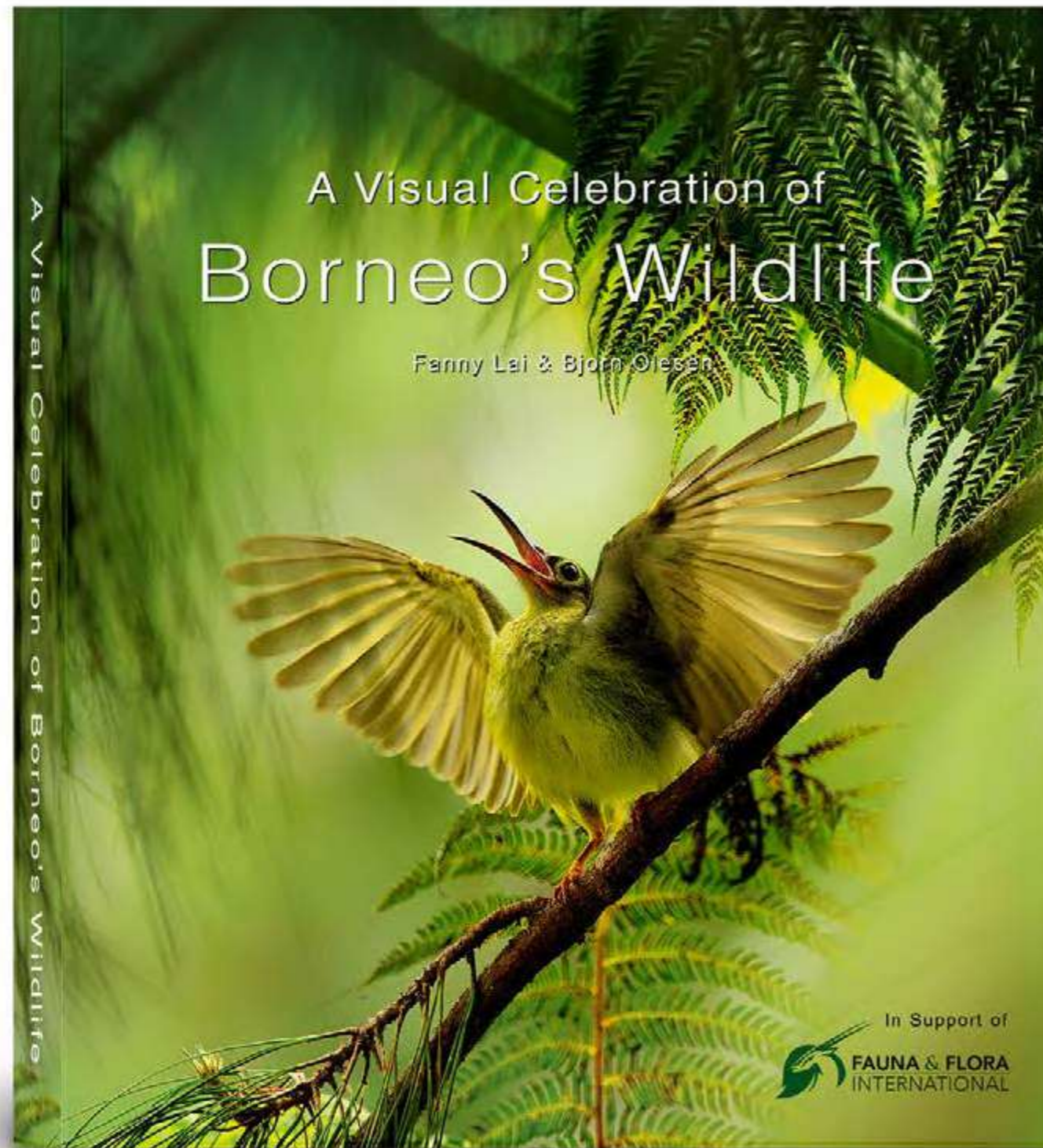
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SINHARAJA FOREST RESERVE

# SINGING IN THE RAIN

The last remaining patch of rainforest  
in the tropical island of Sri Lanka  
is a veritable - and occasionally challenging -  
treasure trove of fascinating endemisms

■ *Green forest lizard Calotes calotes, commonly encountered in Sinharaja National Park. On the opening spread, another iconic species of the Sinharaja rainforest - a pair of the stunningly camouflaged Sri Lankan frogmouth Batrachostomus moniliger.*



■ *Gloriously beautiful, the Ground orchid Arundina graminifolia is a common sight in the Sinharaja secondary forest.*



TEXT BY ANDREA FERRARI  
PHOTOS BY ANDREA & ANTONELLA FERRARI

Encompassing the last extensive patch of primary lowland rainforest in Sri Lanka, world-famous but little-visited Sinharaja Forest Reserve is situated in the south-west lowland wet zone of the island. More than 60% of the trees found there are endemic, and many of them are considered rare. There is much endemic wildlife, especially birds, but the reserve is also home to over 50% of Sri Lanka's endemic species of mammals and butterflies, as well as many kinds of insects, reptiles and rare amphibians. Covering an area of 8,864 ha (about 11,000 ha according to some sources and if one takes the proposed reserve zones in consideration) and ranging from an altitude of 300 to 1,170 meters, it consists of 6,092 ha of Forest Reserve and 2,772 ha of Proposed Forest Reserve. This narrow strip of undulating terrain encompasses a series of ridges and valleys that are crisscrossed by an intricate network of streams. Draining to both the south and

north, these waterways flow into the Gin River on the southern boundary of the reserve and Kalu River via the Napola Dola, Koskulana Ganga and Kudawa Ganga on the northern boundary. Annual rainfall over the last 60 years has ranged from 3614 - 5006mm with most of the precipitation during the south-west monsoon (May-July) and the north-east monsoon (November - January), but such data can be misleading, making the planning of a visit an unpredictable venture. This is a very, very wet forest, which can only be explored on foot and which often requires negotiating muddy ground and wading small, shallow streams despite the presence of a good network of well-maintained forest tracks. Be prepared - Sinharaja can be jealous of its wonders and treasures (well, at least it was in our case - it never stopped raining while we visited, much to our annoyance since too much rain will keep many animal species in constant hiding!),

*continued on page 12* ➤

■ Another strikingly beautiful and strictly endemic species from the Sinharaja wet forest - the Sri Lanka blue magpie or Ceylon magpie *Urocissa ornata*.





■ The strange Hump-nosed lizard *Lyriocephalus scutatus* is one more extraordinary Sinharaja endemic.

and expect having to pick lots of blood-filled leeches from your tired limbs in the evening. It is worth the trouble of course - but be prepared, as wildlife photography in a dark and very wet rainforest full of leeches is anything but easy, and can often prove frustrating at the very least. But yes, it's worth it - after all, Sri Lanka is home to 830 endemic species, of which 217 trees and woody climbers are found in the lowland wet zone. Of these, 139 (64%) have been recorded in the reserve, including 16 rare species. Faunal endemism is particularly high for birds with 19 (95%) of 20 species recorded in the reserve being endemic to Sri Lanka. Endemism among mammals and butterflies is also greater than 50%. A number of threatened, endangered and/or rare species occur within the reserve including Sri Lankan leopard *Panthera pardus kotiya*, Indian elephant *Elephas maximus*, endemic Purple-faced Langur *Presbytis senex*, Sri Lanka wood pigeon *Columba torringtoni*, Green-billed Coucal *Centropus chlororrhynchus*, Sri Lankan white-headed starling *Sturnus senex*, Sri Lanka blue magpie *Urocissa ornata*, Ashy-headed babbler *Garrulax cinereifrons* and Sri Lankan broad-billed roller *Eurystomus orientalis irisi*.  
continued on page 14 >

■ The beautiful Sri Lankan pit viper, Ceylon pit viper or Green pit viper *Trimeresurus trigonocephalus* is another endemic species and can be occasionally observed coiled in ambush on low branches.



■ A tiny and unidentified planthopper probably belonging to the family Dictyopharidae or Tropiduchidae.

### A UNESCO WORLD HERITAGE SITE

Sinharaja has been designated a World Heritage Site by UNESCO as it is the last remaining and relatively undisturbed patch of tropical humid evergreen forest in Sri Lanka. The flora found in the reserve is a relic of Gondwanaland, and it provides an important component to our scientific understanding of continental drift and an outstanding site for the study of the processes of biological evolution. A geological feature of considerable interest is the presence of the Sinharaja basic zone, with the reserve located within the transition zone of two important rock types characteristic of Sri Lanka; the south-western group and the highland group. Endemism within the area is extremely high. Protecting the last viable remnant of Sri Lanka's tropical lowland rainforest, Sinharaja is home to at least 139 endemic plant species within two main types of forest: remnants of *Dipterocarpus* in the valleys and on the lower slopes, and secondary forest and scrub where the original forest cover has been removed.

continued on page 17 >






■ Left, Lantern bug *Pyrops maculatus*, an endemic species; right top, Tree-climbing freshwater crab *Perbrinckia scansor*, another endemic; right bottom, wasp-like moth *Syntomoides imaon*.







Green forest lizard   
Calotes calotes.

Sixteen of the endemic plant species within the reserve are considered rare, including the endemic palms *Loxococcus rupicola* and *Atalantia rotundifolia*. Faunal endemism is also high, particularly for mammals, birds and butterflies, exceeding 50%. Nineteen (95%) of Sri Lanka's 20 endemic birds are present in the property, which is also home to leopard and Indian elephant, both of which are threatened species. So, according to UNESCO criteria, Sinharaja Forest Reserve forms a sufficiently large conservation unit for the in-situ conservation of rare and endangered species while sustaining the on-going biological evolutionary processes for which it was inscribed. It is surrounded by 13 other adjacent natural forest areas that provide an added layer of protection to the property, whose boundaries however require further definition and demarcation. Efforts are **continued on page 21** ➤



Antonella ■  
photographing a male  
Hump-nosed lizard  
*Lyriocephalus scutatus*, a  
rainforest-dwelling  
endemic species.



Left, Pitcher plant *Nepenthes distillatoria*; right, male and female Sri Lankan frogmouth *Batrachostomus moniliger*.



■ A tiny Ant-mimic  
Praying mantis  
*Odontomantis* sp.  
nymph.





■ Left,  
*Sri Lankan or  
Brown-patched  
Kangaroo lizard  
Otocryptis  
wiegmanni,  
another endemic;*  
right, male  
*Stag beetle  
Odontolabis  
nigrita.*



also being made by the management agency to further enhance the conservation status of the reserve through regulation of land uses occurring in the area surrounding the property, in the hope of further reducing the impact of intensive land use on the values of Sinharaja. Illicit timber felling, mining for gems and poaching (by locals and by foreign reptile and amphibian collectors for the exotic pet market) continue to be of concern with regards to the impacts on the values and integrity of the reserve, but the high level of public support for nature conservation and the large number of government bodies involved in regulation and proposal approval luckily results in strong opposition to resource exploitation proposals.

### CURRENT STATUS AND PAST HISTORY

Noted as a national heritage wilderness area on October 21st 1988, the majority of the area within the property was originally declared a forest reserve on May 3rd 1875, providing a long history of protection. The property is afforded the highest level of legal protection under the National Heritage and Wilderness Area Act of Sri Lanka and almost all the peripheral natural forests along the boundary have already been declared

*continued on page 25* >

■ Flower Praying mantis *Creobroter* sp. nymph.



■ *Tiger beetle*  
*Calochroa*  
*discrepans* - a very  
small but ferocious  
predator of the  
rainforest floor.





Top left, Sharp-snouted shrub frog *Pseudophilautus cuspis*, endemic; top right, Fulgorid planthopper, family Nogodinidae; bottom right, unidentified grasshopper; bottom left, Freshwater crab, family Parathelphusidae.







■ Large adult male Green forest lizard *Calotes calotes*.



■ Sri Lankan  
junglefowl  
*Gallus lafayettii*.

as conservation forests or reserved forests under the Forest Ordinance. The values encompassed by the property were further recognised when it was declared a Biosphere Reserve in April 1978 and subsequently inscribed on the World Heritage. The management plans for the property, prepared in 1985/86 and 1992/94, emphasize conservation, scientific research, buffer zone management, benefit sharing, and community participation. Sinharaja is provided with the highest level of legal protection under the National Heritage Wilderness Area Act and a high level of environmental awareness of the local community is extremely helpful in implementing management plan prescriptions. Forest dependency of local communities is very low and maintaining this healthy partnership with local communities is the main strategy to ensure future protection of this property. Historically protected as a result of its inaccessibility and steep, hilly terrain, the Forest Department prioritizes protection of the reserve over development pressures and resource extraction. Visitor numbers remain low with entry by permit only. Threats to the values and integrity of the property primarily come from encroaching cultivation, particularly along the southern

*continued on page 27* >

Top left,   
Besra Accipiter virgatus;  
top right, Spot-winged thrush  
Geokichla spiloptera, endemic;  
bottom right,  
Crimson marsh glider  
Trithemis aurora;  
bottom left,  
Spiny crab orb weaver  
Phoroncidia thwaitesii.



boundary. Development undertaken outside the property indirectly impacts the site through road developments which subsequently open up routes and entry points into the property, facilitating illegal logging and removal of resources, with illegal gem mining also posing a threat. The traditional use of forest products is now restricted to areas outside the boundaries. Sadly, low staffing levels hinder patrolling, and a lack of funding is a barrier to the effective, long-term management of the area. The management agency, the Sri Lankan Forestry Department, has designated the management of Sinharaja a high priority, allocating funds according to the priorities spelled out in the management plan and on-going management programmes.

**ECOLOGY AND EVOLUTIONARY NOTES**

Also referred as Sinharaja Forest Reserve, the location of the Sinharaja Rain Forest is in the South Western part of the island, bordering three districts of the island, namely Galle, Matara and Ratnapura. The total area of

*continued on page 32* >



Geometrid Moth Berta sp.



■ Far left, land snail *Satiella* sp., an endemic species; center, Hump-nosed lizard *Lyriocephalus scutatus*; right, Green vine snake *Ahaetulla nasuta*.

■ The bane of Sinharaja - a harmless but bothersome leech waiting for its prey to pass by a rainforest trail.





■ Left, Flower Praying mantis *Creobroter* sp.; center, juvenile Green forest lizard *Calotes calotes*; right, Sri Lankan keelback water snake *Xenochrophis asperimus*.





■ Left, Sri Lanka blue magpie or Ceylon magpie *Urocissa ornata*; right, Purple-faced langur *Trachypithecus vetulus*, an endemic species.







Sinharaja Forest Reserve is very small: about 21 km lengthwise, with a minimum width of 3 km and a maximum width of 7 km throughout. The Rakwana Massif with its mountain ranges is part of the area covered by Sinharaja rain forest: the highest mountain peak found there is 1170 mt high and has eight peaks over 600 mt. This tormented topography affects the definition of vegetation zones, as the Sinharaja Forest is considered to be a Tropical Rainforest in the areas below 1000 mts. and a Sub-Montane Forest above 1000 mts. According to several sources the plant density inside the forest is 240,000 plants per hectare with 340 timber species of commercial value. Out of these 192 are endemic to Sri Lanka, and 19 out of these endemic species are found only within Sinharaja Forest. The formation of such a diverse and highly specific rainforest makes for an interesting story. The present rainforests in the world are an evolution of the earlier rainforests dating back to 150 - 200 million years. About 140 million years ago, during the Paleozoic era, a part of land from the Southern hemisphere called Gondwanaland - where present day India and Sri Lanka also were situated - started its slow process of separating from the main land. About 55 million years back - during the Cretaceous - the

**continued on page 34** ➤

■ Sinharaja can only be explored by walking.



■ Top left, Sharp-snouted shrub frog *Pseudophilautus cuspis*; top right, Sri Lanka Short-horned shrub frog *Pseudophilautus singu*. Bottom right, Asian grass frog *Ferjervaya limnocharis*; bottom left, Indian Green frog *Euphlyctis hexadactylus*.



■ Sri Lankan or Brown-patched Kangaroo lizard *Otocryptis wiegmanni*, an endemic species.



Deccan plate with Sri Lanka and India separated from the Southern hemisphere, started drifting towards the equator and joined with the Northern hemisphere called Laurussia. Due to this new environment, the life forms of that landmass started to undergo changes to evolve their own characteristics, making way to unique botanical and biological species. Later - around 20 million years ago - Sri Lanka separated from the Deccan plate. Today the rainforest in Sri Lanka is confined to its southern part, nearest to the equator. Forests in other parts of the island differ much from Sinharaja, as tropical rainforests need to have three main factors in common. First, there should be bright sunlight, second there needs to be a high rainfall, distributed all along the year and third, a high temperature, which keeps the region very humid. Only Sinharaja and few other scattered forests of lesser extent in the southwestern part of Sri Lanka fulfill the above criteria. Moreover, Sri Lanka was an

*continued on page 37* ➤



■ The beautiful Purple-faced langur *Trachypithecus vetulus* found in the Sinharaja rainforest is an endemic species.



■ Grizzled giant squirrel *Ratufa macroura melanochra*, another endemic.



■ Left, one of the countless brooks and streams crisscrossing the rainforest landscape of Sinharaja; right, Sri Lanka blue magpie or Ceylon magpie *Urocissa ornata*.

agricultural country since 4th century BC and much of the land in the northern and central part of the country, where there are forest covers now, had been under cultivation till around the 10th century AD, so the age of the forest cover there dates back only for around a thousand years. Taking note of the above, we now can finally add that the Sinharaja forest cover receives between 3000-6000 mm of rain throughout the year and has a minimum rainfall of over 200 mm, even during non-monsoon periods. The mean temperature is between 18-27 degrees centigrade with a humidity of 75% - 90%, and only a faint sunshine reaches the ground layer of the forest totalling a meager 5% - 15% of sunlight. As we already said, it's a very, very wet forest - but believe us, despite the leeches, at the end of a long day you'll be happily singing in the rain! ●



Sinharaja is crisscrossed by a large number of clear-water streams and brooks, mostly sandy and very shallow.





■ Left, an unidentified forest plant in bloom; right, the near-invisible shape of a Phasmid stick insect camouflaged on a tree's bark.





Due to its high ambient humidity, the forest of Sinharaja is home to a great variety of land snails, many of which are difficult to recognize for the non-specialist.



The rainforest landscape in Sinhārāja offers a great variety of beautiful spots which are ideal for a brief pause - despite the harmless threat posed by the ever-present leeches!





■ Left, Sri Lankan or Brown-patched Kangaroo lizard *Otocryptis wiegmanni*, endemic; right, unidentified giant millipede. High ambient humidity is quite apparent in this latter image.



Sri Lankan junglefowl   
Gallus lafayettii.





Many of the waterfalls and rocky streams in Sinharaja would be a challenge to negotiate - besides, walking in the Reserve is restricted to a network of well-marked forest trails.

Left, Sri Lankan or Brown-  
patched Kangaroo lizard  
*Otocryptis wiegmanni*.  
Right, a mosquito feeds  
undetected among the nuchal  
scales of an endemic  
Hump-nosed lizard  
*Lyriocephalus scutatus*.



■ The unmistakable pitfall traps of the pitcher plant *Nepenthes distillatoria* are a common sight in the more open spots of Sinharaja's rainforest.



# At-a-glance travel guide

COUNTRY OF DESTINATION: **SRI LANKA**



## USEFUL TIPS FOR YOUR EXPEDITION

**Some simple, common sense, field-tested advice and information to make the best out of your trip and avoid hassles, worries and problems**

**ROUTE:** Your international flight will land at Bandaranaike International Airport, in the Sri Lankan capital Colombo, where you will be met by your guide of choice. Travelling around this beautiful and relatively small tropical island for holiday and sightseeing alone is exceedingly easy and safe (in fact highly advisable), but when dealing with the bureaucracy of National Parks and the unpredictability of wildlife we always prefer to rely on a good, knowledgeable local guide. Whenever we visit Sri Lanka's National Parks we do so with our naturalist and wildlife photographer friend **Mevan Piyasena**, who has proven himself on several occasions a highly reliable, professional organizer.

**MEANS OF TRANSPORT:** Sinharaja can only be visited on foot along a network of well-maintained forest tracks and by occasionally fording shallow, sand-bottomed streams, so a good pair of waterproof rubber boots are a necessity. The large number of leeches encountered in the field call for robust, knee length socks, but in fact little can be done to avoid donating daily a little blood to the cause!

**CURRENCY:** Sri Lankan rupee - even if US dollars and Euros are commonly accepted at most tourist resorts, it is advisable to change a reasonable sum upon arrival to buy the inevitable (and excellent) organic spices and tea to bring home.

**ACCOMODATION:** Accomodation ranging from spartan to relatively comfortable is readily available in the vicinity of the Park's gate (camping or spending the night inside Sri Lankan protected areas is sadly not allowed anymore). A very good and practical option is offered by simple, clean, private country bungalows - complete with personal cook and caretaker - being widely offered for rental.

**FOOD:** Sri Lankan food is spectacular, often very fiery, mostly based on all possible culinary declinations of coconut flesh and milk and with a predominance of savoury vegetarian and fish dishes, usually served in abundance. Do not miss the



## *A spectacular rainforest destination featuring wonderful macro subjects*



mouth-watering curries and the buffalo milk curd topped with treacle (palm sugar syrup) dessert.

**LANGUAGE:** Sinhalese and Tamil, but excellent English is widely spoken everywhere.

**WORRIES:** Basically none at the moment - Sri Lanka is one of the safest, most relaxed countries we know. As anywhere else when in big cities, avoid being around alone at night in Colombo, especially if carrying expensive jewellery and cameras.

**HEALTH:** Again, Sri Lanka appears to be a very safe tropical country health-wise. We are unfamiliar with any cases of dangerous tropical diseases there, and food appears to be safe anywhere. As usual, avoid drinking tap or well water and prefer tea or bottled water. Ticks, mosquitoes and the occasional venomous snake are a liability in the field.

**CLIMATE:** Tropical, but very variable depending on season and altitude. In the lowlands expect hot, relatively dry days and the occasional thunderstorm; at higher elevations - such as in the tea plantations of Nuwara Eliya - expect misty, cool mornings and cold nights. One side of the island is usually experiencing the rains of the monsoon at a time while the other is in the dry season - so simply switch sides accordingly to your preferences of the moment!

**BESIDES:** Situated at the southernmost tip of the Indian subcontinent, the island of Sri Lanka - first known as Serendib and Taprobane, and later Ceylon - has always been at the crossroads of the busy sea lanes of the Indian Ocean, a rich, bountiful, teardrop-shaped land of ancient history and culture where a wealth of wildlife and a beautiful environment have historically been preserved by the strong influence of Buddhist culture. And because of the beneficial

Buddhist influx, not only wildlife is confident and abundant everywhere, but many stunningly beautiful archeological sites - still vibrant in the daily observance of cult by the locals - survive and are carefully preserved today in the island. Given their proximity to each other and ease of visiting, the ancient cities of Anuradhapura and Polonnaruwa and the mountain fortress of Sigiriya - all three exceedingly abundant in spectacular works of art, sculpture and architecture and forming the so called archaeological "Cultural Triangle" - are an absolute must for all discerning travellers. The ancient capital of Kandy and the hill station of Nuwara Eliya are also not to be missed. The flat, palm-fringed island coastline also offers excellent opportunities for relaxing at some of the world's most beautiful white sand beaches. Sri Lanka has a wonderful hospitality tradition, and some of the most beautiful, well-furnished, romantic hotels we have ever visited are found here. ●

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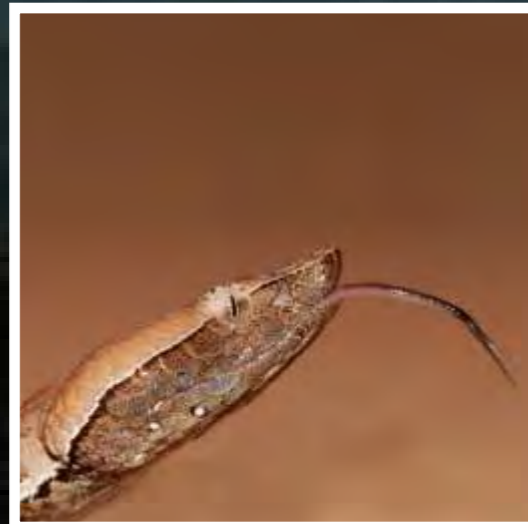
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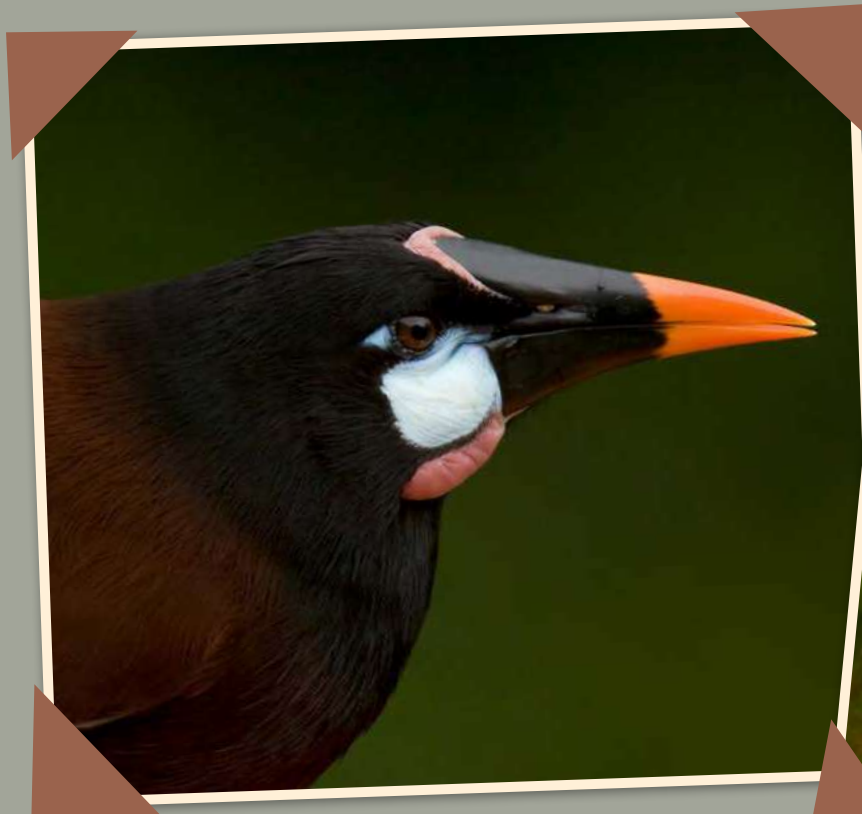


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# CASTLE IN THE CLOUDS



Untamed wilderness meets world-class luxury at a futuristic creation of steel and glass deep in the cloud forests of the endangered Ecuadorian Chocó



**Montane rainforest canopy**

A spectacular view of the Andean cloud forest taken from Mashpi's custom-made cable car. On the opening spread, a view of the mist-shrouded lodge - which was basically flown in by helicopter - as it sits in splendid isolation on the forested slopes of the endangered, enormously biodiverse Chocóan region.





**Imbabura Treefrog *Hypsiboas picturatus***

A relatively common - and truly beautiful - species of the moist forest of Ecuador.

TEXT BY ANDREA FERRARI  
PHOTOS BY ANDREA & ANTONELLA FERRARI

The name Chocó originally referred to the lowland rain forest on the Colombian coast, a region characterized by extremely high precipitation and extraordinary species diversity. As the Chocó-Darién ecoregion it reaches to Panama in the north, while in the south it borders with another ecoregion, the Moist Forests of Ecuador. These two very similar ecoregions are combined to one biodiversity hotspot, the Tumbes-Chocó-Magdalena Hotspot, which spans from Panama down to Peru and from the Pacific coast up to an elevation of 1000m on the Andean slopes. At this elevation the world's most diverse ecoregion begins, the Tropical Andes. Today, all Ecuadorian forests reaching from the Pacific coast up to an elevation of 2200m are called Chocó. The northwest of Ecuador boasts an amazingly high biodiversity and it is home to a staggering percentage of endemics. Sadly, little survives today of the forests of West Ecuador. More than 90% have been deforested between 1938 and 1988 to create banana plantations. The last remnants of forest are also threatened by illegal and legal logging, oil palm plantations and mining companies. This is why the Chocó is considered as one of the areas with the highest conservation priority - it is one of the world's 10 most important biodiversity-hotspots and one of the WWF's Global 200. Six nature reserves in Northwest Ecuador are managed by the Ministry of Environment, and there are several more

public and private protected areas. The spectacularly luxurious [Mashpi Lodge and Reserve](#) is one of them. It is hard to believe that such a wild and remote site - and such an unexpected oasis of comfort for just 47 privileged guests, located in a stunning private forest reserve - could even be associated with a city, yet Mashpi lies within the District of Quito, the capital of Ecuador from which it can be easily reached by car. The lodge perches at 950 metres (3,117 feet) above sea level and the cloud forest reserve in which it is located ranges in altitude from 500 metres to 1200 metres above sea level. With some 400 species of birds spotted to date - 35 of which are endemics - the 1,200 hectare (3,000 acre) Mashpi Reserve is a birdwatcher's paradise. But Mashpi is also an active research station, where scientific information is constantly being gathered in the field to build a conservation strategy, combining sustainable tourism and forest preservation while enriching the lodge's knowledge of its ecosystem. This knowledge is then shared with local communities, guests and the wider public, with the aim of spreading the message of the importance of conserving this endangered and fascinating bio-region. The success of [Mashpi Lodge](#) has shown that conservation efforts should go beyond merely protecting the reserve with its hotel. They must be a combination of research, education, ecotourism and community support in order to be truly successful. ●



**Charm Anole *Anolis gracilipes***

Anoles are fully or semi-arboreal New World lizards, commonly found in a great variety of species. They represent - both as predator of small insects and arthropods and as common prey of larger reptiles and small raptors - a very important link of the tropical ecosystem.



**Pale-mandibled Araçari *Pteroglossus erythropygius***

The transitional montane rainforest of the Chocóan region is home to an absolutely stunning variety of bird species, many of which are actually endemic to Mashpi itself. Araçari in general are noisy, boisterous omnivorous feeders which - while appreciating ripe fruit - will also often raid in groups other birds' nests.



**Green-crowned Brilliant *Heliodoxa macula***  
Several sites in Mashpi offer the opportunity to photograph hummingbirds up close.



**Young fern shoot**  
Unfurling young fern frond coated in protective toxic slime.



**Emerald Glassfrog *Espadarana prosoblepon***

The permanently fog-bound, water-drenched Chocóan forested mountain slopes enjoy a very high degree of humidity due to the frequent and abundant rains, and represent an ideal environment for countless amphibian species (including the recently described Mashpi Torrenter - see our article [here](#)).



**Chocó trogon *Trogon comptus***

Trogons are highly representative of New World tropical birdlife. This is an endemic Chocoan species.



**Owl Butterfly *Caligo atreus ajax***

Aposematic (warning) markings on a large butterfly's wing.



**Andean Snail-Eater *Dipsas andiana***

Snail-eaters are highly specialized, rather common and completely harmless snakes which are occasionally encountered at night by forest trails. Despite what most people believe, snakes are actually very rarely seen while walking in the forest, relying on crypsis (camouflage) and immobility to escape detection.



**Green-crowned Brilliant *Heliodoxa macula***

Several stations around Mashpi offer unmatched opportunities to admire and photograph the frenzied, incessant activity of several stunningly beautiful hummingbird species. Shooting hummingbirds without custom-built "baiting" set-ups can be very frustrating, as these tiny birds rarely sit still for more than a couple of seconds.





**Crimson-rumped toucanet *Aulacorhynchus haematopygus***

Toucanets are usually very difficult to spot in the montane forest canopy due to their brilliant green and very cryptic livery. Like all toucans and araçaris, toucanets are also omnivorous and will feed on a variety of ripe fruits, seeds, invertebrates, lizards, eggs and hatchlings.



### **Andean cloud forest canopy**

Two different cable car set-ups (one powered by pedalling and restricted to two passengers, the other much larger) offer unmatched opportunities to admire, observe in detail and photograph the complex environment of the Andean cloud forest canopy. Just make sure you do not suffer from vertigo!



**Pale-mandibled Araçari *Pteroglossus erythropygius***  
There are currently fourteen recognized Araçari species, all belonging to the genus *Pteroglossus*.



**Rufous motmot *Baryphthengus martii***  
A commonly observed species of the lower canopy.



**Moss-backed tanager *Bangsia edwardsi***  
Tangaras are sparrow-sized, often very colorful neotropical birds with about 50 species.



**Violet-tailed Sylph *Aglaiocercus coelestis***  
One of the most impressive hummingbird species of Mashpi.



**White-whiskered Hermit *Phaethornis yaruqui***

A solitary and relatively large species for a hummingbird, this species will occasionally hover in mid-air, offering the briefest of chances to photograph it in flight.



**Flame-faced tanager *Tangara parzudakii***

Another beautiful example of the Tanager family - the genus *Tangara* actually includes some of the most spectacularly colored birds of the world.



**A room with a rainforest view**

The glass-walled rooms of Mashpi offer truly unique views of the surrounding forest.



**Luxury dining in the cloud forest**

The spectacular setting of Mashpi's excellent, high-design restaurant.



**Fern leaf detail**

Mashpi's untouched cloud forest offers endless opportunities to the observant, highly dedicated nature photographer.



**Chocó trogon *Trogon comptus***

Trogons and quetzals belong to the family *Trogonidae*, which contains 39 species in seven genera. These beautiful residents of the lower forest canopy are found in tropical forests worldwide, with the greatest diversity being in the Neotropics, where four genera containing 24 species occur.





**Empress Brilliant *Heliodoxa imperatrix***

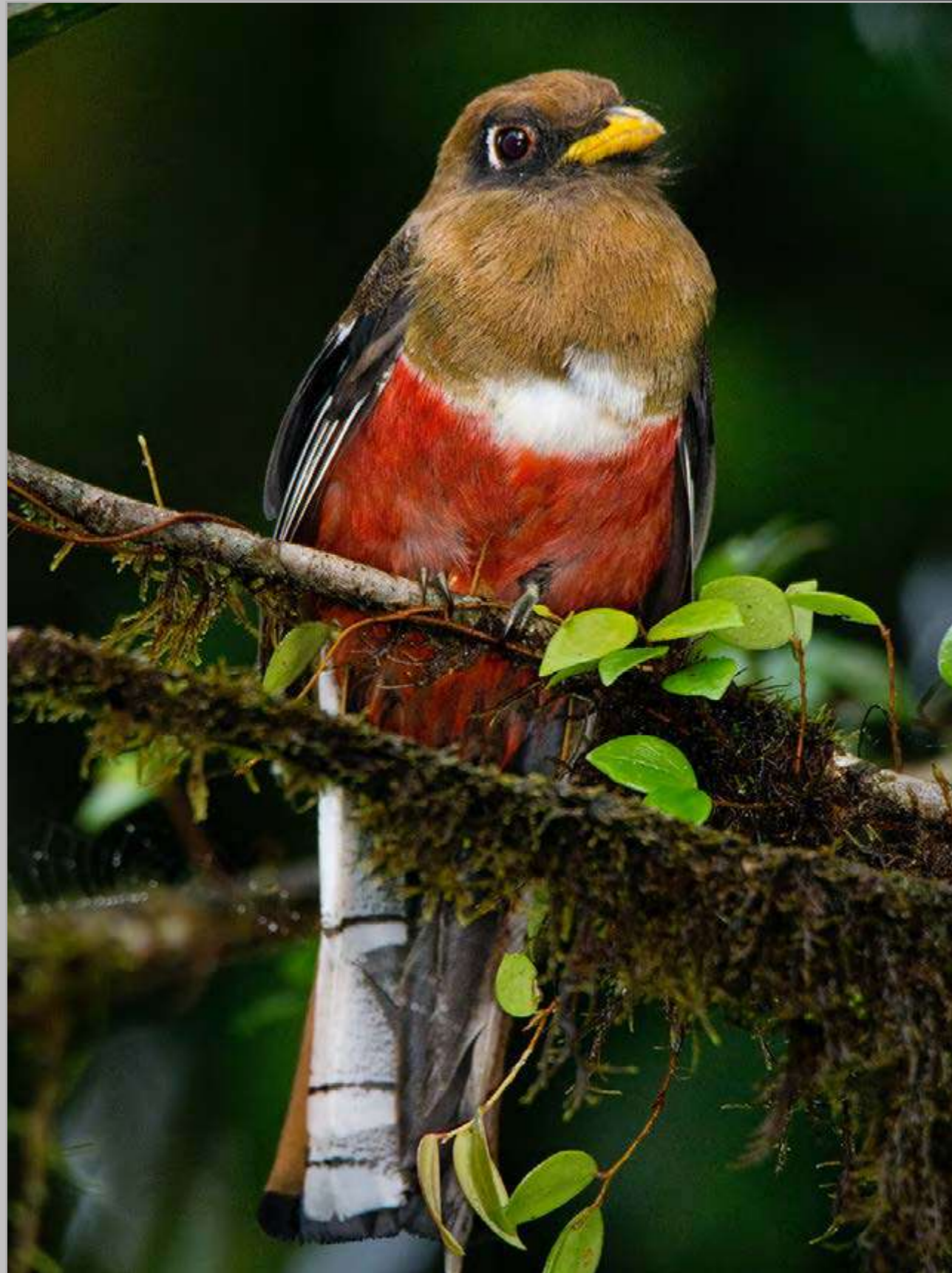
Hummingbirds are restricted to the Americas and are among the smallest of birds, most species measuring 7.5–13 cm (3–5 in) in length. Their common name is due to the sound created as they hover in mid-air at rapid wing-flapping rates, varying from around 12 beats per second in the largest species, to in excess of 80 in some of the smallest.



**Velvet-purple Coronet *Boissonneaua jardini***  
A most beautiful hummingbird species which is quite common at Mashpi.



**Exploring the cloud forest canopy**  
The foot-powered forest canopy bicycle offers unique photo opportunities.



**Collared trogon *Trogon collaris***

A relatively common and often observed species - this is a female.



**Cloud forest comfort**

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# The Long Lens of the Law

Dividing herself between her law studies and her passion for wildlife photography, a young lady from Assam shines among India's budding female photographers

## *Kuntala Roychoudhury - A Wildlife Photographer in Her Own Words*

Kuntala Roychoudhury is a post-graduate in Law and a photographer by passion. She belongs to the North Eastern part of India. India - especially the north eastern part - is one of the hotspots of biodiversity; and she has grown up in a city named Guwahati, which is surrounded by beautiful hills, forests and water bodies. Since an early age Kuntala Roychoudhury has been enchanted by the beauty of nature, and this slowly inspired her to the step into the exciting world of photography.

Her photography journey starts in 2012 when she gets her first entry level DSLR camera, a Canon 550 D. Kuntala does not have any formal training on photography: she is mostly a self-taught photographer, though she gets tips/help from various

photographers of her country. She practices various types of photography, in order to make herself grow in this field everyday: *inter alia*, she loves wildlife and macro photography the most. For her, photography is meditation: which gives her satisfaction, happiness and peace.

Currently she uses a professional camera and undertakes various projects related to photography: apart from being an avid photographer herself, she also mentors photography workshops and fieldworks in the region. She has participated in many national and international shows, circuits and competitions - where she has bagged many awards and recognitions - and has also participated in various State and national exhibitions.





---

**Lunch time**

---

One-horned Rhino  
in Kaziranga  
National Park,  
Assam, North-  
Eastern India.

Lunch time -  
Part 2

Common  
Garden lizard  
with its prey.





**Curiosity**

Monkey baby with its mother, India.

**A heavy burden**

Unidentified planthopper nymph.



**That's my  
baby**

Female Indian  
elephant with her  
newborn walking  
in a grassland in  
Kaziranga  
National Park,  
Assam, North-  
Eastern India.





**The canvas  
of nature**

A flock of birds  
in a grassland  
of Pobitora  
Wildlife  
Sanctuary,  
Assam, North-  
Eastern India



**Taking off**

Common coot, captured in Pobitora Wildlife Sanctuary, Assam, North-Eastern India.

**Thoughtful langur**

A portrait of a Golden langur lost in thought taken in Umananda, the smallest river island in all of India.





**Parakeet  
portrait**

Captured in  
Kaziranga  
National Park,  
Assam, North-  
Eastern India,  
during a tour in  
February 2017.



**Camouflaged  
catwalk**

Macro portrait  
of a twig-  
mimicking  
caterpillar.





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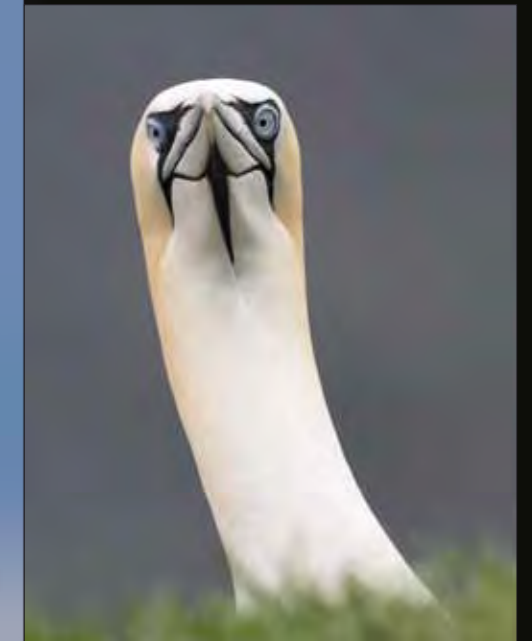
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*David Hemmings - President, Nature's Photo Adventures*



"My experience was EXCEPTIONAL! The trip exceeded my expectations in all areas. I hoped to get in a position to see owls and couldn't possibly have been happier. It was abundantly clear that David invested significant time and effort prior to the arrival of the group in scouting the area around Quebec and Ontario. He knew exactly where to go to find every species of owl. His knowledge and efforts were very much appreciated by the entire group. My primary objective was just getting in a position to photograph owls and was not expecting much in the way of photographic instruction. I was very pleasantly surprised and was very happy with the instruction. Prior to the trip I had a love/hate relationship with auto focus as it applies to photographing birds in flight. I've struggled with this for years. While I have a lot more to

learn, and need to work at honing my skills, the trip with NPA helped me tremendously in being able to photograph birds in flight. Photographing birds in flight was my main objective. Prior to the trip I was nearly clueless in comparison to my skills after the trip. You can also see from my bird list that I found the trip productive from a birding perspective as well".  
*Kevin McCarthy, USA*

"I recommend NPA workshops! The level of services by workshop leaders was excellent. Quality of photographic instruction was exceptional and they

were always on hand to solve issues that arose, and I had more than my share of equipment issues. Quality of wildlife provided was good and I was amazed at how easily the subjects accepted new setups provided. Locations visited were right on for the species targeted. My most memorable moment was using the flash setups the first time and capturing an image of the Swordbill Hummingbird. I feel that my level of photography has improved with the custom functions that were set up on my camera for me and the resulting images that I obtained. Overall experience and

expectations were achieved and we were fortunate to have a very compatible group on our tour, which made it very enjoyable. This was my first workshop and I would recommend them to friends".  
*Rosemary Harris, Canada*

"Great trip, great experience and great workshop leader. Great opportunity for capturing images of magnificent and uncommon (in southern USA) birds. Organizers contribute to great group dynamics and superb attitude. Cool techniques".  
*Eric Grossman, USA*



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THE SEX LIFE OF THE AUSTRALIAN GIANT CUTTLEFISH

**SWINGING  
SEPIAS**



A frenzied and brutally competitive mating ritual of these highly evolved cephalopods takes place every year in the shallow waters of Whyalla

■ A large male of *Sepia apama* displaying its colors.



TEXT AND PHOTOS  
BY DON SILCOCK  
[www.indopacificimages.com](http://www.indopacificimages.com)

The Giant Australian Cuttlefish *Sepia apama* is the largest cuttlefish in the world and can reach half a metre in total length and weigh in at up to 11kg. Solitary animals, they are found all along the coastline of the southern half of Australia - from Central Queensland on the east coast, right around the bottom of the continent and up to Ningaloo Reef in Western Australia. Incredibly photogenic creatures, they have a fascinating ability to rapidly change their colour and skin texture, which they use to great effect as camouflage when they are hunting or being hunted, to communicate with other cuttlefish and as part of the amazing displays they use to impress potential partners during the mating season. Giant Australian Cuttlefish are also remarkable intelligent, and are said to have the largest brains of all marine invertebrates. Both male and female cuttlefish have relatively short life cycles of 1-2 years, and interestingly they have two alternate development cycles - with the first using a "growth spurt" over 7 to 8 months to reach maturity by their first summer so they are ready to mate at the start of winter. The second cycle involves much slower growth where they don't reach maturity until they are in their second and final year. Although not scientifically proven, the most probable reason for the alternate cycles is that it is nature's way of hedging bets, so that if a catastrophic event occurs one year, there is a backup population that can still breed the following year.

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A large male of *Sepia apama* guards closely its female in the shallows of Southern Australia.





As winter approaches, the cuttlefish abandon their solitary lifestyle and aggregate together in small groups of up to 10 individuals to mate - everywhere, that is, except at Whyalla in South Australia's Spencer Gulf, where hundreds of thousands gather during the annual Giant Australian Cuttlefish aggregation. The reality is that you would have to be quite lucky to stumble upon a typical mating aggregation anywhere else, but at Whyalla's aggregation you literally only have to walk in off the beach and the cephalopod version of Sodom and Gomorrah is all around you! It has been called the "the premier marine attraction on the planet" by distinguished marine biologist Roger Hanlon, of the Woods Hole Oceanographic Institution, and it starts from around the middle of May

each year, lasting for about two months. Whyalla's Giant Australian Cuttlefish aggregation is really quite unique as *Sepia apama* is not known to gather in such numbers anywhere else in the world. It is also an incredible spectacle to behold, and one that allows the underwater photographer very close access, particularly to the large bull males, that is simply not possible at any other time. So preoccupied are the bulls with ensuring their role in the reproductive process they simply ignore divers and photographers as they concentrate on the task to hand... To put their dilemma into perspective - overall the population of Giant Australian Cuttlefish has a male to female ratio of almost 1:1, but during this unique mating event at Whyalla that ratio changes and can reach as high as 8 males to 1 female.

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Left, Black Point, near Whyalla in South Australia; right, a large male with its female.



■ The fight for mating begins - a large male and its female are being surrounded by a host of young challengers.



Right,      divers entering and leaving the water. Left, a large male as it displays its mating livery.



So the competition is incredibly intense and explains the large bull males' preoccupation with their captive females - one slip in concentration will ensure the prize is seized by one of this many competitors! The stakes are very high for all the older participants as it is the last roll of the dice for them and all will be dead by the end of the mating season as the cycle of life evolves and continues.

The technical term for how Giant Australian Cuttlefish mate is *polyandry* - which basically means that each female cuttlefish will have multiple male partners to ensure better genetic variability of the species. All of which makes sense from a somewhat dry overall perspective, but when viewed in practice at Whyalla, where so many cuttlefish have gathered

and the females are outnumbered by as much 8 to 1, it takes on a completely different dynamic and the definition "spectacularly promiscuous" would probably better describe the apparently licentious and almost wanton behaviour. Apart from the larger size of adult bull males, it is almost impossible to identify a male Giant Australian Cuttlefish from a female one - even the cuttlefish themselves cannot tell the difference, and males display a subtle zebra pattern on their sides to signal their sex. The large bull males are able to put on the most spectacular colour displays to try and attract a female, but it is up to her whether she accepts and studies have shown that up to 70% of the time they don't. If she does accept, the bull male will then try and keep her hidden in the seagrass - out

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■ A large male - the individual on the right - as it warns off a young male challenger.



Far left, a large male is surrounded by several young challengers; left top, a big male and its female; left bottom, a large male is hiding its females from the competition.

of sight from all the other males. But that's not easy with so many other males around, most of whom are smaller and still in their first year of life. These smaller males are often referred to as "sneakers" because, lacking the physical size and strength to challenge the bulls, they adopt an alternate strategy and very clever of pretending to be a female and sneaking in with the real female while the bull is busy fending off larger males. The interpolator then tries to mate with the female - often with great success and much to the annoyance of the bull when he realizes what is happening.

Cuttlefish conservation in Whyalla has been somewhat of a long, but ultimately (for now, at least...) successful journey. Talk to the local divers who have been around for a while and they will tell you that early

on they did not think there was anything that special about the annual aggregation of Giant Australian Cuttlefish around Black Point and Point Lowly. They assumed that similar events must be occurring elsewhere, but as word spread and marine biologists and scientists from around the world came to see for themselves, the exceptional nature of the aggregation became clear – this just does not happen anywhere else in the world. A great story, no doubt... but if it were not for the tremendous efforts of some of those local Whyalla divers and nature's amazing capability to restore itself when we get out of the way, the chances are that it would now be significantly different story. In all probability the annual aggregation has been happening for hundreds, if not thousands, of years. The Giant Australian Cuttlefish is a short-lived

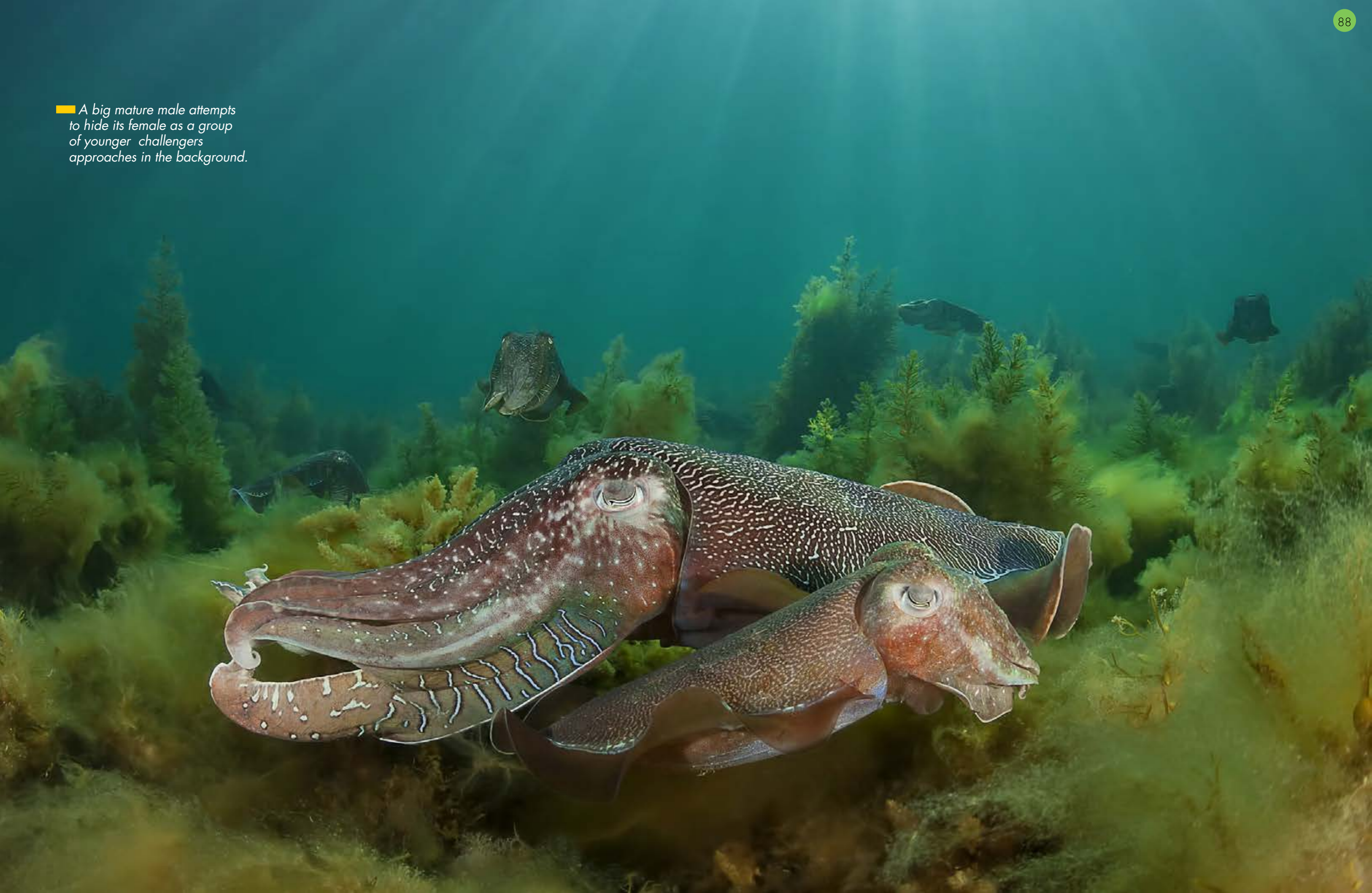




■ Another big mature male displaying its colours.

animal with a life-cycle of one to two years. It is also *semelparous*, which means it has a single reproductive episode and then dies, whereas us humans (and most animals) are *iteroparous* and are capable of multiple reproductive cycles over the course of our lives. The main aggregation area around Point Lowly and Black Point is perfectly suited for the purpose the cuttlefish have adopted it for - it is relatively sheltered and unlike much of the upper Spencer Gulf, which is mainly sand, sea grass flats and mud banks, there are numerous shallow rocky reefs which are perfect places for the females to hide their eggs. So, here is a species that has evolved and thrived in a very specific manner because it has the almost perfect location to ensure its propagation - then along comes Man... Things changed significantly for the Giant Australian Cuttlefish population of the upper Spencer Gulf back in 1997 when about 250,000 of them – roughly 250 tonnes – were taken during the annual aggregation by commercial fishermen for export to Southeast Asia. Up until 1997 there had been very limited recreational and commercial fishing of the cuttlefish, but so lucrative was the 1997 catch that the word spread, and in 1998 a much larger contingent of boats arrived in Whyalla even before the cuttlefish did. Within 4 weeks an estimated 150 tonnes of cuttlefish had been harvested and the stock was so devastated there was basically not much left to catch. After much local lobbying, the South Australian Primary Industries Minister

■ A big mature male attempts to hide its female as a group of younger challengers approaches in the background.





■ Courtship takes place under the watchful eyes of the competition, always ready to take advantage of the slightest chance to steal the female.





■ Finally, success!  
A male and female *Sepia apama* caught in the process of mating.

stepped in and, in a widely applauded decision, closed the area to fishing until September 1998 and ordered a three-year assessment of the overall situation. In 1999 SARDI (South Australian Research and Development Institute) assessed the upper Spencer Gulf population at 182,585 and their subsequent surveys in 2000 and 2001 showed similar, but slightly less numbers. The next proper survey was in 2005 and then again in 2008 – which showed respective numbers of 127,785 and 75,295. SARDI commenced their surveys again in 2013 and recorded a total population of 13,492... meaning a 97% decline against the 1999 high of 182,585 – which in itself was recorded after the loss of about 400,000 cuttlefish because of the devastating harvesting in 1997 and 1998. Those terrible numbers in 2013 prompted a total ban on catching cuttlefish in the upper Spencer Gulf, and most interestingly the SARDI surveys of 2014 recorded a population of 57,317 in 2014 and 130,771 in 2015 - which would indicate that the total ban is working, but the total population is still well below where it was after the terrible events of 1997 and 1998. So for now at least, it looks it looks like the immediate danger may have passed, and we can thank the tremendous lobbying efforts of the local Whyalla diving community for that.

Photographing Giant Australian Cuttlefish *Sepia apama* at the annual aggregation in Whyalla is - for me - right up there with the best underwater photography experiences one can

have. There are very few places like this, where you can consistently get as close to the intense action that revolves around this unique event and yet be almost completely ignored as the cuttlefish focus on why they are there – sexual reproduction and the propagation of the species. The hardest part about getting good images at Whyalla during the aggregation is getting in and out of the water because of the rocky terrain – plus it has to be said that the water is quite cold. But the rest is relatively easy as the subject matter is all around you - like everywhere! If you have the time available, then there is a lot of potential for macro photography during the aggregation - such as close-ups of the cuttlefish eggs and their tiny contents. But if not, then concentrate on wide-angle and capture the ethos of the aggregation. ●

All the underwater images in this article were taken with Nikon cameras – a D300 DX format in a Subal housing on my first trip in 2010 and when I returned again in 2016 I was using a D800 FX format in a Nauticam housing. With the D300 I used the Tokina 10-17mm fish-eye zoom and with the D800 I used the Nikon 16-35mm rectilinear zoom.

For more information and insight on these wonderful creatures and the logistics of diving with them check out Don’s Complete Guide to the Giant Australian Cuttlefish on Don’s website, [www.indopacificimages.com](http://www.indopacificimages.com) , which also has extensive location guides, articles and images on some of the best diving locations in the Indo-Pacific region.

■ A large male Giant Australian cuttlefish displaying its colours.



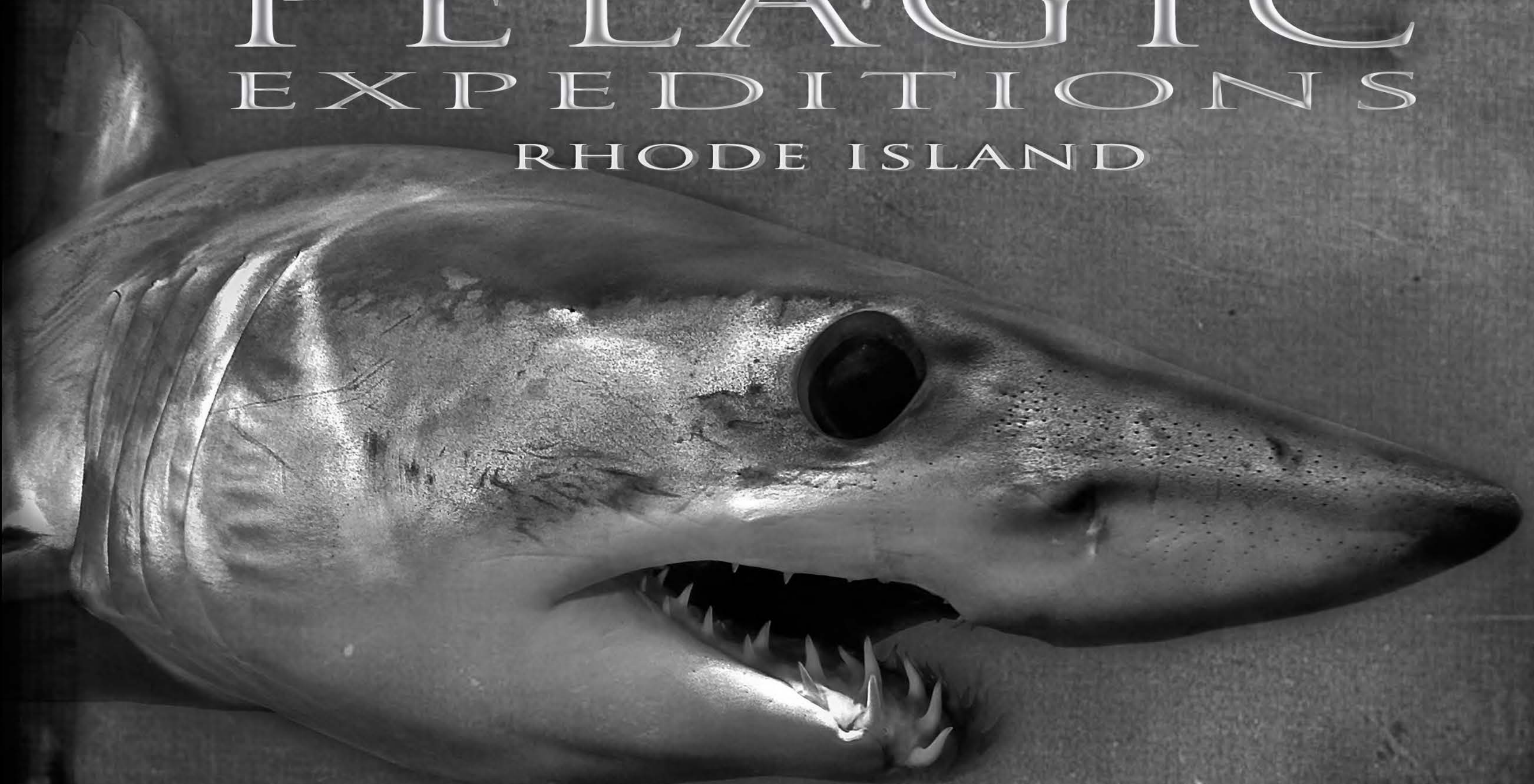
The end ■  
of it all: broken  
and battered,  
exhausted  
by fighting  
and mating,  
a cuttlefish  
awaits death  
just below the  
surface of the  
waters of  
Whyalla.



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# DPG *Expeditions*

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# The Parting Shot



In our globally connected and well-travelled planet, Triton Bay in West Papua stands out as remote, idyllic and relatively untouched diving destination. It is breathtakingly beautiful above and below the surface. So it may seem strange to publish an image taken there over a coral rubble bottom and in fading light, of all things. However, Alan Powderham's photo captures the fleeting moment of a male Flasher wrasse *Paracheilinus nursalim* in its full, glorious and uniquely

brief (albeit many times repeated) mating display. Such spectacular subjects present the ultimate challenge in underwater macro photography - these fish are small (3-5 cms), move at high speed and very erratically, display for a split second, and don't let one get close. Getting one of these subjects in sharp focus and good light as it flamboyantly displays in front of its prospective partners is difficult indeed. The courtship activity by the competing males becomes increasingly fre-

netic towards sunset, and so concludes in a dazzling display of sexual frenzy. If, as was the case here, there is more than one species involved in the frantically and confusing twisting shoals, Flasher wrasses will produce the highest recorded rate of hybridization in any species of fish. This is visually evident in the variation of colour, pattern and the number of dorsal filaments, which once more make correct identification of the species a complex and often frustrating endeavour. ●



**DESERT ELEPHANTS**  
Giants of Namibia's  
mysterious Brandberg

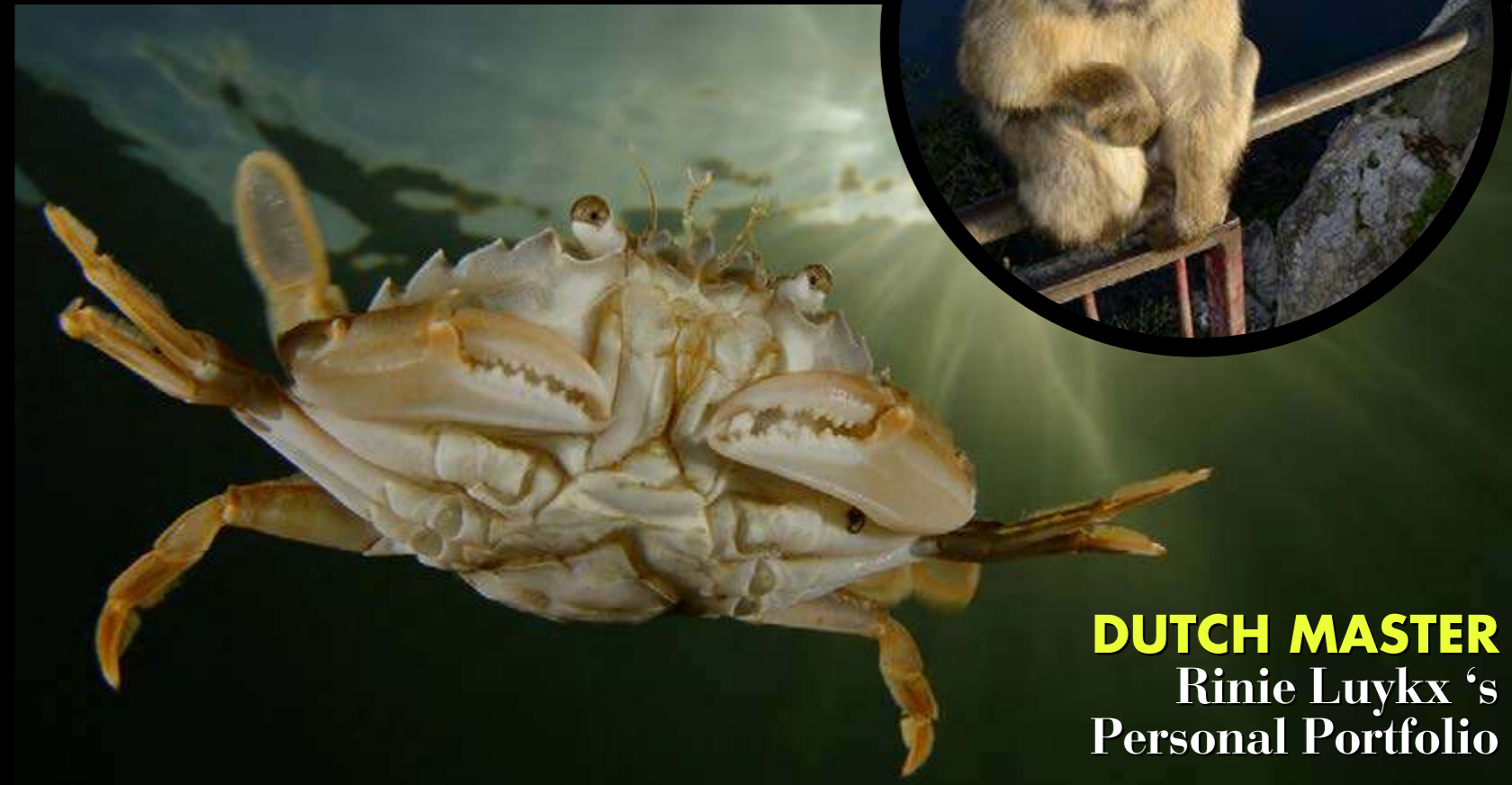


**ENDANGERED BEAUTIES**  
Meeting Vietnam's  
rarest primates

**MACAQUES  
OF GIBRALTAR**  
The monkeys which  
did not give up



**TREASURE OF THE AMAZON**  
A trip to Ecuador's  
amazing Napo reserve



**DUTCH MASTER**  
Rinie Luykx 's  
Personal Portfolio

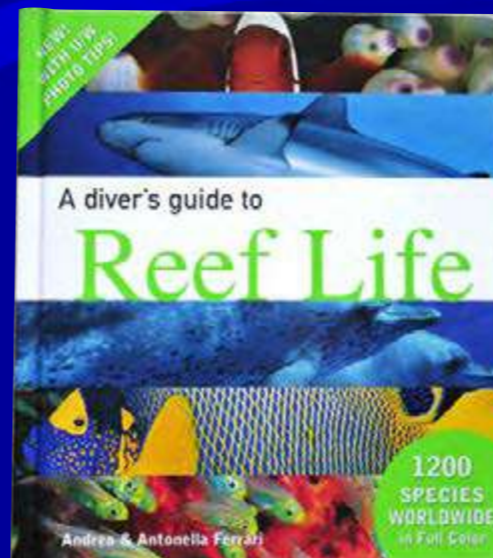


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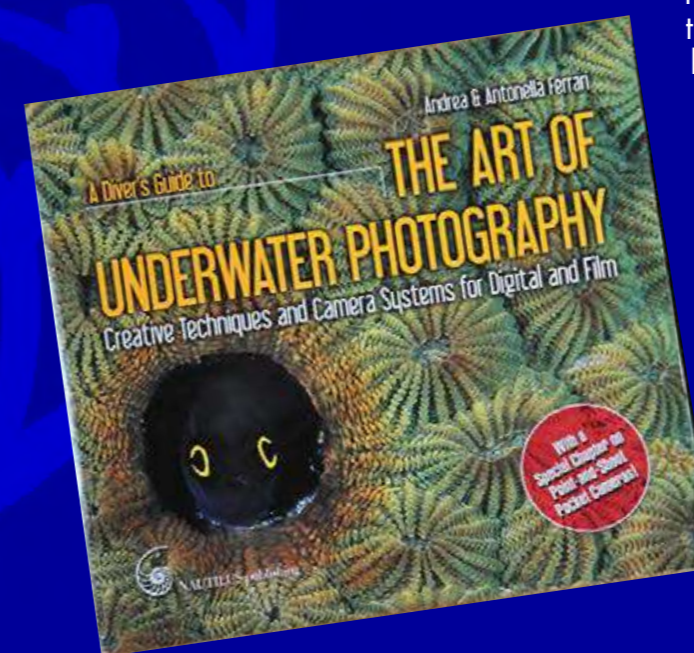
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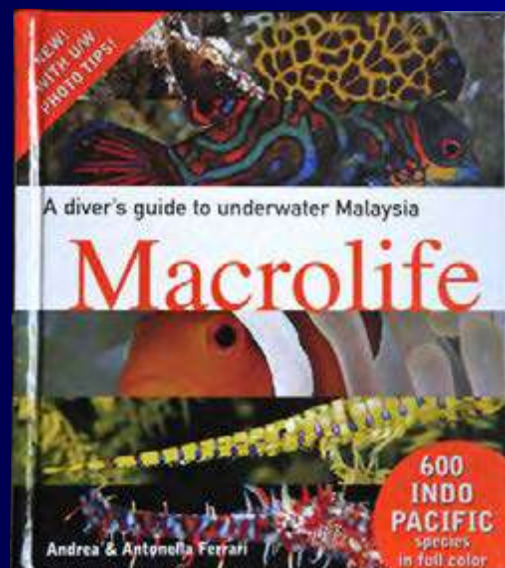
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