

ANIMA MUNDI

Adventures in Wildlife Photography

Issue 4, Year 1 - 4th Quarter, October 2011

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SCOOP! THE INCREDIBLE **TARANTULA MOTH** from Brazil

ON ARCTIC WINGS Breeding birds of Manitoba

RETURN TO WONDERLAND Selva Verde, Costa Rica - Part 2

ENCHANTING ECUADOR A portfolio by Alejandro Arteaga

MANTIS SHRIMPS Colorful predatory crustaceans



ANIMA MUNDI

Adventures in Wildlife Photography

SHARING THE PASSION

Welcome to issue 4! As our free online magazine ANIMA MUNDI – *Adventures in Wildlife Photography's* first year draws to a close, the good news continue to chime in. First of all, our readership is increasing in giant steps – we had a great start with issue 1 and 2, but issue 3, July, registered a record 11.250 downloads worldwide! Those are exceptionally big numbers for an online quarterly which is basically still in its infancy, and they represent a big success for us and a strong motivation to offer richer contents in our future issues. Comments are also invariably positive, and counting on good word-of-mouth (Facebook proved to be an invaluable tool here) we can only expect a further rise in our readers' numbers worldwide. Full-time professional wildlife photographers, biologists and field researchers seem to appreciate ANIMA MUNDI too, and several well-known names have readily offered to contribute – in this issue we welcome bird photography guru *extraordinaire* David Hemmings, who offers a fantastic feature on the breeding birds of the Arctic from his native Canada, and Brazilian biologist and field researcher Edelcio Muscat, who brings us a fascinating look at a stunning tarantula-mimicking South American moth. Edelcio will furthermore be back with next issue, in January 2012, together with journalist and photographer Elsie Rotenberg, for an extensive, in-depth look at the endangered ecosystem of the Brazilian Atlantic Rainforest. They'll be joined on issue 5 or soon after that by Christopher Rimmer, Piper MacKay, Konrad Mebert and many other gifted, highly-respected photojournalists and field researchers from the four corners of the globe – all having in common a deep love for nature, a taste for adventure and a strong commitment to document and protect our world's wildlife. This issue's contents, by the way, also include part 2 of our trip report to Selva Verde Nature Reserve in Costa Rica (see issue 3 for part 1), an in-depth feature on tropical Mantis Shrimps - a truly fascinating group of predatory crustaceans - and a stunning personal

portfolio focused on the reptiles and amphibians of Ecuador by that beautiful country's young photographer and biologist Alejandro Arteaga. As the great family of ANIMA MUNDI keeps growing, we can palpably feel the common bond linking us all – a longing which comes from the heart and which ignores boundaries of creed or nationality, a passion which unites us all to brave long trips, high costs and the occasional discomfort to get that magical glimpse of nature we have been dreaming about...and maybe to succeed in capturing it through our camera.

On a different note, we cannot help noticing that – given our substantial readership – our embedded hyperlinks are getting a ridiculously low number of clicks. Most readers we have spoken to have confessed they have never even attempted to view our YouTube videos or clicked on any given active link embedded in the magazine, neither those in the editorial content nor those in the ads. In fact, most people do not even seem to notice there are active links! We are puzzled – including videos and active links to the contents of every issue is a lot of work, and it'd be rather pointless continuing to do so if our readers are not interested in them. There might be several reasons for this – the links might not be evident enough in our layout, or one's Internet connection might not be fast enough to make it worthwhile, or the linked content might be uninteresting to most, or the links might even go "dead" for some reason during the downloading process. After all, editing and publishing an online magazine is still very much a work-in-progress, and there are still many things to be learned (at least for us) – but the possibility of having active links and a fully interactive magazine seems too juicy to us to be cast aside like that. So – opinions, anyone? Let us hear from you! In the meantime...

Have a good trip!
 Andrea & Antonella Ferrari
www.animamundimag.com

■ An American Golden Plover - one of the many beautiful subjects of David Hemmings' trip report starting on page 7. David also took the Arctic Fox portrait featured on this issue's cover.



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We appreciate your
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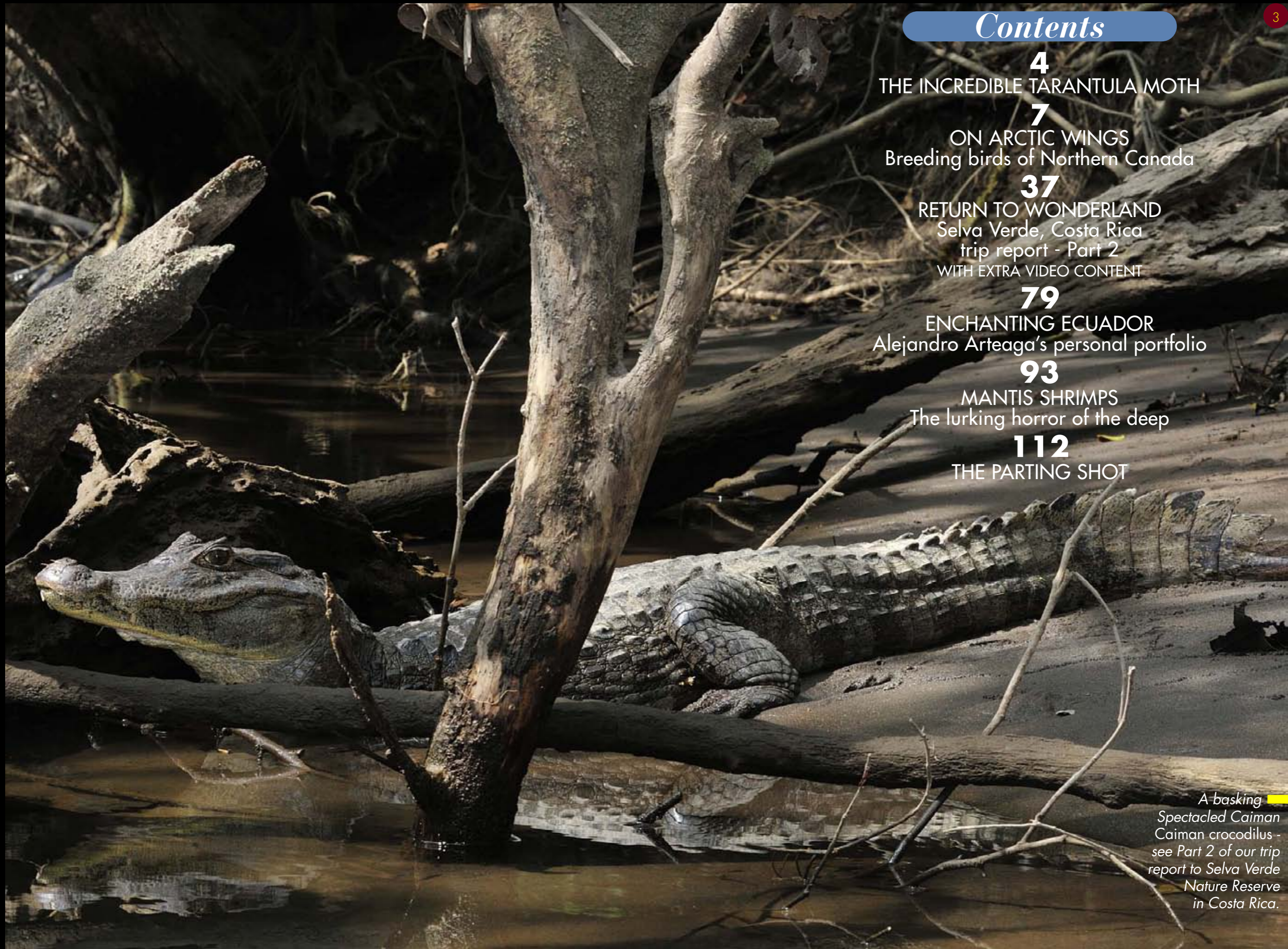
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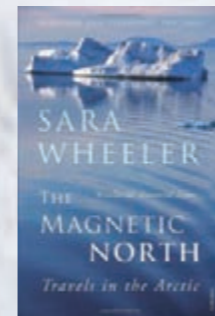
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Richard Sale
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Arctic Flight: Adventures Amongst Northern Birds
James McCallum
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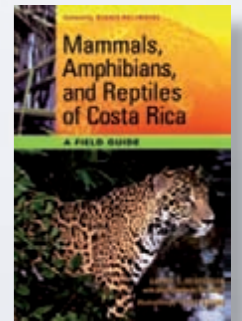
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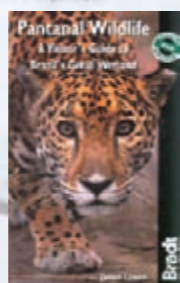
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Travellers' Wildlife Guides: Ecuador and the Galapagos Islands
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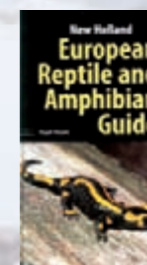


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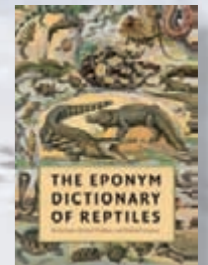
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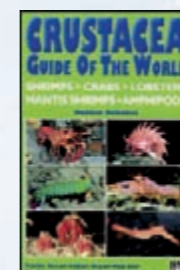


New Holland European Reptile and Amphibian Guide
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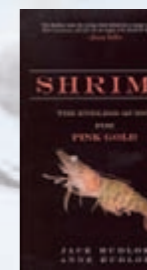


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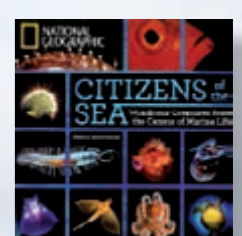
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When Giovanna Holbrook took on the challenge of leading two University of Florida science professors and a group of naturalists to the Galápagos Islands in 1971, she had no way of knowing the lasting impact that experience would have on her life and on the lives of those traveling with her. The group journeyed throughout the archipelago aboard a retired navy vessel, propelled by their spirit of adventure and thirst for knowledge. At that time, the Galápagos was just celebrating its twelfth year as a national park, conservation work at the Charles Darwin Research Station was still in its infancy, and tourism in the islands was virtually non-existent.

More than thirty years later, Holbrook Travel continues to serve the needs of teachers, students, academic institutions, and nature lovers. Although many changes have taken place over the years, Holbrook Travel has taken great care to remain true to its roots. As news of environmental concerns and world conflicts continue to fill the airwaves, it seems more important than ever to help people gain a better understanding and appreciation of the natural world and other cultures through firsthand experiences. In the words of Andrea Holbrook, president: “Our goal is to try to continue the great work my mother started.”

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4

THE INCREDIBLE **TARANTULA MOTH**

A RARE ENCOUNTER
**IN THE BRAZILIAN
ATLANTIC FOREST**
WITH ONE OF ITS MOST
SECRETIVE AND
UNIQUE SPECIES

A frontal  macro close-up of *Trichopassus giganteus* shows how well this South American moth can mimic large tarantulas - a *Grammostola* sp. is used for comparison here.



TEXT AND PHOTOS
BY DR. EDELICIO MUSCAT (*)

Brazil's Atlantic Rainforest has a very significant diversity, both in flora and fauna, and harbors a great variety of micro-ecosystems. This happens due to the characteristics of its vegetation, formed by various vertical strata that form successive layers from the ground to the treetops. Its biome is the result of the formation of two forest ecosystems, mainly dense woodlands: the dense humid ombrophilous forest and the semideciduous seasonal forest. The ombrophilous forest covers mostly the coastal plains, extending above 1,000 meters high, where the climate is moist the whole year

round. The semideciduous forest is found where the climate has two distinct seasons: rainy and dry. This environment's micro-ecosystems host many animal species, especially insects and amphibians. Even a bromeliad can be home.

The preservation of fauna in forested areas is known to be of vital importance to biological stability, to the maintenance of biodiversity, to the biological control of pests and to the process of renovation of flora in nature reserves. Worried about the importance of preserving the natural environment, the journalist and veterinary doctor Elsie Rotenberg decided to become part of that parcel of humanity that effectively does something about it – not only in the poetic sense, but really hands-

on. She founded a non-governmental organization called Dacnis that counts with a 17 hectares permanent preservation area within the Atlantic Rainforest in Ubatuba, a municipality located in the north coast of the state of São Paulo.

Since the good example begins right at home, one night Dacnis' biologist Edelcio Muscat goes into the NGO's area to see what he can find. Watchful of any movement, he notices two green dots reflected in the bright light of his torch. Years of field experience tell him it is an invertebrate. He walks in its direction and, coming close, what he encounters surprises him immensely: a fantastic moth he's never heard of, much less seen.

Camera, macro lens, flash, Edelcio begins recording the specimen for future identification. From the first shots he knows this is an interesting night. Not only is the moth new to him, it is also very odd: it presents characteristics both of camouflage and mimicry.

The moth's camouflage resides in its patterns and colors, which make it nearly invisible against the tree trunks on which it often rests. Mimicry is similar to camouflage, except that animals tend to appear similar to other animals. In the moth's case, to a tarantula! Its head and two pairs of forelegs resemble the spider's, giving it the appearance of predator instead of prey. The third pair of legs is tiny and almost hidden in its abdomen.



Above, *Trichophassus* shows the mottled leaf-like camouflage of its wings and the spider mimicry of its frontal legs. Right, two frontal close-ups show how faithfully the 12cm-long moth can imitate the posture of a tarantula's pedipalps and raised front legs.



More comparison shots between *Trichophassus* and *Grammostola*. Notice how the moth doesn't limit itself to superficially look like a large spider, but actually mimics a tarantula's unmistakable aggressive stance, adopted in self-defense when threatened, making its unique ruse even more convincing to the observer.



He calls Elsie and another colleague, Alberto Cecchi, to the scene so that they can all examine the insect. All of them look closely and are dumbfounded by the moth's beauty and strangeness. Edelcio finishes his photo shoot and the moth flies off.

From that moment, a long journey begins. Email exchanges between Edelcio and entomologists from different universities lead nowhere until, finally, Prof. Dr. Olaf Hermann Hendrik Mielke, from the Federal University of the state of Paraná, identifies the moth: it is a *Trichophassus giganteus*.

Trichophassus is a monotypic moth genus of the family *Hepialidae*, and *giganteus* is the only described species. It is endemic to Brazil – where it is called “*mariposa fantasma*”, or “ghost moth” – and all sources state that it is easier to find it in stormy nights (this, luckily for Edelcio, wasn't one!).

(* *Edelcio Muscat* is a biologist that works for *Dacnis*. He is a researcher who also develops projects about fauna and environmental education involving the communities that live in close contact with Brazil's Atlantic Rainforest. Besides that, he specializes in macro photography to record his findings.

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■ An Arctic Tern *Sterna paradisaea* caught frozen in mid-air, as it comes in to land with some freshly-caught fish prey.

A TRIP TO CANADA WITH DAVID HEMMINGS
ON ARCTIC WINGS

Welcome to the middle of nowhere:
photographing breeding birds in the tundra of Churchill, Manitoba

■ *Grounded Arctic Terns*
Sterna paradisica
somewhat lack the
exquisite gracefulness they
display while soaring.



Flashes of color in the barren landscape of the iced tundra



■ An Arctic Tern *Sterna paradisica* with a fish in its beak zooms over the dark, freezing, ice-covered waters of the Churchill River and Hudson's Bay in the Manitoba province of Canada.



TEXT AND PHOTOS BY DAVID HEMMINGS

When a nature photographer happens to ask you during a conversation, "Have you ever been to Churchill, Manitoba?", more often than not the first vision that comes to mind is Polar bears and freezing cold weather. It is, after all, the Polar bear capital of the world. I can tell you that most people will not think about photographing birds on the tundra in spring. If you are one of those, then you are really missing a great part of what this area has to offer other than the bears.

Every serious (and not so serious) bird and nature photographer should visit Churchill and its whereabouts at least once in a lifetime during mid- to late June. June in Churchill is fresh and full of life and there are beautiful species of birds everywhere in glorious breeding plumage. With beautiful breeding colored feathers and scenic backdrops of light purple flowered and tundra landscapes you will be sure to capture stunning images of the beautiful birds mating and nesting there.

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■ One of the most beautiful duck species seen in Churchill at this time of the year is the truly stunning Common Eider *Somateria mollissima*, the largest duck in the Northern Hemisphere. This is an adult drake gloriously showing off its full breeding plumage.



Churchill is located where the Hudson's Bay meets the Churchill River. It stands at an ecotone on the Hudson's Plains where three distinct eco-regions meet. It has boreal forest to the south, the arctic tundra to the northwest and Hudson's Bay to the North.

The climate in Churchill is subarctic, with long cold winters and short, cool summers. These cool summers are when the tundra hosts many different species of breeding arctic birds as well as Arctic Fox. More than 270 species of birds have been recorded within a 25 mile radius of the town of Churchill.

This is truly amazing in a place that looks like it holds no life at all at first glance! Upon arrival you may think to yourself something like "So this is Churchill" or "Where is everything, all I can see are big open tundra plains?". Then you

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One of the more commonly seen, but not less interesting, species in Churchill is the Semipalmated Plover *Charadrius semipalmatus*.

The term "semipalmated" refers to the partially webbed feet on this bird. They usually nest in areas with very little or no plant growth such as open tundra, beaches and, quite often, on gravel roadsides. They forage for food close to their nests and usually eat insects, crustaceans and worms.

A barren, muted landscape echoing of old tales and legends

■ A scenic view of the rather desolate but nonetheless spectacular landscape of Hudson's Bay see from Cape Merry.





might ask yourself, why have I spent all this time and money getting here? Don't worry though; many travelers have probably thought the same thing. It is not until you get settled in and spend the next few days roaming about the tundra and visiting the mouth of the Churchill River where it meets Hudson's Bay that you will have the answers to your questions. Once you have experienced beautiful lichen-covered rocks, seen and heard the gloriously colorful birds of the Arctic, seen and touched the gentle Beluga whales and gazed out at the soft glowing arctic sunset at midnight you will know why you are here.

Churchill in June can be downright pleasant, weather-wise. Average daytime temperatures range from 50 to 65 degrees Fahrenheit with fresh breezes coming in off Hudson's Bay,

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■ One of the more interesting species found in Churchill is the Bonaparte's Gull *Chroicocephalus philadelphia*. This gull has a distinctive black head with red feet in breeding season.



Another
Bonaparte's Gull
*Chroicocephalus
philadelphia*. This
species is named
after a nephew of
Napoleon, Charles
Lucien Bonaparte,
who was a leading
ornithologist in the
1800's in America
and Europe.
An interesting fact
about this species
is that it is the only
gull species that
will often nest
in trees.

■ Scant vegetation and nooks and crannies in the craggy landscape around Churchill offer refuge and nesting opportunities to many bird species.





*The Parasitic Jaeger (also known as the Arctic Skua or Parasitic Skua) *Stercorarius parasiticus* gets its name from the two main strategies it employs to acquire food. "Parasitic" refers to the habit this bird has of chasing gulls and terns to make them drop their food so it can pillage it. The second word is German for "hunter", as the Parasitic Jaeger will at times actively hunt for its food feeding on small birds, lemmings and eggs.*

■ *A Common Eider*
Somateria mollissima drake
flying low over the waters
of the Churchill river.
A famous colony of these
ducks is found on the Farne
Islands in Northumberland,
Great Britain. This colony
has been the subject of one
of history's first known
bird protection laws.
About 1,000 pairs still
nest there every year.



feeding the soft grasses and flowers of the tundra and creating one of the planet's nicest natural air fresheners. In June the frozen tundra springs to life. As the ice melts, birds arrive and mating and nesting begins and chicks start to hatch. Beautiful wildflowers such as Purple Paintbrush and Tufted Saxifrage blossom everywhere, creating fantastic backdrops. On my first visit to Churchill in June 2007, I stared out at the somewhat barren looking tundra landscape and thought, "Where in the world will we find birds to photograph out there?" That question was quickly put to rest as we headed out with our guide to closely explore the landscape and look for our quarry. Bird species to photograph ***continued on page 19*** >




A Harbour or Common Seal (*Phoca vitulina*) emerges from the ice-cold waters of the Churchill River. This species is found in coastal waters of the Northern Atlantic and Pacific Oceans, as well as those of the Baltic and North Seas, making it the most widely distributed among the pinnipeds (walruses, eared seals, and true seals).

include Common Eiders, American Golden Plovers, Whimbrels, Red-necked Phalaropes, Arctic Terns, Willow Ptarmigans, Hudsonian Godwits and more - but finding the birds to photograph is the first challenge here in Churchill. The first time I came here we hired a fantastic bird guide by the name of Bonnie Chartier. She has written a great book on birding in this area and knew all the places to look. Like in many arctic towns, there are a few dirt and gravel roads that traverse around the immediate area. A good portion of the

first day or two is spent scouting the tundra looking for movement and colors amongst the lichen-covered rocks, moss and just starting to bloom tundra flowers. Once you are out there you realize just how diverse the pockets of landscapes and rock formations are in the area. We were photographing Common Eiders flying by us where the Hudson's Bay meets the Churchill River, then we were photographing beautiful American Golden Plovers in stunning tundra flower surroundings and then we found ourselves photographing Red-necked Phalaropes in a pond in

continued on page 22 >

A Common  Eider *Somateria mollissima* hen takes off.





A late-afternoon ■ portrait of a Red-necked Phalarope *Phalaropus lobatus* bathed in warm light. This small migratory wader commonly breeds in North America and Eurasia.

■ A colorful Common Eider *Somateria mollissima drake* "brakes" in mid-air as it comes in for a not-too-elegant water landing.



waders. And this was all on the first day! This place really produces in the spring as far as the variety of bird species is concerned.

And not only is Churchill amazing for the diversity of species to photograph in June, it is also a great place for landscape photography. The endless variety of rock formations along with the flowing rises in the tundra with all of its color in the spring make for some wonderful images.

Churchill is also steeped in history. A wide variety of mostly nomadic Arctic people have lived and hunted in the area since about 1000 AD. The Thule tribe arrived during this time and they later became widely known as the present day Inuit people. They survived by being great hunters of caribou, seals and musk oxen. In the early 1600's a

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Arctic Tern ■
Sterna paradisaea
calling. Notice the
exceedingly small-
sized feet of this
species.



■ Above, another Hudson's Bay panorama. Right, Hudsonian Godwit *Limosa haemastica*. They will often hang out on the top of small pines and call to their mate. After breeding in the Churchill area, this bird will make a several thousand mile non-stop flight to southern South America. Left, the very colorful Willow Ptarmigan *Lagopus lagopus* male is white with red eyebrows (commonly known as wattles) and rust brown colors.



Danish expedition landed and stayed for the winter where Churchill now stands. Only 3 or 4 of the 65 who ventured there survived to return to Denmark. In 1717 the Hudson's Bay Company built the very first permanent settlement known as the Churchill River Post. This was primarily a trading post for the North American fur trade. The French later invaded and took over the fort from the vastly outnumbered English and for decades this fort was used on and off as the fur trade declined. With the success of North American agriculture, Churchill eventually became, and still is, a major shipping port for the export of grains to Europe, Japan and Russia. As of today the population of Churchill is about 50% non native, the other 50% consisting mostly of Chipewyan and Swampy Cree. Only about 5% are Inuit. ●



Parasitic Jaeger ■
or *Arctic Skua*
Stercorarius
parasiticus - notice
its strong, partly
hooked bill,
indicative of its
occasional
predatory habits.



■ The undulating, irregular and rocky coastline environment, rich in semipermanent ponds, offers a multitude of microhabitats to all breeding bird species.

Mixed flight of
Common Eider
*Somateria
mollissima* with
three drakes and
one hen. This
beautiful species
shows a strong
sexual dimorphism.



Three suitors and a princess flying in magical unison

■ A common Eider
Somateria mollissima
hen shows her muted
livery, which offers
excellent camouflage when
nesting among the reed
beds of the riverbank.



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- Your longest lens (at least a 300mm + 1.4x and / or 1.7x tele-converter)
- A wide angle lens
- 1-2 camera bodies
- Batteries and chargers
- Storage (flash cards and laptop or digital storage media is recommended)
- A tripod
- A flash
- A good bag to carry all of your gear in the van / in the field.

Additional Gear:

- Weatherproof Boots (Goretex hiking boots or good quality rubber boots)
 - Warm clothes – layers are best as the temperature can vary at this time of year.
 - Waterproof jacket
 - Fleece jacket
 - Long underwear
 - Warm socks!
 - Bug nets
 - Neoprene or rubber gloves (just in case the mosquitoes get nasty)
 - Bug spray
- Plus all of your normal personal items and equipment

A note about bugs:

Churchill at this time of the year generally has a cool breeze that keeps

the mosquitoes away (or at least bearable). The most important thing for this photo adventure is to be prepared. If you have a physical barrier between yourself and the bugs they are no problem! We are recommending that everyone bring long pants that bugs can't bite through, a weatherproof shell, gloves that are thick enough that bugs can't bite through and a bug net mask. If we all are prepared for the bugs they will not be a problem.

Photography Plan:

All of our days will be spent primarily within a 30 minute drive to and from the hotel. For some species we travel one and a half hours likely twice during the workshop. There is no set itinerary as we plan each day according to the weather and species we want to shoot that day. For example, if we have done really well photographing American Golden Plovers and have shot Willow Ptarmigans, but the light was not great, we may opt that day to go for the Ptarmigans again... you get the idea.

Weather:

Don't forget that Churchill is far north! The daytime temperatures in June range from about 2-15 degrees. Churchill is one of those places that can get all seasons in one day. So be prepared for all types of weather by dressing in layers.

Shooting in the late spring-early summer tundra environment requires a degree of motivation and specific equipment (right), but spectacular encounters such as this one with a curious - and rather endearing - Harbour or Common Seal *Phoca vitulina* are virtually guaranteed.





Left top, a Pacific Loon *Gavia pacifica*. Pacific Loons nest in the Churchill area but can be difficult to find. Right top, a Ruddy Turnstone *Arenaria interpres*. Right bottom, a Whimbrel *Numenius phaeopus*. This species is one of the largest in the Curlew family, averaging 16 inches in length. They too nest out on the tundra and feed on small invertebrates, small crabs and butterflies. They will also fill up on berries before migration. Left bottom, female Willow Ptarmigan *Lagopus lagopus*: females are subtly camouflaged in a mixture of beautiful brown, rust and yellowish gold tones.



■ A large, colorful Common Eider *Somateria mollissima* drake takes flight from the river surface. High shutter speeds are mandatory to freeze the action when photographing fast-moving subjects such as this - notice the water droplets suspended in mid-air.





American
Golden Plover
Pluvialis dominica
in its beautifully
colored breeding
plumage.
This species of
shorebird is
considered to be
the fastest flier of all
shorebirds with top
speeds of 60mph!
They fly up to
20,000 miles per
year to migrate
and nest,
sometimes flying
nonstop over
the Atlantic for
3500 miles.



■ The barren, severe landscape of the Hudson's Bay in late spring. Drab-colored clothes are a must when photographing here.



■ An Arctic Hare *Lepus arcticus* in its summer coat - evolved to offer better camouflage among the barren, lichen-covered rocks of its habitat. With the coming of winter and snow its coat will turn a pure unblemished white, making it virtually invisible in the iced landscape. Together with the Arctic Fox *Vulpes lagopus* it is one of the very few mammalian species commonly seen around Churchill in spring and summer.



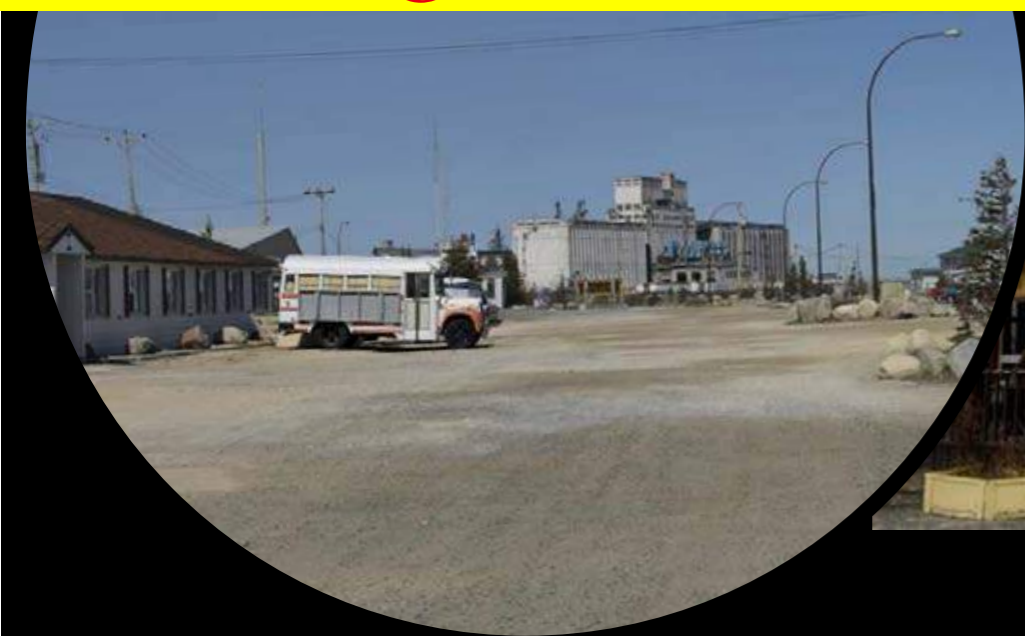
■ Another beautiful bird found in the Churchill area is the Short-billed Dowitcher *Limnodromus griseus*: this species is very colorful in its breeding plumage. It was the last day of the trip before we actually found one foraging in a small pond by the side of a road. Never stop looking! It is fascinating to watch one of these birds feeding as it rapidly probes its beak in and out of the mud like a sewing machine.



A muted symphony of browns, greys and ancient gold

At-a-glance travel guide

COUNTRY OF DESTINATION: CANADA



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: The city of Winnipeg, Canada, is the main hub for travel to Churchill. Since there are no actual roads to Churchill, there are only two primary modes of transportation to Churchill, air and rail.

The flight from Winnipeg, Manitoba to Churchill, Manitoba is approximately two hours in length. Two airlines serve Churchill, Calm Air International (Tel: 1-800-839-2256) and Kivalliq Air (Tel: 1-877-855-1500) with daily flights to and from Winnipeg, through Churchill and into the Kivalliq District of Nunavut. Calm Air also offers three flights a week to and from Thompson, Manitoba.

The Railway train, known as the Bayline or the Muskeg Special, departs Union Station in Winnipeg for Churchill every Sunday and Tuesday morning at

9:00am. The train ride is approximately 48 hours long, arriving around 6am. The train arrives to and departs from Churchill every Tuesday, Thursday and Saturdays.

MEANS OF TRANSPORT: While in Churchill, your means of transport will depend a lot on the season you are there. If you are there in June photographing birds and fox your main means of transport will be a good 4 x 4 or an ATV. There are only a couple of roads that you can travel while in Churchill and except for the main road in town, they are all dirt and gravel. In the winter you will need a 4 x 4 for sure.

CURRENCY: Canadian currency, the Canadian dollar, is the local currency in Churchill. If you are

planning a trip to Churchill, hotels and vehicle rentals can be paid in advance. While in town most establishments accept major credit cards and of course, cash. There is also a Royal Bank of Canada in town.

ACCOMODATION: Do not expect any 4 or 5 star accommodations in Churchill - but the hotels are clean and very functional. Room rates per night average around \$150.00 CAD. When I stay in Churchill there are two hotels that I can highly recommend. One is the Seaport Hotel. The Seaport is Churchill's only full amenity hotel which offers a licensed restaurant, 71 seat dining room, 47 seat cocktail lounge & 200 seat beverage room with V.L.T.'s. The hotel has a 3.5 star rating thru the Canada Select hotel program. The rooms

No-frills accommodation and the occasional rogue Polar bear



include private bath/shower, free cable tv, clock radios, hair dryers, coffee makers, microwave ovens, fridges and wireless internet. Smoking rooms are available. ATM is available. All major credit cards are accepted. Complimentary shuttle to and from the airport is available too.

The Polar Inn & Suites offers high standards of guest room comfort through their 3 Star Canada Select Rating. Whether you are traveling for pleasure or business you may select from their one bedroom apartments with full kitchen facilities or kitchen studio suites or standard units. All rooms are equipped with fridge, private bath, remote tv, free cable and movie channels, complimentary in-room tea and coffee. Non-smoking rooms, VCR's, double, queen or king beds are available. The Polar Inn & Suites is closely sited to restaurants, shops, tour offices and the train station.

FOOD: Gypsy's Bakery, Restaurant and Coffee Shop! Whether you are in the mood for a charbroiled burger or a gourmet meal, Gypsy's Bakery has it all. Owned and operated by the Da Silva family, this licensed restaurant can seat up to 100 guests. Their great food

and friendly service come highly recommended by the many residents, visitors and tour companies who have made Gypsy's Bakery the place to be in Churchill, Manitoba. Gypsy's has a cafeteria like atmosphere. The food is fantastic and the service is top notch. They even have wonderful espresso and lattes!

The Seaport Restaurant at the Seaport Hotel also serves up some great local and standard cuisine. Prices are in line with standard food fare and your pocket book will not be too stressed out by the bill.

LANGUAGE: English.

WORRIES: About the only worry you might have in Churchill is a rogue Polar bear around town. It is very rare but it can happen. If you ever do come across a Polar bear, back away slowly while keeping eye contact and get to a safe area asap. Report the bear immediately to the RCMP in Churchill - remember, Polar bears can be extremely dangerous to humans!

HEALTH: Not really any health issues to worry about in regards to local concerns. If you happen to

fall ill while on a trip in Churchill there is a fully staffed medical center in town. The Churchill Regional Health Authority is located in the Town Centre Complex.

CLIMATE: The winters in Churchill can be downright freezing, with average temperatures of about -27 degrees Celsius. The summer is cool with some warm days occurring in July and August. The average summer temperature is around 15 degrees Celsius daytime.

BESIDES: In addition to being a great place for nature photography, Churchill is steeped in Inuit culture. There is an Inuit museum in town with Inuit art and artifacts. There is also a National Historic Site, Cape Merry. This site is the former cannon battery designed to complement Prince of Wales Fort, visible on the other side of the river. The cape is an excellent vantage point for observing the Beluga whales that frequent the tidal area of the river throughout the summer. Good sunset shots of Prince of Wales Fort can also be taken here. ●



"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

NATURE'S PHOTO ADVENTURES

Photographic Learning Travel Adventures

"Our goal at Nature's Photo Adventures is to lead instructional photographic workshops to the some of the world's most beautiful and unspoiled destinations while providing a rewarding and educational learning experience".

"We strive to exceed your expectations, taking you on an adventure and a once in a lifetime experience. Explore nature, share, learn and develop new levels of photographic skills and leave with fantastic photographs and wonderful memories and new found friends."

David Hemmings - President, Nature's Photo Adventures

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



info@naturesphotoadventures.com

<http://www.naturesphotoadventures.com>



Canada: Newfoundland - Puffins & Gannets • British Columbia - Spirit Bears • Alberta - Black Bears & Elk • Churchill - Breeding Arctic Birds and Polar Bears • Ontario & Quebec - Snowy Owls and Great Gray Owls
United States: Alaska - Kodiak Bears & Bald Eagles • Florida - Raptors **Asia:** Borneo - Orangutans, Proboscis Monkey, Broadbills • India - Bengal Tigers and birds **Africa:** Botswana - Chobe River - Elephants and Hippos • Kenya & Tanzania South Africa - African Penguins and the Big 5 **Central & South America:** Peru - Machu Picchu and The Amazon • Costa Rica - Hummingbirds • Brazil - The Pantanal & Jaguars

COSTA RICA'S SELVA VERDE NATURE RESERVE

RETURN TO WONDERLAND

Part Two of our extensive trip report
on Costa Rica's Selva Verde Nature Reserve,
including the unmissable river excursions
along the spectacular Rio Sarapiquí



■ An adult male Green Basilisk *Basiliscus plumifrons* in breeding livery stakes its territory by the Rio Sarapiquí's boulder-strewn shores.

■ Strawberry Poison Dart Frog *Ooophaga pumilio*, a tiny Dendrobatid frog whose range is restricted to the Caribbean slope of Costa Rica.



TEXT BY ANDREA FERRARI
PHOTOS BY ANDREA & ANTONELLA FERRARI

*A*s our fiberglass launch glides quietly and noiselessly along the swift-flowing, jade green Sarapiquí river, I cannot help reflecting on Costa Rica's successful act of balance – the river banks drifting by are as wild as they can be, with huge sandy beaches overshadowed by enormous trees festooned with bromeliads, lianas and


orchids, and yet a few meters beyond lie the neatly cultivated banana plantations or small family-owned farms so typical of the agricultural Heredia region. Now and then we catch a glimpse of a large Plumed Basilisk or an even larger Green Iguana basking in a sunny spot, side by side with a few cattle quietly feeding by the river's edge or a noisy, joyful group

of kids happily splashing in the water. Surprisingly, they all fit in the same larger picture – an apparently balanced canvas in which humans and wildlife have found a way to coexist peacefully. However precarious this truce may be, one cannot help but admiring Costa Rica for the gigantic efforts it has taken to ensure it – this tiny, peaceful Central American

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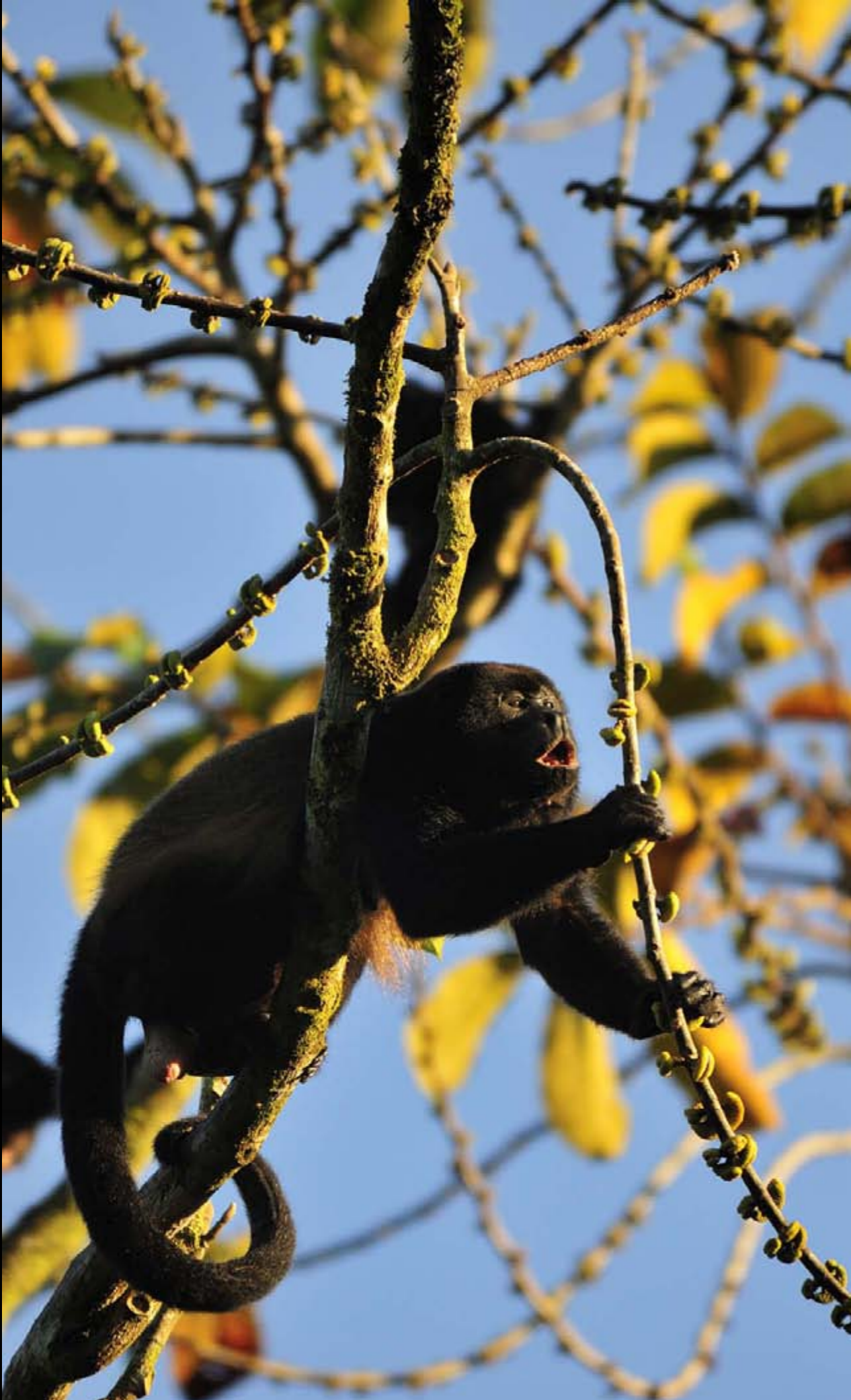
Multicolored living jewels littering the rainforest floor



A large female  Hercules Beetle *Dynastes hercules* surprised on a branch during a torrential downpour. This is one of the largest and heaviest insects in the world.

*Like a sculpted statue
the caiman lies still, in
patient wait of its prey*

A perfectly camouflaged
Spectacled Caiman
crocodilus basks on the shores of
the Rio Sarapiquí.



Left, an adult male Mantled Howler Monkey *Alouatta palliata* feeds at dawn. Above, a male Chestnut-mandibled Toucan *Ramphastos swainsonii*, one of Selva Verde's most conspicuous (and noisy!) bird species.

nation truly is a beacon for conservation worldwide, and a prime destination for wildlife photographers and nature lovers. Gazing in the shallow water slipping below us, I can see with absolute clarity huge shoals of 50cm-long, rainbow-sided, trout-like fish swimming in the lazy current, perfectly silhouetted against the white pebbles of the river bottom. This is the end of the dry season, and the mighty Sarapiquí is at its

lowest – in a few weeks, with the coming of the rains, this peaceful, slow-moving watercourse will rapidly transform into a raging, dangerous, foaming mass of churning muddy water. As we elegantly dodge a bone-white tree trunk emerging from the surface, our boatman's hoarse whisper awakens me brusquely from my reverie – “Caimàn!”. Snapping to attention, we take our binoculars to our eyes and scan intently the closest river

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■ A scenic corner of the Rio Sarapiquí in proximity of the La Selva Biological Station. A peaceful image of bucolic wilderness - but did you see the basking Spectacled Caiman *Caiman crocodilus*? This photo is a good example of the difficulties encountered when trying to spot well-camouflaged wild animals in their environment.





■ Top left, an unidentified longhorn beetle; bottom left, a Green-and-Black Poison Dart Frog *Dendrobates auratus* with rather uncommon markings. Above, a leaf-mimicking grasshopper, one of many several species found in Costa Rica.

bank, looking attentively at the sandy beach and among the trees' gnarled roots, but as the launch glides to a noiseless halt and beaches itself we can only look at each other and shrug in delusion – surely our guide was mistaken? Our questioning gaze to him is met by a flashing smile (and a decidedly ironic gaze) as our Tico friend silently points a couple of meters from us – and sure enough, as the landscape

shimmering in front of us falls together like the pieces of a puzzle, a large Spectacled Caiman basking by the river's edge emerges from the broader picture, its dragon-like upturned snout mirrored in the clear waters lapping at its webbed, clawed feet. As if by magic, we can now suddenly see with utmost clarity its armored body resting on the sand, its thick, muscular, plate-covered tail stretched behind it, its jewel-like

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The impish grin of the red-eyed green elf of the rainforest



■ One of Costa Rica's most iconic and eagerly sought-after species, the Red-eyed Tree Frog *Agalychnis callidryas* can be occasionally observed at night in rainy weather. The Pacific population sports purplish red - rather than blue - flanks.



■ Clockwise, from top left: an unidentified, toupet-like and highly urticating caterpillar, a small Litter Toad *Rhaebo haematiticus*, a brightly marked grasshopper nymph and a male adult Central American Ameiva *Ameiva festiva*.



■ The bright colors adorning this Saturnid moth caterpillar advise would-be predators to stay well away from its highly urticating bristles. A warning coloration - ie an aposematic livery - is commonly shown by urticating, poisonous and venomous organisms.



amber eyes unblinkingly meeting our gaze. Once again, nature has gracefully fooled us, disguising its treasures as they were all the time right in front of our unseeing eyes – we could clap our hands in sheer joy as for the next twenty minutes we methodically click away at our complying subject, so close we could actually touch it. Nor the gentle Caiman will be the only subject of the day, as we did right in renting the launch just for ourselves and doubled the normal duration of the river trip: the cruises normally last two hours and take place with a boatful of tourists (six, eight or even ten people, normally not interested at all in a wildlife photographer's needs),

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The stunning Murano glass-like semitransparency of the bright red young leaves at left seems to mirror the aposematic coloration of the infinitely smaller Strawberry Poison Dart Frog *Oophaga pumilio* at right. Excellent climbers, these tiny amphibians have been collected in the forest canopy at a height of more than 60 meters - a very long climb and no mean feat for such a small species.





■ A rather unusual sighting: imposing Turkey Vultures *Cathartes aura* will occasionally enter the rainforest canopy if attracted by the smell of carrion, but are usually found in more open environments.



Top left, Black-cowled Oriole *Icterus prosthemelas*; bottom left, Golden-hooded Tanager *Tangara larvata*, locally known as "Siete colores". Above, adult male Green Basilisk *Basiliscus plumifrons* in breeding livery displaying on the dark, wet forest floor.

but to barely scratch the surface of what the Sarapiquí has to offer, one needs solitude and longer stays. We like the river trip so much, in fact, that later on we take another one – bagging several enormous American Crocodiles, packs of Collared Peccaries, Mantled Howler Monkeys, a bounty of river birds, an enchanting Two-toed Sloth and even the rare sighting of a Neotropical River Otter catching its fish prey. At the end of the

day, we disembark with full memory cards and a nagging thought – what else could we have seen if we had taken the full trip north to the border with Nicaragua? It's just a few hours after all, but in progressively thicker forest and far from human settlements – our guide mentioned the possibility of getting close to even bigger American Crocodiles up there. Maybe next time...

■ The stunning profile of a Walking-leaf katydid *Mimetica mortuifolia* nymph less than 1cm long - without its enormous antennae, of course! Finding such small subjects at night requires a great deal of careful observation.

Strange creatures that go bump into the warm humid tropical night



Portrait of a █
Green leaf
Praying Mantis
Choeradodis
rhombicollis, a very
photogenic and
rather common
inhabitant of Selva
Verde's lowland
rainforest. The flat
protrusions of its
thorax make this
species basically
invisible among the
leaves of the
creepers where it
commonly lurks.
Right, the
unmistakable
and rather gaudy
inflorescence of a
Heliconia species.





The Rio Sarapiquí boat trip takes place a few miles from Selva Verde itself – the Nature Reserve is admittedly crossed by the river itself, which however assumes a decidedly more stream-like character there, with a few easy rapids and a more rocky environment. Great fun for those interested in rafting surely, but not so conducive to good wildlife photography! It is one of the many interesting excursions one can undertake from Selva Verde itself – in fact, it is perfectly possible to hire a launch for a couple of days and motor all the way up to Tortuguero National Park, on the Caribbean coastline, from the town of Puerto Viejo. In Costa Rica the

opportunities for nature and wildlife explorations are literally endless, and the whole Country's economy is so carefully structured around the core idea of ecotourism that none of the hassles to be expected elsewhere in organizing trips to protected areas are to be feared here – in fact, visiting the place is rather like entering a kid's toys and candy store, one doesn't know where to start from! It is also difficult for newcomers to fully realize how small Costa Rica actually is – there are a few vantage points along the Cordillera Central, the mountain ridge dividing the Country from north to south, from which one can simultaneously see the Pacific and

Vines and creepers drape the tree trunks in every corner of the forest.

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Top left, female ■
Anhinga Anhinga
anhinga drying its
 wings by the Rio
 Sarapiquí; top
 right, a large
Psalmopoeus
reduncus Costa
 Rican orangemouth
 tarantula lurking in
 ambush by its
 arboreal lair; bottom
 right,
 displaying *Ground*
anole *Norops*
humilis male,
 showing gular
 dewlap; bottom
 left, *Shining*
Honeycreeper
Cyanerpes lucidus.



Antonella is dwarfed by a gigantic fallen tree trunk, thickly colonized by creepers, mosses and epiphytes. The complex, multi-layered environment of the Caribbean rainforest of Selva Verde Nature Reserve is quite evident here - microhabitats are almost endless. With the coming of the rainy season the dry, leaf-covered river bed will soon become a sluggish, slow-moving forest stream.





Adult male
Green Basilisk
Basiliscus plumifrons, left, displaying the typical head bobbing used to stake its territory. Right, a sizeable Common Boa *Boa constrictor* makes its way among the forest's undergrowth. This generally harmless but ready-to-bite species can reach a length of more than 4.5 meters - although it remains generally smaller - and it is equally at home on trees or on the ground.



A small Praying Mantis has just completed its ecdysis - the moulting process by which it emerges from its old exoskeleton - leaving behind its empty shell.



Atlantic oceans on clear days, and getting from one National Park or Nature Reserve to the next is more often than not a matter of hours rather than days. Despite its small size, however, Costa Rica boasts an enormous variety of biotopes thanks to its greatly varied orography, so that some species which are not present in any given spot can be frequently and reliably seen and photographed just a few miles away but at a different altitude. But among all

these wonderful choices, ranging from rainforests to volcanoes and from sun-drenched beaches to mist-shrouded cloud forests, the discerning visitor and wildlife photographer should not miss the option of a long, quiet, relaxed boat trip along one of Costa Rica's big rivers, such as the Rio Sarapiquí in the Heredia region or the Rio Tarcoles on the Pacific coast. Experience worldwide has taught us that river boating, given the right conditions and in the presence of an

Emerging from the old shell to begin a new life with a fresher one



experienced, knowledgeable guide, offers some of the best chances ever for successful wildlife photography, often allowing a close approach to normally wary subjects and guaranteeing the sighting of shy species which would otherwise go easily missed in the closely-curtained forest environment.

There's one facet of wildlife photography where boat trips cannot not really deliver, and that is, predictably, macrophotography – an activity unto itself which requires a very close, specific approach to the subject and a very firm footing (many use tripods – we don't). No worries however – Costa Rica is one of the world's top destinations for macro, and taking great shots can often be ridiculously easy as a network of trails criss-crosses every National Park or Nature Reserve, allowing close observation and interaction with macro subjects. Trails vary in difficulty, but most are extremely well-maintained and easily

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Far left top, the much-feared "Bala" or Bullet Ant *Paraponera clavata* - fast, aggressive and capable of inflicting one of the world's most painful stings. Top left, Ground anole *Norops humilis*. Bottom left, a very unusual image of a tiny, newly-metamorphosed Red-eyed Tree Frog *Agalychnis callidryas* caught in mid-yawn. Notice reticulated membranes covering the eyes.



A Robber Fly (family Asilidae) has just captured a winged ant and is now sucking the body fluids from its prey using its proboscis. Robber flies count more than 7,100 species worldwide.



managed by visitors (Selva Verde even offers paved and roofed ones in the surroundings of its Lodge area to avoid getting drenched when it rains!), so the chances of taking a few good pics are extremely high on any given day (or, better, night). The right thing to do here, as usual, is to walk at a snail's pace, pausing every few steps, listening carefully and checking every possible nook and cranny which might

be inhabited by an interesting species. As our magical Caiman - which suddenly emerged from the complex tapestry of its river bank background to reveal itself after having been there all the time - has already demonstrated, most of our subjects are always there, often in full sight. The secret is to use one's eyes well...and Costa Rica's rainforests are the perfect training ground to learn that fine art. ●

Top, male ■ Maniled Howler Monkey *Alouatta palliata* feeding in the forest canopy; top right, an unidentified but colorful assassin bug; bottom right, a longhorn beetle.



Getting its greenish coloration from the algae living on its fur, a Hoffmann's Two-toed Sloth *Choloepus hoffmanni* hangs upside down from its tree branch perch in a typical posture. This fairly common but not easily sighted species can be identified by its broad, pig-like snout and by the two large claws on its front feet.



Clockwise, from
 top left: male
 Passerini's Tanager
Ramphocelus
passerinii,
 unidentified
 grasshopper (notice
 curious heart-
 shaped marking on
 its back!), Blue-gray
 Tanager *Thraupis*
episcopus and
 unidentified
 longhorn beetle.



Green Leaf
Praying Mantis
Choeradodis
rhombicollis in
threat posture,
clearly showing its
enlarged, flattened
thorax.





An exquisitely camouflaged planthopper (see also page 73 for a detailed dorsal view). Right, the necklace-like infructescences of a palm; far right, a scenic view of the Sarapiquí river from the Selva Verde suspension bridge.





■ Green
Honeycreeper
Chlorophanes
spiza males
display a dazzling
blue-green
iridescence.



■ Clockwise, from top left: Bright-rumped Flycatcher *Attila spadiceus*, subadult Green Iguana *Iguana iguana* basking on a branch (notice brighter pattern and colors, typical of young specimens), unidentified mantid in threat display and Social Flycatcher *Myiozetetes humilis* sunning itself.

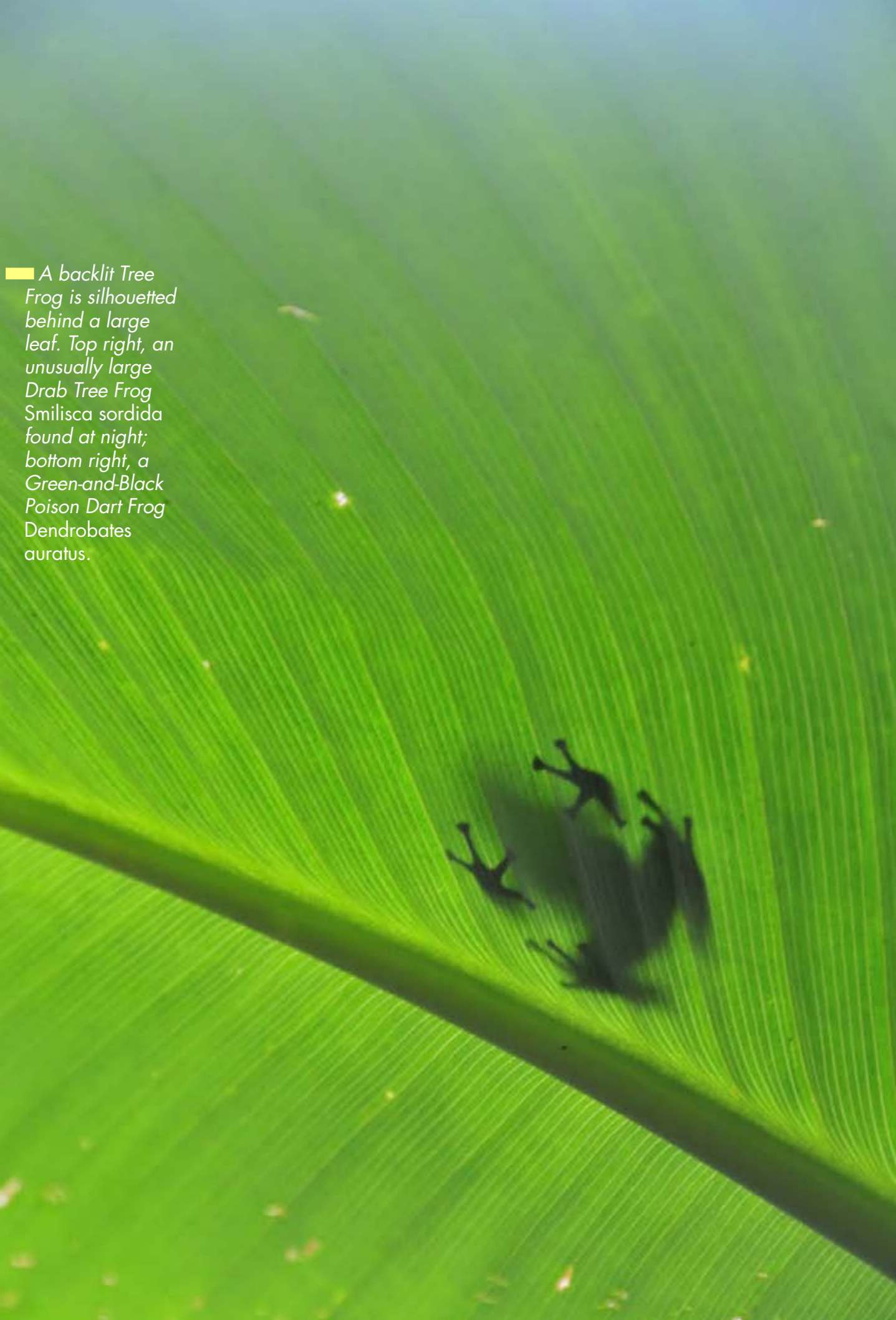


■ The sculptured features of a Spectacled Caiman *Caiman crocodilus* floating on the surface of the Rio Sarapiquí. This species can be occasionally approached very closely if one moves slowly and cautiously.



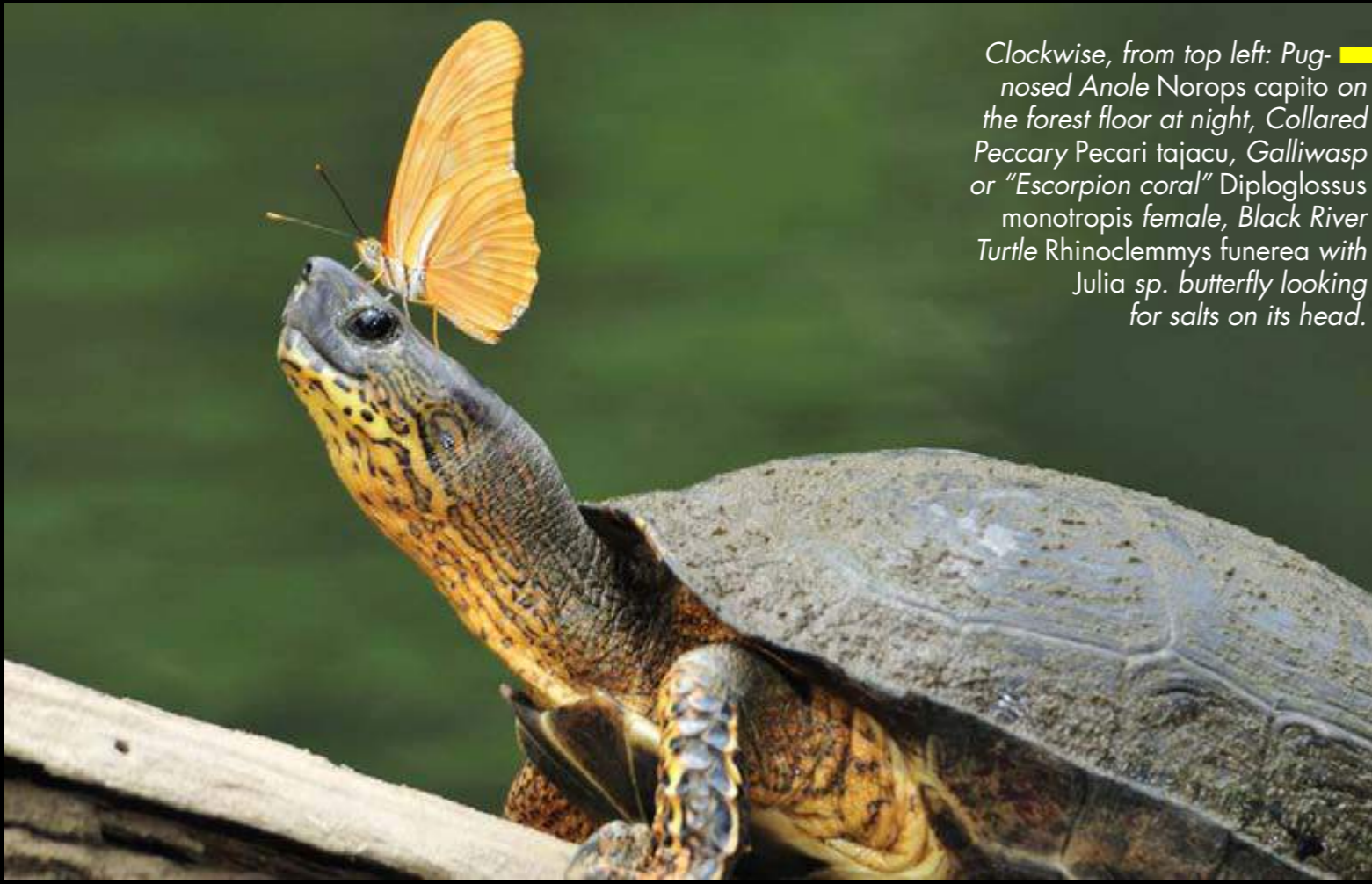
Living logs lying in silent ambush but ready to strike

■ A backlit Tree Frog is silhouetted behind a large leaf. Top right, an unusually large Drab Tree Frog *Smilisca sordida* found at night; bottom right, a Green-and-Black Poison Dart Frog *Dendrobates auratus*.





The lowland rainforests of Central America usually show a more open canopy than those of South-East Asia or the Amazon region of South America, allowing more sunlight to reach the lower levels and the ground itself.



Clockwise, from top left: Pug-nosed Anole *Norops capito* on the forest floor at night, Collared Peccary *Pecari tajacu*, Galliwasp or "Escorpion coral" *Diploglossus monotropis* female, Black River Turtle *Rhinoclemmys funerea* with *Julia* sp. butterfly looking for salts on its head.





A stunning Bare-throated Tiger Heron *Tigrisoma mexicanum* struts on a beach of the Sarapiquí river. This is one of Costa Rica's largest, most stately and easily sighted waterbirds.



■ Clockwise, from top left: two mating *Ascalapha* sp. moths, portrait of a Tailless Whipscorpion *Paraphrynus laevifrons*, a *Caligo* (probably *atreus* sp.) Owl Butterfly and a large Golden Orb-weaver *Nephila clavipes* spider with its incredibly strong, golden web.

A scenic view of the Sarapiquí river in the vicinity of Selva Verde Nature Reserve.



ANIMA MUNDI ON YouTube

Click on the images and watch two short videos on Selva Verde Nature Reserve and its wildlife.





Far left, male Striped Basilisk *Basiliscus vittatus* in breeding livery; left, a spectacularly camouflaged planthopper; right, a clear-water forest stream at Selva Verde.

■ Delicately nuanced, a budding *Musa* sp. flower is bathed in pinks on the bright green background of its leaves. In a few weeks this beautiful inflorescence will have transformed into a...banana.

Abstract patterns and flashes of colors among the forest's chiaroscuros





A juvenile Central American Ameiva *Ameiva festiva* moving on the leaf-covered forest floor displays its metallic-blue tail. Far left, a beautiful Broad-billed Motmot *Electron platyrhynchum* perching in full sight.

*The tiny, colorful
and pugnacious
Sumo wrestlers
of the rainforest floor*

■ A tiny Strawberry
Poison Dart Frog
Oophaga pumilio
displays openly its
pugnacious nature.
Males of this
species will fight for
hours to solve their
territorial disputes.



At-a-glance travel guide

COUNTRY OF DESTINATION: COSTA RICA



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 flight will land at Juan Santamaria International Airport in San Jose, smack in the middle of the Country. From the capital it's a two-hour long car drive to Selva Verde – your driver will be waiting at the passengers' exit to pick you up with the resort minibus. Keep your camera at hand – it's a very scenic drive as the road passes through the beautiful forested hills and ravines of Braulio Carrillo National Park.

MEANS OF TRANSPORT: None since you won't need one. For excursions to nearby Nature Reserves or the Sarapiquí river, the Lodge will

gladly organize some private transport or get a taxi for you – public buses are also available. Renting a car and driving around isn't really a good idea at all – it might save you some money but truck drivers in Costa Rica are a reckless, dangerous breed and deadly road accidents are a daily occurrence.

CURRENCY: Trips are usually paid in advance, but extras and bills at **Selva Verde Nature Reserve and Lodge** can be settled in Euros or US currency. The local currency is the Costa Rican Colon or CRC. All trips and excursions can be paid to the Lodge together with your bill at the end of your stay – very convenient.

ACCOMODATION: **Selva Verde Lodge** is a beautifully organized, spread-out compound comprising a main body with two restaurants, plus about 40 double rooms and several bungalows broadly dispersed on a huge, semi-wild forested and gardened area. All buildings are on stilts and are connected by long, paved and roofed walkways, very useful for a short post-dinner stroll if you're not up for a night walk in the primary forest (which can only be visited with a guide). There's also a lovely and perfectly maintained swimming pool, but you'll probably be too busy photographing animals to make much use of it.

A dazzling variety of flora, fauna and scenic landscapes



FOOD: Excellent and abundant – you can choose between the Italian Restaurant on the ground floor, La Terrazza, for a dinner *à la carte* (and the Italian recipes are done properly for once!), or opt for a rich buffet in the self-service restaurant right above it. Food is healthy and absolutely safe – we consumed staggering amounts of fresh salads and fantastic fresh tropical fruit juices every day for four weeks and never had the slightest problem. Don't miss the typical Costa Rican breakfast – *Gallo Pinto*, a rustic, country-style dish of fragrant rice steamed with black beans and coriander and with fried eggs on the side.

LANGUAGE: English and Spanish.

WORRIES: Costa Rica is a safe country with a very high rate of literacy and a reasonably high standard of living – "Ticos" (colloquial for Costa Ricans) are usually extremely friendly and pleasant – we love

them! However – as in most countries – it's better not to walk around at night with an expensive camera dangling from your neck if you're in some dubious neighbourhood. Inside the Selva Verde compound you'll be perfectly safe obviously as there's security round the clock. More dangerous might actually be the silly habit of walking around barefoot at night and without a torch – this is the home of the much feared (and rightly so) *Terciopelo* or *Fer-de-Lance* *Bothrops asper*, a big, fast, very irritable and extremely dangerous venomous snake.

HEALTH: No worries. Botflies – 1cm-long parasitic maggots of the fly *Dermatobia hominis* which develop in the living flesh of mammals before pupating – are present, but cases of human infestation are rare in the Sarapiquí area.

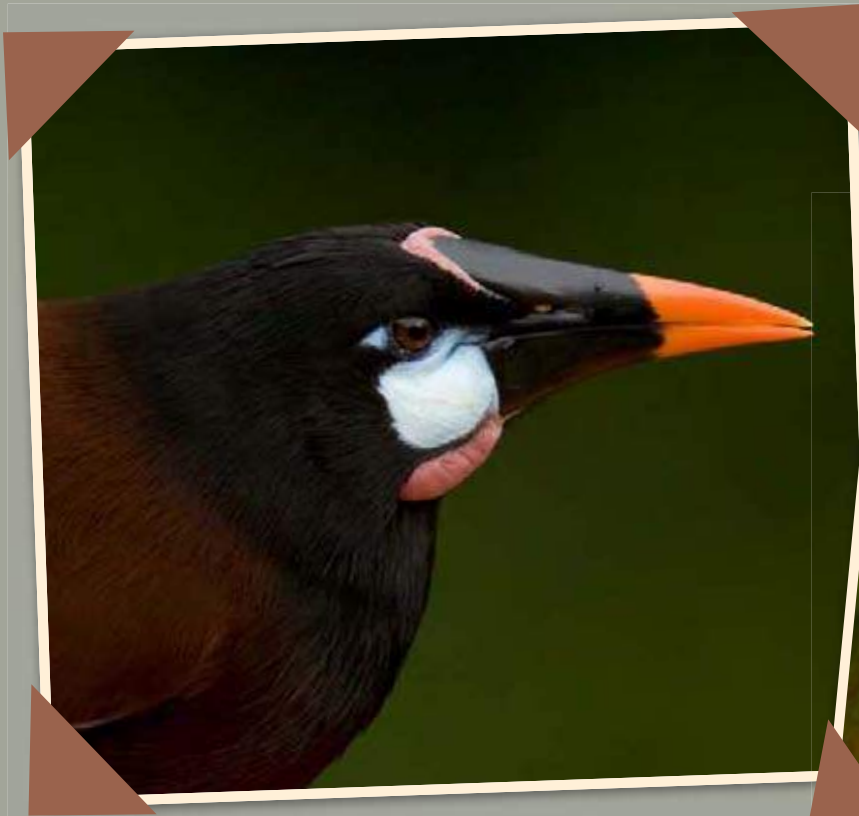
CLIMATE: Warm, tropical, occasionally rather humid

– but not as stifling or hot as you might imagine in the early mornings or at night (in fact it can be refreshingly cool at night, especially if it rains). The rainy season from April to September is the best for insects, amphibians and reptiles, but birdwatchers might instead want to visit from November to February.

BESIDES: Not much art or local culture, but an incredible amount of wildlife and wilderness which will dazzle even the most seasoned nature travellers – from beautiful beaches (both on the Pacific and Caribbean coasts) to mangroves, from cool montane cloud forests to warm lowland rainforests, from seasonally dry biotopes to perennially humid ones, Costa Rica has it all. Nature travel destinations are mostly easily accessible, well organized and easily explored – just remember prices honestly aren't the lowest in the world, so inquire carefully about options before choosing. ●

Selva Verde Lodge & Rainforest Reserve

Sarapiquí,
Costa Rica



Somewhere in the middle of a 500-acre tropical rainforest reserve is a place where you can get away from the world and be surrounded by it at the same time. That place is Selva Verde Lodge & Rainforest Reserve.

As one of Costa Rica's legendary eco lodges, we are committed to a sustainable future – not only for Selva Verde, but for the people and wildlife that call the Sarapiquí home. We proudly carry and support Costa Rica's Certification for Sustainable Tourism. We actively work with conservation partners, including the Sarapiquí Conservation Learning Center, to promote conservation and environmental education throughout the local community. Learn more about our efforts when you visit Selva Verde!



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Alejandro Arteaga: A Wildlife Photographer in his own words

Enamored of his Country's wildlife, a young Ecuadorian herpetologist and conservationist lets beauty shine through in his striking photographic portrayals of endangered reptiles and amphibians

Ecuador is home to nearly 900 species of reptiles and amphibians. This country, smaller than the state of Arizona, houses more than 10% of the world's herpetofauna (all reptiles and amphibians). However, it is believed that, in Ecuador, about 35% of such amazing biodiversity is still unknown to science. This astounding diversity, mostly overlooked by wildlife photographers, is what drew me into the world of macro photography. Above all, it is my intention to discover, document and conserve Ecuador's reptiles and amphibians through technical and artistic photography. As a biologist, I always strive to capture images that are technically and scientifically valuable; as a photographer, I try to take pictures that are visually compelling. I believe that this type of photography is the best tool for improving people's perception of reptiles and amphibians, while it opens a window for knowing them in detail and to conserve them for their inherent, ecological and aesthetic value. Either as a research method, or as a hobby, the photography of reptiles and

amphibians is for me a highly productive and gratifying activity. A little about me: I'm a biology student at the Pontificia Universidad Católica del Ecuador; an institution in which I have worked as photographer and researcher. Even before that, I have been interested by nature photography and, above all, by Ecuador's astounding diversity. In particular, the diversity I have long considered most attractive and most in-need-of-conservation: reptiles and amphibians. It is my intention to work within both areas, art and science, in order to help conservation efforts as a biologist and to divulge information as a photographer. For some years now, I have successfully been using Canon digital SLR camera bodies (including the 7d, my current workhorse) and mainly Canon's 100mm f/2.8 Macro, which I consider the best lens for herpetography. The second lens I use most is the Sigma 15mm f/2.8 fisheye, which creates fantastic wide angle-macro shots in which the subject is portrayed in its environment. For the lighting, I use Canon's 430EX speedlite; for stability, any tripod with ground-level capabilities.



Enchanting Ecuador

<http://www.tropicalherping.com>



Northern Glass Frog

(*Hyalinobatrachium fleischmanni*), 13/11/02 | Ecuador, Esmeraldas, La Concordia
Canon EOS 7d | 100mm f/2.8 Macro | 1/50 f/8 | ISO 400 | Tripod | Flash

I spent at least 2 hours trying to photograph this frog from the best angle, which in this species is logically from below. (1)

Shooting this glassfrog from below was tricky. It first involved getting a thin, clean glass; then, using two diffused flashes from the sides, and finally, to angle the glass so reflections would be minimized. (2)

Condor Glass Frog

(*Centrolene condor*), 23/11/10 | Ecuador, Pichincha, Quito - Facilities of the Life Raft for Frogs
Canon EOS 7d | 100mm f/2.8 Macro | 1/125 f/14 | ISO 250 | Strobes

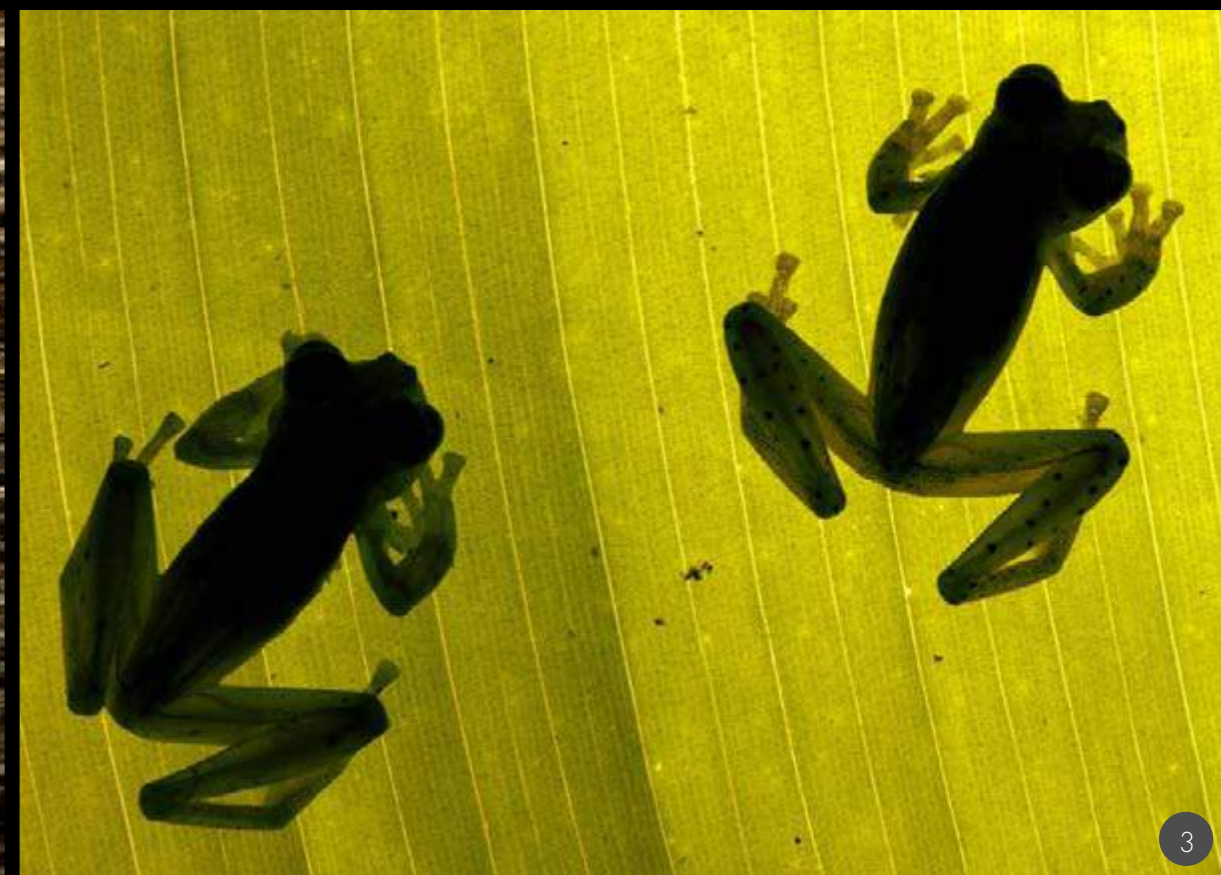
Ever since I saw my first glass frog, I've always wanted to portray one below and lit from behind. I have long considered this the ultimate glass frog picture, as these creatures are translucent. The shot was anything but easy. It was taken in a studio, with two strobes lighting the frog from behind, positioned to each side. An assistant held a thin, clean glass diagonally on top of a black velvet backdrop, so the frog was resting on it during the shoot. (3)

Giant Glass Frog (*Nymphargus grandisonae*)

| 23/11/09 | Ecuador, Pichincha, Rio Guajalito Protected Forest
Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro | 1/200 f/16 | ISO 100 | Flash

Having long heard about glass frogs, those enigmatic, translucent inhabitants of remote forests, it had always been my dream to find one. I then decided to visit a poorly-known cloud forest in the eastern slopes of the Ecuadorian Andes, in order to search for the famous glass frogs. I was alone, with my headlamp, my field notebook and my camera, surrounded by dense cloud forest. Then I saw it: posing there on a leaf, right next to a stream, just as I imagined. For a moment, I stared at the frog, then I grabbed my camera, my off-camera flash and took as many pictures as I could. The encounter lasted just a few minutes before the frog disappeared in the vegetation. I just couldn't believe it: I had seen a glass frog! moreover, I had grabbed a decent picture of it! I was thrilled.





Bridled Forest Gecko (*Gonatodes humeralis*)

| 04/05/10 | Ecuador, Napo, Archidona | Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro | 1/60 f/16 | ISO 100 | tripod

I faced two difficulties when making this picture: first, the light was dim; and second, the leaf was swaying in the wind.

To overcome these two problems I used a tripod, set the camera on self-timer and held the leaf still with my free hands. (1)

Turniptail Gecko (*Thecadactylus rapicauda*)

| 09/07/10 | Ecuador, Esmeraldas, Caimito | Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro | 1/200 f/16 | ISO 100 | flash

I love silhouettes, but I must admit I've had a hard time with this technique. Not in this case though, as I just found a perfect subject, this large, opaque gecko, and a semi-translucent, fibrous leaf-sheath. (2)

Emerald Glassfrog (*Espadarana prosoblepon*)

| 05/11/01 | Ecuador, Sto. Domingo de los Colorados, Tinalandia Lodge

| Canon EOS 7d | 100mm f/2.8 Macro | 1/200 f/16 | ISO 100 | Flash

This pair of glassfrogs were found foraging on riparian vegetation during a warm night.

Using an off-camera flash held behind the leaf made it possible to render them as silhouettes in the picture. (3)

Convict Treefrog

(Hypsiboas calcaratus) 01/11/08 |

Ecuador, Morona Santiago, Limón

Canon EOS Digital Rebel Xti | 100mm f/2.8

Macro | 1/250 f/8 | ISO 400 | handheld

Most often than not, I try to keep my subject's eyes in focus. This shot was no exception: by placing my camera so the focusing plane was aligned with the frog's eyes, I managed to focus on them sharply.



Convict Treefrog

(Hypsiboas calcaratus)

| 01/11/10 | Ecuador, Morona Santiago, Limón

Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro |

1/125 f/3.5 | ISO 400 | Handheld

Nocturnal frogs, such as this one, are rarely found during the day. However, it may be quite rewarding to capture them until the next day. In this case, the frog was kept moist inside a collecting container until the next morning. Then it was photographed under soft, early-morning light.

Emerald Glass Frog

*(Espadarana prosoblepon) | 08/08/10 | Ecuador, Pichincha, Mindo
Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro | 1/200 f/14 | ISO 100 | Flash*

Glass frogs are on the top of my photography list during every outing. Most often than not, I come back home empty-handed; quite unusually, I find only one; very rarely one, then another.

Only once in my life, I've found two, together on the same branch. As always, I became enchanted by their beauty before I got my camera and off-camera flash out of my bag.

It was pitch black, right besides a cold-water stream in a cloud forest, all I had to achieve focus was my headlamp; which quite conveniently frees my hands to hold my photographic equipment.





Palmar Treefrog (*Hypsiboas pellucens*)

| 09/07/10 | Ecuador, Pichincha, Mindo | Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro | 1/100 f/4 | ISO 400 | tripod, flash

This green, big-eyed frog wasn't sitting right on top of the *Heliconia* inflorescence when I found it. It actually was some meters away from it, on a green leaf. I thought that moving the frog to the bright red perch would be much more visually compelling, as both colors contrast quite nicely.

**Pinocchio
Rain-Peeper**

(*Pristimantis
appendiculatus*)

| 08/11/10 | Ecuador,
Pichincha, Rio Guajalito
Protected Forest
Canon EOS Digital Rebel
Xti | 100mm f/2.8
Macro | 1/200 f/13
| ISO 100 | flash

Once I saw this odd-looking amphibian, I knew I had to photograph it in profile. I wanted to make that conical tubercle on the snout, plus those on the eyelids, stand out against a black background. This was not difficult to achieve, given it was photographed during night using a single off-camera flash.





Neotropical Green Anole (*Anolis biporcatus*)

| 05/08/10 | Ecuador, Esmeraldas, Caimito
 Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro | 1/200 f/16
 | ISO 100 | flash

Two techniques allowed me to capture this flash shot without the typical flat appearance. One, I used the speedlite off-camera; and second, I attached a large diffuser in front of the flash unit, in order to achieve a softer light. (1)

Amazonian Poison Frog (*Dendrobates ventrimaculatus*)

| 27/06/10 | Ecuador, Pastaza, San Juan de Piatúa
 Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro | 1/5 f/16 |
 ISO 100 | tripod, flash

The challenge with this frog was to avoid touching it, and yet, prevent it from escaping. I achieved this by using a plastic bag as a glove, so I would not have to deal with its toxic skin secretions. (2)



Peter's Leaf-toed Gecko

(Phyllodactylus reissii) | 27/05/10 | Ecuador, Manabí, Alandaluz
Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro
| 1/200 f/16 | ISO 100 | flash

Most geckos are nocturnal creatures. By using a flash to light only the foreground, I managed to create a black background that gives a sense of nocturnality to the shot.



Brown Sipo

(Chironius fuscus)
| 27/06/10 | Ecuador,
Pastaza, San Juan de Piatúa
Canon EOS Digital Rebel Xti |
100mm f/2.8 Macro | 1/200
f/16 | ISO 100 | flash

Quick and aggressive. That's how I'd describe this snake. To get my picture, I had to overcome these two aspects of the behavior of this bad-tempered snake. What I did was to have an assistant distract the snake and hold the flash while I approached the subject from the side. I still was very nervous, I admit.



Pale Rain-Peeper

(Pristimantis eugeniae)
| 29/10/10 | Ecuador,
Pichincha, Las Galarias Reserve
Canon EOS 7d | 100mm f/2.8
Macro | 1/40 f/9
| ISO 320 | tripod | flash

From the start, I knew this strange amphibian gathering deserved its own creative technique: I combined the dim available light with a tiny dose of flash. In order to keep my camera steady, I used a tripod; to get a background that was really black, I placed a black velvet behind the frogs.





Eyelash Palm Viper

(Bothriechis schlegelii)

| 27/06/10 | Ecuador, Esmeraldas, Unknown locality

Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro |

1/200 f/20 | ISO 100 | flash

I was kind of trembling when I took this picture. The subject is one of Ecuador's most dangerous snakes, and I knew it right. I used the 100 mm lens, but I would have been much more confident using a 180 mm macro. With that working distance, a close-up portrait like this would have been far less risky.

Gummy Rain-Peeper

(Pristimantis riveti) | 29/10/10 | Ecuador, Cañar, Mazar Reserve
 Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro |
 1/100 f/8 | ISO 100 | tripod | flash

Very rarely, I spend less than 15 minutes shooting a frog (unless it escapes). In this case though, the frog was very chilled-out and just stayed still for enough time to allow me to set up my photo equipment and grab the shot I wanted.



San Lucas Marsupial Frog

(Gastrotheca pseustes) | 05/06/10 | Ecuador, Cañar, Mazar Reserve
 Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro |
 1/200 f/3.5 | ISO 200 | Handheld

Here's a shot made with nothing but soft, overcast light. I just chose a low f/stop and lay on the ground to improve stability. The situation suggested a vertical composition, as it shows the frog in its microhabitat.

Graceful Snail-eater

(Dipsas gracilis)

| 09/07/10 | Ecuador,
Esmeraldas, Caimito
Canon EOS Digital Rebel
Xti | 100mm f/2.8 Macro
| 1/200 f/18 | ISO 100
| tripod | flash

Grabbing a shot of a snake while it sticks its tongue out is not an easy trick.

What I did in this case was to place the camera on a tripod, set it on self-timer, and wiggle my hand right in front of the snake's snout.

Every time I did this, the snake felt the air-borne particles of my hand and stuck its tongue out.



Yellow-flecked Sipo

(Chironius flavopictus) | 13/11/02 | Ecuador, Esmeraldas, La Concordia
Canon EOS 7d | 100mm f/2.8 Macro | 1/400 f/4.5 | ISO 400 | Flash

Shooting this snake was certainly one of the most defiant photographic tasks I've ever faced. Other than being fast and jittery, it was extremely aggressive, to the point it bit my hand and then disappeared in the vegetation.





Cuenca Nelson Frog

(Nelsonophryne aequatorialis)
|05/10/08|Ecuador, Azuay, Cuenca
Canon EOS Digital Rebel Xti
| 100mm f/2.8 Macro
| 1/8 f/10 | ISO 800 | tripod

I remember struggling to get this shot: first, the frog would just not stay still; second, the light was very dim; third, I had no flash; and fourth, it was very windy.

All of these were ingredients for a blurry photo. For about two hours I failed to get a sharp picture. I felt frustrated... until I grabbed this shot, the only decently sharp one among nearly 100 shots. For me, the solution was to keep shooting in order to improve the chances to get a keeper. Additionally, I raised the ISO to get a slightly higher shutter speed while maintaining an adequate f/stop to cover the entire scene.

Brown Debris Snake

(Coniophanes fissidens)

|09/07/10|Ecuador, Esmeraldas, Caimito
Canon EOS Digital Rebel Xti | 100mm
f/2.8 Macro | 1/60 f/7.1
| ISO 100 | tripod

Being terrestrial and diurnal,
this snake suggested
a ground-level perspective.

To achieve this, I placed my camera
on the ground, on top of a cloth.

This way, I achieved the lowest
possible shooting angle.



Banded Cat-eyed Snake

(*Leptodeira annulata*) | 27/06/10 | Ecuador, Pastaza, San Juan de Piatúa
Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro | 1/3 f/5
| ISO 100 | tripod | flash

I already felt like I had grabbed the picture I wanted when a stingless bee landed on the snout of the snake. Sometimes, a second element adds an interesting touch to the final image.



Stubfoot Toad

(*Atelopus sp. nov.*) | 15/06/10 | Ecuador, Morona Santiago, Centro Shuar el Tiink
Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro | 1/8 f/8 | ISO 100 | tripod | flash

This critically endangered species was photographed in a stream. The shot in this circumstance was tricky, given that I had to be partly submerged in cold water. Plus, I did not want to use the flash alone, as it reflected too much on the skin of the wet toad. Using the tripod was difficult as well, as it was submerged in water, and shaking.



Amazon Wood Lizard

(Enyalioides laticeps) | 27/06/10 | Ecuador, Pastaza, San Juan de Piatúa
Canon EOS Digital Rebel Xti | 100mm f/2.8 Macro | 1/200 f/16 | ISO 100 | flash

This lizard was found sleeping on a horizontal branch at night time.
In this circumstance, I approached it and woke him up with the flash of the test-shot.
As soon as I did this, it opened its eyes and allowed me to get a second capture.



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Fast, flexible, fearless - scurrying and scooting among the coral rubble or suddenly exploding from their burrows in the muck. To impale and smash their hapless prey

*The Peacock Mantis Shrimp *Odontodactylus scyllarus* is - as its common name implies - the most colorful species among these widespread crustacean predators.*

TEXT BY ANDREA FERRARI
PHOTOS BY ANDREA & ANTONELLA FERRARI

Wreathed in a cloud of volcanic sand, a large *Lysiosquillina* sp. literally explodes from its burrow in a three-millisecond attack. This is a "spearer" species - notice its sharply toothed raptorial claws.



Many newcomers to scuba diving are scared of sharks. Others are afraid of morays. Some again are intimidated by barracudas... Little they know that some of the scariest, most fearsome and probably most monstrous creatures of the deep lurk a few feet below the surface, silently waiting, coldly staring at their surroundings, waiting for the opportunity to strike with a lightning-fast motion and to cruelly impale their prey or smash it to smithereens! Luckily, most of these terrifying critters are just a few inches long – otherwise diving on coral reefs might be a risky proposition indeed for every human being... But stop for a moment, and consider those cunning predators of the seabottom, the mantis shrimps: an elongated, segmented and armored body, capable of great flexibility and yet strong enough to resist the bite of all but the fiercest triggerfish; a series of short, parallel, jointed legs positioned under the thorax to swiftly propel it among the reefs rubble bottom; a pair of incredibly large, multifaceted dragonfly-like eyes, mounted on sophisticated swiveling joints, capable of giving the animal an absolutely unbeatable 3-D vision on a 360° field of vision, immensely better than our own and enabling it to strike with implacable accuracy at its chosen target. And above all, consider those

continued on page 97 ➤

*A crustacean mother
no one really wants
to mess with*



A female Odontodactylus scyllarus lovingly aerates its clutch of wine-red eggs, safely kept between its front claws. Females of this species are less colorful than the many-hued males.



■ Mantis shrimps come in many colors and sizes, depending on their habitat. Far left, top, a small *Gonodactylus chiragra*; bottom, a tiny *Pseudosquilla ciliata*. Both species are found in clumps of algal growth and display a high degree of camouflage. Left, male Peacock Mantis Shrimp *Odontodactylus scyllarus*, found in coral reef environments.

■ *The Pink-tail Mantis Shrimp* *Odontodactylus latirostris* is a very active, inquisitive and fearless species. Luckily for divers, it's only 10cm long.

incredible front raptorial claws, articulated exactly like a switchblade or like those of the terrestrial predatory insect, the so-called Praying mantis, from which these fascinating marine crustaceans take their common name in divers' circles: able to shoot out and grab their prey, impaling it alive and writhing on sharp spikes or smashing its shell to a pulp, with a three-millisecond strike which is almost invisible to the eye. Behold, my friends, the true alien of the reef, the beautiful monster of the

muck, the implacable raider of the rubble – the mantis shrimp!

OF SPEARERS AND SMASHERS

Mantis shrimps can be roughly separated in two groups – the "spearers" and the "smashers". Those belonging to the first group are generally sedentary ambushers, preferring to patiently lurk in wait at the entrance of their vertical mucus-lined burrow dug in the sand or silt of the

bottom, attentively peeking out of the hole with only their stalked eyes and their folded raptorial spiked claws showing. Should an unwary fish or squid pass directly above (or quite often just close enough to be within grasping distance) the alert crustacean shoots out and grabs it with a lightning-fast strike, flicking out its three-segment articulated spiked claws around it. Those who have witnessed this act – as we have in several occasions – cannot avoid being but amazed (and a bit

continued on page 101 ▶





Far left, a close-up of a Giant Mantis Shrimp *Lysiosquilla lisa*, a species which can be 40cm long - notice the fearsome array of its serrated raptorial claws. Left, a dorsal view of a male *Odontodactylus scyllarus* shows to advantage its long, flexible, armored body.



Emerging from its burrow, an unidentified, small sized Mantis Shrimp feeds on a Cardinalfish it has grabbed. Fast and aggressive, these bottom predators will however scavenge dead fish if the opportunity arises, taking it to their lair.

Mounted on swiveling joints, the eyes of a Pink-tailed Mantis Shrimp *Odontodactylus latirostris* are testimony to its exceptionally good eyesight. This is a "smasher" species with clubbed front claws.

Ceaselessly scanning the underwater horizon for a possible meal



Right, top, Orange Mantis Shrimp *Lysiosquilloides mapia*; right, bottom, Giant Mantis Shrimp *Lysiosquillina lisa*; far right, a possible color phase of *Pseudosquilla ciliata*. Field identification of the smaller, nondescript species is often rather difficult.



scared) by the speed, efficiency and unfailing accuracy shown by the mantis shrimp - and by the raw strength of its grip, with the fish prey being often broken in two by the violence with which the predator drags its down its burrow to consume it. Given their habits, "spearers" are generally able to reach a greater size, with the quite large Giant Mantis Shrimp *Lysiosquillina lisa* - commonly found on South East Asian coral reefs - reaching a total length of about 35-40 centimeters. "Smashers" are usually smaller and much more active, being often observed while rapidly scooting among coral heads and under overhangs, hunting for crabs in the open but always within reach of their more or less horizontal U-shaped tunnel,

half-built and half-excavated among the coral rubble but always featuring two entrance holes - so that in the case of an emergency the mantis shrimp will be able to bolt out from one while danger looms at the other. Well adapted to hunting and consuming hard-shelled crustacean prey like large reef crabs, "smashers" are armed with modified front raptorial claws which show no spikes on their edges but feature a blunt, rounded, bludgeon-like tip at their extremity instead. Flicking these clubs with great speed and violence at fleeing crabs - just like a boxer on a ring would do at his adversary - the prey is rapidly disorientated, stunned and crushed, its shell soon giving way to the armored fists of its tormenter. The best known of the "smashers" found on Indo-Pacific

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Emerging in ambush from its vertical burrow, a Giant Mantis Shrimp *Lysiosquilla lisa* lets itself be cleaned and tended by two *Stenopus* sp. Boxer shrimps. This is a commonly observed form of commensalism among coral reef species.






The dorsal view of a colorful Pink-tailed Mantis Shrimp *Odontodactylus latirostris* shows to good effect its segmented, armored body, ending in a sharp, spiked telson - when defensively rolled into a ball, Mantis Shrimps are almost impregnable.


reefs is the spectacularly beautiful and very showy Peacock Mantis Shrimp *Odontodactylus scyllarus*, commonly observed in shallow, well-lit waters while it fearlessly runs about like a little runaway mechanical wind-up toy. While "spearmen" simply disappear down their burrow when they feel threatened, "smashers" cornered in the open will instead roll on their backs, instantly turning into an almost impregnable ball and offering their thick armored telson (the fan-shaped "tail" at the posterior end of their body)

to the attacker. Several other species can be observed on coral reefs and muck bottoms with a little patience – several of them quite beautiful and all equally interesting, as small bright green ones often inhabit algal or seagrass mats – but those mentioned above are quite probably the two most common ones. Interestingly, despite being fearful and implacable

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A male  *Odontodactylus scyllarus* on the prowl. This is a "smasher" species - notice red-tipped, mace-like front raptorial claws, which are capable of cracking a large crab's armored carapace. "Smasher" species are more active than "spearmen", which rely more on ambushing their preys.



Having detected  some movement in the vicinity, a Pink-tailed Mantis Shrimp *Odontodactylus latirostris* emerges rapidly from its burrow, ready to charge its prey and stun it to death with a lightning-fast series of smashing blows.

*Sitting in ambush
but ready to strike at
the first opportunity*



Top (right and left), a pair of Pink-tailed Mantis Shrimp *Odontodactylus latirostris* (the male is at left) show a noticeable sexual dimorphism; bottom right, a stunningly colorful but unidentified and possibly undescribed species.



predators, large "speakers" often host commensal shrimps at the entrance of their burrow – we have observed impressive specimens of *Lysiosquilla lisa* being attended by several different species including Blue boxer shrimp *Stenopus tenuirostris* and Squat shrimp *Thor amboinensis*, the cleaners quite clearly not afraid of being grabbed and consumed by their much larger and rather horrifying host.

STUNNING BUT CHALLENGING PHOTO SUBJECTS

Mantis shrimps can be observed almost anywhere in temperate and tropical waters. They are usually encountered on coastal, shallow (1-20 meters) and well-lit bottoms, "speakers" being more

common on muck, sand and silt while "smashers" are more easily observed on coral rubble. Tropical species are – as it commonly happens – much more colorful than those found in temperate waters: they are all diurnal, territorial and occasionally inquisitive, but in general rather shy. Great attention and care are needed to shoot good portraits of mantis shrimp. Peacocks make gorgeous camera subjects with their bright blue-green bodies and their orange, blue and dark red decorations, being also much easier to observe and approach in the open: look carefully at olive-tan females, much lighter than males, as with a bit of luck these can be occasionally observed carrying a precious, wine-red mass of tiny eggs under their belly, cradling it in their

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A male Peacock Mantis Shrimp *Odontodactylus scyllarus* perched on a mushroom coral displays the dazzling coloration which has earned this Indo-Pacific species its common name. The genus designation means "toothed fingers" in Latin.





The complex, highly evolved, exceptionally efficient eyes of the Orange Mantis Shrimp *Lysiosquilla mapia* are stalked and definitely more oblong than those of most other species.

thoracic arms and constantly fanning it to circulate oxygen-rich water around it. Beware of hounding “smashers” too close with your camera – the much-circulated story of their strike being equal in power to that of a 22-caliber bullet might be a bit far-fetched, but a good blow from their blunt-tipped claws might very well smash or crack a polycarbonate or glass lens dome. They’re known as “thumb-splitters” with good reason, after all. “Spearmen” need a stealthier approach, as they will disappear in a flash down their burrow if they feel threatened. Most feature a strongly banded lower body, but that is generally well-hidden in the burrow; especially showy is the quite uncommon and all-over bright fluorescent orange *Lysiosquilla mapia*. Some experienced dive guides have learnt to bait “spearmen” out of their burrows offering chunks of fish or prawn, but do not try to do this by yourself if you care about your fingers! Look for the “spearmen” tell-tale round, rubble-rimmed holes in the sand while floating above, and, when you see one, quietly drop on the bottom a few meters away. Approach it skimming as close as you can to the bottom – then lie down on the substrate and slowly inch your way forward. If you’re slow and patient enough you can get real close and be able to shoot show-stopping close-ups as we have often done. ●



A baited Giant Mantis Shrimp *Lysiosquilla lisa* shoots from its burrow, extends its switchblade-like toothed claws and grabs a chunk of squid flesh from a metal stick - in less than three milliseconds. The force of the attack is such that fish prey is often broken in two when grabbed.

■ A female *Odontodactylus scyllarus* shows its swiveling independent eyes, a wine-red clutch of eggs and the blunt, rounded, thickened end of its front raptorial claws. Mantis Shrimps can inflict painful damage if carelessly handled.



■ The compound eyes of *Lysiosquillina lisa* are made by over 10,000 separate elements and like all other Mantis Shrimps' eyes allow a tridimensional view of the prey, permitting a faultless estimate of the victim's distance. Strikes are virtually always successful.



A complex, radar-like array of multifaceted eyes



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The Parting Shot

The enormous rounded dorsal fin had sliced through the churning water just a few minutes before, as the massive, streamlined body it belonged to glided just under the surface a few feet by our sailboat's broadside, its smooth olive-brown back shimmering in the blinding sunlight. I had cried loud "*longimanus!*", as I had immediately recognized the Long-armed Lord of the Sea, the bane of castaways. I had dreamt of seeing one in the wild ever since viewing Peter Gimbel's groundbreaking documentary *Blue Water, White Death*. And now it was circling our boat, in a perfectly flat sapphire sea, hundreds of miles away from land. I remember how I frantically slipped into the cool water without even putting my wetsuit on, gripping my housed Nikon F4 in a frenzy of anticipation and worry, fearing the gigantic beast would glide back to the abyss before I could meet it underwater. I hovered at 15 meters depth, clear blue

water all around me stretching in all directions, the darker bottomless haze below, the sun's rays scything beautifully and peacefully through the fragmented surface above. Nothing happened for a few minutes. Then I perceived a something, a cloud of tiny white fish in the distance somewhere – a shoal which coalesced in the white tips of the enormous dorsal and pectoral fins of *Carcharhinus longimanus*, the Oceanic Whitetip. Towards me it came, effortlessly gliding, a massive stiff bomber of a fish, only its huge tail slowly undulating from side to side, a school of striped pilotfish escorting it, flittering nervously around it like Mustang fighters. Closer and closer it came, the 4-meter long pelagic shark, its pale yellow beady eye never leaving me. I was alone in the oh-so-silent water, suspended in the water column, as it circled and circled, getting closer and closer, evaluating, investigating, waiting for its chance. Despite

the perilous situation I only felt exhilaration, facing a creature of supreme beauty and elegance. I lost the sense of time. Then the sharks became two, and suddenly there were three. As they started scissoring towards me – one from the front, two from the back and below – I realized I had to exit the water. Shivering on the deck in the sun's rays, I realized I had just shot the first good photos of a wild *longimanus* ever taken – and in the process I had probably experienced the most beautiful 45 minutes of my life. This happened 25 years ago, by the Al Akhawein islands, in the middle of the Red Sea. The Oceanic Whitetip was the most numerous large-size predator in the world, with millions of individuals roaming the circumtropical seas. Today 99% of the species has been fished out to satisfy the Chinese hunger for that tasteless broth, shark fins soup. The Long-armed Lord of the Sea is no more – we have killed them all. ●

An aerial photograph of the Raja Ampat archipelago in Indonesia. The image shows numerous small, forested islands of varying shapes and sizes scattered across a vast expanse of water. The water's color transitions from a deep, dark blue in the open ocean to a vibrant turquoise and light green near the coastlines, indicating shallow reefs and sandy bottoms. The sky is filled with soft, white clouds, and the overall scene is one of a pristine, tropical paradise.

Raja Ampat ...

what is your adventure?

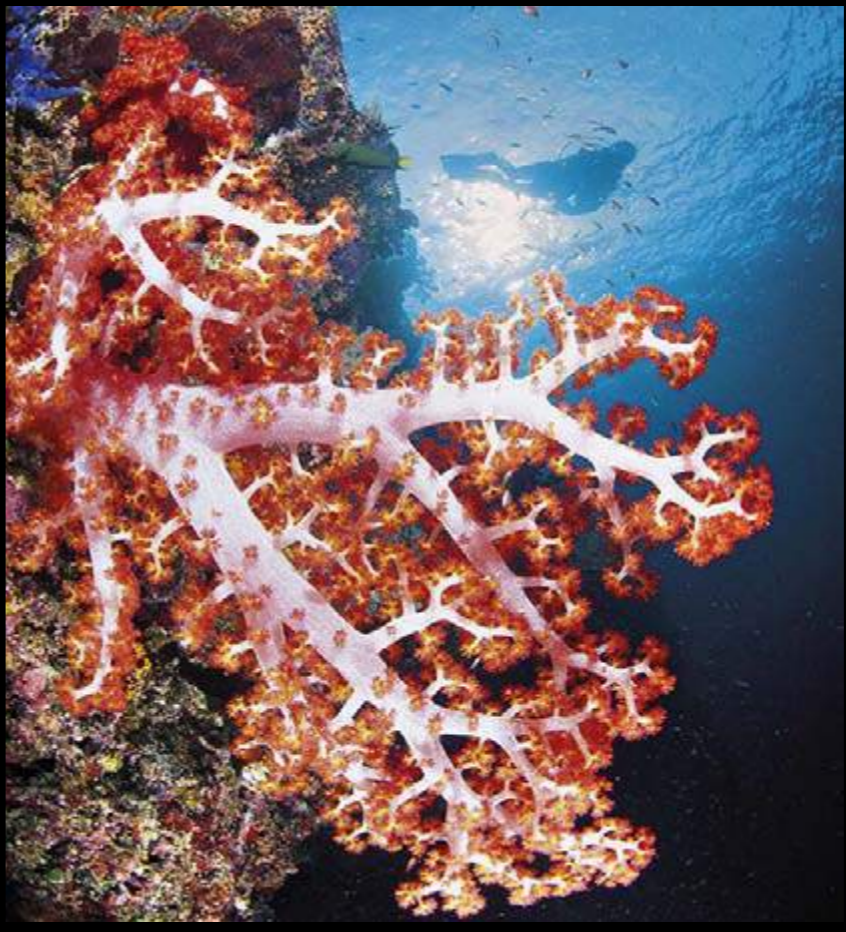
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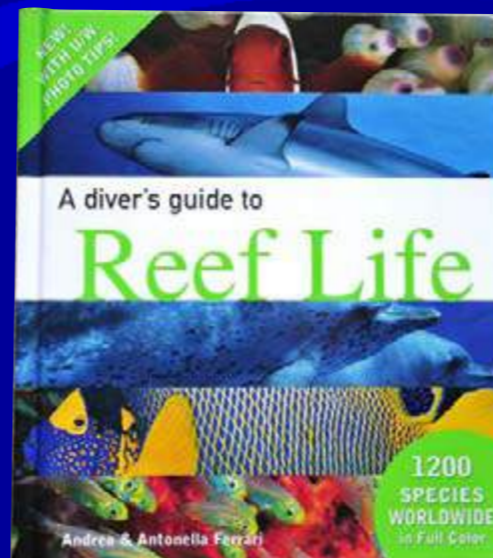


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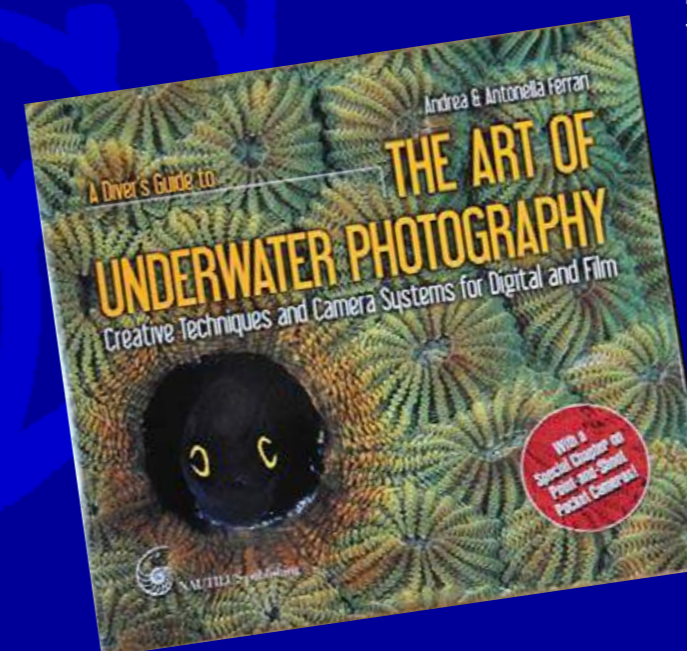
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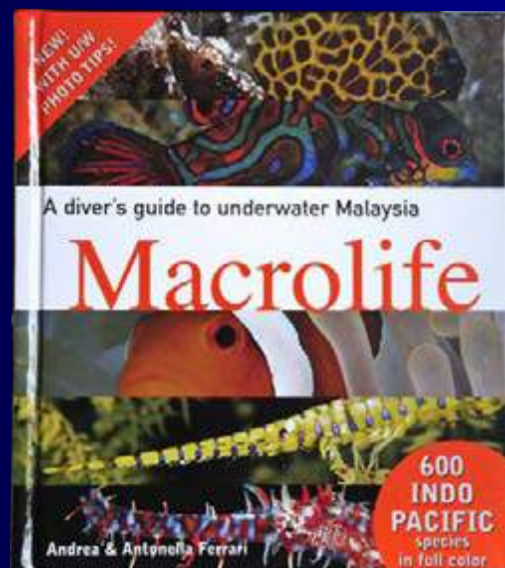
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