

## ECUADOR'S PARQUE NACIONAL YASUNI GREEN MANSIONS

Today what is said to be the world's most biodiverse environment is torn between conservation and exploitation - explore with us the amazing "Green Hell" of Ecuador's Amazon

An Amazonian Palm viper Bothriopsis bilineata sits on a branch overlooking the Rio Tiputini as a Waorani canoe passes by in the background - an image which symbolizes Yasuni's current conflict between Man and Nature.



A rainforest hosting the largest number of species on Earth

> A panoramic vista of the Rio Tiputini at its lowest, during a period of dry weather. With the coming of rain this sluggish stream will rapidly transform itself into a fast-flowing, raging mass of muddy water.

#### TEXT BY ANDREA FERRARI PHOTOS BY ANDREA & ANTONELLA FERRARI

Park has long been a legendary destination for conservationists, researchers, biologists, wildlife Wikipedia sums it up nicely: "Yasuni photographers and nature lovers worldwide - an embattled symbol standing, among others, for environment conservation and Amazonian biodiversity. Celebrities such as actors Leonardo DiCaprio and Edward Norton and US Vice President Al Gore have publicly stood for its UNESCO Biosphere Reserve in 1989. future survival and against further exploitation by oil companies within its borders, and some say Yasuni and its Waorani indians were the actual

*#*uador's Yasuni National source of inspiration for James Cameron's record-breaking movie Avatar. Free online encyclopedia National Park is sited in Ecuador, covering an area of 9,820 square kilometers between the Napo and Curaray rivers in the Napo and Pastaza provinces in Amazonian Ecuador. The Park is about 250 km from Quito and was designated a It is within the claimed ancestral territory of the Waorani indigenous people. Yasuni is also home to several uncontacted indigenous tribes, continued on page 12

A butterfly comes in for a landing on the back of a Yellow-spotted river turtle Podocnemis unifilis - this species can grow up to 45 cm long and weigh up to 8 kg and is now quite hard to spot along the banks of the Rio Tiputini.





An Anolis nitens sitting perfectly still among the leaf litter on the sun-dappled forest floor demonstrates how stunningly effective its somatolitc camouflage can be. Technicolored tree frogs moving in graceful slow motion among the leaves

including the Tagaeri and the Taromenane. The National Park lies within the Napo moist forests ecoregion and is primarily rain forest. Yasuni National Park is arguably the most biologically diverse spot on Earth. The park is at the center of a small zone where amphibian, bird, mammal, and vascular plant diversity all reach their maximum levels within the Western Hemisphere. Moreover, the Park breaks world records for localscale (less than 100 square kms) tree, amphibian, and bat species richness, and is one of the richest spots in the world for birds and mammals at local scales as well. The Park holds a world record 150 amphibian species for places with comparable landscapes. It also is at the top for amphibian diversity compared to other sites sampled in the western Amazon. The total of its amphibian species are more

than those of the United States and Canada combined. Reptile species numbers in the park are also very high, with 121 documented species found. In spite of covering less than 0.15% of the Amazon Basin, Yasuni is home to approximately one-third of its amphibian and reptile species. The Park also harbors high levels of fish diversity with 382 known species. This number is greater than the amount of fish species found in the whole Mississippi River Basin. Yasuni also is home to at least 596 bird species which comprises a staggering one-third of the total native bird species for the Amazon. The Park is also very rich with many species of bats. On a regional scale, the Amazon Basin has an estimated 117 bat species, but on a local scale, Yasuni is estimated to have comparable richness. In a single hectare, Yasuni has over 100,000

A White-lined leaf frog Phyllomedusa vaillantii, one of the many beautiful tree frogs found in the lowland rainforest of Yasuni. Heralded by an unmistakable loud squawking and screeching, a flight of Scarlet Macaws Ara macao illuminates briefly the late afternoon forest canopy. Macaws are large and splendidly colored birds which usually keep their distance even when allowing relatively prolonged observation.



different species of insects, which is roughly the amount of insect species that can be found in all of North America. The Park also boasts one of the world's richest levels of vascular plants. It is one of nine places in the world that has over 4,000 vascular plant species per 10,000 square kms. The Park contains many species of trees and shrubs and holds at least four world records for documented tree and liana richness as well as three world records for diversity in woody plant species. Yasuni National Park also hosts a stunning list of endemic species with 43 different species of vertebrates and 220–720 different plant species".

### HARD TO REACH, WORTH VISITING!

This is all very nice of course, but how does this impressive list of scientific records translate into hard practical facts for a wildlife photographer? Well, the very least we can say is that visiting and exploring the Park is not particularly easy - this is the Amazon, after all.

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One of the many rainforest floor wonders of Yasuni, this Reticulated Poison Frog Ranitomeya ventrimaculata is as poisonous as it is small. Dendrobatids advertise their toxicity to would-be predators with their gaudy, brightly colored liveries.



More wonderful amphibians from Yasuni's rainforest. Left, a Jaguar Tree Frog Dendropsophus bifurcus. Right, top, a Convict Tree Frog Hypsiboas calcaratus; right, bottom, a Shreve's Sarayacu Tree Frog Dendropsophus sarayacuensis sits by its freshly-laid egg clutch on the underside of a leaf.



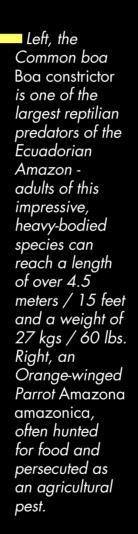




Mineral-rich wet sand patches in the forest - like those soaked in urine by wild mammals - immediately attract large numbers of the stunningly beautiful daily moth Urania leilus.

Reaching the Rio Napo from Quito requires a long day's drive and a night's stay at the border town of Coca, and actually crossing the Napo and entering the National Park itself reminds one of a science fiction or espionage movie - the protected area is ironically controlled and administered by the oil companies which have "occupied" it, and there is a very distinct military feeling to the place with all the checkposts, X-ray machines, huge hangars, enormous drilling machinery and uniformed, armed guards everywhere. Hardly what one would expect from any other National Park in the world - but the oil companies do not want any problems with unwanted visitors, and this is also a very sensitive area due to the local indigenous Waoranis, who generally resent the presence of outsiders. Accomodation can also be problematic - the oil companies have erected fencedoff, severely guarded camps and fortified citadels inside the Park for their own workers but will not deal directly with visitors, and the handful of luxury lodges catering to the mostly North American tourist groups charge exhorbitant prices, making a long stay a very difficult proposal indeed for the seriously motivated visitor. A touch-andgo brief trip is obviously out of the question, given the remoteness of Yasuni continued on page 21 🔰

A pair of unidentified or possibly undescribed mating Monkeyface grasshoppers (Eumastacidae) offer a wonderful display of metallic hues.





# Waiting in silent ambush, coils ready to spring from a bed of dead leaves

A large Lancehead Pit viper Bothrops atrox -Central and Southern America's most feared snake - lies in ambush by a forest trail, perfectly camouflaged among the decaying leaf litter.



Far left, a large Humboldt's Woolly Monkey Lagothrix lagotricha male. This is one of the most impressive monkey species in Yasuni, but good sightings such as this one are rare in the rainforest environment. Left, the striking beauty of an Amazonian Palm viper Bothriopsis bilineata - an uncommon encounter.

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and the overwhelming abundance of its photographic subjects. We were extremely lucky as our friends at Tropical Herping were able to secure us a stay at the Yasuni Research Station (Estacion Cientifica Yasuni) built and maintained by the Pontificia Universidad Catolica del Ecuador (PUCE) - an immaculate complex right in the middle of the forest which is strictly reserved to students, researchers and biologists. It's exactly the kind of accomodation we cherish, but keep in mind one has to forward a scientific/documentation project to be approved by PUCE to be able to stay there - the Station does not cater to the occasional visitor or tourist. A wide network of long, well-kept and selfguided forest trails radiates from the Research Station - other options for wildlife photography include an observation tower whose top reaches the forest canopy and a pair of motorized canoes to explore (at a price) the nearby Tiputini river.

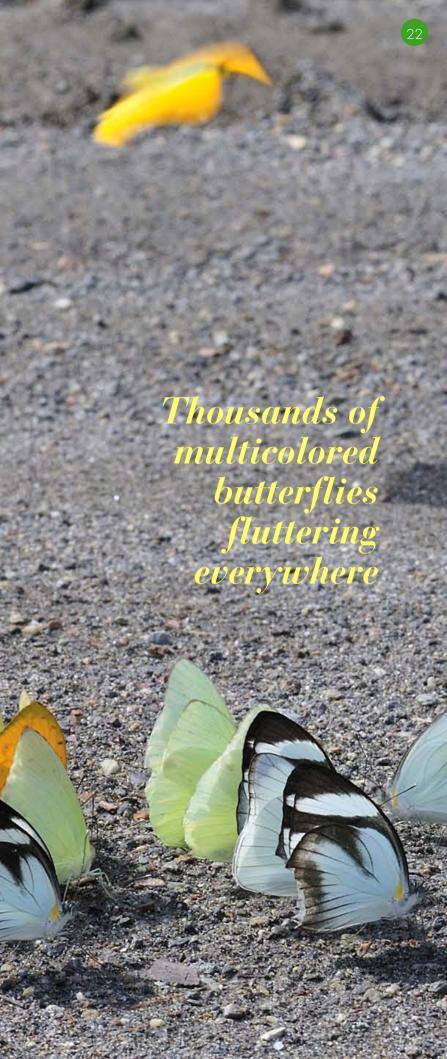
### A WELL-DESERVED REPUTATION

Does Yasuni stand up to its awesome reputation? Yes - with some exceptions. Biodiversity in the area is truly staggering - walking in the rainforest here means finding a new, different species at literally every step - be it amphibian, reptile, insect or plant. The variety of shapes and colors is stunning, and the examples of camouflage and mimicry displayed by *continued on page 25* 



Exquisitely camouflaged among the dead leaves on the forest floor, a South American Common Toad Rhinella margaritifera is almost impossible to spot. A mixed group of Pieris and Itabalia (with one single Papilio species on the left side) butterflies is feeding on soil minerals - a common and enchanting morning sight in Yasuni's rainforest open patches.

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A trio of Scarce Bamboo Page butterflies Philaethria dido feed on soil minerals. Large numbers of butterflies congregate on wet sandy patches in the morning.

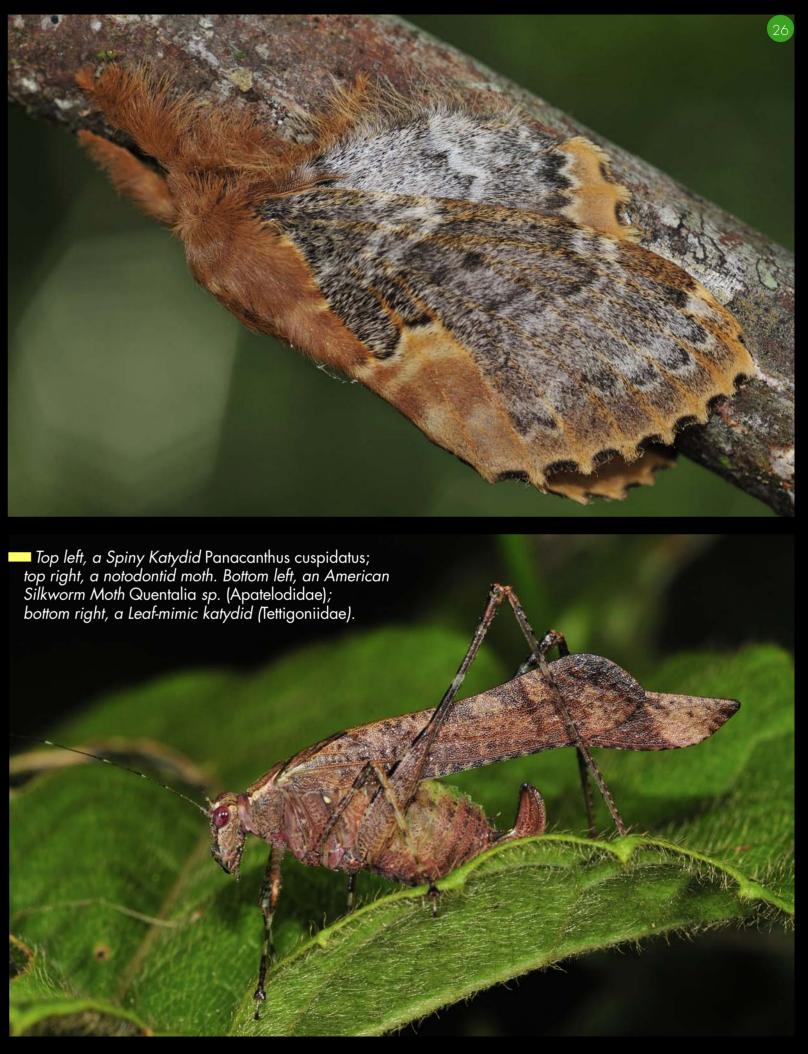


Alien-looking and brilliantly colored, a Monkeyface grasshopper belonging to the family Eumastacidae. Yasuni is home to an immense number of species still undescribed by science. a large number of species is absolutely mind-blowing. Exploring the forest trails at night is even more surprising wearing a headlamp will attract so many moths of all sizes that actually swallowing one accidentally or getting one flapping up one's nostrils is rather common! Insect life is incredibly rich we have found ourselves literally covered with spectacular butterflies during the day when stopping close to some mineral-rich sandy spots, and the place is pure heaven for katydid and grasshopper lovers, with many undescribed species. Depending on the point of view, Yasuni can also be an arachnophile's dream or an arachnophobiac's nightmare - we have never seen anywhere else such an enormous quantity of spiders mostly very large, very hairy and caught in the act of devouring something else! Several beautiful tree frog species are commonly observed during night walks, while many incredibly colorful dendrobatids hop here and there on the forest floor during daytime. Careful observation will also provide exceptional snake encounters - common and rainbow boas and above all the ubiquitous and highly dangerous Lancehead Pit viper Bothrops atrox can be expected anywhere, especially at night. It goes without saying that walking here especially at night - requires great care to avoid extremely unpleasant and possibly life-threatening accidents.

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The South American Tapir Tapirus terrestris is relentlessly hunted everywhere in the Amazon - this beautiful female is completely wild but will occasionally appear in the vicinity of the Estacion Cientifica Yasuni.

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This exceptional, overwhelming richness of life - which is truly unique by any standards - is also however mirrored by the microscopic universe, and Yasuni is both a microbiologist's dream come true and a high-risk location regarding the occurrence of dangerous tropical parasites and diseases such as leishmaniosis or Chagas' disease. We didn't catch any of those luckily, but our ankles and calves still bear the scars left by a myriad invisible rainforest mites, which, undeterred by long trousers and knee-high socks, inflict bites which cause first an unbearably itchy swelling and then a festering sore which won't heal for several months. Ticks, mosquitoes and dangerous wasps are also prevalent - Yasuni is certainly no place for those unwilling to deal with bugs, as the rest of the Amazon basin in fact. This permanent, ever-pervading cascade of life forms everywhere makes it all more noticeable however the continued on page 32 🔰

> This stunning Metallic Green Rhinoceros Beetle Oxysternon conspicillatum was being attacked by dozens of ticks when we found it - some can be spotted between the joints of its front legs.



Extreme left, an unidentified Praying Mantis in threat posture; center, two undescribed Acridiidae grasshoppers mating; left, a Jumping Stick Apioscelis sp. (Proscopiidae)

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A gruesome drama unfolds on the forest floor as a large cicada is being attacked by a swarm of army ants. Careful, patient observation will reveal a multitude of similar occurrences everywhere in tropical rainforests.

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Left, a trio of Proboscis Bats Rhynchonycteris naso roost on a tree trunk by the Rio Tiputini; right, a rare close encounter with a spectacular Scarlet Macaw Ara macao, an imposing and iconic but normally very wary species.



One more spectacularly colorful dendrobatid frog from Yasuni's rainforest floor - this is an Ecuadorian Poison Frog Ameerega bilinguis. unmistakable scarcity of larger species, even more so than one would normally expect in any rainforest environment - such habitats are notoriously difficult anywhere in the world for the sighting of terrestrial mammals or canopy-dwelling birds, for instance. Some investigation and a few pressing questions provided the answer for this riddle - anything edible (Black and Spectacled caimans, river turtles, monkeys, birds, large mammals such as tapirs) is being ruthlessly hunted by the Waoranis, which have abandoned the traditional, sustainable hunting methods by trap and blowpipe and are now being abundantly provided with guns, ammunition and boat engines by the oil companies renting their ancestral grounds for drilling and extraction. According to what we were told, the problem has become so serious that some of the most expensive tourist lodges will actually pay the local Waorani families to avoid having the animals on their grounds being killed and eaten - to avoid losing a precious source of revenue. Accorded by Ecuadorian law a protected status - being part and parcel of the natural environment of Yasuni - but having now forgotten their traditional ways, the Waoranis which number in total less than 4.000 individuals - have now become their own world's worst enemies, with alcoholism, gambling and prostitution

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A graceful, fast dart gliding among the rainforest foliage A Brown Sipo Chironius fuscus glides effortlessly among the forest canopy branches. This is a fast, active, non-venomous colubrid predator. Left, a Leaf-footed Bug (Coreidae); middle, a Lepidoptera pupa in a graceful, lace-like, self-created protective casing; far right, an unidentified / undescribed bug, possibly a Reduviidae.



An Amazonian Palm viper Bothriopsis bilineata in ambush mode on a lichen-covered tree branch. This is a much sought-after species which is however very difficult to spot in the forest environment. 100





running rampant along the forest roads opened by the oil companies and with the rainforest's natural resources being mindlessly squandered for money, liquor or weapons. Fierce warriors and prone to solving disputes by violence (they apparently are the ethnic group with the highest rate of homicides and violent deaths in the world), the Waoranis won't be easily relocated somewhere else or accepted by other tribes, as they are highly feared - nor they will be easily convinced to accept the fact that animal prey is not infinite. The damage has been irrimediably done once the oil companies penetrated in their territory and the Waoranis (then called Aucas) lost forever their virginity, and the problem seems almost impossible to solve now - but the tragic fact is that the signs of an unbearably high hunting pressure are very evident (at least in the area we explored), as large animals are extremely wary, have turned nocturnal or have disappeared alltogether. This makes photographing them even more difficult than it normally is in the usual rainforest conditions, which are prohibitive at the very least. Besides the interesting moral implications of this conundrum - should any indigenous people be allowed to destroy their own ancestral grounds, to which they owe their own protected status? - the fact remains that Yasuni

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A White-lined leaf frog Phyllomedusa vaillantii. Far left, a Jumping Spider Capidava sp., (Salticidae) with its forest cockroach prey.

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Yasuni counts an enormous number of impressive spider species, which can mostly be observed at night. Left, a Giant Wandering Spider Cupiennius sp., (Ctenidae), feeding on its grasshopper prey; right, another Giant Wandering Spider Cupiennius sp. (Ctenidae) shows its cannibalistic habits as it feeds on another large spider it has just captured.



Left, a Golden Orb Spider Eriophora sp.; right, a very large Pink-toed Tarantula Avicularia avicularia. This latter species can get as big as a spread adult human hand and is capable of lighting-fast bursts of speed when catching its prey. It feeds on large insects, lizards, frogs, small snakes and the occasional rodent or bird.



A living death trap waiting in ambush on the forest floor

> A close-up of an unusually colorful and large Amblypigid Whip Scorpion Heterophrynus sp., (Phrynidae). This nocturnal arthropod is rather common in Central and South America.



reputation as one of the world's damage is being done, and yet the biodiversity hotspots, and as such it rest of the world with its unquenchable needs the highest degree of protection thirst for oil has to accept ultimate - both from its own corrupted responsibility for it. Is there still hope indigenous people and from their for Yasuni's wildlife? corruptors, the multinational oil companies which invaded these lands and did the damage in the first place. The careful "greenwashing" and the public relations so carefully put in place by the national and international oil companies operating inside Yasuni's borders since 1937 cannot

National Park fully deserves its hide the awful truth - irreversible

DON'T MISS THE SECOND INSTALLMENT OF OUR YASUNI STORY – COMING IN OCTOBER 2012 ON ISSUE 8 OF ANIMA MUNDI – ADVENTURES IN WILDLIFE **PHOTOGRAPHY**:

> A large Spectacled caiman Caiman crocodilus. This species - very common elsewhere - has now become difficult to spot in several areas of Yasuni due to hunting pressure and disturbance.



Click on the images and watch six short videos about Yasuni National Park and its wildlife









The Lancehead Pit viper











### The Rio Tiputini



The White-lined leaf frog Phyllomedusa vaillantii is one of Yasuni's most spectacular tree frog species. Yasuni's forest offers an endless variety of plants and fruits. Colorful berries, tiny mushroom growing from rotting leaves and many-hued leaves create a complex tapestry of indescribable beauty.



Delicate lace-like structures unfurling in the shade of the forest

> A new Giant fern leaf is unfurling - one cannot help but admiring its delicate yet extremely complex structural detail.

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Flowering trees can be seldom observed in the closed forest canopy environment - the one at left was spotted during a boat trip on the Rio Tiputini. Right, a Black Agouti Dasyprocta fuliginosa, a rather common species and one of Yasuni's largest rodents. Agoutis are widely hunted for their meat.

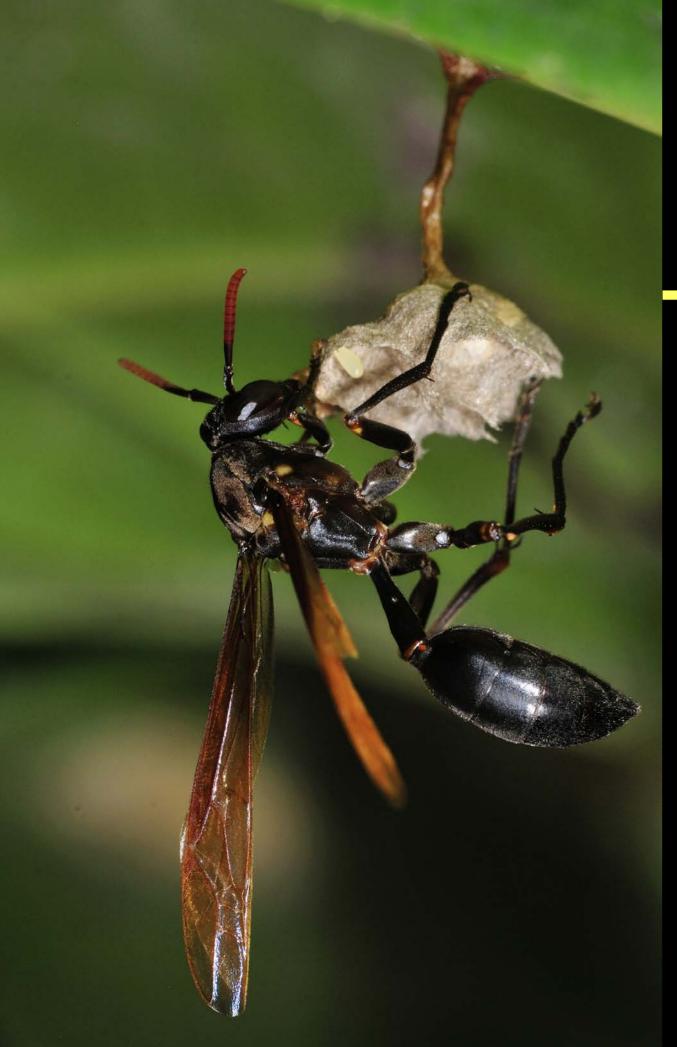






Far left, a White-lined leaf frog Phyllomedusa vaillantii; middle, a Jaguar Tree Frog Dendropsophus bifurcus; right, a South American Common Toad Rhinella margaritifera. Yasuni is a dream destination for those interested in frogs and toads.

Yasuni's warm and humid environment is ideal for frog species Also featured on this issue's cover, this is a Giant Broadheaded Treefrog Osteocephalus taurinus, one of Yasuni's largest tree frog species. It can be easily identified by its brilliantly patterned green eyes.



Left, a solitary forest wasp builds its cardboard nest. Right, a detailed dorsal view of a large Harlequin Longhorn beetle (Cerambycidae). Yasuni's warm and moist environment hosts an enormous number of insect species - many of which are still unnamed and unknown to science - and research within the Park is constantly being carried out by Ecuadorian and foreign biologists.



Antonella cautiously approaches a 180cm / 6 feet long Lancehead Pit viper Bothrops atrox, a beautiful but very dangerous species which is responsible for the majority of snakebite incidents in Central and Southern America.



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A close-up portrait of the Bothrops atrox from the previous page - notice the heat-sensitive pits between the eye and the nostril. A mosquito hovers by - a constant, bothersome presence in Amazonia's rainforest.



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Colors and structural details from Yasuni a rainforest view, a close-up of a Scarlet Macaw Ara macao's technicolored wing feathers, the folds of a palm leaf.



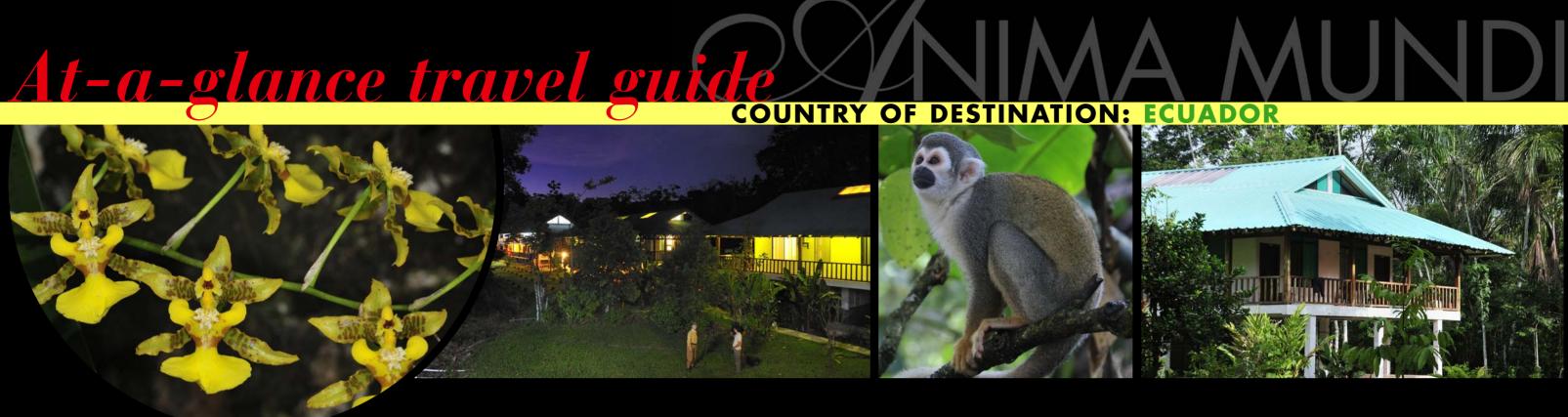
The deliberate, graceful pose of a striding Whitelined leaf frog Phyllomedusa vaillantii belies the rapidity of its movements.

> Frogs which can move among trees with the agility of a monkey



Life and death are seamlessly interwined everywhere in Yasuni's exuberant, fluid environment. Left, a moth has turned into an organic sculpture after having been colonized and killed by a Cordyceps parasitic fungus; right, a butterfly alights without fear on Antonella's hand .





## 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

there it's a day-long drive to the town of Coca. The young, enthusiastic Quito biologists with a keen following morning you'll drive to the crossing of the interest in nature, wildlife and photography. Rio Napo, and after that you'll have to go through the strict entrance procedures set by the oil **CURRENCY:** Since the year 2000 Ecuador has companies before driving through the forest all the opted not to have a national currency of its own – all way to the Estacion Cientifica Yasuni. Getting to the transactions are done in US dollars. lodges may require slightly different itineraries.

local help is almost impossible, and it might actually offering reliable wildlife sightings in their own even be problematic. For a well-organized and private reserves inside the Park. The best-known having in Yasuni really depends however on the type

**ROUTE:** Your international flight will land at successful trip we can heartily recommend the ones include Sani Lodge, Sacha Lodge and the Mariscal Sucre International Airport, smack in the services of our friends Lucas Bustamante-Enriquez Napo Wildlife Center, but they are usually very middle of Ecuador's high-altitude capital Quito. From and Alejandro Arteaga of Tropical Herping - two

**ACCOMODATION:** Yasuni offers several beautiful **MEANS OF TRANSPORT:** Visiting Yasuni without tourist lodges, usually set in strategic locations and

expensive and are best chosen for a 2-3 days luxurious stay - perfect for the casual visitor but hardly ideal for the serious wildlife photographer. Several Waorani communities are now also offering simple, relatively inexpensive accomodation.

**FOOD:** Simple but basically healthy and filling. Ecuadorians love soups (try the delicious Locro de Queso – potatoes, cheese and avocado), meats and fish and are blessed all-year round with fantastic vegetables and fruit. The type of food you'll be



most importantly in this kind of environment perfectly sanitized. No health worries there!

LANGUAGE: Ecuadorian Spanish and English.

WORRIES: Ecuador used to have a pretty bad (and rather well-deserved) reputation regarding street areas. When in Yasuni - as in any other truly wild equatorial/tropical rainforest environment - you'll never wander alone in the forest, especially at night. drinks have been concocted with bottled water.

enter the Park you'll need a Yellow Fever certificate,

and the danger of catching Leishmaniosis (a very **BESIDES:** Don't forget to visit the historical center of

of accomodation you have chosen - that of the HEALTH: This is a sticky subject, as Yasuni - like the CLIMATE: Ecuador - especially at altitude - is Yasuni Research Station is abundant, healthy and - rest of the Amazon Basin - is a hotbed of tropical blessed with an eternal spring, and they say one can diseases and dangerous parasitic ailments. You experience the four seasons in a single day in Quito. never know what you can catch in the Amazon as Climate in Yasuni however is very hot and humid, some diseases haven't even been named yet, but to with frequent torrential downpours and strong sunlight.

serious, disfiguring disease transmitted by the capital Quito, which has been extensively and phlebotomine sandflies) is quite real, especially in lovingly restored and features some spectacular muggings and tourist-related crimes. Things are waterlogged areas. Never forget to use insect examples of colonial architecture from the Spanish much better now, but - like in so many other big cities repellant and remember to wear long-legged domination. Ecuador is a rather small but worldwide - it's always better to be accompanied by trousers and long-sleeved shirts, always! Landing in exceptionally diverse Country, and it's almost local friends when visiting Quito's beautiful historical Quito (2.800 meters, 9000 feet) upon one's arrival impossible summarizing it in a few lines - a few might also cause altitude sickness to the hours's travelling will have one passing through highunaccustomed, so it's advisable to plan spending a altitude plateaus and valleys, stunning Andean have to be really careful with venomous snakes and couple of days there to better acclimatize. Food is landscapes and elfin cloud forests - descending to stinging insects such as wasps and ants. Ticks and generally guite safe, but when touring the Country the dry Pacific coast (and the Galapagos Islands) if mites can also be very bothersome. In any case, avoid street-stalls snacks and always make sure your going West and to the rainforest of the Amazon including Yasuni - if going East.