

One of the world's most pristine and ecologically relevant Nature Reserves, Danum Valley is stunningly rich in biodiversity, offering visitors fascinating glimpses into the complex habitats of the Asian rainforest. Here animal and plant species often offer truly exceptional photographic opportunities.

SABAH'S DANUM VALLEY

THE LAND WHERE TIME STOOD STILL

An immense stretch of pristine, untouched rainforest in the wild heart of Borneo

TEXT BY ANDREA FERRARI
PHOTOS BY ANDREA & ANTONELLA FERRARI

*T*he crown jewel of Borneo's wild nature, legendary Danum Valley Conservation Area is the largest protected lowland dipterocarp primary forest left in Sabah, Malaysia. This pristine, untouched area of stunning beauty holds a unique status among other gazetted nature reserves in the country: before it was declared a conservation area there were no human settlements within its borders, meaning that hunting, logging and other damaging human interference were almost completely non-existent.

continued on page 56 ➤

A scenic view of Danum river, winding its way among mist-shrouded, rainforest-cloaked banks. The valley's typically tropical environment features a constant, stable combination of intense heat and extremely high humidity, with daily torrential downpours and thick early morning mists.



• Danum's suspended walkways are remarkably long and high above the ground, offering dizzying views of the surrounding multi-layered rainforest canopy.



A bird's eye view of the multi-layered forest canopy environment



The canopy walkways - steel cables and wooden planking - offer unique views of the surrounding rainforest, 40 meters above the ground. Far right, an unfurling young leaf.



This particularity makes the area almost unique among other protected areas in Sabah - and this is immediately apparent to visitors, both in the number of wild animal sightings and in the sheer scope of its water-soaked, luxuriant rainforest. Danum Valley covers an area of 438 square kilometres and is currently managed by the Yayasan Sabah Foundation, created in 1966 for conservation, research, education and physical training purposes.

continued on page 59 ➤

■ Undetected, a mosquito is sucking blood from an unsuspecting White-lipped frog *Rana chalconota*, sitting in ambush and waiting for some insect prey to pass by.

Stealthily preying on the unsuspecting predator...The life cycle goes on



Another atmospheric view of the Danum river and its forest- and mist-cloaked banks. Center, a tiny Intermediate Sticky frog *Kalophrynus intermedius* - less than 3 cms long - is guarding its clutch of eggs, laid in a tree buttress cavity filled with rainwater. Right, a hazy sun and stormy sky are reflected in a rain puddle on the forest floor.





■ Hanging from a leaf by a forest trail, a colorful Tiger leech *Haemadipsa picta* wait for its prey to pass by. If needed, leeches can survive on one single feeding a year. Above, a giant scorpion *Heterometrus spinifer*, a large, nocturnal predator of the forest floor.

The nearest town, Lahad Datu – a quiet, smallish provincial settlement situated at the crossroads between Sandakan and Tawau and which can be easily reached by car or twin-engine turboprop flight from both centers - is about 82 kms away (about two hours' journey by four-wheel drive vehicles on corduroy, unpaved roads in good weather, which may become a much longer, Camel Trophy-style slog in deep mud if it has been raining). Given its formidable isolation and impenetrable rainforest cover, accomodation in the area is presently

limited to two basic choices: the Danum Valley Field Centre is a research establishment reserved for scientists and education purposes only, while the rather splendid (and understandably quite expensive) Borneo Rainforest Lodge has been created - with conservation and low-environmental impact in mind - for tourists to stay. From its beautiful, well-appointed bungalows visitors can take long, guided walks through lowland rainforest trails and on long, well-maintained suspended canopy walkways.

continued on page 61 >



Comfortable, roomy and unobtrusive, the Borneo Rainforest Lodge chalets sit on stilts, deep in the forest by the river Danum. The environmental impact of the resort is minimal.



Left, a Lantern bug (probably *Pyrops* sp., family Fulgoridae) perches on a tree trunk, while, above, a minuscule Planthopper (fam. Cicadellidae) sits on a leaf. Equally colorful, both species feed on plant saps and are somewhat related to common cicadas.

Other activities include night walks (serious wildlife photographers should not miss these) and night drives (avoid these instead at all costs since the lorries used for the purpose are crowded, noisy and not really suited to the local environment – rainforests are made for walking).

FAUNA AND FLORA WITH FEW EQUALS

The biodiversity shown by the area is absolutely stunning. Danum Valley is a well-known destination for passionate birdwatchers worldwide, but its

undisturbed, virgin and forbidding lowland rainforest environment - structured in a complex, puzzling, endless maze of microhabitats - is home to an enormous number of other animal species, including several large mammals, many beautiful reptiles and amphibians and countless numbers of exceptionally attractive insects.

Mammals regularly sighted in Danum include wild Orangutans, gibbons, leaf monkeys, long-tailed and pig-tail macaques, wild bearded pigs, mouse deer and sambar deer - lucky visitors may also occasionally encounter several species of wild cats (including

continued on page 63 ➤



Left, a male Rhinoceros Hornbill *Buceros rhinoceros* - a spectacular and large bird which can weigh 3 kgs and reach a length of 130 cms. A very wary species, it can usually only be photographed from a great distance. Above, the colorful inflorescences of a wild banana, *Musa* sp.

The delicate, abstract curling of a forest leaf and a vividly red Dragonfly - belonging to an unidentified species - perching on a wild banana leaf by a muddy stream.



the dream date of South-East Asian rainforests, the strikingly beautiful and incredibly elusive Clouded Leopard), Bornean Pygmy elephants - which however are much more easily observed along the Kinabatangan river basin in the Sukau area - and even Malay Sun bears or Sumatran rhinos (the latter, given their scarcity, being exceptionally uncommon). Birds commonly observed along the forest trails or near the Lodge number several species of Hornbills (including Rhinoceros and Helmeted), colorful bee-eaters and kingfishers, warblers, several species of forest raptors and many others, while among the
continued on page 65 ➤

Abstract shapes in which function always meets form



Riverfront chalets of the Borneo Rainforest Lodge offer beautiful views of the pebbled banks of Danum river and the surrounding landscape. It is not unusual to sight wild Orangutans and hornbills from the balconies. Acting as a giant sponge - first absorbing water, then releasing it - the valley environment is rich in small rivers, forest streams and scenic waterfalls.



■ Notwithstanding its spectacular rainforest landscapes, Danum offers its best in the details - such as these delicate flowers and the nocturnal sight of a ferocious looking - but harmless - uropygid Whip scorpion or Vinegaroon (family Thelyphonidae).



numerous reptile and amphibian species encountered the impressive Reticulate python, at least two different species of Pit viper, the strikingly marked Paradise snake, the colorful Forest dragon lizard and the splendidly camouflaged Borneo horned frog all deserve to be mentioned. A lot of first-time visitors to rainforests spend most of their time looking in the distance and hoping

for the large animals, but the most interesting and fascinating denizens of this mysteriously beautiful environment are in fact the small, secretive and surprisingly well camouflaged dwellers of the forest floor and canopy: diminutive reptiles, tiny amphibians and most often strange insects and arthropods of all shapes and sizes, which are usually quite hard to spot and which

continued on page 67 ➤



Thick foliage offers refuge, concealment and nourishment to an enormous number of widely different species: a large nocturnal unidentified spider (above), a Red leaf monkey *Presbytis rubicunda* (center) and a Harlequin tree frog *Rhacophorus pardalis* (far right) all share heavily forested habitats.





are most easily observed during the guided night walks.

NOTES ON RAINFOREST TREKKING

Long, physically challenging day and night walks doubtlessly offer the best chances to fully appreciate the demanding Danum Valley rainforest environment. Despite the apparent drawbacks and discomforts – waking up at 5am, slogging in the mud for hours on end, being literally drenched in sweat and very often even heavy rainfall, dealing with the occasional but messy leech bite – this is really the only sensible way to enjoy the place and fully savour the wonders it offers.

continued on page 70 ➤

■ A Red-sided or Triangle Keelback *Xenochrophis trianguligera*, a harmless colubrid snake, rests half-coiled above a muddy stream. Night walks usually offer the best chances to encounter interesting snakes and amphibians.

A secret world where frogs can fly and birds have horns



Harlequin tree frogs █
Rhacophorus pardalis are small, very colorful flying tree frogs. They are able to glide for short distances - using their widely webbed toes - when jumping from an elevated perch to escape predators.



A dazzling variety of life forms inhabits the primeval rainforest of Danum Valley. Colorful, common examples are the tiny Orange cup mushrooms (left), several species of minuscule but often quite showy Salticid Jumping spiders (a specimen is guarding its egg clutch laid on the lower face of a leaf, bottom) and the striking, ubiquitous Borneo Forest Dragon or Anglehead lizard *Gonocephalus borneensis* (a female on its tree perch, right). The latter are very territorial and can be approached quite closely if one moves slowly, cautiously and avoiding unnecessary vibration. All individuals share a common reticulated pattern, but color variations - depending on age, sex and mood - can be delightfully dramatic.



Complex and relatively unexplored environments such as that of the rainforest can offer unexpected, surprising and occasionally puzzling observations. This strange object is in fact the woody, grapefruit-sized seed capsule of a large tree, now lying - already rotting and colonized by fungi - on the damp forest floor.



Passionate photographers and seriously interested visitors should book the services of an experienced private guide from the [Borneo Rainforest Lodge](#) - as usual this will make the experience completely different - and wear lightweight cotton clothes with long trousers, long thick socks to tuck them into, and long-sleeved shirts.

Surprising shapes wait in the forest at every step

Be aware that you will be drenched most of time - in your own sweat and/or downpours - so it makes no sense trying to keep dry at all costs wearing nylon ponchos or raincoats, which also rapidly become unbearably stifling in the heat.

continued on page 72 ➤



■ Rainforest environments - and Danum's in particular - are the empire of the weird, the colorful and the grotesque. Clockwise: a technicolored grasshopper, a beautifully patterned Lynx spider, the monstrously large and ferociously spiked Jungle nymph or Giant spiny Stick insect *Heteropteryx dilatata* (one of the world's largest insects) and a Keith Haring-esque "dance of the nymphs" - in fact a group of minute, brightly colored, newly-hatched Shield bugs, literally holding hands by their now empty egg capsules.

A pair of good hiking rubber-soled ankle boots will prove invaluable in such an hostile environment - synthetic, breathable fabrics are strongly recommended, since footwear will be constantly and thoroughly soaked: natural materials such as leather and canvas would rapidly rot or mould, often in the course of a single night, with fascinating but, predictably

uncomfortable effects in the morning. A sun hat and a rainproof torch will be important items to take along too. Since we are on the subject, do not let the local all-pervasive obsession and paranoia about leeches scare you - these fascinating, small rubbery creatures (which can survive with a single feeding a year if needed) are completely harmless and do not transmit any diseases.

continued on page 74 ➤

The stunning rainforest landscape, wreathed in the morning mists. Here Dipterocarp Shorea and Koompassia trees can be over 70 meters tall.



More striking samples from Danum's weird and wonderful universe of insects. Left, a large leaf-mimicking grasshopper; below, a tiny - less than 1 inch or 2 cms long - Bark mantis, a very well camouflaged and active predator exclusively found on tree trunks and branches. Right, an extreme close-up of another unidentified grasshopper.





If you get bitten by one you will feel no pain - maybe just a little itching later on - but you will certainly bleed freely and massively for quite a few hours, as their saliva contains both an efficient anesthetic and a powerful anticoagulant. The blood's staining and apparently unstoppable trickling can look very scary to the uninitiated, but it's no big deal really – after a long tiring day's trekking in the rainforest you would have to thoroughly wash yourself and your soiled clothes anyway!

continued on page 77 ➤

Adult male Borneo Angleheads *Gonocephalus borneensis* (left) display a very distinctive, well-developed nuchal and dorsal crest. Giant crab spiders *Heteropoda* sp. (right) are commonly observed on large tree trunks. Far right, the unfurling of a new leaf.





One of the world's largest beetles, and in proportion possibly the world's strongest living creature, the Borneo Rhinoceros beetle *Chalcosoma moellenkampi* feeds on fruit and rotting vegetable matter.



■ A wolf spider (left) sits in patient ambush on the underside of a leaf, making good use of its superlative camouflage. Blooming flowers instead gaudily advertise their presence in the gloom of the rainforest floor, using strong colors and strange shapes to attract pollinators. Notice the brightly colored and minute bug on the stem!



At night, a pair of Jade Tree Frog *Rhacophorus dulitensis* (the male is on top) embrace and mate under a downpour. In a few seconds they will be laying and fertilizing eggs in a foam nest whipped up by the female. Far right, a beautiful cicada has just molted, leaving behind her empty shell.



On the good side, Danum Valley is almost completely (and rather surprisingly) mosquito-free, and that is really important since most serious tropical diseases - such as malaria or dengue - are transmitted via the bite of these obnoxious little winged pests.

A UNIQUELY IMPRESSIVE ENVIRONMENT

Despite our lifelong experience in rainforests exploration and photography worldwide, we could not help being deeply impressed and in fact even awed by the beauty, richness and sheer

continued on page 82 ➤



Still more fascinating creatures from the stifling, wet nights of Danum's rainforest. Clockwise, a tiny unidentified toad, a garishly-hued millipede, a nightmarish portrait in extreme close-up of a large Giant Crab spider *Heteropoda* sp., and finally a large Wolf (or possibly Huntsman) spider female carrying her egg-sack in her pedipalps. Many impressive spider species are well represented in the area, often making excellent photographic subjects.





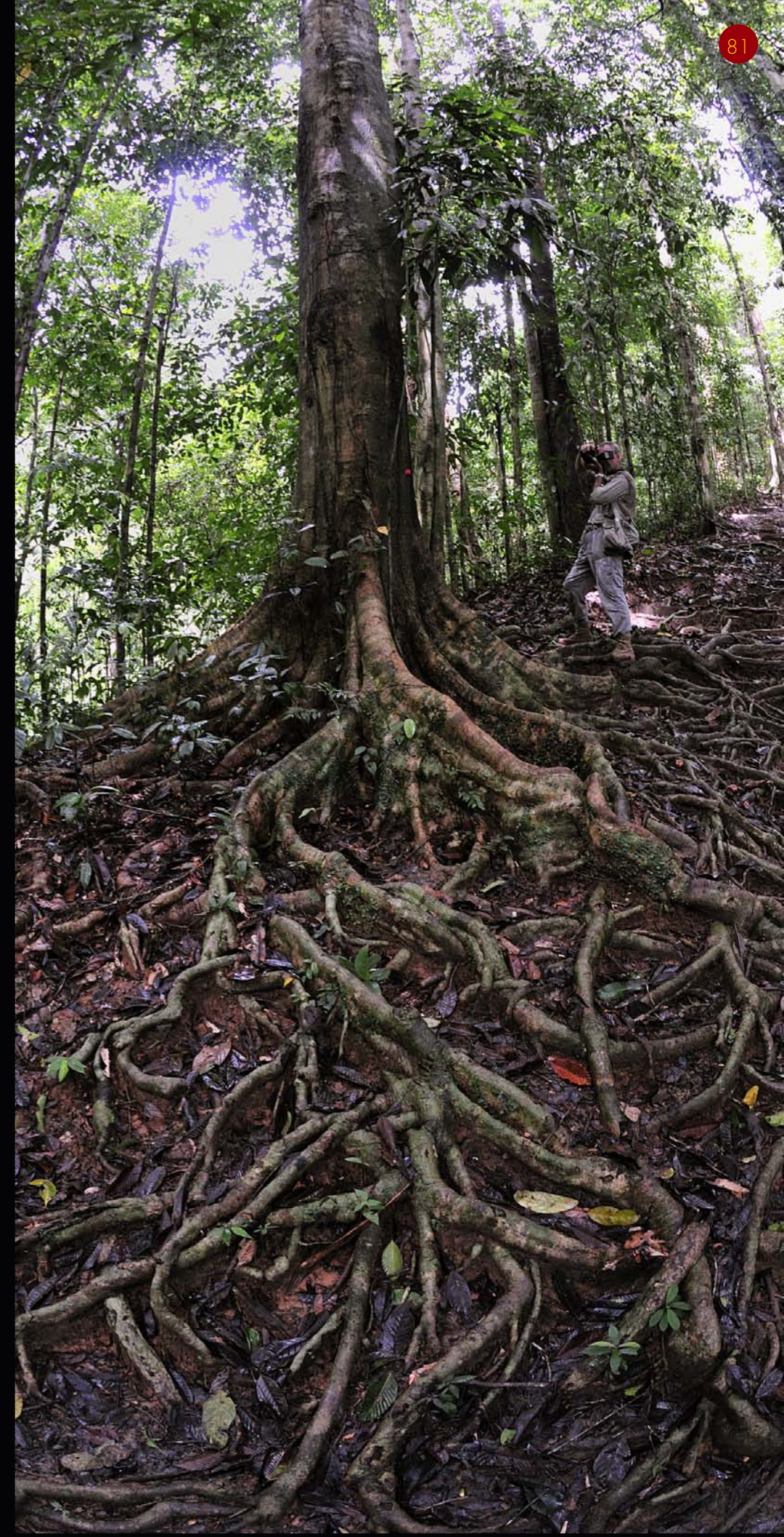
Red leaf monkey *Presbytis rubicunda* (left) come in fact in a variety of hues - from pale grey to honey to Titian red - and can be occasionally observed in the very early morning, just before dawn. Like most arboreal primates, they live in well-structured groups and are generally very shy - this, plus their choice of habitats and the very low light levels of the forest canopy, makes photographing them a rather difficult proposition. Right, a curiously X-Files-ish climbing root slowly and implacably applies its strangling grip on the tree host. Notice how wet the bark is - Danum's air is literally dripping with moisture.

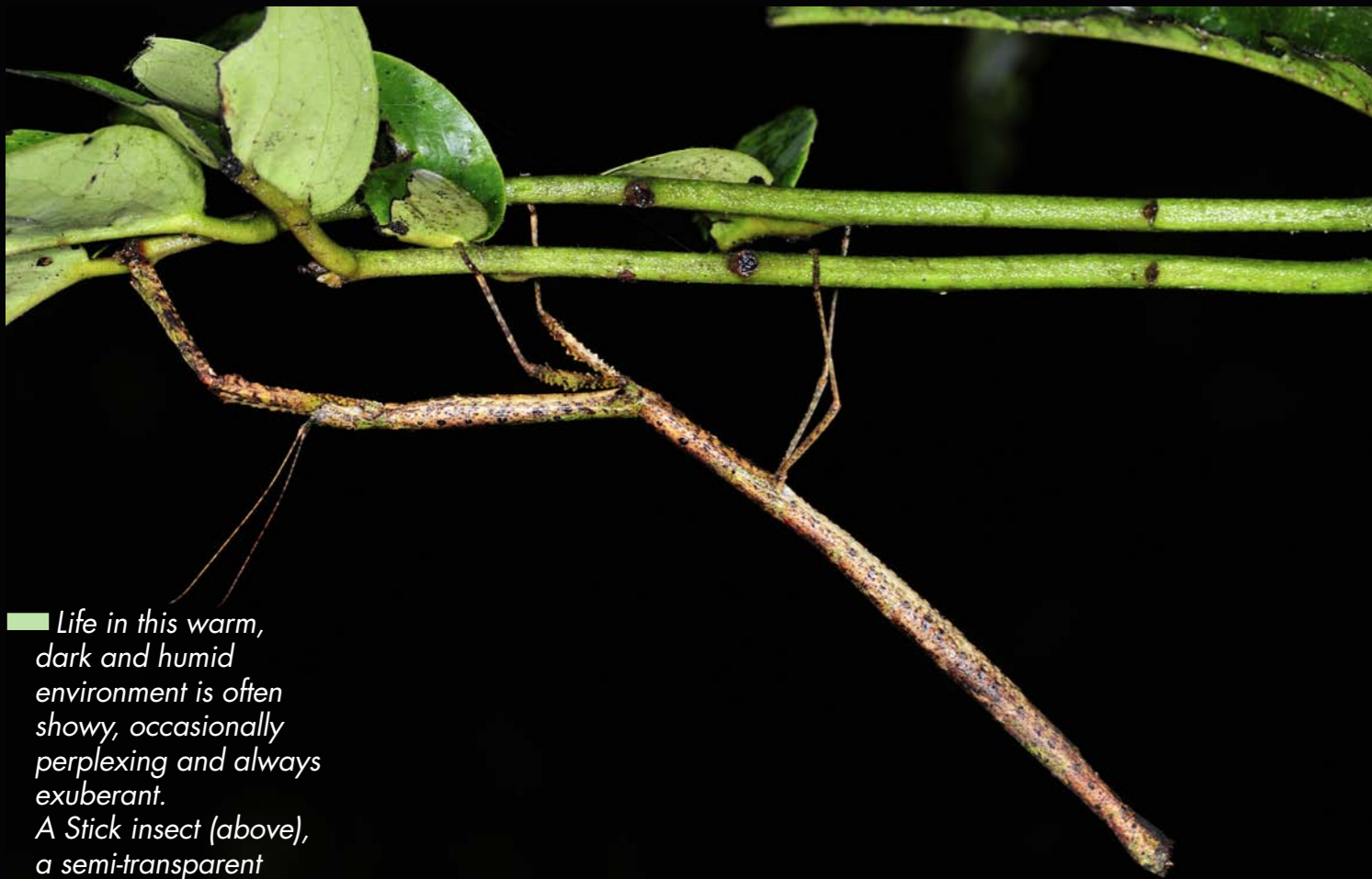




■ A female Green crested lizard *Bronchocela cristatella* pauses briefly on a wooden handrail at the Borneo Rainforest Lodge, while a newly-molted cicada (above) is leaving its empty shell on the tree trunk it climbed, and is now hardening its exoskeleton and stiffening its wings.

Plant species of Danum come in a dazzling variety of colors, shapes and sizes - from fungi growing out of rotting wood (below) to wild orchids in bloom (center) and gigantic Dipterocarp trees standing on serpentine buttress roots (far right). The latter is an adaptation to shallow soil, characteristic of rainforests.





Life in this warm, dark and humid environment is often showy, occasionally perplexing and always exuberant.

A Stick insect (above), a semi-transparent newborn Praying mantis (below) and a wild ginger in bloom emerging from the forest litter (right) all bear witness to the many different survival strategies adopted by rainforest species.



Successful survival strategies to feed and reproduce

isolation of Danum Valley. This is a virgin, primordial, occasionally demanding environment of steaming lush vegetation and glutinous ankle-deep mud, of steep ravines and quietly murmuring clear forest brooks, of gigantic buttress roots and coiled, climbing lianas, pervasively bathed in oppressive heat and humidity.

Shockingly violent downpours are sudden and frequent, and even when bathed in searing sunshine the whole environment is perennially immersed in a prehistoric, Jurassic-like atmosphere. Animal sightings are surprisingly frequent and close despite this being a rainforest habitat, and photographic opportunities for professionals and

continued on page 83 ➤





serious amateurs are simply endless. We have spent a whole week at the Borneo Rainforest Lodge, and despite going daily on long, arduous treks we feel we have barely scratched the surface - every few steps along the forest trails a new fascinating subject would be sighted, and during night walks lasting over three hours it would not be uncommon for us to cover only a few hundred meters due to the number of subjects encountered. Thanks to its own very specific nature, the Danum Valley environment offers a unique chance to the careful observer - the possibility not only to encounter otherwise shy rainforest species, but also to pause at length and leisure and watch them actually feed, hunt and mate. This is a rare and precious gift, and the untouched wilderness of Danum Valley offers it generously to those willing to listen to the sounds of the rainforest and put their eyesight to good use. ●



■ A juvenile Bornean Horned Frog *Megophrys nasuta* offers an amazing example of its leaf-mimicking camouflage as it sits undetected among the forest litter.