

AIPC

SPECIAL ISSUE

2



Special Issue 2 - April 2010
Publication reserved to AIPC members
Edited by AIPC - Associazione Italiana Pianta Carnivore
www.aipcnet.it

Special edition

A tour of the Venezuelan Gran Sabana and some of its Tepuis

by Andy Smith



President

Graziella Antonello
presidente.aipc@gmail.com

Vicepresident

Andrea Boldori
vicepresidente.aipc@gmail.com

Secretary

Andrea Scaccabarozzi
segretario.aipc@gmail.com

Treasurer

Luigi Tartaglia
tesoriere.aipc@gmail.com

Editor

Gruppo Editoriale
editore.aipc@gmail.com

Editor in chief

Cristina De Rossi

Get in touch with AIPC

AIPC
via Mar Tirreno 9/3
30034 Mira (VE)
Italy

www.aipcnnet.it

Graphic and Composition

Chiara di Biase
info@mondocarnivoro.it

The opinions expressed by the Authors are not necessarily those of the Society or the Editor.

Issued in April 2010

Summary 2

Special Edition

A tour of the Venezuelan Gran Sabana and some of its Tepuis

by Andy Smith

- 5 A tour of the Venezuelan Gran Sabana and some of its Tepui
- 8 The Gran Sabana
- 18 Amuri Tepui
- 38 Kavac and Yunek
- 47 Auyan Tepui
- 54 Ptari Tepui
- 67 Roraima Tepui

Subscription rates for year 2010: all countries via air mail € 22.00. Payments by Postal Order or made to National Giro Account N. 70092069, to Associazione Italiana Pianta Carnivora (or "AIPC").

Back Issues of AIPCMagazine can be requested. Please contact the Secretary or visit www.aipcnnet.it/AIPCNews

© AIPC, quarterly journal. All rights reserved

No parts of this publication may be reproduced in any form and by any means without written permission of the Editor.

Guidelines for the authors

Only typed articles are accepted. It is recommended to make use of a standard word processor (either for PC or for Mac) avoiding fancy characters or styles. As an indication, each page should consist of about 3000 characters (including spacings). The utmost care should be taken in producing high quality colour slides to accompany the article.

Cover: view from the summit of Ptari Tepui, Venezuela; this page: 'Island flora' on Ptari Tepui (photos Andy Smith)

Editorial

the Editorial Group

Dear readers,

AIPC is pleased to present this Special Issue n° 2, which belongs to the series, available on CD, specifically addressed to the English-speaking friends of the Association.

This issue is completely devoted to a field trip report written expressly for our journal by our friend Andy Smith; it has been published in a slightly reduced version in the Italian printed magazine, whereas it is here presented in its entirety and enriched with many more photos.

The experience it reports represents a dream for every CP lover, and it is hard just to read this story without flying with the fantasy to those wonderful places, or without at least feeling a little empathy with the group of explorers, so enthusiastic and passionate to face any problem with a smile, regardless of any fatigue or hardship.

A big thanks to Andy Smith, then, for his infectious enthusiasm.

About the Author

Andy Smith was born in Hertfordshire, England, and moved to Dorset to study Natural History Illustration. He has been an avid grower of carnivorous plants for around 25 years and has travelled extensively across Australia, Southeast Asia, South America and Europe to study and photograph these fascinating plants in the wild. He now concentrates on cultivating *Heliamphora* and high-land *Nepenthes* and has amassed one of the largest private collections of these plants in the UK.



A tour of the Venezuelan Gran Sabana and some of its Tepuis

by Andy Smith

nepenthescarnivorous@yahoo.co.uk

View of the Gran Sabana

I was fourteen years old, it was Christmas Day 1986 and I had just opened a gift from my Mum and Dad, a copy of Adrian Slack's new book, 'Insect Eating Plants And How To Grow Them'. Completely absorbed, all my other presents were soon forgotten as I read my way through what I still believe is one of the best books on carnivorous plants ever written. Eventually I came to the section on *Heliamphora*, a name I was then unfamiliar with. The photos showed me the most beautiful and graceful plant I had ever seen while the text taught me all about the mystical region in South America where they grew. I was captivated and I tried to find out as much information as I could. I avidly read and was entranced by Sir Arthur Conan-Doyle's fictional "The Lost World". This and the fantastic National Geographic article of May 1989 further fuelled my interest but no other information on the area seemed to exist. I promised myself there and then that one-day I would just have to go and see them in the wild for myself.

My interest in carnivorous plants continued to develop and a couple of years later my friend Dudley Watts gave me a real *Heliamphora* plant to grow. It did surprisingly well in my little terrarium for about 18 months but died one hot summer day. Several more attempts over the next few years gave mixed results, but with less than ideal conditions none of the plants survived more than three years. Eventually, around 12 years ago, I finally invested in a small greenhouse and I started to grow these plants properly. No more plants died and my collection slowly grew in size.

Twenty-three years after I had made that promise to myself to see *Heliamphora* in the wild, my dream was to come true. On a cold January evening in 2009, after months of planning, saving money and buying equipment, I was sat on a coach on my way to Heathrow Airport where I was to meet my good friend Stewart McPherson who had arrived from Australia a couple of days before.

My journey to see wild *Heliamphora* had begun at last.

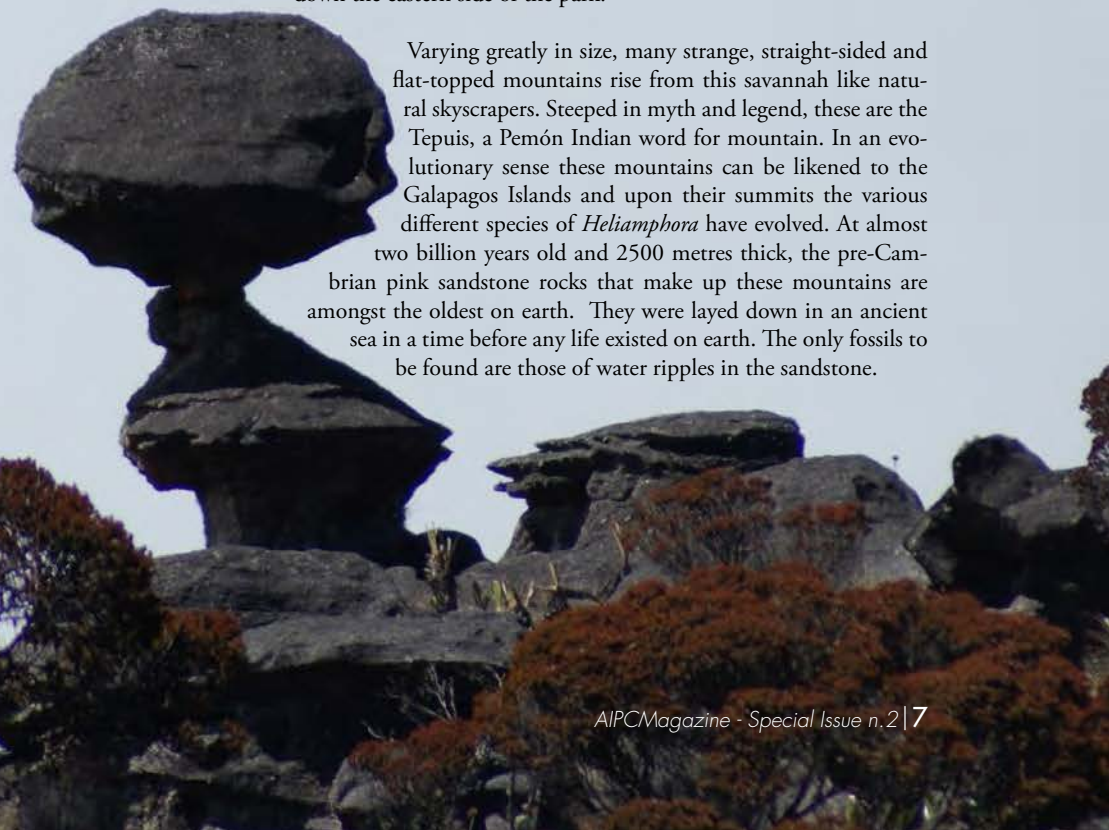
Soon after we took off from London we landed in Paris where we had to change planes and where we also met up with three of the four German members of our party, namely Martin Hingst and Holger and Anja Hennern. All three of which I had already met a year earlier at the botanic gardens in Leiden, Holland. We soon boarded our next plane and settled down to a long trans-Atlantic flight. Several sleepless hours later we arrived in Caracas, collected our luggage and were promptly bombarded with offers from all the black-market money exchangers at the airport. Having swapped a few US dollars for several thousand Venezuelan Bolivars, we made our way to the domestic flights terminal and bought tickets to Porto Ordaz, a town 500 km south east of Caracas. With this task accomplished we made our way back to the international terminal where I bumped into Andreas Fleischmann, an old acquaintance I had previously met both in Holland and Italy. Andreas had arrived a few days earlier to study material at the Caracas herbarium, in the company of the famous Venezuelan botanist Otto Huber. A few

hours later and my friend Darren 'Spot' Cullen from Tasmania arrived on a flight from Miami and we then made our way to the hotel we had booked for the night. The last member of our eight-strong party, Ch'ien Lee the wildlife photographer and *Nepenthes* expert, arrived at the hotel sometime during the night. We all mustered for breakfast the following morning before going back to the airport for

our flight to Porto Ordaz. We landed at 2:30 p.m. and just half an hour later we had found three taxis to take us and our mountain of luggage to Santa Elena de Uairén, a frontier town in Bolivar State, 700 km to the south and situated about 5 km from the Brazilian border. After ten very cramped hours we finally arrived at the Hotel Lucrecia in Santa Elena at around 2 a.m.. We quickly found our rooms and beds and soon fell asleep. The following morning, after a fantastic breakfast of chicken *empanadas*, fresh melon juice and strong coffee, Stewart went off to meet with Raoul, the local helicopter pilot, to sort out the logistics of flying eight people and all their kit to various mountains on a limited budget. The rest of us decided to take a guided tour of the Gran Sabana and so off we went in a huge 4x4 to see what we could find.

The Gran Sabana is a vast area of hilly grassland, dense forest and mountains in the south of Bolivar State in Venezuela, close to the borders of Brazil and Guyana. Ten thousand square kilometres of this area was made a National Park in 1962 and named Canaima, after the Venezuelan novel of that name by Rómulo Gallegos. Canaima means 'evil spirit' in the local Pemón Indian language. In 1975 the size of the park was increased to 30000 km² (3.000.000 hectares), making it the then largest protected area on earth, the same size as Belgium. The park received 'World Heritage' status in 1994. It had long been assumed that this grassy savannah was the product of the Indians' practising their slash and burn technique on the original forest, but the existence of 107 different species of plants that live only on the grasslands of the savannah, and found nowhere else on earth, would suggest it has existed for a very, very long time. A single road, the Pan American Highway to Brazil, runs north/south down the eastern side of the park.

Varying greatly in size, many strange, straight-sided and flat-topped mountains rise from this savannah like natural skyscrapers. Steeped in myth and legend, these are the Tepuis, a Pemón Indian word for mountain. In an evolutionary sense these mountains can be likened to the Galapagos Islands and upon their summits the various different species of *Heliamphora* have evolved. At almost two billion years old and 2500 metres thick, the pre-Cambrian pink sandstone rocks that make up these mountains are amongst the oldest on earth. They were laid down in an ancient sea in a time before any life existed on earth. The only fossils to be found are those of water ripples in the sandstone.



Our first stop of the day was at the amazing Quebrada de Jaspe or Jasper Creek. Here a thirty metre wide, very shallow river flows over a slab of exposed bedrock made entirely of pure, gem-quality red and yellow jasper. Having a rippled texture, the jasper is colonised by black algae that grows in sheltered patches, giving the appearance of tiger stripes. As sunlight hits the rock through the crystal clear water, it glows an intense blood red and provides a rather surreal contrast to the lush, green forest on either side. On the wooded banks of the river we found several beautiful orchids in flower, one of which, we found out later, was the very rare *Otostylis lepida*. In the deep shade of the river bank, I was surprised to see a small colony of the beautiful fern *Adiantum reniformis*, a plant better known from the Canary Islands and one I grow in my greenhouse back home.

At our second stop, in the savannah proper, we found the first carnivorous plants. Rank upon rank of thousands of tall, yellow tubes of *Brocchinia hechtoides* were marching army-

like over the grassy hills. In the wetter valleys were lots of *Utricularia*, *Drosera* and *Genlisea* and never have I seen such a mass of different species of carnivorous plants all growing next to each other. I was pleased to find *U. tricolor*, a species I have grown for years, as well as less well known species such as *U. juncea*, *U. hispida*, *U. simulans*, *U. amethystina*, *U. longeciliata*, *U. lloydii*, and *U. adpressa*. The first *Genlisea* I had seen in the wild were found here too, namely *Genlisea repens* and *G. filiformis*. The unmistakeable red rosettes of sundews were clearly visible and three species were seen; The pretty *Drosera communis*, the tiny *D. felix* and the endemic *D. roraimae*. This last species of sundew was found in its hundreds, growing along the banks of a large river in the company of *Utricularia nana*, *U. subulata*, *U. pusilla*, *U. nervosa*, *U. trichophylla* and the two smallest species in the whole genus, *U. tenuissima* and *U. oliveriana*. These two plants are contenders for the title of the world's smallest flower. It was here that we found the stunning and rare orchid *Phragmipedium klotzschianum*, a species very rarely grown in cultivation.

We spent almost three hours at this site and finally broke for a late lunch at about three o'clock. We had worked up quite an appetite running around in the heat, so off we went to a nearby Indian settlement called San Francisco de Yuruani for a fantastic leisurely lunch of heaps of BBQ beef and chicken (I think) and a much needed cold beer or two. Our final site of the day was a very wet marsh next to the road that we explored in the rain. Here we found the large, rare, purple-flowered *Genlisea guianensis* growing in several centimetres of water. Various other *Utricularia* were present but nothing different from the other sites. After an hour or so our thoughts began to drift; we were wet and tired and all of us were suffering from numerous puri-puri bites we had been collecting all day. Puri-puri are tiny black sand flies that attack any exposed skin. Their bite is way out of proportion to the size of the fly and the intense itching continues for almost two weeks afterwards, keeping you awake at night and generally driving you mad. These flies inhabit only the lowland savannah and are not present on the tops of the tepuis. I was thus very much looking forward to going to the summit of Amurí Tepui the following day and away from these biting vermin.



This page: *Brocchinia hectioides*



Catopsis berteroniana. Above: *B. micrantha*; below: *B. reducta*





Above: *Drosera felix* at the Brocchinia site; below: *D. kaieteurensis* at Chivatón, Gran Sabana



We got back to Santa Elena in the early evening to find that Stewart had had a very busy day organising the helicopter itinerary and all the food, quite an undertaking considering he was catering for eight of us for over two weeks in the field. After dinner and still at the hotel we had a meeting with John Junior, a celebrated and rather portly local guide who would take us to the summit of Roraima. We handed him what seemed like an awful lot of US dollars and in return he promised to meet us again in a couple of weeks with a small army of porters for the ascent. Not only is it illegal to climb Mt. Roraima without a guide, but also once on the summit we would need one anyway to show us all the sights of the mountain. Generally, the local Pemón Indians completely rely on tourism for their income and, despite their belief that the tepuis are the homes of the spirits, some of the harder souls have become guides and porters.

After a pleasant nighttime stroll through the streets of Santa Elena, via the local bottle shop to stock up on cheap Venezuelan rum, we returned to the hotel and sorted through all our kit, organising ourselves for nearly three weeks of living in a tent. Batteries had to be charged, cameras and clothing checked, food and fuel distributed etc. We were soon ready for bed but sleep didn't come easy, as I lay awake with the knowledge that tomorrow I would see my first *Heliamphora* in the wild.

We awoke early and went again to the local café for our breakfast of juice, coffee and *empanadas*. After this, having returned to the hotel to collect our kit, we hailed a taxi to take us to the local airstrip. Here things got a little military and lots of soldiers with big guns were walking about. Our travel documents were checked, re-checked and finally copied out by two clearly illiterate soldiers who wrote everything down wrongly. An hour or so later four of us, Darren, Andreas, Ch'ien and I got into a little Cessna and off we flew for an hour or so to Yunék, a very small Indian village right at the base of Akopan Tepui which forms the south-eastern section of the much larger Chimantá Massif. To allow enough space for all our equipment, the seats in the plane had been removed and of course this made the journey a tad uncomfortable. We came in to land on the bumpy grass right in front of the thatched huts of the village and several villagers of all ages



From top: *Phragmipedium klotzscheanum*; two unidentified orchids; *Otostylis lepida*





Background: *Drosera rotundifolia*; box: *Utricularia tenuissima*



came out to meet us. After a quick greeting and an impromptu bow and arrow demonstration from a village elder, we set off for a brief foray into the countryside. Wandering down to the river we saw lots of huge butterflies dancing in the air and several interesting but unidentifiable birds were flitting about. Andreas soon found a small colony of *Drosera cayennensis* and I found the strange, alien-like skull of a capybara. We were awaiting the arrival of Raoul, who was taking the other four directly to the summit of Amurí Tepui and after a while we heard the distinctive thump-thump sound of a helicopter approaching from afar and so we made our way back to the village. Ten minutes later we were trying to squeeze all of our kit into the back of Raoul's shiny new 'Long Ranger' helicopter, while leaving enough room for ourselves. Being the biggest of the four, I was asked to sit in the front and what a treat this was as here even the floor was made of glass. Having flicked a few knobs, pressed some buttons and wiggled the joystick a bit, Raoul lifted us up into the air, hovered mo-

mentarily, creating a severe sandstorm in the village below while doing so, and then started to spiral upwards to gain enough altitude to fly us over the summit of Akopan and on to our way to Amurí. Up close to the mountain we could see numerous waterfalls cascading over the rim, plunging hundreds of metres down the vertical cliffs into the encircling forest below. Straight, horizontal lines of green proved to be hanging gardens of vegetation, growing precariously at certain strata levels on the cliff sides of the mountain, hundreds of metres in the air. Alas I was too far away to see what sort of plants they were. Up and up we spiralled and then all of a sudden we shot over the edge of the plateau and now the ground was only a few tens of metres below us. An amazing array of rocks, boulders the size of office blocks and deep, dark crevasses fractured the surface and we could see, amongst the patches of vegetation, *Brocchinia reducta* plants glowing yellow against the black rocks and green grass.



Drosera sessilifolia



Dwellings at Jasper Creek

AMURÍ TEPUI

Amurí Tepui, roughly 9 km long and 5 km wide, forms the southerly tip of the Chimantá Massif and is heavily vegetated in comparison to other tepuis. It supports several large cloud forests as well as vast meadows and wetlands. After ten minutes of flying over the plateau there was a change of pitch in the engine and we started to circle our descent. I noticed a tiny speck of colour in the distance and this soon transformed into the

huddled figures and luggage of our companions. We landed on what at first appeared to be a nice level, grassy field but what was in fact a rather wet swamp about sixty metres from the edge. Due to the altitude, Raoul didn't want to turn the engine off and we hastily unloaded all our equipment and then he flew off again.



View from the campsite, Amurí Tepui

We were eight of us alone on top of a very remote mountain without any way down, and as I watched the helicopter rapidly dwindle into the cloudy distance I realised that Raoul was the only person who knew of our whereabouts. It took a minute or two to come to terms with this situation but it was soon forgotten as I realised my long-held dream had finally come true. I was surrounded by hundreds of *Heliophora pulchella* plants. Their red and green hairy pitchers could be seen nestling amongst the taller grasses and their tall, pink and red flower stalks and white flowers contrasted nicely amongst the equally as tall bright yellow tubes of *Brocchinia reducta*. I had obviously landed in heaven and so here we made our camp. We pitched our tents in the slightly less boggy spots, trying not to crush too many *Heliophora* and *Brocchinia* plants underneath, and feeling guilty, as it was impossible not to do so; but I did try my best. Our campsite was right next to a cluster of about fifty black, rock pillars. Each about 30 cm wide and varying in size, the largest were up to four metres tall. They looked just like huge, displaced stalagmites rising from the marsh. I walked up to inspect a particularly tall one and realised it wasn't fixed as I could easily wobble it from side to side even though it must have weighed over a ton.

For the next couple of hours or so I wandered around in a trance-like state, trying to take in my surroundings. The view from camp was breath taking. In front of us, looking northwest was the edge of the mountain. Here the plateau suddenly ended and eight hundred-metre-tall vertical cliffs plunged down into a deep valley thickly cloaked in lowland rainforest. Five kilometres away on the other side of the valley were the imposing cliffs of Toronó Tepui and behind this to the left could be seen the distant Abacápa Tepui, both of which also belong to the huge Chimantá Massif. No sign of any human activity could be seen at all.

Heliophora pulchella (typical form) on Amuri Tepui





Both photos: *Heliamphora pulchella* (hairless purple or black form) on Amurí Tepui

The plant-life, even within the camp, was alien to me. What I had presumed to be grass was in fact *Stegolepis ligulata*, a small species in the *Rapataceae* family occurring in its thousands, and whose iridescent leaves flashed electric blue in the sunlight. There was a larger species too, *Stegolepis guianensis*, that grew almost as tall as me. These very strange, ancient-looking plants form a short but substantial flat trunk composed of dead leaves. Only four or five green leaves are present at the top and these are sword-shaped, up to a metre in length and extremely glossy, glinting like glass in the sunlight. Stewart showed us how to pull out the newest leaf and eat the white, tender base. Not unpleasant but the clear jelly found on the leaves has to be washed off first. There was a small shrub, looking like a bonsai no more than 30 cm tall that had lots of large cherry-like fruit. According to Andreas these were strongly hallucinogenic and best avoided! Here and there were the larger bushes of *Maguirethamnus* sp. These had large, white, frangipani-like flowers that we later saw being pollinated by a hummingbird. Bizarre, prehistoric-looking ferns grew in a few places amongst the shorter vegetation and in the wettest places numerous *Utricularia* and *Gentlisea* flowers could be seen. It was the *Heliamphora pulchella* that commanded most of my attention however. The plants had pitchers over twice the size of any I had seen in cultivation and some of the clumps comprised of over 300 pitchers. Most of them were in flower and they

didn't appear to be too choosy where they grew. Some sheltered amongst rocks, others were exposed out in the marsh and a few were almost completely smothered amongst taller vegetation. Most of the plants here were green with some red colour with the occasional all-red plant. The white, bristly, downward-pointing hairs on the inside of the pitchers were an obvious and distinctive feature.

As evening approached our hunger increased and so water became our next concern. To keep the weight down for the helicopter journey, we had arrived with empty water bottles. This shouldn't have been a problem as we were on top of a tepui, one of the wettest places on the planet; how wrong we were! In the distance we could hear a roaring waterfall so Darren and I decided we would go and investigate while Martin would go off in a different direction. Taking all our water bottles we set off into the interior of the mountain. We first had to try and pull ourselves through the densest forest I have ever seen. The ground was very uneven and it was impossible to go in a straight line. The deeper we went the more disorientated we became and if it were not for the constant noisy reminder from the waterfall we would have become hopelessly lost. Perseverance eventually paid off and we emerged from the other side at the base of a small hill, the flat summit of which turned out to be the only



known location for the black form of *Heliamphora pulchella*. They grew practically submerged in swampy, algae-filled water and we stopped briefly to admire them but would return here tomorrow for a proper look, for now we wanted to get to the waterfall that was getting louder with every new step. On the other side of this hill the ground suddenly dropped away into a ravine with large outcrops of rock and was thickly covered in very dense cloud forest. We couldn't see the bottom of the valley or the waterfall and after several failed attempts we had to admit defeat. Amongst these rocks we came across a single specimen of the biggest *Brocchinia* plant I had ever seen. Standing over 1.5 metres tall, its rosette had more leaves and was slightly more open than those of *Brocchinia reducta* but not as open as *Brocchinia hechtiioides*. Over the next couple of days I saw a three more specimens of this plant, always growing singularly and widely scattered. Quite what this plant represents I don't know. Is it a new species or just a giant form of *B. reducta*?

On our way back to camp we found our first *Utricularia humboldtii* flower. The plant itself was growing in the flooded rosette of a large *Brocchinia tatei* plant and the flower stalk was over a metre tall. Darkness wasn't far off now and we were still an hour from camp so we pressed on. Martin had had marginally better success as he had found a very small trickle of a stream and had managed to fill a couple of water bottles. With this and some extra water we got from the swamp we boiled-up a very meagre meal of Spam, rice and tuna and promised ourselves that we would try harder tomorrow. The swamp water was full of mosquito larvae that still wriggled even after iodine treatment, so we just drank them anyway and tried not to think about it.

Night falls very quickly in the tropics but the brief sunset is very intense and colourful. We all sat down to watch the show while sipping our rum but just fifteen minutes later it was completely dark so we went to our beds and were soon asleep.

We awoke early the next morning to a glorious sunny day. I had slept well and felt very refreshed but it soon became apparent that Anja had taken a turn for the worse during the night with a seriously upset stomach. During a breakfast of crisps, biscuits and coffee we made our plans for the day. Holger would stay in camp and look after Anja while the rest of us would go and look for water. Darren and I decided it would be worth attempting the waterfall again and so off we went, leading the others through the dense forest that was



Above: an unidentified species; below: *Ledothamnus* sp.





Both photos: *Drosera arenicola* on Amuri Tepui

easier this time, as we could see where we had gone before. We climbed the hill back up to the black *H. pulchella* site where we all got very wet taking lots of photos. This form of *Heliamphora pulchella* is unique in that it always grows as a semi-aquatic. The lower half of the plant is submerged in about 10 cm of water, with the water within the pitchers at the same level as that outside. The roots are held within thick mats of jelly-like algae that cover the bottoms of the ponds. The plants lack any green colour, the new pitchers are a uniform deep red and this darkens to a near black, as they get older. Another distinctive feature of this form is that 90% of them are completely smooth inside the pitcher, lacking the bristles that are usually such a diagnostic feature of the species. Insect life is generally rather scarce on the tepui summits but here in this swamp we saw several species of dragonfly and damselfly. It was here too that we saw the tallest examples of *Drosera roraimae*, arising out of the water on stalks up to 25 cm tall; one can't help but wonder at what age these plants might be.

A couple of hours later we began to search for a way down into the gully. We climbed down a very steep slope covered with strange rock sculptures and small *Bonnetia* trees until we came to a drop too large to contemplate. Here the waterfall was very loud and clearly not too far away but we still couldn't get down. At this point Andreas announced that he was not feeling very well and practically collapsed on a rock. It would be foolish for him to carry on and Martin gallantly opted to return to camp with him. Ch'ien, Stew, Darren and I turned left and followed the top of the gully through some very dense forest, skirting some cliffs and fallen boulders and generally making slow but steady progress. At one point we came across a hollow in the rock formations and here was a crystal clear pond. Quite deep with fresh, running water, we stopped and filled our bottles and drank the cold, refreshing water until we couldn't drink another drop. Just here, hanging off a branch above the pond was an exquisite example of the beautiful *Utricularia jamesoniana*. I have never grown this species and had only ever seen it once in cultivation. The medium-sized, creamy-white, orange and blue flowers were of an incredibly complex structure and were huge in comparison to the minute foliage from which it arose. This was the only example of this species we saw on the whole trip. We still wanted to make it to the bottom of the gully and so we pressed on. The gully gradually narrowed and at one point we could see the other side, a mossy steep cliff with numerous waterfalls cascading over it and through Ch'ien's incredibly high magnification bird-spotting binoculars we could see clumps of *Heliamphora* plants, clearly distinct from *H.*

pulchella growing straight out of the vertical cliff face. This was *Heliamphora exappendiculata*, a large species and very rarely grown in cultivation. Its distinguishing feature is the nectar spoon, which is like a small bubble built into the top of the rear wall of the pitcher.

By now we had been travelling for three or four hours, but were probably only about two kilometres from camp. After a brief rest we pushed on and soon came to a dead end as a looming cliff ran across our path. Turning right and heading downhill, we followed this cliff through the forest, heading for the bottom of the gully. Here the terrain was extremely dangerous. Everything was soaking wet and very slippery, the forest so dense that we had to crawl, climb and jump our way through the trunks and branches. Our backpacks would snag on every branch while the decaying vegetation gave off a dank, mouldy smell. Deep crevices had to be negotiated and several times my foot would break through the surface of the false forest floor and my leg would plunge into nothingness. This continued for about an hour and then suddenly we were at the bottom. We crawled out of the undergrowth into a dimly lit rocky gully that had a lovely cool stream flowing along its bottom. The water was clear and refreshing so we filled our water bottles again, paddled, drank, washed and swam. The shape of the gully spoke of mighty deluges in the past and I couldn't help but imagine the raging waters this place must see during the rainy season. For now though everything was calm and the rocks had a generous coating of moss, ferns and orchids. Amongst these rocks and growing in the moss we found *Utricularia quelchii*, *U. amethystina*, and *U. pubescens* and another species that I had to look at twice to recognise as a bladderwort. It formed extensive networks of thread-like stolons, armed with lots of large, red bladders and topped with a twin row of rounded leaves. The plants grew as a large mat over the smooth bare rocks where a film of water flowed over it. No flowers were found but I collected a small sample to take back to Andreas.

In one sunny spot growing in pure rotting leaf mould a small colony of *H. pulchella* survived. These were smaller than those we had seen out on the plateaux, no doubt as a result of the lower light and drier conditions in the gully. On the vertical walls of the gully, amongst grasses and other vegetation, several clumps of *H. exappendiculata* could be seen. This species retains lots of

Above: *Brocchinia acuminata*; below: *B. tatei*





Above: *Utricularia heterochroma*; left: *U. quelchii*; right: the gully

dead pitchers that dry to an unusual straw colour and which appear to form some support for the few live pitchers that nestle on top. The plants were pure green and the only red colour was the large nectar glands sparsely covering the outside of the pitchers. This species is up to four times larger than *Heliamphora pulchella* and lacks any of the hairy bristles found in that species. The nectar spoon forms a small 'bubble' built into the back wall of the pitcher from which nectar is secreted. Not far from these but growing on level ground was a small colony of a new species of *Heliamphora*. Obviously closely related to *Heliamphora exappendiculata* and of a similar size, these plants had a large nectar spoon that terminated in a very distinctive sharp hook. Only about ten large plants were seen and this is the

only known population, a very rare plant indeed. I immediately thought the obvious, that this species was a stable hybrid between *H. exappendiculata* and *H. pulchella*, but no visible traits from the *H. pulchella* parent could be seen. Was this a newly evolving species or the last remnant population of an ancient one? Whatever its origin, it is a beautiful plant and a worthy addition to the genus *Heliamphora*. Since my return, Andreas has worked tirelessly on describing this new species and it has just recently been officially published as *Heliamphora uncinata*.

On one side of the gully a beautiful waterfall showered down the cliff into an oasis of different fern species. Growing next to this was a colony of small, prickly tree ferns of the genus *Cyathea*, with a trunk no more than an inch thick. Large bromeliads festooned the tangled



branches of the forest hanging off either side of the gully and various climbers and creepers climbed and crept everywhere. We spent a very memorable couple of hours exploring the botanical riches of the gully but eventually we had to leave as we had a very strenuous return journey ahead of us. Barely able to walk another step, we arrived in camp just before darkness fell. Fortunately Anja was feeling much better and Holger had started to cook some food. Andreas was still ill and asleep in his tent but soon woke up and after he was shown the unusual *Utricularia* sample I had collected, he promptly made the most amazing recovery. Very excited, at first he wasn't sure what species it was but after some deliberation and careful reading of Taylor (I couldn't believe he had bought that huge book with him!), he announced that it was *Utricularia heterochroma*, a rare and enigmatic species and a first-time record for Amurí Tepui. After a well-earned dinner of rice, Spam and tuna, seasoned with copious amounts of Darren's Worcester sauce and a few swigs of rum we turned in for the night.

Early the following morning, during a quick breakfast of crisps, biscuits, tinned tuna and coffee we made our plans for the day. Those of us who had visited the black *Heliamphora pulchella* and the gully the day before had described them to the others with such enthusiasm that they decided they wanted to go too. Darren not only kindly offered to lead the way for them but he would re-fill all our water bottles too – what a great guy!

Stew had visited Amurí once before, five years earlier while conducting research for his book 'Pitcher Plants of the Americas'. He had vague recollections of finding another new species of *Heliamphora* and so Ch'ien and I asked him whereabouts he had found it. "Somewhere over there" he replied, pointing in a northerly direction, along the line of the cliff. We



From left to right: *Stegolepis* sp. flowers, and two other flowering species unknown to the Author

quickly decided to go and see if we could re-locate it and so off we went in this new direction. Making our own path down through a meadow of *Stegolepis ligulata* that were looking particularly blue that morning and headed to a valley that was largely hidden amongst a labyrinth of huge stone pillars. In places the gaps between the pillars opened up into deep chasms and we had to carefully jump from rock to rock. Often the chasm would be too wide to jump and we would have to backtrack and find an alternative route. The going was very slow and we had to be extra careful. Eventually the pillars started to get smaller and spaced further apart and then they were gone. We walked up the other side of the valley, returning once again to a large open meadow. *Heliamphora pulchella* grew everywhere and *Brocchinia reducta* plants were very numerous. After a couple of hours we found our first decent colony of *Utricularia quelchii*. The plants were growing at about head height on a small vertical cliff that had water seeping over it. Five bright magenta flowers were fully open and several more buds were in development, arising from just a handful of leaves. Every open flower showed some slight damage in the form of fine scratches on the lower lobe.

After a few photos we plodded on, always keeping our eyes open for the elusive new *Heliamphora* species that Stew now remembered grew in quite dense vegetation. Every patch of bushy scrub was investigated, but to no avail. The occasional humming bird would shoot by on its way to sip nectar from another *Maguirethamnus* flower and once or twice a huge black carpenter bee, almost the same size as the humming birds, would loudly buzz past. Apart from the odd eagle and a few swifts in the distance, no other animal life was seen. To our left the edge of the mountain was never far away and the view of the heavily forested valley, almost a kilometre below and Toronó Tepui, with its numerous waterfalls beyond, was truly stunning. Sometimes clouds would rise up the cliff and roll over the rim to engulf us in mist for a while, cutting down visibility to just a few metres. As we walked on, zigzagging our way across the plateau, a gentle slope led us down to a small, cold stream. Here we replenished our water supplies and stopped for a short rest and a snack. While Stew had a little swim and Ch'en took some photos I wandered down the stream towards the cliff edge. About halfway down there was a small colony of jewel-like *Drosera arenicola*, some of which formed a beautiful, rounded ball-like cushion twenty centimetres across.

Half an hour later, feeling refreshed and rested, we continued our search. Every now and then we would see a strange rugby ball of dead leaves with a few spiky green leaves growing out the top. These were plants of *Brocchinia acuminata*. Not a carnivorous species but one that has a symbiotic relationship with insects and has become an 'ant-plant'. Given a sharp knock on the ball of dead leaves, hundreds of big, black ants would appear from the gaps between and swarm all over the plant. Occasionally the much larger, bright yellow rosettes of *Brocchinia tatei* would occur singularly or in small stands, many hosting populations of *Utricularia humboldtii*. With viciously sharp spines on the tips of their smooth, agave-like leaves, the beautiful, grey-green *Orectanthe spectrum* grew everywhere. Several times I had to dig out painful spines that had got embedded in my legs. Looking like a little bonsai, *Ledothamnus decumbens* would make itself known by displaying stunning pairs of pink flowers with yellow stamens, atop stalks that are thickly covered in sticky glands, just like a sundew. The dew is resinous and incredibly sticky and regularly traps small flies and other insects. Despite this, the plant has not proved to be carnivorous.

About five hours after we left camp we were approaching the end of the meadow escarpment and in front of us a small, dense cloud forest of *Bonnetia roraimae* trees, palms, tree ferns and other vegetation was growing in the shelter of a large cliff. Here we could hear a loud waterfall and there must have been a deep gully somewhere in front of us in the forest. Considering how long it had taken us to get to this point, and how long it had taken to descend the gully the day before, we decided this was far enough and really we had to think about turning round if we were to get back to camp before dark, a rule you must obey when on top of a tepui. This was a shame as Stewart said that he was sure this was the gully with the large, well-known population of *Heliamphora exappendiculata*.

Heliamphora exappendiculata





This and opposite page: *Heliamphora* sp. I (*H. uncinata*) on Amurí Tepui

I thought I would just take a quick look to see if there was a way through the forest and down to the gully, while Stew and Ch'ien waited. Not five metres into the forest and I began to see clumps of a strange, large *Heliamphora* with an unusual-shaped nectar spoon. Upon closer inspection I realised I had serendipitously stumbled across the new *Heliamphora* species that had been the original goal of the day. This species was unusual in its preference for the shady cover provided by overhead vegetation. Often the pitchers would be completely hidden from sight and just the flower stalk would give its presence away. The pitchers were up to 25 cm tall and had very wide, circular mouths. The exterior of the pitcher was very colourful, while the interior appeared silvered due to the film of tiny hairs covering the surface. The most distinctive feature was the nectar spoon. Small but well developed and coloured a very dark red, it looked just like a World War Two helmet. Several plants were found growing right next to *Heliamphora pulchella* but no hybrids were found. After a quick photo session and a brief scout around to assess the size of the population (apparently no more than about thirty plants) we started our return. Just recently this new species had been described and published by Andreas Fleischmann and is named *Heliamphora huberi*, in honour of the famous Venezuelan tepui botanist, Otto Huber.

Time was getting on and we pushed ourselves to get back to camp before dark. As we emerged from the valley of stone pillars near the campsite, a clump of bushes about a metre tall and several metres across caught my eye. Only the top third of the bare, woody trunks had any foliage and the elliptical leaves were succulent and shiny. The centre of the rosette and the newest leaves were completely covered in a dense pelt of fine golden hairs. This was *Chimantaea eri-occephala*. These plants had a strange feeling of great age about them. A few species are known and the entire genus *Chimantaea* is confined to the various highland plateaux of the Chimantá Massif. The final walk up the hill to the tents was almost too much but I was eager to hear what sort of day the others had had. Due to the deterioration of the path, they had struggled to reach the gully but after a strenuous few hours they finally made it. All of the previous days' discoveries were marvelled at again with the addition of Andreas finding two small but extremely pretty flowers on the *Utricularia heterochroma*. After a quick dinner we sat down to watch the amazing sunset and sip some rum for the last time as tomorrow morning we would be leaving Amurí. Typically, it began to rain so we all went to bed early. Not only were we all exhausted from our exploits but we would have to get up



extra early the following morning to break camp. At 7:30 a.m. Raoul was due to arrive to fly the first four back to Yunék where they would get a flight in the Cessna to Kavac, a small Pemón settlement at the base of our next destination, Auyán Tepui. I fell asleep listening to the rain and distant thunder echoing around the mountains.

The next morning Anja and Holger awoke to discover their borrowed tent wasn't as waterproof as they had hoped and all their equipment had got soaked through. It was still raining and, in spite of the cold, wet and cloudy morning, Raoul kept his word and at 7:20 a.m. we could hear his helicopter approaching. We did a quick final check of the campsite to make sure we hadn't left anything and then, without shutting down the engine, Holger, Anja, Martin and Stewart packed their stuff into the hold of the helicopter, climbed aboard and off they flew back to Yunék. To while away the time, waiting for the return of the helicopter, the rest of us investigated a tiny hummingbird nest that Ch'ien had found. About the size of a walnut and situated in the 'V' of a *Maguirethamnus* bush, it appeared to be entirely made of the golden hairs taken from the leaves of *Chimantaea eriocephala* plants. An hour or so later Raoul returned to fly us to Kavac. The cloud had really thickened up by now and the visibility from the helicopter was nil. Rain was pelting against the windscreen and out of every window the view was the same featureless grey mist. I found this a little unnerving and very disorientating and was glad for a brief break in the clouds just so I could confirm to myself that the ground was still where it should be. We started to descend and finally emerged out of the clouds just in time to land at Kavac, where it was very hot and sunny. The others arrived in the Cessna about twenty minutes later.



This page: *Heliamphora* sp. 2 (*H. huberi*). In the box: *H. huberi* and *H. pulchella*



Kavac and Yunek

Back in the domain of the dreaded puri-puri and sited on a flat grassy plain at the base of Auyán Tepui, Kavac consists of a small group of thatched huts and a thatched longhouse. Most of the huts are empty and can be rented for the night but a few had permanent Pemón residents. Raoul asked if we would like to go for a flight in the Cessna over Angel Falls as we were a little under budget. While we were doing this he would organise breakfast for us. Ch'ien, Darren, Andreas and I were to go first so, with Ch'ien in front and the rest of us in the back, we took off down the bumpy airstrip and were soon flying alongside the towering, vertical cliffs of Auyán Tepui. The entire mountain is surrounded with thickly forested talus slopes and we could see from the air that many of the trees were a bright lemon yellow, obviously a mass flowering of a certain species. Lots of waterfalls cascaded over the rim and plunged into the forest below. We gained altitude and were soon high enough to fly over the plateau. From this height we could see that the surface was cracked and fissured all over with massive ravines and cervices. All of a sudden the mountain top opened up into a huge, forested canyon with numerous waterfalls spilling over the side.

Akopán Tepui viewed from Yunek

One raging torrent of a waterfall was the biggest one I had ever seen and opposite this was another that looked like a drawn curtain. As the plane banked it flew over the top of Angel Falls and we could see an immense, angry, spray-filled plume of water hurtling over the side of the mountain in an almighty torrent. About a hundred metres down the water was lost in thick cloud and it was a shame that we could not see its full splendour. We turned round and flew back to Kavac and our lovely, cooked breakfast and coffee. The other four had their turn in the Cessna but by the time they reached the falls there was thick cloud all round and they didn't get to see them at all. I guess we were just lucky.

Darren and Martin decided to rent a hut for the night to give them a break from sharing the same tent. Holger and Anja did the same but only after we had evicted a scorpion and a giant centipede from their hut, little did we know about the colony of vampire bats roosting in the roof! Wandering around the huts I saw that most had their own resident giant brown gecko climbing over the walls. Ch'ien, Andreas, Stewart and I pitched our tents on the luxury of flat, dry grass in the shade of two mango trees and then Stew suggested we go for a guided walk to a local cave. Apparently we were going to get wet on this walk and Stew, Darren and I dressed and packed accordingly. We followed the Indian guide out of the village, over a hill and, following a substantial river we headed downhill. The path crossed a little stream and the wet ground on both sides was littered with hundreds of *Drosera communis*. Their bright red rosettes reminding me of the *Drosera intermedia* in the bogs back home in southern England. Amongst these sundews was a mass of yellow flowers of *Utricularia subulata* and, to a lesser extent, other species such as *Utricularia nervosa*, *Utricularia pusilla*, *Utricularia tridentata*, *Utricularia tricolor* and the white



From top left: caves at Kavac; Kavac with Amuri Tepui; flight to Yunek; church at Yunek; Yunek

form of *Utricularia amethystina*. A few *Genlisea pygmaea* were found here too. We entered the rainforest and made our way down to the river where it had started to cut into the rock and form a gorge. This is the same gorge made famous in the May 1989 issue of National Geographic Magazine. The river rounds a bend and the path abruptly ends. Here we enter the water and, using a rope attached to the cliff, pull ourselves against the strong current. I don't know how deep it was here but I couldn't touch the bottom. We held our cameras, wrapped in waterproof bags, above our heads and continued on for about 500 metres, twisting this way and that. The walls of the gorge were worn smooth by the water and must have been about 50 metres high and 10 metres apart, the daylight above was reduced to just a distant crack. The current gets stronger the further you go and then, as you round a blind bend, you are confronted with a vast natural amphitheatre filled with water and a huge roaring waterfall plunging down the far cliff face. Beautiful hanging garden of ferns, lianas and palms grew either side of the waterfall and Darren and I swam as close as we could get but were driven back by the sheer force of water. We sat and stared for a while in utter awe at this marvel of nature and then headed back. Taking an alternative route, we passed a different waterfall, this



The second waterfall near Kavac

time in more open forest, and the vegetation here was even more luxuriant. One very large tree had lots of hanging fruit on long strings that looked like huge sausages.

That evening we bathed, swam and washed our clothes in the river and then had a nice big meal in the longhouse. Darkness fell quickly and as we walked back to the tents we were captivated by the spectacular display of hundreds of fireflies flashing their eerie greenish glow over the endless savannah. After the sun has gone down on the Gran Sabana, the puri-puri go to bed and a short, bite-free respite follows before the mosquitoes come out to play about an hour later; it was time to go to bed. Lying in my tent trying to go to sleep, it slowly began to dawn on me that the rain I was listening to couldn't be, as it wasn't actually raining. Rubbing myself in Deet, I ventured outside to see what was creating such a noise and noticed some large ants on the ground just outside my tent. Using my head-torch I looked up and saw that the entire mango tree above was crawling with giant leaf-cutter ants. They were on every leaf; there were moving lines of them on every branch and several trails on the ground led away to their distant nest. Ch'ien and Andreas arrived with their cameras and proceeded to take some amazing macro shots. These worker ants appeared to come in two different sizes, one big and the other huge. The huge ants would take up position on a leaf and one of the smaller ants would then cut the leaf off.

The huge ant and the leaf would fall to the ground where it would go back to the nest with its prize. There were far more of the smaller-sized ants and these too were carrying smaller bits of leaf, following regiments of others along the branch, down the trunk and off into the savannah. Andreas and I investigated a couple of cashew trees not far away and in these were lots of roosting, rainbow-coloured birds. A few photos later and we made our way back to the tents and went



to bed. That night it was sweltering hot and I had to sleep outside the sleeping bag.

We had another early start the next day and we were down at the river having a wash before six. The first puri-puri were just starting to appear when we made our way back for a decent breakfast in the longhouse. Raoul was to fly the first four to the summit of Auyán at seven so we hastily took down our tents and re-packed all our equipment. Darren and I bought a cold bottle of Coke each and sat and watched the others fly away into the distance. Half-an-hour later Raoul returned and off we went to join the others. We landed on a gentle slope of flat, smooth bedrock that formed the bottom of a very shallow but wide river. Up the slope the river emerged from a dark cloud forest and down the slope the river disappeared over a precipice. On our side there was a jumble of flat rocks large enough to pitch our tents and on the far side was dense, low vegetation.



The little village of Yunek; opposite page: river at Kavac

AUYAN TEPUI

Before we left for Venezuela, Stew had told everyone that they would need a tent that is completely self-supporting because on most of the tepuis there is no soil to plunge a tent peg into. Auyán Tepui is such a place and I was glad of the advice. We all picked a suitably level place on the rocks to pitch our tents but to reach these from the river involved jumping over several deep crevices, some of which had a beautiful species of *Cyathea* tree fern growing out of them. Tall palm trees grew here too, as well as other trees and shrubs. Orchids grew everywhere and several different kinds were in flower. Some were almost tree-like and obviously of a great age. A few metres away from my tent was a huge colony of *Brocchinia reducta* growing over the flat rock. There must have been over two hundred rosettes, stretching over several metres. Hopping amongst the bushes in the campsite were several little sparrow-like birds. Completely oblivious to us, they would land right by your feet and not take the slightest bit of notice that you were there. This was the first time I had ever come across wildlife that was naturally unafraid of humans, as they had never seen them before. As soon as camp was made we were ready to explore. Martin, Holger and Anja chose to go up the river and the rest of us headed downstream. The river was only a couple of centimetres deep, more of a fast moving puddle really, so we walked straight down the middle. A few minutes later and there was a fractured fault in the riverbed and this resulted in a 30 cm high and 30 metre wide waterfall. Growing behind the waterfall was the extra-luxuriant growth of a beautiful colony of an *Elaphoglossum* sp. fern. At this point, on the left-hand bank of the river there was a large boggy area with small shrubs and grasses and poking out of these were many *Heliamphora* flowers. This was *Heliamphora minor*, and one of my favourites. The colony was not too large and not very dense. The individual clumps of pitchers were spaced quite far apart amongst the grasses. The pitchers were usually a solid dark red with the coating of tiny hairs inside the pitcher giving them a silvery appearance. The mid rib running down the back of the pitcher was a darker red, approaching black in colour. The nectar spoons were well developed but of a different shape to those I had seen in cultivation. Here they sat atop a short stalk, the bell being taller than it is wide and pointed at the top. They were open at the front in a 'A' shape. Darren was soon heard shouting something so I went to have a look. What he had found was a *Heliamphora minor* plant vastly different to any of the other specimens we had seen. This one was covered all over in a shaggy pelt of long silvery hairs on the outside of the pitcher. The inside had a sparse coating of spiky hairs too, similar to those in *Heliamphora ionasii*. Was this a new species? Was it just an extreme form of *Heliamphora minor*? We collected a single pitcher for genetic analysis back home and perhaps we shall soon know what it is. There were not many of these hairy plants amongst the population of 'typical' *Heliamphora minor*, possibly only around 5%.



Flight over Auyan Tepui; left: a mature plant of *Tillandsia turneri*



Ch'ien was still in the river when he discovered a lovely little water snake. About a metre or so in length, it was mainly brown and apparently quite enjoyed having its photo taken. In places we found small colonies of *Utricularia subulata*, *Utricularia quelchii*, *Utricularia amethystina* 'pink flower', *Utricularia humboldtii* and *Genlisea repens*. I also noticed that there were several very old and very large half rotten tree trunks lying in the riverbed, obviously washed-down debris from the cloud forest at the top of the hill and a product of a vast and ancient flood. These were far larger than any living trees I saw on Auyán and again I wondered how old they could be and what the forest would have looked like back then. By noon we were all feeling hungry and we made our way back to camp for a bite to eat. The mid-day sun was extremely strong and I noticed that my skin was beginning to burn, so I covered myself in sun cream. After lunch I decided to head



upstream and check out the cloud forest at the top. Walking up the slope I could see clumps of a beautiful grass, *Xyris* sp. growing on the banks of the river and *Drosera roraimae* were very numerous. There were only a few *Heliamphora minor* up here but I did find a couple more hairy individuals. Growing out into the very shallow river and over the smooth bedrock were carpets of lush sphagnum moss filled with extensive colonies of *Utricularia quelchii*. Only one flower was open but there must have been fifty unripe buds. I stepped up onto the bank and made my way through some large *Stegolepis* and some very sharp *Orectanthe*



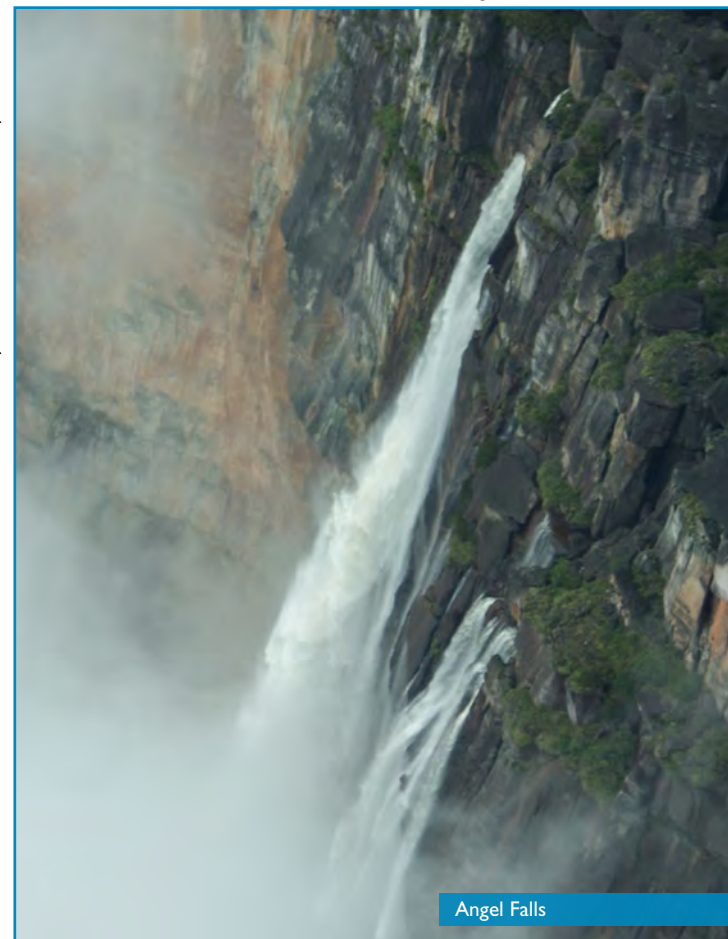
spectrum and walked into a red carpet of *Drosera arenicola*. These were the best examples of this species I had seen and were almost twice the size of those on Amuri.

I was starting to feel a bit uncomfortable in the sun and made my way to the shade of the cloud forest. To enter I had to bend double under a horizontal branch and then climb through a tree. The canopy closed over me and I was in the cool shade

Plants on Auyan Tepui, from top: *Cyathea* sp., colony of *Brocchinia reducta*, *Elaphoglossum* sp.

of the forest. With the tinkle of the river, the emerald-green carpets of moss and the countless epiphytes growing all over the limbs of the trees, I felt this place was truly enchanted. The silver air plant, *Tillandsia turneri*, grew in its hundreds, smothering the trees in all manor of sizes, the largest sporting splendid red flowers. *Utricularia quelchii* grew along the moss-covered tops of the branches, but no flowers here in this shade. The forest was very dense and the river bottom was very slippery and I went as far as I could but after 15 metres or so the forest became impenetrable and I turned ninety degrees right and headed off where I could see the trees thinned out a bit. In this less-dense forest there were lots of small, ericaceous bushes and fallen, rotting logs. Patches of white reindeer moss grew here and there and geometric clumps of *Xyris* grass looked almost artificial next to the twisted and gnarled trees.

I saw it from several metres away. You couldn't miss it, a fluorescent beacon of colour shining out into the misty gloom of the forest. About 20 cm off the ground and sprouting out of a fallen log, here was *Utricularia campbelliana*. A single, perfect flower of the most intense vermilion, there was a small spot of contrasting yellow on the throat. Held at the end of a hair-like stalk set at 45°, the flower was just over two cm across and about the same deep. A curved spur pointed forward underneath. The foliage was very sparse; I could see only three leaves and these were only about 5 mm across. No doubt there was a mass of stolons, tubers and bladders within the moss. Photography was a challenge in the cramped, wet, dark conditions but I was pleased with the results. It was starting to rain and the sky was darkening. A storm was on its way and I had best head back to camp. I met Martin on the way back and when we got back to camp he said he wanted to go and look at the ravine at the bottom of the river. As the rain was still only light I decided to go with him and we made our way down, back past the hairy *Heliamphora* site. The ravine itself was quite impressive. Our river formed a hanging valley into a deep canyon that had a larger riv-



Angel Falls

er flowing in its bottom. Rocks the size of houses lay strewn in the bottom, causing the river to pool and meander. One of these rocks had yet to make it over the edge and was precariously close but still firmly attached to the bedrock of our river. There was a fissure in this rock and growing in the gloom within was a stunningly beautiful *Elaphoglossum wurdackii*. Like *Stegolepis ligulata*, this fern has electric blue iridescent leaves that flash in the sun. When the leaves get wet the effect is amplified and the plant looks as if it should belong on another planet. I grow this species in my greenhouse and have discovered that if grown in complete shade the plant remains entirely green. Only with some direct sunlight, filtered through the green leaves of other plants suspended above, can the blue colour develop.

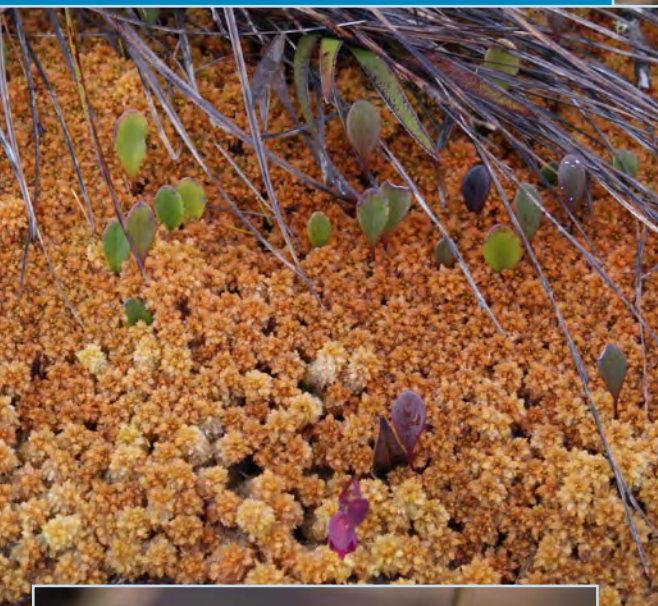
The storm wasn't far off now and the rain was getting heavier. Martin and I made our way back to camp to sit out the worst of the weather. It was early evening when the rain stopped and, taking advantage of this, we boiled up a huge pot full of various ingredients and called it dinner. Before bed we went down to the deeper, middle part of the river to wash-up our cooking utensils. In our torchlight we could see large shapes moving in the water and so Ch'ien bravely hooked one out. It was a massive, aquatic cricket. Apparently these very strange, giant insects are only found on a couple of tepuis and are unique amongst the *Orthoptera* in living entirely underwater. It must have been 12 cm long and was a beautiful-looking beast.

Climbing into bed that night the full extent of my sunburn became apparent and I was very grateful to Andreas for his bottle of After-Sun. I then had to rub Lanacaine all over arms and legs to try and stop the itching from the puri-puri bites and was a little alarmed at the swollen size of my wrists and ankles. Is this what happens to you when you live at high altitude? I was too tired to ponder the question for long and soon fell asleep listening to the rain falling on the tent.

Another early start, Raoul was due at 7:30 so we were up at 5:30 to break camp. I took my daily anti-malaria tablet and started to take down my

tent. I didn't feel too good and my sunburn was starting to be a concern, just moving about caused intense pain and soreness. Five minutes later I had had enough and was violently sick. Up came the malaria tablet and not much else. Obviously the cause of my discomfort, perhaps I should have taken the tablet along with some food. To check, I pulled out the information sheet that came with them and here was a list of a whole plethora of possible side effects. The first on the list stated possible extra sensitivity to sunlight, maybe resulting in severe sunburn. A few lines further it mentioned swelling of the joints and water retention. The last in the list was 'may cause death!' I decided there and then that I would take no more. They were clearly making me ill and besides, I had hardly seen any mosquitoes at all. (For the record, three days later all my symptoms had disappeared; the swellings had gone down, the sunburn was slowly healing and I generally felt much better).

It was still raining and the plastic bags we were keeping our food in had let in lots of water overnight. Everything was wet and heavy and I could barely lift my backpack. After a quick breakfast the first four to leave Auyán were Holger and Anja, Martin and Stew. They were to fly to Murisipán Tepui, part of the Los Testigos group, for a short stop before flying on to Ptari Tepui, our next destination. While the rest of us waited for the return of the helicopter, we crossed the river and explored the opposite bank and the dense, low scrub that grew there. Having walked through a large patch of very sharp *Orectanthe spectrum* we found a fantastic colony of *Utricularia humboldtii*. Some of these flower scapes had to be a metre and a half tall with flowers 10 cm across. They were of a darker mauve than the usual pale lilac I had seen back home. Lots of *Drosera arenicola* grew amongst them, as did several, large *Stegolepis* sp. After about an hour we could hear Raoul's approach and we rushed back to the landing site. Packing all our kit into the helicopter, Raoul told us that it had been too cloudy to land on Murisipán and so the others had gone directly to Ptari. Saying our farewells to Auyán, we were off for another adventure.



This page, clockwise from top left: colony of *Utricularia quelchii*, the hairy form of *Heliamphora minor*, colony of *Genlisea repens* and the flower of *U. humboldtii* (largest in the genus). Opposite page: the typical form of *H. minor*



PTARI TEPUI

Ptari Tepui is about 80 km from where we were on Auyán and halfway between the two are the four tepuis of the Los Testigos group; Murisipán, Aparamán, Kamarkawarai and Tereke-Yurén. We flew right over the tops of these mountains and marvelled at their small size and incredibly rugged summits. Soon Ptari Tepui came into view and what a breath taking site it was. Surrounded by thick, lowland rain forest, the mountain rose, straight-sided and flat-topped to a height of 2400 metres. Only 1 km across in any direction, its summit is almost perpetually shrouded in mist. We landed about 100 metres from the edge and joined the others in setting up camp. I chose a smooth, elevated rock not more than three metres from a small colony of *Heliamphora heterodoxa*.

The top of Ptari is the least vegetated of any of the tepuis I visited. Very few trees grow here and those that do are stunted and nowhere do they form anything approaching a forest. Most of the plateau is smooth, flat rock with numerous streams, ponds and puddles. The occasional rock sculpture is dotted here and there but they are small and very weathered.

The rock is broken up with patches of vegetation, mainly grasses, small ericaceous bushes and *Stegolepis* sp. The bright yellow urns of *Brocchinia tatei* were a conspicuous feature and appeared to like growing in shallow standing water. *Utricularia humboldtii* grew in many of these urns and I marvelled at the size of the giant bladders, but none were in flower. However, several *Utricularia quelchii* were in flower and these glowed like beacons in the gloomy fog. The strange, dark rosettes of *Tillandsia turneri* grew where they could get a foothold and lots of pretty little rosettes of *Paepalanthus* sp. grew in ponds and puddles, their flowers like giant dress-making pins stuck in a pin cushion.

The view from the edge, looking out over the Gran Sabana was incredible. You could see for miles, various tepuis and hills rising into the distance, a few little plumes of smoke rose from Pemón fires and rivers glinted in the sunlight. Every now and then a small flock of Tepui Swifts, *Cypseloides nelsoni* would skim past, racing about like mini jet fighters and dive over the edge and swoop down the cliffs.

View of the summit of Ptari Tepui

Having made camp it was time to explore. Large patches of low vegetation grew like islands across the bare rock plateau and it was in these that the *Heliamphora heterodoxa* grew. The pitchers were mostly a dark, uniform red and about 30 cm tall but some were orange, others red and green and a few pure green with red nectar spoons. I was amazed at the variation in size and shape of the nectar spoon between individual plants. Some were small and pointed, while others produced a pronounced, large bulge in the back of the pitcher. Quite a few had large pointed and vaulted spoons and I found one specimen that had such huge nectar spoons that they entirely sealed off the opening of the pitcher, rendering it virtually useless and unable to catch anything at all. Most were in flower and these were frequently visited by large, loud, black carpenter bees. There were hundreds of plants; some forming solid stands several metres across and in a couple of pitchers I found resident brown tree frogs, waiting patiently for their next meal. As we got nearer the edge I saw the first *Heliamphora saracenioides*, and then another, and then a huge clump of them. It became apparent that this species is confined to outer rim of the plateau, never more than 40 metres from the edge. There was a patchy zone between the two species where many hybrids grew and then furthest from the edge grew the *Heliamphora heterodoxa*. *Heliamphora saracenioides* is a beautiful species and certainly the most colourful. No green pitchers here, all of them were of varying hues of red and orange. To quote Darren and his poetic analogy, "The pitchers are like flames frozen in time" This is the most primitive-looking species in the genus and, as the name suggests, the pitcher architecture is very similar to that of the upright species in the genus *Sarracenia*. There is no nectar-spoon as such and the entire back wall of the pitcher forms a glandular hood, terminating in a point. A distinctive feature of this species is that the pitchers are not formed in a rosette, but all bend in the same direction so that their mouths all line-up and face the same way, a mode of growth I have seen in young plants of *Darlingtonia californica*. Hybrids must have pollinated other hybrids, as well as species because amongst the hybrid swarms I could easily find plants of all introgressions and some of these were possibly the most handsome *Heliamphora* I had ever seen.





We wandered right over to the edge and here was Ch'ien, clearly unafraid of the height, dangling over the side trying to photograph something. "Come and have a look at this!" he shouted, and so we carefully made our way to him. What he had found was a third, and completely new species of *Heliamphora* for Ptari Tepui. Using his huge, carbon-fibre zoom lens, Ch'ien had managed to capture some photos of plants growing about 100 metres down the cliff face and we used these to have a look. Clearly different from the two species on the summit, this one had larger, more open and greener pitchers and was obviously rather choosy in where it grew. Unfortunately, without serious mountaineering equipment, it was impossible to get any closer and I can't see a way that this species will be entering cultivation any time in the future. I doubt if it can even be officially described, as you would need to have a herbarium specimen for this.

Of course it soon began to rain and we were all getting hungry so we made our way back to camp for a slap-up meal. The Trangia stove I had brought from home used methylated spirits as fuel and unfortunately this is not available in Venezuela. Thus my nice, expensive Swedish stove had been rendered useless from day one. Martin had a compressed gas stove and this is what we had been using up till now. Unfortunately, halfway through cooking our dinner it developed a leak and we all had to leave camp as it was in imminent danger of exploding. Like a pulsating rocket, every three seconds it would shoot a huge flame skywards with a loud roar, and we couldn't get near enough to turn the bloody thing off. Luckily, twenty minutes later the gas ran out before it exploded and we returned to camp. Some of the others gave up at this point and went to bed, but I was determined to eat something and so Ch'ien, Darren and I had no choice but to use Ch'ien's tiny Whisperlight stove. This used a hand-pump to pressurise a bot-



tle of petrol and the only one we had was my aluminium water bottle. Figuring I could get another when we reached civilization, and desperate for a bite to eat, we used this. Finally we managed to cook a meal just in time as the petrol soon dissolved the neoprene seal on the water bottle lid. The meal was ok, Spam, tinned tuna, rice and biscuits but now we didn't have a stove and I didn't have a water bottle (my other one still had some rum in it!).

It was now late and time for bed. The rain was coming down hard and it didn't look like it was going to end soon. Crawling into the tent, I found the groundsheet floating on 2 cm of water and I was glad I had taken Stewart's advice and brought a raised camp bed. Fortunately the tent proved completely waterproof; otherwise I would have had a small river flowing through it. Just as I was drifting off to sleep there was an incredibly bright flash of lightning, followed immediately by the loudest, most almighty clap of thunder I have ever heard. I have always dreamed of camping in a tent in the middle of a thunderstorm, and that dream was about to come true. More lightning, more thunder, and then someone turned up the volume on the rain. The wind picked up and the loose guy ropes outside started to flick and flap against the tent. I had chosen a raised platform of rock to pitch my tent in an ultimately vain attempt at keeping out of any standing water. As I pictured myself from afar, lying on a metal bed, in a metal-framed tent atop a raised rock on an otherwise flat-topped mountain, in the middle of a seriously electrical storm and floating in a pool of water, I naturally began

Both pages: *Heliamphora sarracenioides* on Ptari Tepui

to worry. I couldn't help imagining myself getting zapped by a lightning strike and when the others woke up in the morning, all they would find would be a smouldering puddle of melted metal and a few charred remains. Needless to say, sleep didn't come easy that night.

Somehow I managed to survive and awoke early the next morning to a beautiful sunny day. I emerged from the tent to find a couple of the others already up and eating a breakfast of biscuits and sweets. Our last stove didn't work any more so there wouldn't be any coffee this morning. Instead we got to work taking down our tents and cleaning up the campsite. Raoul showed up on time and upon hearing about our misfortunes with the stoves, he promised to lend us his own from the helicopter, along with a jerry can full of helicopter fuel, as this is what it used. As it was such a nice day Raoul said that he would give Murisipán Tepui another go. This time I got to go, along with Andreas, Martin and Ch'ien and half an hour later we were circling above the three spectacular peaks of the Los Testigos group of tepuis. These tepuis have very small and extremely rugged and fractured summits and there appeared to be only one tiny landing site on Murisipán, not much bigger than the helicopter itself, and right on the edge of the cliff. Carefully we descended and it is a real tribute to Raoul's expert flying that we actually managed to land. Again, the helicopters' engines were left on and we were told to be as quick as we could be. Off we scurried, each of us heading

Flora on the summit of Ptari Tepui, from left: an "orchid tree"; *Paepalanthus* sp; *Stegolepis* sp.



in a different direction to explore the mad, tortured, rocky landscape. Very little grew here but we soon found a couple of specimens of the bizarre *Heliamphora folliculata*. The pitchers of this species were a solid bright red and quite ugly, lacking any of the elegant finesse of the other species. They grew almost unseen amongst taller grasses, which, in turn, surrounded a wide, shallow, natural pond. A large colony of *Brocchinia tatei* grew right out of this pond and were themselves surrounded with many hovering yellow flowers of *Utricularia subulata*. Lots of *Drosera roraimae* grew round the edge of the pond, forming a red ring. Behind some large rocks I discovered a small gully filled with dense vegetation and I carefully made my

way down the steep, slippery side. The bottom was very narrow and was itself quite steep but I managed to get to a small waterfall that was trickling down the rock face. Amongst the long grasses and taking advantage of the waterfall, here was a fantastic colony of *Heliamphora folliculata* growing straight out of the vertical cliff wall, much like *Heliamphora exappendiculata* on Amurí. In this dimly lit gully the pitchers were much greener compared to the solid red specimens growing on the summit. I suppose about half an hour had passed since we landed and I guessed it was time to make my way back to the helicopter. As I emerged from the gully I met a happy Andreas who had just found a small patch of *Utricularia aureo-maculata*. Martin was already waiting at the chopper and Ch'ien soon joined us. Our brief visit to Murisipán was over but it was good to have seen the bizarre *Heliamphora folliculata* in its natural habitat.

We flew to a small settlement called Chivatón in the middle of the Gran Sabana and then Raoul promptly returned to Ptari to collect the others. Chivatón was a gem of a place and consisted of a small, single storey hotel, set in the grounds of a beautiful garden, miles from any tepui and any other human habitation. A few Pemón children came out to say hello, each one with a very tame pet parrot on their shoulder. There were graceful *Cyathea* tree ferns growing in pots all round the property and amazing *Cattleya* orchids had been collected from the surrounding savannah and wired to bits of tree trunk and were flowering profusely.



There were real toilets here too with flushing water and cold drinks machines. Most importantly and quite surreally, a huge satellite dish out the back provided Internet access and we managed to e-mail home to let our loved ones know that we were still alive. Soon the others arrived and we settled down to a double helping of breakfast; *empanadas*, fruit juice, cheese, scrambled egg and copious amounts of coffee were consumed. After breakfast we had a bit of spare time to explore the surroundings and immediately outside the property was a pretty little

stream flowing over rocks with a few small trees overhead. Here, growing in the mossy banks of the river were lots of conspicuous little, ruby-red sundews. A recent discovery, *Drosera kaieteurensis* is a small, pretty plant with many pure red leaves, forming a small dome. This was the only place we saw this species. In smaller numbers, and much smaller in size, we found a few tiny rosettes of *Drosera felix* here too, as well lots of *Utricularia subulata* and a few *Utricularia pusilla*. Soon it was time to leave and the four of us that had visited Murisipán were to go by 4x4 to the base camp of Mt. Roraima. The others were to go by helicopter, stopping off on Tramen Tepui on the way. We loaded all our kit onto the roof of the Toyo-

ta Land Cruiser and climbed aboard. Given the remoteness of Chivatón, the extra weight of all our kit on the roof and the general poor state of the dirt track, it took over two-and-a-half hours just to reach the main road. The track, pot-holed and rutted to the extreme, was so bad it caused the 4x4 to pitch and roll like a yacht in a storm and was wreaking havoc with my back. Just two weeks before I came away I had damaged my back at work and couldn't walk for over week. For a time I thought that I might have to cancel the whole trip but fortunately, with some strong prescribed drugs, it got better just in time.

From here we turned right and headed south for about a hundred kilometres, all the way back to San Francisco de Yuruani, turning left here on to another dirt track that would take us to the base camp. This track wound its way through some stunning lowland rainforest before climbing up onto the grassy savannah. Along the side of the road were masses of orange/yellow flowers of a small *Heliconia* species and at one point I saw a giant anteater walking across the savannah. Ch'ien was keen to photograph this animal so we stopped and jumped out.

Ch'ien started running towards the anteater, changing the lens on his camera as he went, but the anteater soon spotted him and started to run in the opposite direction, incredibly fast for such a cumbersome creature. Ch'ien managed to take a few long-distance shots and then, out of nowhere, Raoul appeared in his helicopter and not only scared off the anteater but scared us too. He wasn't too happy because apparently we were over an hour late. We quickly transferred the kit from the 4x4 into the helicopter and flew for fifteen minutes, landing on top of a small, rounded, grassy hill that had a pretty little Pemón church sat on top of it. The cliffs of Mt. Roraima loomed about eight kilometres away and we followed the path to camp. Very steep in places, it eventually led down to the River Kukenán. This we had to cross and at about 15 metres wide, knee deep in the shallower places and flowing strongly over large, loose boulders, it was time to get wet. I changed into my sandals and hand-

Utricularia quelchii from Ptari Tepui



ed my camera kit to a young Pemón lad who appeared at my side. I managed to stay upright and dry and just 50 metres into the forest on the other side we walked into the camp known as Camp Rio Kukenán. My young helper turned out to be one of our hired porters. Affectionately known as Puri Puri and the younger brother of our Roraima guide, John Junor. John was already in camp, along with five other porters and it was a relief to know that our plans to climb Roraima were coming together. We pitched our tents and hung our wet clothes out to dry. The porters started to cook some food and us dirty explorers went down to the river for a bathe.

The view from here was amazing. Looking up the rock-strewn river, with the rolling grassland beyond, a very imposing Kukenán Tepui loomed like a fortress in the distance. Kukenán Tepui sits right next-door and to the north of Mt. Roraima. A narrow, permanently cloud-filled valley separated the two. At the time of our visit, Kukenán was closed to tourists in an effort at regeneration of the vegetation of the summit.

We made our way back to the camp, slapping our arms and legs in a vain attempt at driving away the puri puri. As the sun went down and day rapidly turned to night, the puri puri finally went to bed and we got out Raoul's stove to cook our dinner. It was at this point that we discovered that none of us knew how to use the stove, and no matter what we tried, we couldn't get it to work. In the end we had to ask our porters if we could use their stove and forty minutes later we sat down at a rough-hewn table in one of the thatched huts to a nice meal of rice, Spam and tuna. No sooner had we finished and the mosquitoes made their appearance, at least you could hear these coming for you! Ch'ien and I decided to go for a little walk down to the river to see if we could find any *Dendrobates* (poison arrow) frogs. The closer we got to the water, the more aggressive the mosquitoes became and twenty minutes later I was driven to distraction and had to make my way back to the safety of my tent. We didn't find any frogs.

RORAIMA TEPUI

After a very hot but dry night I awoke early to the sounds of the porters cooking their breakfast. They had an enormous brass stove and were cooking something unrecognisable in a huge metal bowl. After they had finished we again asked to borrow their stove so we could cook up some noodles for our breakfast. After eating it was time to take down the tents and tidy up the camp. Today was Roraima day! Having concerns about the climb up, Holger and Anja had paid for an extra helicopter flight to take them to the summit of Roraima. Thoughtfully they asked me if I would like to join them because I was a bit concerned about the state of my back. A tough decision, climbing mount Roraima and following in the footsteps of Sir Everard Im Thurn, the famous explorer and first person to climb the mountain in 1884, was something I really wanted to do. On the other hand, the very real risk of my back going into seizure again halfway up an otherwise inaccessible mountain was something I didn't want to contemplate. Weighing up the pros and cons, common sense prevailed and I accepted their kind offer. I would just have to be content with the climb down in a weeks' time.

No sooner had I decided to fly with Holger and Anja our helicopter appeared and landed a few hundred metres outside camp. Suddenly there was a mad rush to get everything organised. We needed a stove and fuel. Food had to be sorted out and plans made to meet up with the rest of the party in two days' time. Eventually we were ready and, accompanied by John Junor, climbed into the helicopter for our flight to the summit plateau. At altitude the wind was strong and the helicopter really struggled to climb to the desired height. As we neared the edge, the engine began to scream and the whole cabin started to vibrate. We rose over the edge but the wind pushed us back down and we had to try all over again. Finally there was a lull in the weather and we managed to limp on to the summit. A big sigh of relief!

We landed on a vast, perfectly flat expanse of bare, black rock, most of which was submerged in a centimetre or so of water. Large outcrops of rock, a hundred metres high surrounded us and layer upon layer of different strata were an obvious feature. The rock itself, despite appearances, is not actually black but salmon pink. The black colour derives from a thin covering of black algae and only where the rock has recently fractured can this colour be seen. As the helicopter took off, John Junor went for a walk to get his bearings and Holger, Anja and I explored the tortured landscape. Almost immediately I could see several *Utricularia campbelliana* flowers, growing at ground level on a hummock of moss. Nearby, a small waterfall had masses of *Utricularia quelchii* sprouting out of it and some lovely specimens of *Stegolepis* were growing within the spray zone. Hundreds, if not thousands of *Drosera roraimae* grew everywhere and some of the older plants were towering on stalks up to 20 cm tall. As I walked, my feet crunched on what I thought was gravel but upon closer inspection turned out to be huge drifts of quartz crystal points. These must have weathered out



From left: cloud forest; *Bonnetia roraimae*



of the sandstone bedrock a long time ago, as they were rather eroded and pitted. All of them had a film of black algae on them and only after cleaning did they attain their typical white colour.

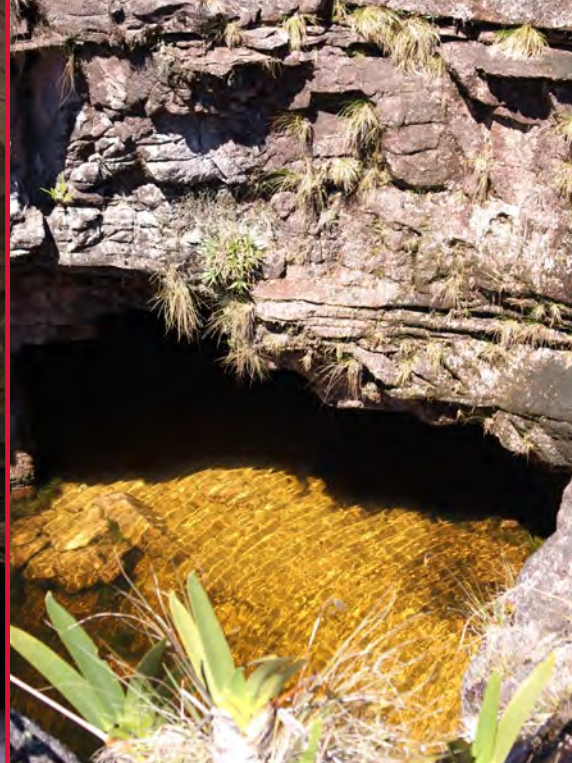
After an hour or so John appeared in the distance and called us to him. We collected our equipment and made off across the lunar surface-like 'rain desert' plateau of Roraima. I don't know how John knew where he was going, everywhere looked the same, visibility was poor due to cloud cover and huge rock formations blocked much of the view but after an hour he announced we were nearly there, wherever 'there' was. We arrived at the foot of a towering cliff, the base of which was covered in luxuriant cloud forest. Here a narrow and very steep path climbed up through the forest and disappeared and it was up here we followed John. A climb of about 60 metres brought us to a level (ish) patch of ground. Jokingly referred to as 'Hotels', there are several designated campsites on top of Mt. Roraima, all of which have been chosen for the rock-formed shelter they provide. This one was 'Hotel La Rampa' and underneath an immense fallen boulder the size of a house a small cave had been formed, and here was just enough room for three tents. Or at least there would have been if John had remembered to bring his. He told us it didn't matter as he was quite used to sleeping without a tent and that just a sleeping bag would do fine. The ground was soft sand, eroded from the cliff and beautiful ferns adorned the walls of the boulder at the entrance. Growing on a ledge high above the campsite I could see a single, beautiful cycad. This required further investigation but I needed to pitch the tent first. As soon as I had finished, I went to the open back of the cavern where I found a way up to the ledge. As I approached the plant, I realised it was not a cycad at all, but a gorgeous, prehistoric-looking fern: *Blechnum schomburgkii*. Even up close it looked just like a cycad. Its trunk was around a metre tall, fifteen centimetres thick and covered in grey fibres. The attractive fronds, of which there were many, were about a metre long, the youngest glowing an intense liver red. The fertile fronds were similar but, typically for the genus, these were held erect and the individual leaves were thinner, quite succulent and very leathery. The dark brown spores formed a



This page, both photos: *Blechnum schomburgkii* (a tree fern)



Tillandsia turneri on Mount Roraima

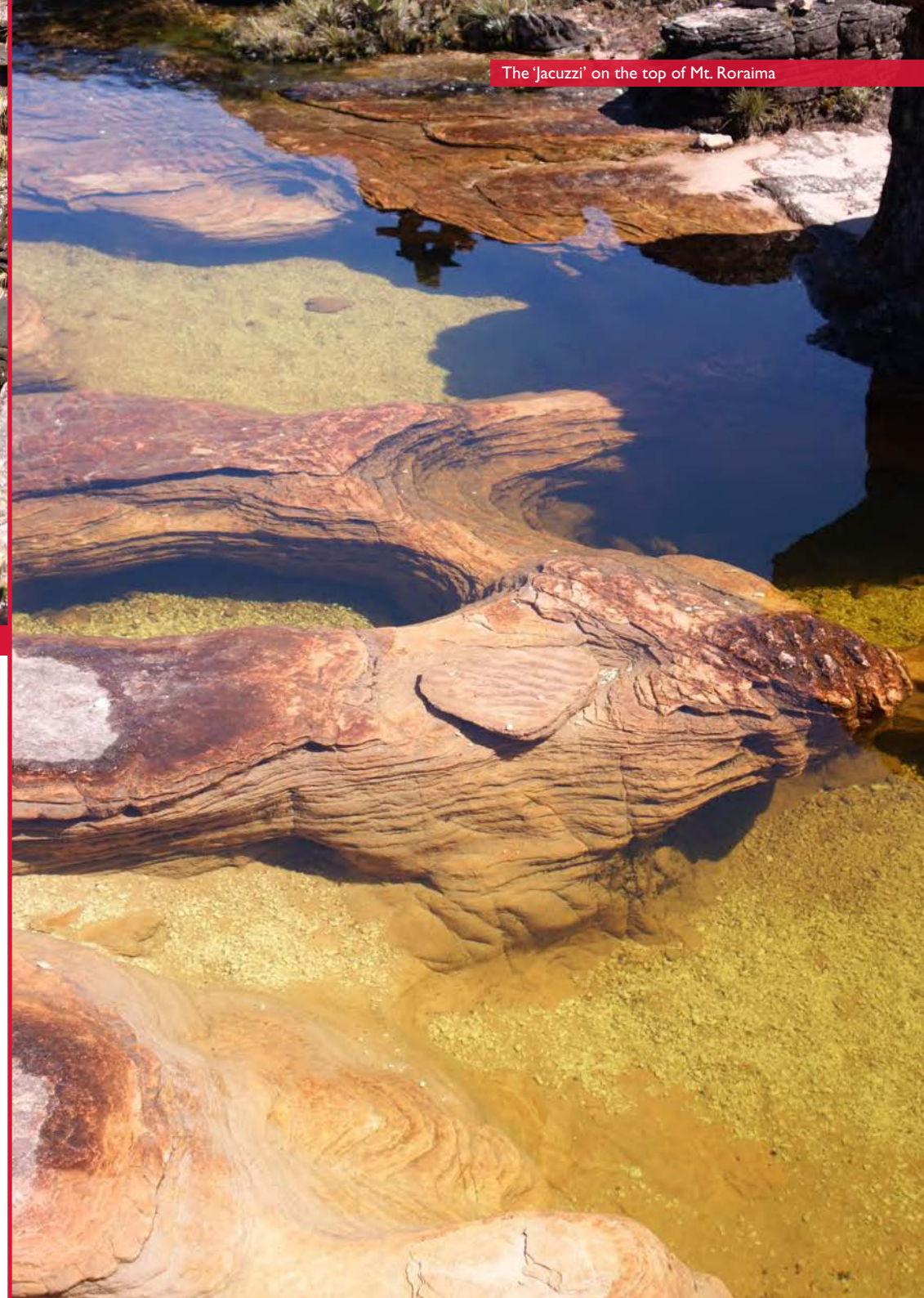


Left: caves inside El Fosso. Above: the pit at El Fosso

cushion on the underside and several little baby plants were growing around its base. This particular plant was perhaps the most perfect and attractive fern specimen I had ever seen. Making my way back down to camp I saw a tiny little black toad crawling through the moss on a boulder. This was *Oreophrynella quelchii*, the famous and primitive Roraima Toad, only found on this mountain. It can neither swim nor hop and has tiny prehensile hands to grip on to its surroundings. Black and warty on top, its belly was patterned with bright orange dots. Several species are known, each endemic to its own particular mountain.

After a quick lunch it was time to explore and I wanted to check out the cloud forest. Here I found more *Blechnum* ferns, beautiful, scarlet-flowering *Tillandsia turneri* growing on branches of trees, different, lithophytic bromeliad species and some very old examples of a *Schefflera* species, looking like ancient, twisted bonsai. I hadn't noticed them on the way up, but growing out from under a boulder was a fantastic colony of *Heliamphora nutans*. These plants were growing in full shade yet still exhibited extensive red colouring on the pitchers. I found more plants growing amongst long grasses and these were in flower. A pretty and graceful plant, this was the first species in the genus ever discovered.

The more I looked the more plants I could see, often the pitchers were buried in vegetation and only the flowers visible. Lots and lots of *Utricularia amethystina*, *Utricularia pubescens* and *Genlisea roraimensis* grew in the wetter places, along with yet more spiky rosettes of *Oreocanthus spectrum*. Some of the best examples of *Stegolepis guianensis* I had seen grew out of the boggy patches, and some of these were over one-and-a-half metres tall, with quite substantial trunks. Lots of stunted *Tillandsia turneri* grew on the bare rock and here they al-



The 'jacuzzi' on the top of Mt. Roraima

most appeared to take on the same black colour of their surroundings. The colourful red and green foliage of many *Bonnetia roraimae* trees towered over the lower vegetation; some of the oldest examples were four or five metres tall with lots of twisting branches adorned with little epiphytes. The fan-shaped blades of *Xyris* grass grew out of the cracks in the rocks and orchids, *Epidendrum elui* (previously *E. dendrobioides*), *Epidendrum secundum* and little *Habenaria* species grew in the drier places, their flowers providing splashes of colour amongst the generally drab landscape. This place is a botanists dream!

Wandering further from camp, following the sound of a small waterfall, I climbed over two huge boulders and squeezed between some others to find myself in a beautiful, enchanted grotto. About the size of a small room and very dimly lit, the far wall was covered in the distinctive rosettes of masses of filmy ferns, *Trichomanes* sp. These are primitive, ancient plants, adapted to survival in very humid, shady conditions. Their beautiful, delicate and lace-like leaves are transparent and very complex, with many frills and ruffles. Little ball-like sporangia were dotted here and there.

I emerged from the cavern back into blazing sunlight and continued on my exploration.

Bottom: the summit plateau on Mount Roraima. Opposite page: Valle de los Cristales



As it started to get dark I made my way back to the tent for a meal of Spam, tuna and rice, cooked on Ch'ien's borrowed Whisperlight stove. I don't know if it was the lack of tent or the monotonous food, or what, but that night John Junor decided to try for the world record for the world's loudest snore. As I tried to get to sleep, every next snore seemed louder than the last, echoing of the rock walls of the rock shelter. Thankfully I was so tired I managed to drift off to sleep and thus drown out the noise.



We awoke early the next morning and had a breakfast of strong coffee. John wanted to take us on a tour of the summit and so we let him lead the way. We didn't see anyone else but

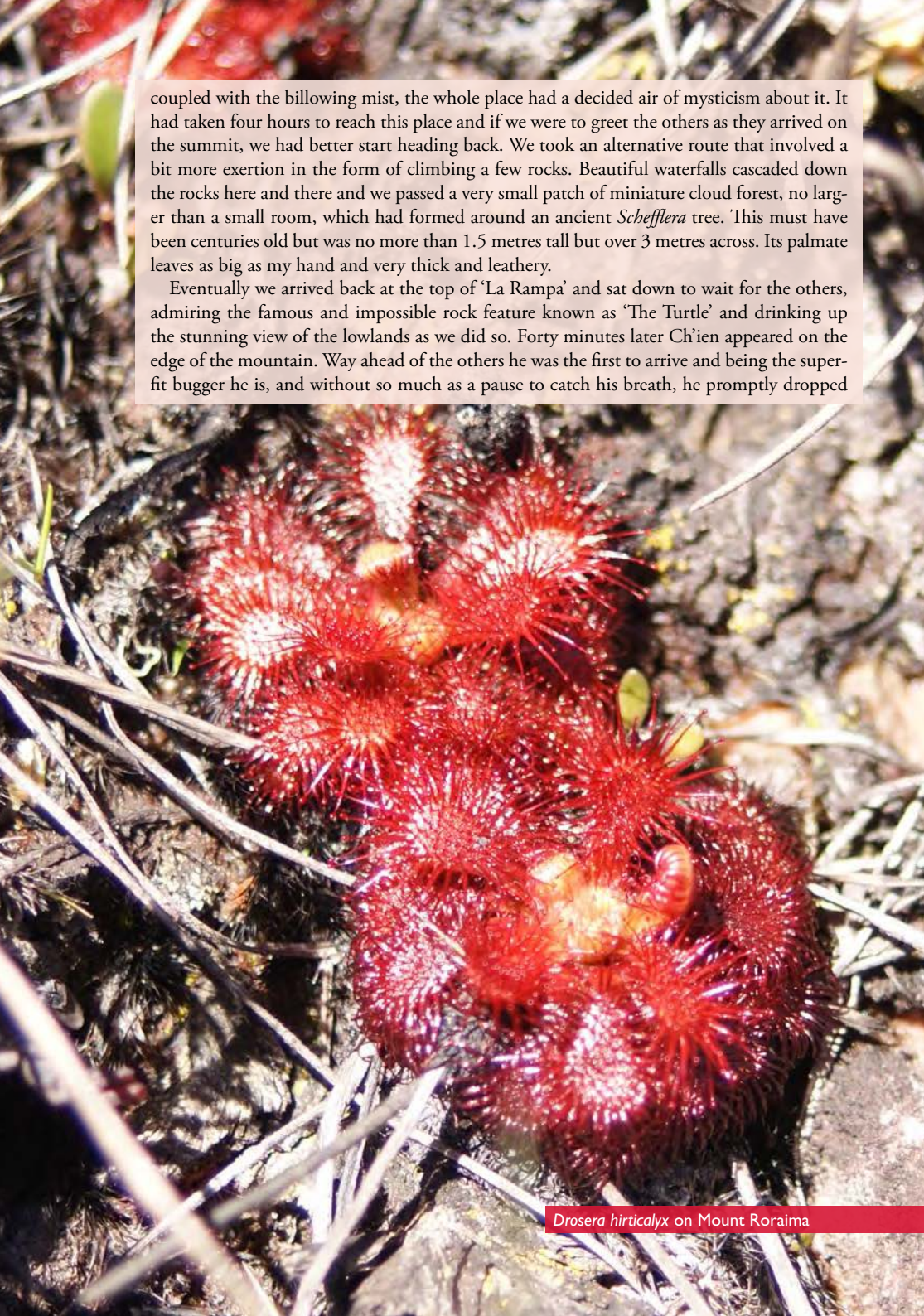
tourism to Mt. Roraima is increasing and this was evident in the network of little paths that criss-cross the plateau. These paths aren't always easy to see; you have to look for patches of rock where the black lichen has been worn off and the pink colour underneath shows through. It was one of these paths that we took away from camp, towards the top of 'La Rampa' or Whitley's Ledge. This is the only way to make it to the summit by foot, and the route the rest of our team were to take. Last night they would have slept at the base camp at the foot of the mountain, and indeed we could just see Andreas's tent, a little speck of yellow way below us. John estimated that they would arrive mid-afternoon and so we made off in the opposite direction to go and have a look at some natural pools known as The Jacuzzis.

After a little trial-and-error we got on to the right path and slowly made away across the desolate landscape. The rock formations here on Roraima are much more twisted and tortured than on any of the other tepuis I had seen and the vegetation was sparse. As we got further away from the rim the *Heliamphora* populations thinned out and finally disappeared altogether about 500 metres from the edge. Again, I assumed the condensing clouds around the edge of the mountain must have been providing a greater humidity to enable the *Heliamphora* to thrive. We walked through a *Bonnetia* forest and on the bare mud ground was a large colony of the amazing club moss *Lycopodium* sp. I had seen the very rare, native, English club moss *Lycopodium clavatum* in the New Forest near where I live, but this was something else. Almost twice the size, the many fertile, spore-bearing parts of the plant stood erect to 20 cm in the air and the vegetative parts crawled over the surface of the mud for over two metres. Lots of little *Genlisea* and *Utricularia* plants were growing among the moss and *Drosera roraimae* grew everywhere. Walking further I saw some huge *Stegolepis* and these were in flower. The buds, held atop a very tall stalk, were like little yellow sea urchins and the flowers themselves like transparent, golden butterfly wings. A lot of these *Stegolepis* had damaged leaves, the edges having been eaten away. I soon found what had caused this; one leaf I looked at had a row of twelve fat caterpillars munching away at the fleshy leaf. Soon after this I saw a huge brown butterfly flit drunkenly past, battling against the wind and landing on another *Stegolepis* plant nearby, this must be the adult. Growing on the rocks were strange, black-leaved orchids with bright yellow flowers.

At noon we arrived at the Jacuzzis and what a natural wonder they are. About eight pools, two or three metres across and perfectly circular had been eroded away in a streambed, forming a line, like beads on a necklace. They were full to the top with crystal clear water and the flat bottoms were covered in thousands of gleaming white quartz crystal points. The eroded rock formations surrounding them looked like something out of a fantasy movie and when



Cliffs of Mt. Roraima



coupled with the billowing mist, the whole place had a decided air of mysticism about it. It had taken four hours to reach this place and if we were to greet the others as they arrived on the summit, we had better start heading back. We took an alternative route that involved a bit more exertion in the form of climbing a few rocks. Beautiful waterfalls cascaded down the rocks here and there and we passed a very small patch of miniature cloud forest, no larger than a small room, which had formed around an ancient *Schefflera* tree. This must have been centuries old but was no more than 1.5 metres tall but over 3 metres across. Its palmate leaves as big as my hand and very thick and leathery.

Eventually we arrived back at the top of 'La Rampa' and sat down to wait for the others, admiring the famous and impossible rock feature known as 'The Turtle' and drinking up the stunning view of the lowlands as we did so. Forty minutes later Ch'ien appeared on the edge of the mountain. Way ahead of the others he was the first to arrive and being the super-fit bugger he is, and without so much as a pause to catch his breath, he promptly dropped

his rucksack and started to climb free-style up a near cliff-face, like a gecko. Fifteen minutes later a few more porters appeared and then, an hour after Ch'ien had arrived, I thought I could hear distant voices so I wandered over to the top of the ledge. Sure enough, there was Darren, Andreas, Martin and Stew nearing the rim, all looking rather tired but clearly jubilant at reaching the summit.

Hotel La Rampa was now too small for all of us, so Holger and I went back to take down our tents while the others followed the porters to another 'Hotel'. About a kilometre-and-half further into the interior, Holger and I eventually arrived at Hotel Sucre. I'm not sure why it was named thus, but a long, low rock overhang provided the perfect shelter for about ten tents. A low, rock ledge running the entire length of the overhang provided us a perfect cooking surface and a dry place to store our food. The whole place reminded me very much of the famous Neolithic campsite of Les Eyzies in the Dordogne region of France, only on a much smaller scale. We chose our spots and pitched our tents, again on the luxury of a flat sandy surface. Stew, ever the amicable guy, kindly lent John Junor his tent and so I made room for him in mine. By this time the camp bed I had bought for Stew in England had fallen apart and he ended up sleeping on the floor. Having 'checked in' to the new hotel, Darren, Andreas, Ch'ien and I went down to a little stream in front of the campsite and paddled our feet in the surprisingly warm water of a small pool fed from the stream. Above the stream, growing in a crack on a smooth, black rock was the smallest orchid I have ever seen. The entire plant was about 2 cm across and only 3 cm tall, consisting of lots of tiny, succulent leaves coloured a very dark purple, almost black. Floating above the leaves on hair-like stalks were many microscopic but perfectly formed yellow flowers. This was *Trichosalpinx roraimensis*, (formerly *Pleurothallis roraimensis*) and was the only specimen we ever saw.

It soon got dark so, using the porters' stove, we cooked a huge evening meal of rice, tuna and Spam. Darren had carried a lime fruit all the way from the garden at Chivatón and the juice of this we added to our meal. It tasted quite good too! As we got into our tents, we heard a cry from Anja and we rushed to see what was up. A small, brown scorpion had crawled into her tent and given her a fright. This was the only scorpion we saw on any of the summits of the tepuis. With the drama over, we returned to our beds and went to sleep.

Another early start, today we were going to let the others catch-up with what Holger, Anja and I had already done and we went back to see the *Heliamphora* at the edge of the mountain. Lots of photographs later and we decided to climb to the highest point. This sits atop an enormous outcrop of rock, affectionately known to the locals as 'The Car', and indeed, from the lowlands it does have the rough shape of a car, a Ford Maverick, according to one of the porters. The path up to the 'roof' of the car wound its way through an amazing stunted cloud forest that had more large and beautiful specimens of *Blechnum schomburgkii*, as well as *Schefflera* and *Bonnetia* trees and a whole host of other plants. One of the *Schefflera* had an attractive, parasitic mistletoe attached to its upper branches, not unlike those I see back home in England in the winter. Breathless, we reached the top and there, perched at the very peak was a small cairn of stones. Up here were stunted *Stegolepis*, some grasses and some very hardy *Heliamphora nutans*, in flower at that! Standing 2800 metres above sea level, the view was the best yet. Looking north we peered down on the rest of the plateau, roughly 200 metres below us. Over to the west and we could look over the neighbouring summit of Kukenán Tepui. The car is an elevated part of the rim of the mountain and to the south we looked out over the rolling plains of the Gran Sabana. The cairn is no more than



Drosera roraimae on Mount Roraima

4 metres from the edge of the cliff and we took extra care up here, as it was a very long drop down to the lowlands below. Looking east and we could see the cliff face of Roraima disappearing into the distance. We spent a pleasant hour up here and then slowly made our way back to camp. That evening, I watched Stew filming himself for a prospective documentary on Sir Everard Im Thurn and his successful attempt at reaching the summit of the mountain, some 125 years before. As it got dark we made our way back to camp to cook a dinner of tuna, Spam and rice. I pulled the Spam out of its place on the rock ledge, only to discover it had been half-eaten by something. There were the telltale bite marks all over it of a small creature having a feast. Not five minutes later and we saw a little rat scurrying amongst the tents. Quite a cute little creature, this was the endemic *Podoxymys roraimae*, the Roraima Rat, only found on this mountain. Dinner that night was just rice and tuna.

The next morning we awoke early to a heavy rainstorm. Too wet to venture far at the moment, we cooked a meagre breakfast of coffee and biscuits and, sheltering under the rock overhang, we broke camp. Today we were to trek northwards across the plateau, heading for the 'Prow', the northern-most tip of the mountain, made famous from the stunning aerial photos of Roraima. Early explorers who made it as far as the prow discovered a small lake there and named it 'Lake Gladys' after the fictitious lake discovered by explorers on a South American mountain summit in Sir Arthur Conan-Doyle's 'The Lost World'. It was going to be a long walk and with numerous sights to visit along the way we wouldn't arrive until that evening. We were quite a party now, eight of us, five porters and our guide. Around mid-morning the rain stopped and the sun came out and so we set off in a long line, following the lead of John Junor. By a different route, we soon arrived at the Jacuzzis again and then continued on over a flat, bleak and rocky plain. Here, growing right next to the path, and seemingly on bare rock, was a gleaming carpet of brilliant red sundews. Quite different to the myriad *Drosera roraimae* we continuously saw everywhere, this was the very rare *Drosera hirticalyx*. It started to rain again but we pushed on and only took a break when we arrived at the most amazing rock sculptures I have ever seen. About four metres tall and very pointed, many of these natural works of art looked eerily organic, some even looking like strange creatures marching or slithering across the landscape. Dotted around were rocks collected by previous visitors, all of which looked like animals. Here was an elephant, there a tortoise; one even looked just like a sleeping baby in a manger.

Following the path we made our way across the plateau, climbing up cliffs and dropping down waterfalls and hour later the ground started to break up into huge, building-sized boulders and deep, deep crevasses. The path led us into a vast, natural amphitheatre, in the centre of which was an enormous circular hole, like a giant plughole twenty metres across. This was 'El Fosso', 'The Cave' and peering over the rim we could see the bottom was about 15 metres below where a shallow, crystal clear lake had formed. Several caves could be seen radiating away from the lake, disappearing into the subterranean interior of the mountain. Here we had a short rest and then struck out again, climbing up the rim of the basin on the other side. The going was now quite difficult; the path winding this way and that and each step either a climb or a drop. The rock was smooth and often slippery and sometimes we had to leap across huge chasms and then climb down massive boulders. This area of Roraima is known as 'The Labyrinth' and has been made famous by the amount of people who have gotten lost inside it. One explorer camping there said he walked from his tent for two minutes and was then hopelessly lost for over two hours!



Epidendrum elui

To early surveyors and cartographers Mt Roraima provided a handy landmark where they could join three different countries together, and here, right on the edge of the labyrinth is the famous 'Triple-Point' where Venezuela meets the neighbouring countries of Brazil and Guyana (formerly British Guyana). A two-and-a-half metre tall, flat-topped, concrete obelisk marks the spot and on each of its three sides the name of the country is written. Like the name Brazil, Venezuela is spelled out in embedded quartz crystals but the side for Guyana has been vandalised and de-faced. Soon after their independence from the British, Venezuela illegally laid claim to the whole country and modern maps of the area refer to Guyana as 'Zona En Reclamación', the Zone Of Reclamation. I climbed up and sat atop the obelisk and it was a strange feeling knowing I was in three different countries at the same time!

Half an hour further on we came to a shallow valley on our right. Stretching away for about two kilometres into the distance, this was the 'Valle De Los Cristales', the Valley Of The Crystals. We dropped our packs and climbed down to the bottom of the valley. Here, the ground was strewn with drifts of quartz crystal points, all eroded from the sandstone cliffs. Between 2 and 6 cm long, they must have numbered in the mil-

lions and in places looked like drifts of snow. Here and there little red jewels of *Drosera rorimae* grew straight out of the crystals and looked stunning against the translucent white facets of quartz.

Time was getting on and still with several kilometres to go, we continued on. John decided we should take a short cut and so we left the path, descending a steep valley and then climbing up the other side. This brought us to a flat, smooth rocky plain, right in the middle of which was a stream, surrounded by very boggy ground. A fallen tree provided us a bridge to cross the stream, but we still sank up to our knees in the bog. On the far side of this plain, the ground dropped away and we could see several kilometres into the distance, looking up a very wide valley, almost to the prow itself. All of us, except of course Ch'ien, were extremely tired by now and upon asking the porters how much further we had to go, we were told about twenty minutes. This raised our hopes and so we slowly climbed down the cliffs to the ground below. To our left and sheltered by the cliff, was the biggest cloud forest I had yet seen on Roraima with trees about 15 metres tall and covered in hundreds of flowering bromeliad air plants, *Tillandsia turneri*.

Half an hour later we asked if the porters could point to the cave, "No, not yet, maybe in about twenty minutes" was the reply. Ok, perhaps we were a little

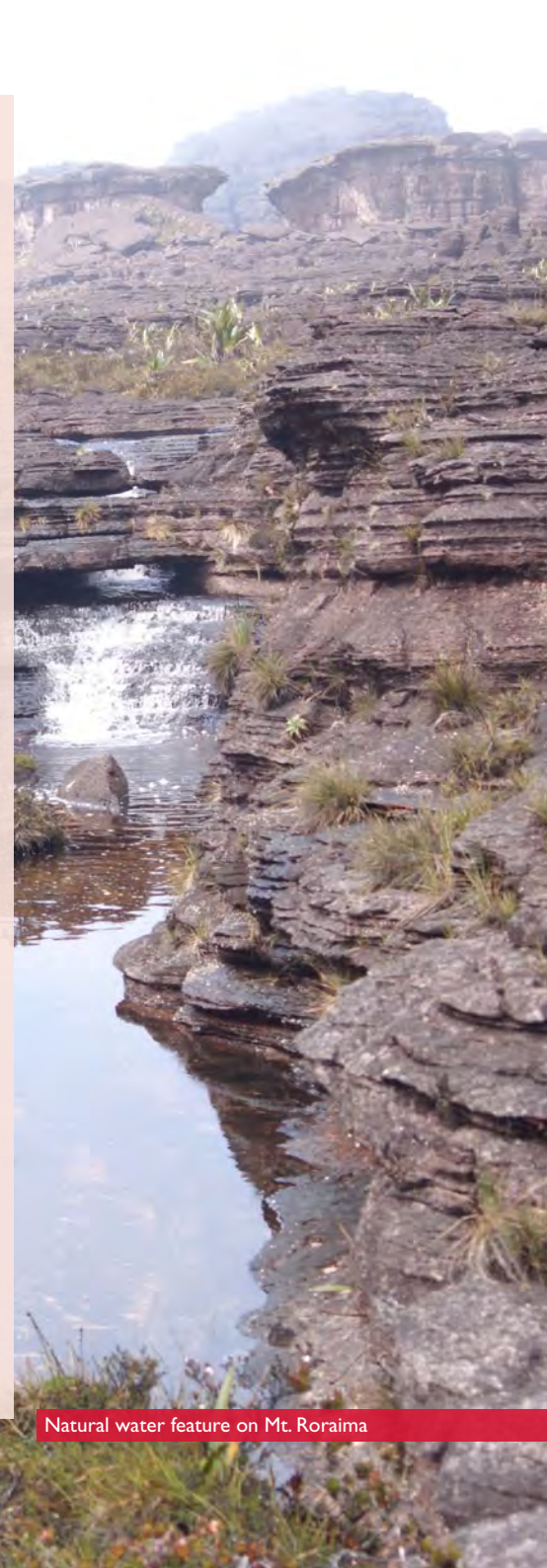


Lycopodium sp.

slow coming down the cliffs. On we pressed, trudging through the bleak landscape. Twenty minutes later and the porters said that maybe it was perhaps forty minutes to the 'hotel' from where we stood. We were beginning to realise that the Pemón concept of time was a little different to our own!

Finally, about an hour later, and only an hour before dark, we turned left and headed towards the imposing cliffs of the valley walls. A little path led through a small patch of trees and bushes, right up to the base of the cliff where there were three cave entrances leading into the living rock of the cliff. This was 'Hotel Coati', so named for the common occurrence of that dog-like animal in this area and indeed, on entering the caves we could clearly see the tracks of a coati all over the sandy floor. Various side passages led off in different directions and twenty metres into the cave daylight could be seen. A huge, scar-like chasm cut into the rock surface overhead, creating a ten metre wide oasis, walled in all sides by 20 metre cliffs. Here luxurious *Cyathea* sp. tree ferns grew out of a sandy stream and carpets of green sphagnum moss covered the streambed.

The wetter parts of the vertical cliffs were draped in the delicate fronds of filmy ferns, *Trichomanes* sp. and a lone example of *Blechnum steyermarkii* stood guard at one end. On both sides of the chasm, a natural, sandy path ran its entire length and afforded the perfect camping site for two tents. Ch'ien had chosen a side chamber for his camping spot and Darren and Martin had pitched their tent next to Holger and Anja's, near the entrance. The porters had disappeared down to the far end of the chasm and so Andreas and I pitched our tents on the flat sand next to the stream. We needed water to cook our evening meal and so Stew and I went for a wander outside the caves. Not far away we came across a series of ponds that flowed crystal-clear water into each other. The water was warm, almost hot and we went for a quick dip before heading back to cook our dinner. Thankfully, we were now out of Spam and tonight we would share a tin of palm hearts, along with noodles and tuna. As I spooned in my last mouthful I could hardly keep my eyes open and so I headed off to bed.



Natural water feature on Mt. Roraima

The following morning, while we warmed up some left overs from the night before for our breakfast, an amazing smell hit our deprived noses. It turned out that one of the porters had brought a huge supply of fresh eggs with him and all the porters were enjoying scrambled egg for their breakfast. We could only watch and smell as they ate the lot. Never mind, I had a strong coffee instead. Today we would see if we could make it to the prow but Holger and Anja expressed their concern over their health at this altitude and decided to head back to Hotel La Rampa. We would catch up with them in a couple of days somewhere in the lowlands, and so we set off up the wide valley in northerly direction. A shallow stream wound its way along the valley floor and the boggy ground either side was almost overgrown with *Genlisea roraimensis*. The stream soon widened out and got larger as others joined it from the valley sides and at one point it flowed under a little natural rock bridge, cascading into a little waterfall on the other side. With the contorted rock sculptures, the whole place reminded me of a Japanese Garden.

We heard a shout from Andreas who had wandered some distance away towards one of the valley sides, and as we got closer to him we could see that he was standing next to an enormous colony of *Heliamphora*. This was the first pitcher plant we had seen since leaving the southern edge of the mountain and, looking about, we could see there were no others in sight. This colony, consisting of just one massive and very old plant, covered an area of several square metres and must have comprised several hundred, maybe a thousand, huge pitchers, some over 40 cm tall. Masses of one-metre tall flower stalks arose above the pitchers but no seed pods could be seen. It was obvious that this plant wasn't the normal *Heliamphora nutans* of Roraima and it was Andreas who explained to us what it was. This was the plant known in cultivation as *Heliamphora nutans* 'Giant' or the 'Oxford Clone' as it used to be grown at the Oxford Botanic Gardens and is widely grown in collections all over the world. It is actually a natural hybrid between *Heliamphora nutans* and *H. glabra*. Apparently there is a small population of *Heliamphora glabra* on the northern-most tip of the mountain



Orchids on Mount Roraima

and this hybrid, geographically situated between the two species is the resulting progeny. The lack of seed pods is a result of its hybrid origin as apparently it produces deformed pollen and is therefore deemed sterile. As it was such a nice spot, we decided to eat our lunch next to this giant marvel of the carnivorous plant world and, despite attempts by us all, no other *Heliamphora* were to be seen. One thing we did find however was an old, rusty stash of gold-panning equipment. Several mesh pans and a couple of shovels had been placed in the shelter of a rock overhang. How long they had been there was anyone's guess but they looked very old.

After we had eaten we headed towards a break in the valley wall, just in front of the plateau edge. Here we had to be extra careful, as one stumble would have sent us flying over the side. Cloudy at first, the view of the lowlands was invisible and so we concentrated on seeing what grew here. No sun pitchers, but we did find a small patch of *Drosera hirticalyx* and several flowering *Utricularia quelchii*. The *Utricularia quelchii* of Roraima showed a surprising amount of variation in flower colour. All other plants we had seen on other tepuis had a distinct magenta colour. Here on Roraima we found velvety dark red, scarlet, vermillion and magenta coloured flowers. The most attractive were exactly the same colour as those of *Utricularia campbelliana* and some of us did speculate if maybe some of the plants we found were of hybrid origin. Again, I noticed that many of these flowers had small patches of damage on the lower palate, and again Andreas came to the rescue and offered an explanation for this. In the tropical Americas it is widely known that red flowers are most often pollinated by humming birds, and so the theory goes for these red-flowered bladderworts. Although there are plenty of humming birds present on the summits of the tepuis, nobody has yet observed this process and the idea remains a theory.

All of a sudden the clouds lifted and we were rewarded with an awesome view of the lowlands. Here the Gran Sabana was thickly forested and no grassland could be seen at all. Di-



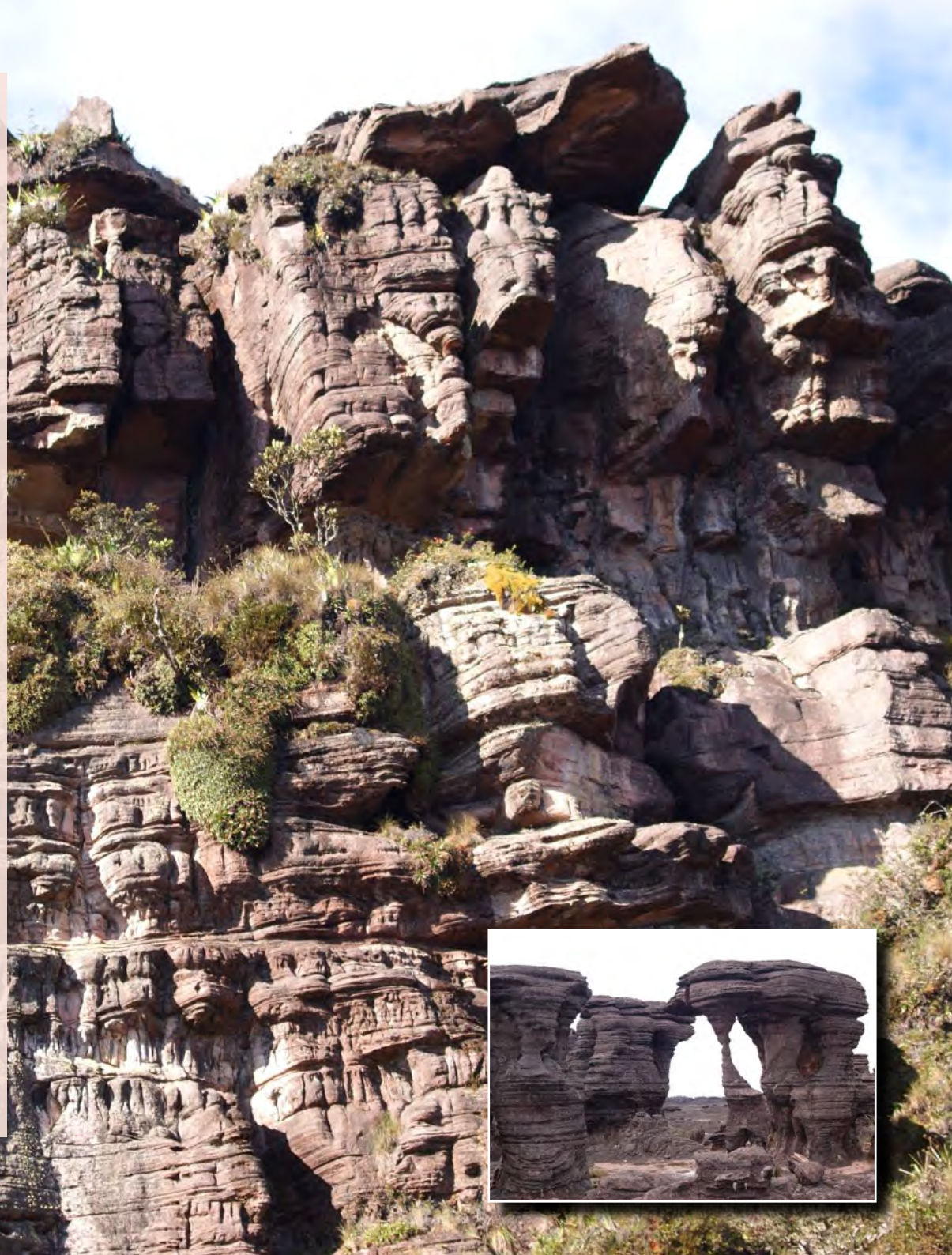
Oreophrynella quelchii on Mt. Roraima

rectly in front of us was another tepui. Rather small and about 300 metres lower in elevation; this was 'Roraimita' or Little Roraima. Using Ch'ien's binoculars we could see masses of *Heliamphora* plants growing on the summit and it seemed strange that there were none where we were on Roraima. Apparently the pitcher plants on Roraimita are pure *Heliamphora glabra*. When we could go no further, we turned round and headed back towards the wide valley. Several of us were determined to find the elusive *Heliamphora glabra*, it couldn't be far away, the hybrid plant proved this, and so we split up into small groups and went to see what we could find. Martin and I headed towards a side valley and were soon jumping from raised hummock to raised hummock in an attempt to cross a particularly boggy area. Lots of standing water in the form of ponds littered the bog and hundreds of brown dragonflies were darting this way and that. Growing out of the bog was a small colony of *Stegolepis* and these were the largest I had ever seen. The leaves were unusually short but held atop two metre tall stems; these plants must have been centuries old. Amongst these were the oldest *Drosera roraimae* plants I had seen and some of these looked like miniature palm trees, with stems twenty centimetres tall. Different coloured flowers of *Utricularia quelchii* grew in patches, usually on vertical ground and often right next to each other. The whole valley had the look of a well-tended garden. I saw a long trail of human footsteps in the sand under a rock overhang; they looked very fresh, although I had no way of telling how long they had been there. We hadn't seen any other people for days, and in fact probably had the entire mountain to ourselves. I found a small, black stag beetle, (*Lucanidae*) crawling through the grass, the first beetle I had seen but it was soon followed by another and then a pretty green weevil (*Curculionidae*) I found hiding under a rock.

We were at least two hours from camp and time was getting on. Tomorrow we were to return to Hotel Sucre for our last night on the mountain and the thought of that long walk back was a little daunting. We would need an early night and so we headed back to camp. That night, after a quick meal, we cleaned up the camp to save us time in the morning and then went to bed. We never did make it to the prow.

The next morning we woke early, had breakfast and broke camp. Re-tracing our steps we trekked south. Journeys always seem shorter on the way back and soon we were back at the cave, El Fosso. This time one of our porters, an elderly gentleman named Caramello, showed us a way through the rocks and down a into a crevasse, which led us to a subterranean chamber with a small river flowing through it. Daylight could be seen at one end and, in knee-deep water, we walked up the river and out into full sun at the bottom of the sinkhole. Several other caves led away in other directions and I wondered if anyone had ever explored them. We arrived back at Hotel Sucre with lots of time to spare, so we spent an afternoon relaxing by the pool, trying to catch little dragonfly larvae but failing miserably. After a quick meal, several of us made the half-hour walk to the edge to try and photograph the sunset. Alas it was too cloudy but we had a good hour messing about with Stewart's video camera. As it got dark we made our way back to camp on what was to be our last night on Mt. Roraima.

We awoke to a sunny morning and were soon packed and ready for the off. Just like the evening before, we walked the half-hour to the edge, and there we stood a while, gazing down on to the Gran Sabana, picking out the tiny, hair-like path we were to take, snaking over the hills and disappearing into the distance. The start of the climb down The Ramp is very steep and rocky. Numerous *Heliamphora nutans* are dotted here and there but these disappear after 100 metres or so. Soon the plants began to get larger with *Blechnum* tree ferns and other shrubs to about head height and then you enter cloud forest proper. Here are Cy-



athea tree ferns with huge rosetted crowns of fronds on ten metre trunks. Deep moss grew everywhere and one species, with stalks 60 cm long, was apparently the largest moss in the world. Many epiphytic *Utricularia* were sprouting out of the moss-covered rocks and one of these had leaves very similar to *Utricularia asplundii* or *U. alpina*. The shaded conditions of the forest had prevented any of these bladderworts from flowering and we couldn't make any positive identification. In a few places small, fan-like fronds of the strange and ancient fern relative *Schizaea* sp. sprouted up through the moss, very similar, if not identical to the *Schizaea dichotoma* I had seen growing in lowland rainforest in Queensland, Australia.

The path continued on downwards and in places was very slippery, we had to climb over fallen tree trunks and skirt the bases of huge boulders, trying to find a grip on the smooth surface. On our left the dripping, towering cliff, disappearing into the clouds above radiated a looming presence that was entirely lacking on our right where the sudden drop, hundreds of metres straight down to the forest below made one hold on to the rocks ever more tightly. The forest ended abruptly the trees at the edge showing crushing damage and the path widened, strewn with very loose rocks and boulders, clearly deposited here very recently by a rock avalanche from above. A large waterfall plunged down from the heavens above and was splattering on newly fallen rocks. The whole path appeared very unstable as cracks had appeared here and there, swallowing up the water from the waterfall, and I felt that the several hundred tonnes of fallen rock, held here by the narrow path underneath, was in imminent danger of continuing its descent. I gingerly made my way across this area to discover the path now climbed back up into the forest, and very steep it was too! I reached the top completely out of breath and sat down for a little rest. Upon removing my rucksack, I discovered

that one of the shoulder straps had completely broken and the whole strap system looked like it was about to fall apart. As if by magic, Martin appeared to the rescue. He had a spare nylon strap which he expertly mended the rucksack with – Cheers Martin!

It was all down hill from here but it started to rain and the path didn't get any easier. In several places recent landslides had destroyed the path and new routes had to be found through the steeply sloped forest. As we got lower, the temperature rose and the forest dried out somewhat. Finally, after a near vertical, twenty-metre drop down a water-eroded gully and then a wade through a shallow river, the path levelled out and we walked out of the forest and on to the grassy plains of the Gran Sabana. A little thatched hut marks the base camp for the mountain and here we had a little rest, sheltering from the rain along with a group of Brazilians about to make their own climb up. The rain wasn't going to ease up so after twenty minutes Stew, Martin and I donned our rucksacks and continued our journey. Despite the

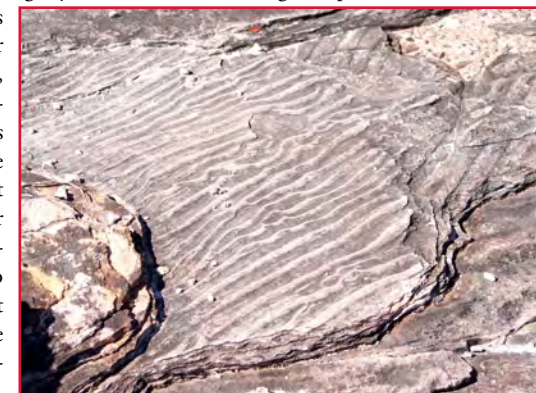
Stegolepis sp. at the highest point of Mt. Roraima

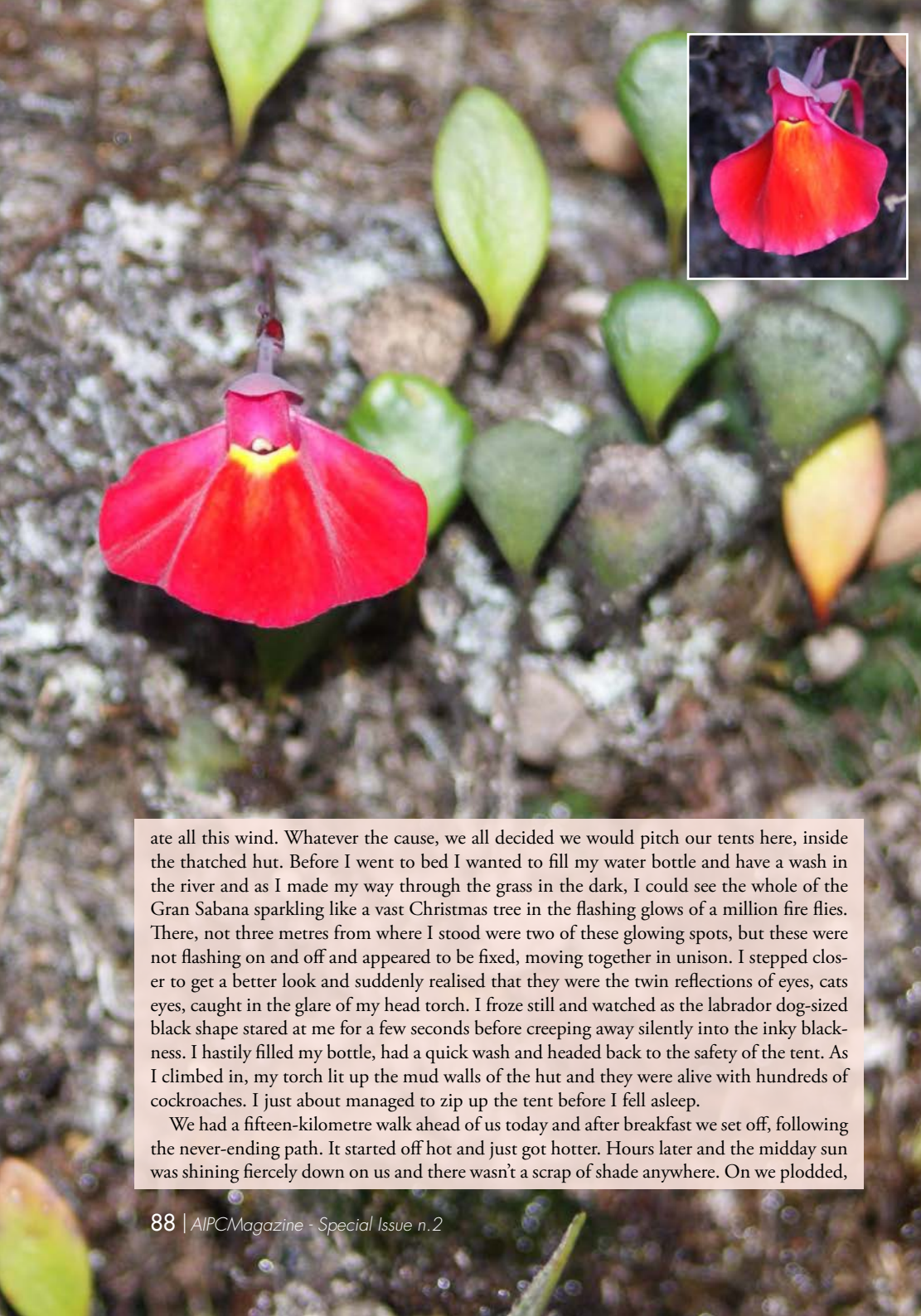


Mount Roraima seen from Rio Tek. Bottom: fossil ripples on the summit of Mt. Roraima

rain, it wasn't long before we all felt the full force of the puri-puri. Today's journey was about ten kilometres, ending at a campsite known as Camp Rio Tök, where we were to spend the night before pushing on the next day, hoping to reach civilization sometime in the afternoon. The temperature soared as the day progressed but the rumour of a cold beer at Rio Tek kept us on our feet. I soon discovered that as long as you kept walking, you wouldn't be bothered by the puri-puri; they only seemed to attack when you stopped moving. This, of course, left but one option and thus it wasn't long before we arrived at Rio Tek, completely knackered and in dying need of a decent rest. Here we met up with Andreas, who had arrived about an hour earlier and already discovered several carnivorous plants in the vicinity, and Holger and Anja, who had arrived earlier that morning. Ch'ien and Darren, the mad buggers that they are, had stopped here briefly but decided they would push on and cover the extra ten kilometres the rest of us would do tomorrow.

We all sat around a massive hardwood table in a thatched hut and the rumour of the cold beer proved to be true. Holger kindly bought us all a couple of bottles of Polar Light, a most refreshing brew that went straight to my head! I felt bloody awful now that I was sitting down and I realised that I had pushed myself to the limit today. I couldn't have walked another step if I had tried and so I just sat there, sipping my beer and almost falling asleep. We still had stacks of food left and because it was our last night in the field, we threw it all in together in one pan and had a wonderful dinner of noodles, tuna and tinned vegetables. For the first time in nearly three weeks we ate at a real table, sat on real chairs and had a roof over our heads, while we watched the sun set over the undulating plains. Strangely, as it got dark a strong, cold wind picked up and soon the air was filled with dust and sand. Tents outside were flapping madly and the thatched roof of the hut started to come apart. One of the Indian porters told me that it was 'The Time Of The Birds', when all the birds take flight and have somewhere to go and in doing so cre-






ate all this wind. Whatever the cause, we all decided we would pitch our tents here, inside the thatched hut. Before I went to bed I wanted to fill my water bottle and have a wash in the river and as I made my way through the grass in the dark, I could see the whole of the Gran Sabana sparkling like a vast Christmas tree in the flashing glows of a million fire flies. There, not three metres from where I stood were two of these glowing spots, but these were not flashing on and off and appeared to be fixed, moving together in unison. I stepped closer to get a better look and suddenly realised that they were the twin reflections of eyes, cats eyes, caught in the glare of my head torch. I froze still and watched as the labrador dog-sized black shape stared at me for a few seconds before creeping away silently into the inky blackness. I hastily filled my bottle, had a quick wash and headed back to the safety of the tent. As I climbed in, my torch lit up the mud walls of the hut and they were alive with hundreds of cockroaches. I just about managed to zip up the tent before I fell asleep.

We had a fifteen-kilometre walk ahead of us today and after breakfast we set off, following the never-ending path. It started off hot and just got hotter. Hours later and the midday sun was shining fiercely down on us and there wasn't a scrap of shade anywhere. On we plodded,



This page: *Utricularia campbelliana*. Opposite page: *U. quelchii*



sipping regularly from our water bottles and getting more worn-out with each step. Every small hill felt like a huge mountain, only to reach the summit and see the path before us, stretching away seemingly forever into an endless sea of green grass. Just when I thought I was about cooked, we walked down a slope into a small forest-filled valley bottom and here we took a short break in the shade of the forest giants. A wide, shallow river flowed over a jumble of rocks at the bottom and here a fallen tree provided a bridge across. We filled our bottles and then continued on, climbing up the other side and out into the scorching, open savannah once again.

Three long hours later and we got our first glimpse of a group of mud huts. Stood atop a high hill about three kilometres away, they had corrugated tin roofs that glinted in the sun. This was Paraitepui de Roraima; a large Pemón settlement from where we were to meet a couple of 4x4s to take us back to Santa Elena. An hour later and practically numb from the effort, I virtually crawled into the settlement on all fours. I had made it. Here was Darren and Ch'ien drinking cold beer and eating juicy watermelon. Stew, Martin and Andreas had dumped their packs and joined them. Holger and Anja had arrived moments before me and



Opposite page: *Orectanthe spectrum*. Above: the same species with *H. nutans*; a colony of *H. glabra* x *nutans*

with them I made my way over to the table where a cool box was full of cold drinks. All I could do was sit in the shade and recover, trying to quench my thirst with copious quantities of ice-cold Coke. Half an hour later it was time to leave and we packed our equipment into the two 4x4s. A twenty-kilometre dirt track took us to San Francisco de Yuruani and from here we drove south down the Pan American Highway, all the way back to Santa Elena and the Hotel Lucrecia.

Over the next couple of days we relaxed a bit but remained busy. Andreas and I took a taxi across the border to Brazil where, following Fernando Rivadavia's directions, we drove south for a hundred kilometres or so, continuously dropping downhill as we drove off the ancient Guyana Shield formation and into lowland rainforest. We stopped off every now and then, and in the sweltering heat found locations for the very pretty *Drosera sessilifolia*, the tiny *Drosera biflora* and the aquatic *Utricularia erectiflora*. On another day, Andreas joined an independent Italian expedition to the Chimantá Massif, where, not only did he get to see the vast colonies of the spectacular *Heliamphora chimantensis*, but he also re-discovered a species of *Genlisea* that had not been seen since its initial discovery several decades earlier.

It was time to leave this magical land and, hiring the biggest taxi in Venezuela, we made the 700 km journey back to Porto Ordaz. Half an hour into the journey, Andreas pulled out his GPS device and asked the taxi driver to pull over. We had just started the descent down the northern section of the Guyana Shield and were only just still inside the Canaima Park. Next to the parked car a drainage ditch beside the road was filled with *Drosera intermedia* and *Drosera roraimae* plants. Beyond this was a *Stegolepis* meadow, looking just like the summit of a tepui but right here in the lowlands. This was the lowland *Heliamphora heterodoxa* site and, still standing on the road, I could see the distinctive flower stalks amongst the taller *Stegolepis*. The entire population grew within a football pitch-sized area and not too many individuals were seen. Apparently there are a couple more, less accessible known colonies elsewhere on the Gran Sabana.

Heliampora glabra x *H. nutans*

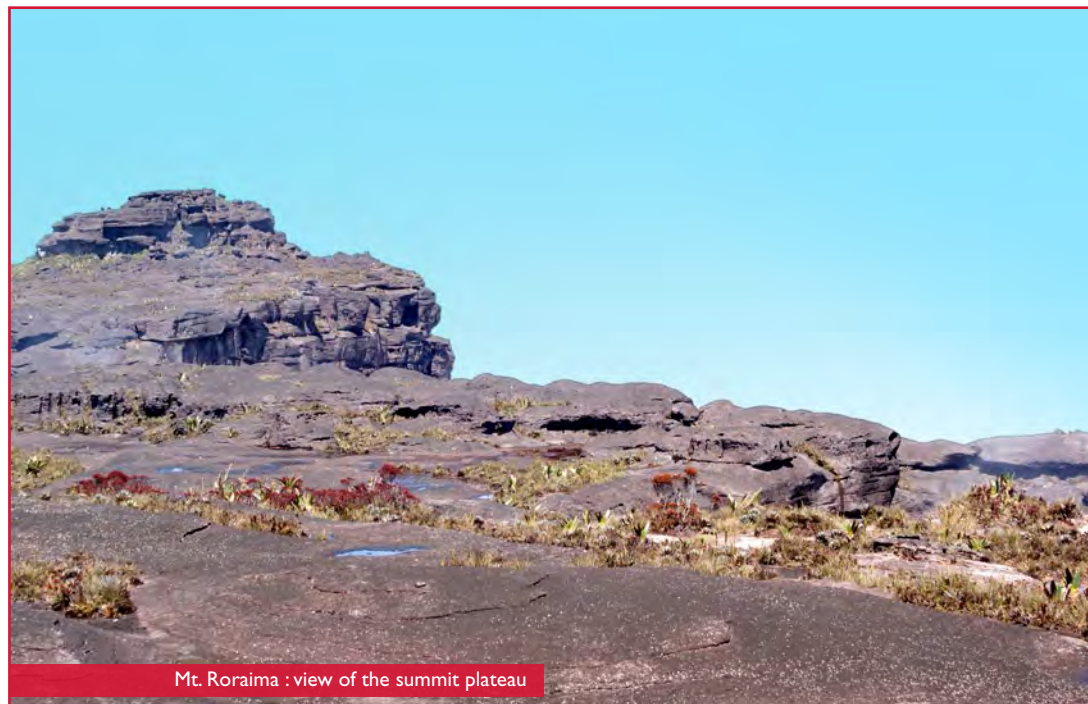


Heliampora nutans



We continued our journey for another fifty kilometres or so and then made another stop, this time to see a fantastic population of *Catopsis berteroniana* plants. Clearly visible from the road, the surrounding small tree and bushes were playing host to several hundred, bright yellow vases of this strange carnivore. Many were in flower, some with racemes to almost a

A comfortable night eased our aches and pains a little and after breakfast we hailed a couple of cabs to take us to the airport. We were soon on our way back to Caracas and landed a short while later. We said our farewells to Darren as he went to catch his flight to Miami, and then the remainder of us sat around for hours waiting for our delayed flight home. ■



Mt. Roraima : view of the summit plateau



Another view of the summit

metre. The rosettes ranged in size from tiny seedlings to huge adults fifty centimetres tall. The local name for the plant translates into English as 'Lantern of the Trees', and is most apt. The dry ground here also had a healthy covering of tiny *Drosera felix*. A few photographs later and we carried on, soon losing altitude and entering lowland rainforest. At one point I spotted a clump of amazing-looking plants growing by the road and asked the driver to stop. Towering eight metres tall and almost as high as the rainforest trees behind them, these rosetted plants looked like something out of a fantasy film. This rare plant was *Brocchinia micrantha*, the largest bromeliad in the world. Fortunately, this monster is a non-carnivorous relative to *Brocchinia reducta* and manages to break another record too; despite its size, it produces the smallest flowers of all the bromeliads.

We continued along the road, passing through some amazing scenery and rainforest along the way. By prior arrangement, Ch'ien was to jump out at a little village where he was to spend a couple of days photographing that amazing dancing bird, the Cock Of The Rock and, hopefully, some *Dendrobates* (poison arrow) frogs. We found the village, dropped him off and said our farewells. Other than a quick re-fuelling at an unknown town, this was our last stop before we arrived, several hours later, at our hotel in Porto Ordaz. Not in a particularly pleasant part of town, we were advised not to leave the hotel after dark.



The view from the highest point on Mt. Roraima