

Diaries of Frog Research Adventures in Wau Creek Research Station, Papua New Guinea.

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We left through a haze of white mist over Cairns in Tropical Northern Australia and flew over lush rainforest, interspersed with large houses, nestled in the canopy of the forest. Yachts dotted the coast but soon became obscured by the white cloak of cloud. I looked down some twenty minutes later to see a translucent blue ocean, surrounding a stepping stone of small islets, each unique in size and shape but almost all a mixture of browns and yellows with an edge of brilliant aqua extending along some area of the coast, most often on the northern side.

The Torres Strait melted into a winding network of brown rivers that met an ocean rippled like a marble around the New Guinea mainland. The river network cut through the land forming countless islands of green vegetation below us. Before long I had spied a village, marked by a handful of buildings lost in the muddled maze. The islands grew larger as the rivers merged, seemingly more organized in their collective arrangement. The dense canopy of the forest made it difficult to decipher the vegetation communities blanketed below us but as we descended into Moro, I could discern the intricate shadows of mountains and a road pathed yellow through the forest, a scar on the otherwise intact landscape.

From Moro we flew to Gobi and drove 4x4 to Kopi where we took an hour speed-boat trip to Kikori. We met Frank John at the boat, the local landowner and creator of a research station at Wau Creek where we would be working. He piled us into a fiber-glass river boat with a large outboard at its rear and we waved to villagers as the boat motor putted us away from Kikori station, out into the large, murky river.

We drove upstream as the river changed from a wide murky expanse to an intimate series of tight meandering bends, hugged by limestone cliffs with overhanging forest like a hidden gorge. The water was a clear, deep lagoon green and we sped past two Papuan crocodiles, which were making the most of the unseasonably consistent sunshine. Hornbills flew across the canopy as I tapped Simon's knee in uncontrollable excitement. The Kikori River turned into the Sire and we began to pass small beaches of sand, covered with tracks. Perfectly parallel sets of tire-like flipper tracks emerging from the waters edge marking Pig-nose turtle nesting routes to the highest spots available. The last section of the journey we pushed the boat up the shallow stream, moving against the current and trying to keep up with the locals.



Photo: Arthur Georges.

THE RESEARCH STATION

We pulled up on a raised stretch of river bank with pebble substrate and the field assistants tied the boat to a large snag. There I noticed a railing guiding a path up three discrete step ladders to a 5 x 18 m traditional house that was to be our research station for our two week trip to Wau Creek. Built and owned by Frank John and his family, we were the first visitors to his recently protected patch of forest. Tree trunks provided the frame to the station, which is divided into a sheltered verandah, large room for sleeping quarters and a kitchen area for food preparation. The roofing was made from long, dried Nipa Palm leaves and walls were weaved mats from Sago Palm leaf. The floor of Black Palm bark was aligned neatly on top of the tree trunk foundation and delicate windows propped open with sticks allowed streaks of sun light into the main compartment. Frank had even built tables and bench seats on the verandah and kitchen and put a sink and benches in for convenience. It was built off the ground, providing an undercover area where the baby 'Nena-hiho' could be left to swing in the shade of her miniature hammock and where scorpions could torment me during my frantic forays to catch rogue escapee wildlife during our photography and data collecting sessions.

Outside the building, a path had been constructed from pebbles, bordered by larger rocks collected from the river below. The path passed a water tank, through a garden of beans and banana trees and looped around the house up a small incline to a hut where a handmade door swung open to reveal a box with a toilet lid decorated with a floral design, perched on top.



Photo: Arthur Georges.

FROG SURVEYS

We were visiting Wau Creek Nature reserve to survey frogs and with 6% of the world's frog species in less than 1% of its land surface area, we knew we were in for a treat.

As twilight greeted us eagerly, I handed out plastic bags to everyone with instructions to invert them as they capture the frogs so that I could test for the presence of a fungal pathogen on their skin, without contamination. Before I'd finished handing them out, then my head torch detected the characteristic dull green eye shine of a frog from across the camp. I went over to a small plant and bending down, I used my bag to pluck a small delicate frog from a leaf and popped it inside the bag to keep it safely secured, as people gathered round to observe. I picked up some leaf litter from the ground and sealed in inside the bag, using a marker to record its GPS location and habitat details. We then marched off in a conga line including Frank's small children, our field assistants and cooks.

I'd only taken a couple of steps when I saw another frog on the path. This one was larger and sat up higher with red markings on its legs and a bulbous head. No sooner than I had captured it in its own plastic bag and I was on to the next. The frogs surrounded us

as we walked down the path collecting more and more every few steps until the transect had changed to a low, lying grassy based forest. It became quieter as I fell behind the group and I caught some blazing red eye shine from up in a tree. I edged closer thinking it was a mouse but soon realized it was something else entirely. With a black and white striped face like a possum and a thin, prehensile tail a Feathertail or Pentail Possum (*Distoechurus pennatus*) glared back at me. "It flies" a local hunter Mikey told us. It's the Angel rat. "Very powerful", he added. "Keep remains of it in your pocket and you can enter a meeting place or houses undetected."

On the way back, just off the path I lost my breath in surprise and excitement as my light fell onto the characteristic shape of a forest dragon clutching a tree. This was no Australian forest dragon though, it was huge with red eye liner and striking long spines lying down the length of his head and body. I braced for its reaction as I went to catch it but it remained motionless as my eyes grew wide in disbelief and delight. Papua New Guinea is Cape York on acid I decided and practically skipped back to camp because I was so excited to show the others. Bounding up to the verandah I gave Arthur a bag with a dragon tail hanging out of the top, betraying the surprise. He was an Indonesian Forest dragon, the first of three that we would find that trip.



Distoechurus pennatus. Photo: Arthur Georges.



Lophosaurus dilophus. Photo: Arthur Georges.

OUR CATCH

Each day we sat down and spent hours taking detailed descriptive notes and measurements of the frogs we had caught the night before, as well as specimens for the museum. With a field guide developed largely from museum specimens, it was a complex and slow task to identify the 164 individuals of 26 species of frogs we sampled during our trip. As Australian's we appreciated the novelty of the Ranids, dominant and obvious in the larger creeks but as biologists, we marveled at the diversification of Microhylids, which accounted for the majority of our sample. They have radiated to occupy every niche imaginable from burrowing *Xenorhina* to a largely aquatic *Austrochaperina* and every arboreal *Oreophryne*, terrestrial *Callulops* and pointed nosed *Sphenophryne* possibility in between.

A lack of rain transpired into some quiet nights during the middle of our trip but several downpours a few days before we left meant that the last night we went out at Wau Creek was a ripper. The *Litoria* materialized from the forest canopy to places we could see and catch them and as we were walking down a transect, we heard a soft staccato moan that grew louder and more intense each time it released a call. On the fourteenth note it would climax in a high-pitched release and then rest a while before starting again. We crept upon the sound, local research assistants and biologists alike, puzzled at the absurdity of such a crescendo and after recording it, we dug a frog up from a small nest it had made in the ground. The frog looked no less ridiculous than its call with a tiny head and giant body, we marveled at the spectacular animal that we so nearly missed seeing. How many more amazing creatures lay hidden in the forest of Kikori and beyond?

FUTURE CONSERVATION

Frank John's Research Station is now functioning as a base where scientists can stay during research trips. The research station comes complete with food, fresh from the forest and the help of the 'Piku Warriors' - the research assistants that know the local area and have been trained to assist in researching pig nosed turtles and, more recently, frog surveys. The petroleum industry has funded pig-nosed turtle research, which has been used as an excellent model for out-

reach and education of sustainable harvest, invasive species, pollution and general conservation issues in the Kikori Region. In the future we hope Frank can build the capacity of the research station as more researchers visit and the value of Wau Creek biodiversity is recognized. Our baseline surveys for frogs served as a first step towards documenting frog biology at Wau Creek and we hope to build on this in the future. People that are interested in the station can contact Arthur Georges (georges@aerg.canberra.edu.au) for more information.

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Sphenophryne cornuta. Photo: Arthur Georges.



Hylophorbis rufescens. Photo: Arthur Georges.



Oreophryne oviprotector. Photo: Arthur Georges.



Litoria aff. *genimaculata*. Photo: Arthur Georges.



Austrochaperina derongo. Photo: Arthur Georges.



Callulops omnistriatus. Photo: Arthur Georges.



Callulops doriae. Photo: Arthur Georges.



Austrochaperina palmipes. Photo: Arthur Georges.