LANDSCOPE EXPEDITIONS

DEPARTMENT OF Conservation AND LAND MANAGEMENT
Conserving the nature of WA

in association with

UWA EXTENSION
THE UNIVERSITY OF WESTERN AUSTRALIA

THE LAST GREAT WILDERNESS – EXPLORING THE MITCHELL PLATEAU 2002

LANDSCOPE Expeditions Report No. 49

FROM THE EXPEDITION LEADERS

On behalf of the Department of Conservation and Land Management, and UWA Extension, we thank all members for their tremendous support, enthusiasm and good humour in making the Mitchell Plateau expedition the success it was. The logistics were formidable but everyone's cooperation ensured the smooth running of the expedition.

Special thanks to National Park Rangers Chris Brown and Alex Bowlay for the very professional campsite they prepared for us. We also thank our support crew of Richard House, Alex Mitic and Kate Padgham for their driving, camp management and excellent meals. The fresh fish supplied by Liz Terry of the Kimberley Coastal Camp was very much appreciated. Thanks to Allen Lowrie for additional algal collections from the Plateau. We also acknowledge the assistance of our scientific colleagues in identifying specialist collections.

We trust that expedition members benefited from visiting this Kimberley icon and assisting with this important research project. We look forward to your company on future *LANDSCOPE* Expeditions.

Kevin Kenneally, Daphne Edinger, Kevin Coate, Dr Bernie Hyland, Dr Ric How, Professor Linc Schmitt, Mark Cowan, Tim Willing and Chris Done.

Members of the The Last Great Wilderness-Exploring the Mitchell Plateau *LANDSCOPE* Expedition 2002

PARTICIPANTS' DIARY

Day 1: Monday–June 17 At Broome airport, 12 expeditioners (Connie, Sue, Gane, Barb H, Barb L, Garry, Trish, Kaye, Debbie, Janet, Joe, and Kath) met the two Kevins (Kenneally, KK, and Coate, KC) for a noon departure to the Mitchell Plateau. Pilots from Golden Eagle Airlines, David (Plane 'A') and Cameron (Plane 'B'), treated us to a wonderful sightseeing trip over the next two hours up the Kimberley coast.

We flew over King Sound, with Valentine Island to the left, and Derby far to the right, and past the many islands of the Buccaneer Archipelago in the azure sea; whilst the ancient sandstone ridges and basaltic outcrops of the Kimberley coastline lay to the right.

The Horizontal Waterfalls were flowing from their narrow gaps. On we flew over Collier Bay and Walcott Inlet. Montgomery Reef lay to the right, and Raft Point stood out below; we hoped the spirits of the Sea Wandjinas that reside there wished us well in our venture as we flew over. Then we were over the Prince Regent River-the 100km long river that runs straight along a geological fracture line; the flat mesas, Mounts Trafalgar and Waterloo, stood out beside the river. We climbed from our good viewing altitude of 5500 ft, to a cruising altitude of 7500 ft, as we headed for the Mitchell Plateau - which is 1128 ft above sea level. Prince Frederick Harbour to seaward gave way to red plateau escarpments, the characteristic lateritic cappings and basaltic outcrops, and a treed landscape below.

Soon the Mitchell Plateau airstrip came into view and we caught sight of small patches of the rainforest that would form part of our study areas over the next week. Finally we were over Airport Swamp's paperbarks and landing, to be greeted by more *LANDSCOPE* team members before a short drive to camp.

Alex Bowlay and Chris Brown, Mitchell Plateau Rangers for the Department of Conservation and Land Management (the Department), had prepared a special *LANDSCOPE* Expeditions campsite amongst the *Livistona* palms, dotted with tents, the research marquee, cook's tents, showers, toilets, and with Camp Creek trickling alongside.

We met camp crew members Kate Padgham, Alex Mitic, and Richard House. We also met *LANDSCOPE* Expedition leaders, Daphne Edinger, Bernie Hyland, Tim Willing, Ric How, Mark Cowan, and Linc Schmitt. Tag-alongs Anne and Ross Ireland, Nancy and Maurice O'Connor, and Rosemary and John Offer had their tents all set up nearby.

As the sun set, having organised our tents, we settled back to enjoy dinner and an introductory briefing to the week by KK and other leaders. The good organisation of this first day boded well for the next ten days.

The projects, the interesting events, the shared experiences, the comments, and the camaraderie that arise from such a trip as this one are still to come!

Kaye Oddie

Day 2: Tuesday–June 18 During the night I had my first experience of hearing the eerie calls of dingoes! The bush stone-curlews gave us our early morning wake up call at 5.00 am After a quick cereal breakfast one group went off to check the trap lines at the sandstone site and another group, which I joined, went bird watching with KC. We observed 18 different species of birds including two breeding records of striated pardalote and chestnut-breasted mannikins. We also managed to flush a brown quail by following a creek, about 1-2 km from the campsite, while using a large track possibly left by wild cattle. While exploring the creek various small plants were collected and some crystals were seen in the rock.

KC caught a small dragon lizard I had observed warming itself on a small stick and we also found an area where pebble-mound mice are possibly living. I was pleased as my new GPS was used to mark the spots.

We walked back to camp for morning tea by 9:30 am. After this we were shown how use the Interactive Key on the computer to identify rainforest plants.

The trappers returned with only one rat — *Rattus tunneyi* — and three skinks from 250 traps! They did, however, see some interesting birds along the way.

We all enjoyed big meat and salad rolls for lunch.

After lunch I was off again bird watching with KC to a remnant rainforest patch near Crusher Pool. The highlight for me was seeing two orange-footed scrub-fowl fly overhead, and observing greater bowerbirds, plus seeing one bird's elaborate bower. It was fun exploring the thicket and I was amazed at how small it is and which birds rely on it.

The vine thicket excursion by the botanists went well, although the OKA had a tyre spiked and Richard had to change it while the expeditioners walked the final short distance to the thicket. Several samples of vine and tree were taken to test the computerised rainforest key that Bernie has developed.

While the "birdos" were quietly birdwatching in the rainforest, there was an almighty commotion from the botanists trying to retrieve a plant sample from a tall tree using a ging and human brawn. No wonder the scrub turkeys flew off in the direction of another remnant vine thicket to some peace and quiet!!!!!

While returning I had another interesting wander up a creek to observe birds at dusk with KC. We disturbed a nankeen night heron and saw some white-throated honeyeaters. We discovered at the evening bird call that 60 species have been observed in total so far.

On returning to camp Janet and I shared a refreshing hot shower under the palms followed by our nightly cold beer. We all enjoyed a delicious dinner of apricot chicken

After dinner, Ric How gave an interesting and informative talk in the "Meet the Scientist" session.

By the light of the warming fire it was reported that Gane had collected a small skink of interest during the day, and KK a small gecko. Five species of frog have been heard along Camp Creek, and a frill-necked lizard was seen going up a tree. John Offer has collected 14 species of ants in the last two days.

I enjoyed a warming port and some good company by the campfire, then Janet and I were off to view the "Amazing Star Show" through the back door of our tent.

Deborah Perry

Day 3: Wednesday–June 19 A slightly warmer but windier start to the day, with the "birdos' and trappers up at about 5:30 am for breakfast before departing to check the Elliott traps at the sandstone, and to do some bird spotting.

The remainder of the group had a leisurely breakfast of bacon and scrambled eggs. Some then tackled Bernie Hyland's CD-ROM with the aim of identifying some to the rainforest plant samples collected yesterday.

At 10.00 am the trappers and birdos returned from the sandstone and bush trap lines. No mammals were trapped, but three lizards (skinks) were trapped at the sandstone line. The birdos saw brolgas and variegated wrens, red-tailed black cockatoos and more.

The others left camp just as the trappers returned and headed for the Mitchell Falls, with the former following after a brief comfort stop.

On the way we stopped to view a *Podaxis beringamensis* fungi growing on a termite mound. These fungi have a special relationship with the termites and are rarely seen. They look similar to some of the 'puff balls' we all know, and apparently disintegrate in a similar manner to release their spores.

The walk from the car park to Mitchell Falls is 3.5 km, according to the signpost, but seemed longer to most of us. It was an interesting walk with the terrain varying from rocky outcrops to creek beds and sandy patches. The flora varied also, from thick *Acacia* scrub, including the Minni Ritchi (*Acacia delibrata*) with its strange peeling bark, to eucalypts, and many other species.

Birds sighted included the white-browed robin, white-quilled rock-pigeons, and friarbirds. The expeditioners swimming at the Mitchell Falls spotted a Mertens water monitor. We all enjoyed our pre-packed lunches before returning to the car park.

Four of us (Kath (me), Gane, Barb, and Joe) caught the helicopter back. The flight included a view of the lower Mitchell Falls and the place where the estuarine and fresh water meets the Mitchell River.

A good day was had by all, topped off by another excellent meal.

Kathleen Verrier

Day 4: Thursday–June 20 Received the diary in time to record Bernie Hyland's superb after dinner "Meet the Scientist" session. He set himself in time and place and also his work, as both his research and computers developed from early and unsophisticated beginnings.

Trappers and birdos out early, the former still very disappointed.

10:00 am off to Lone Dingo remnant rain forest. No tag-a-longs this time-all in the main vehicles for a long rough trip. En route some wonderful views out over Port Warrender in Admiralty Gulf. The port was used as an access for machines and supplies that came in throughout the 60's and 70's for bauxite exploration. A good story tells of a D9 dozer being stuck in the mud, and flooded at high tide.

All the tracks in this area were formed to access exploration areas and at one time quite substantial camps were in existence.

The Institut Islands were visible from our viewing spot. These islands were named by the Baudin Expedition after their Science Institute in France. Napoleon dispatched Baudin to monitor the British exploration.

Walked in Lone Dingo rainforest patch noting seeds (some edible), fruits, flowers and growing patterns. Bernie, Mark and Tim went in to cut a path for the trappers tonight. Bernie found the mistletoe he so much needed. A multi-skilled man (Bernie) once again showing his skills with brush hook and slingshot.

The birdos were taken on a merry and arduous walk by KC with good results. An amazing scrub fowl nest (10 m by 20 m), very possibly several hundred years old, was seen.

Lunch taken at an idyllic spot overlooking Admiralty Gulf under *Eucalyptus miniata* in full flower with friarbirds feeding.

Back to camp. Another loaf of bread to be made (tag-alongs have to be self sufficient), and a curry for tea.

KC spoke about his amazing career which led to his becoming a "living legend" last year.

Rosemary Offer

Day 5: Friday–June 21 The shortest day of the year got away to a good start with a 7:00 am cooked breakfast. The zoologists had to miss this as they were away early

for an arduous day, taking up the traps from the sandstone and setting them up at Lone Dingo.

KC led a short birding expedition down the creek and back up an old creek bed on a circular route back to the camp. It was rather windy and birds a bit scarce but a blue-faced honeyeater was a new record for some. On the way back to camp we met the bucket-and-shovel-carrying latrine patrol which was greeted with the expected ribald comments.

At 9:00 am the OKA and two vehicles set off for Airfield Swamp where we split into a birdo group and a botany group. The swamp is unusually dry for this time of year, squelchy mud in the middle and a few very shallow pools. The climax vegetation is paperbarks, tall trees in the centre and a mass of small seedlings on the periphery, where seed is washed out during the wet. Under the *Melaleuca viridiflora* were mainly rushes with the occasional swamp lily and a few small herbs. The only bright colour was the bright yellow of the tiny flowers of *Utricularia muelleri* showing above the mud. Other findings were freshwater sponges and freshwater crabs. Bernie demonstrated how to obtain water from swellings at the base of some paperbarks.

We were surprised, at midday, to hear what we thought were a pack of dingos calling. Then, Ranger Alex Bowlay appeared at the edge of the swamp with a group of six aboriginal kids, the youngest on his shoulders, others wearing his hat and sunglasses, and all making remarkably authentic-sounding dingo noises. The children took a keen interest in our findings and contributed a snake skin, which they said was from a king brown. The skeleton of a python was also found, aestivating freshwater snails under a piece of bark, and a variety of beetles under the bark of standing trees. On the way back to camp we admired a specimen of the only northern banksia, *Banksia dentata*.

The birdos also had an interesting morning at the swamp seeing a flock of brolgas, pacific heron, little grebe, and ibis, among others.

After lunch one group went out to Mertens Falls to look for the black grasswren and the yellow-faced partridge pigeon, the botanists' group went to the sandstone site. The latter group had a bonus sighting of the black grasswren as well as paintings in a rock overhang including Wandjina figures. In the evening we had a delicious meal of barramundi and Christmas pudding, appropriate for mid-winter night.

For "Meet the Scientist" we heard of the varied career of Tim Willing before he became Conservation Officer of the Kimberley Region. We have enjoyed his company and knowledge and are sorry he has to leave us before the end of the expedition.

We also heard from Liz Terry about how a couple of New Zealanders came to be part of the Kimberley community, now owner/managers of the Kimberley Coastal Camp overlooking Port Warrender. The roundup of the day's activities heralded a success story for the zoologists who were rewarded for all their hard work with:

- seven *Melomys burtoni* and a bandicoot from the traps at Lone Dingo vine thicket
- two rock rats from the sandstone traps
- two pale field rats and a red-cheeked dunnart from the traps by Camp Creek.

Barbara Latch

Day 6: Saturday–June 22 Woke to the knowledge that this morning was the chilliest so far! Turned out to be only 4°C. As people approached from tents and swags towards the breakfast 'car' they filled their plates and raced back to the fire to stand with their backs to it.

We had a lot of departures at differing times with the first being Tim Willing who is leaving the expedition today. The next group were the zoologists-to see what their first evening of trapping at Lone Dingo rainforest patch would produce. The next group were the advance party with Chris Done and Alex Bowlay to clear the track to the cycad site and mark it for the main party who left an hour later at 8:00 am.

Connie, Barb Harvey, Daphne and I went with KC in front of the OKA. We had a couple of stops for birds on the way to the cycad patch-one was a supposed "Kodak moment", which would have been quite spectacular . . . except the *Livistona eastonii* palms blocked the view!

Arrived at the patch of cycads, and to gain a rough estimate of how many were there, formed a line approximately 30 m apart and walked in counting the cycads as we went. The end result was approximately one cycad for every five square metres.

[The cycads (*Cycas lane-poolei*) commemorate Charles Edward Lane-Poole, WA Conservator of Forests (1916-1922), and later Principal of the Australian Forestry School. Specimens of the cycad were first collected on R.W. Easton's 1921 Kimberley expedition by botanist Charles Austin Gardner].

The birdos returned and an early lunch was decided upon (11:00 am) after which we continued along the Mitchell River Station Road. We stopped at another patch of cycads that looked 'sick'. Following an inspection by the botanists if was discovered they were infested with leaf hoppers.

Continued along the road a little longer before it became too rough (we were hoping to circle round to the sandstone trapping area). Turned back and returned the way we came.

Just as we (KC's party and Chris Done) hit the main road we stopped to remove tape markers and heard 'cheep, cheep'-to discover a blue-faced honeyeater's nest at the top of a *Livistona* palm in one of the fronds. While we waited for the parent to return to feed the chick, a goshawk attacked a group of yellow miners.

Back to camp-a bit of relaxation before the shower queues started and the bread baking (by the tag-alongs) commenced. A great deal of hilarity as those who waited for showers passed the time.

Delicious roast dinner before 'reptiles' and 'birdos' left for Little Mertens Falls for some night spotting. Unfortunately it was very quiet. A few bats feeding on the *Eucalyptus miniata*, a wallaby, a bit of rock art we had not previously seen. On the road to and from the falls we saw a boobook owl and a sound asleep sacred kingfisher.

By the time we returned the campfire was deserted, everyone had gone to bed. We were not far behind. The "Meet the Scientist" for the evening was Mark Cowan.

Susan Clarkson

Day 7: Sunday–June 23 Another early morning! We are all getting used to rising from our warm beds before the sun. A first for some no doubt. The evenings have been quite cool but bearable. Even more so by the fact that the fire has been kept going long after dinner. With most of the expeditioners having made their lunch and smoko for the drive to Surveyor's Pool, we set off and were met by Chris Done who left for some "real work" this morning. That is now two of the Department's staff who have left us to experience more adventures elsewhere.

The drive to Surveyor's Pool was uneventful in the fact that there were no flat tyres or mechanical problems. The road we travelled is well used and quite reasonable. Have to say though it was a little exciting near the car park as the OKA had to negotiate some rough terrain.

We all gathered down at the Surveyor's Pool car park, which was still four kilometres from the actual water, and set off. Walking was at a reasonable pace, as it was still early and the sun didn't quite have its 'bite' yet. We arrived after approximately two hours of walking through more woodland to the top of the waterfall at the 'Pool". The group, having broken into two earlier, made their way through some very rugged and fascinating sandstone landscape to the bottom of the gorge, where we stopped for lunch and a well deserved rest.

I have enjoyed my return trip to the Plateau, as I was keen to see what of it I could remember. Not much I am afraid! The years have faded my memory of the previous trip around 1993. What I do remember, however, is the camaraderie between the leaders and the volunteers. That hasn't changed. It is great to see the enthusiasm in the two Kevins and Daphne is still as electric as ever. I feel proud to have been accepted by this expedition and contribute in my own way to the conservation of the environment.

It was also pleasing to the see the trappers have at last had success-little furry critters literally lining up to jump into the traps and be recorded for the good of science. However, the capture only two bats in the nets indicated to me that perhaps their food source has moved on and so have the bats.

Back to the "Pool". Lunch having been devoured and a swim taken by only three of the ladies, we packed up and set off. All together this time-we didn't want to get lost. All dutifully followed the intrepid bush man himself-KC-only to find him bounding off at one point charging what appeared to be a bandicoot, not a grasswren or any other feathered animal. What a man! He even managed to become a little 'geographically disoriented" at one stage. Still, we had the ultimate faith in him and followed him out of the sandstone safely onto the black soil plain and then up to the steep rise to the car park and awaiting OKA.

Writing this is interesting. For me mainly. I am not really a scribe and have avoided this job on the three previous expeditions. But it is not too bad apart from the lack of scientific data.

We arrived back in camp about five-ish, and duly lined up for the showers. Bernie however had to sort out his fern samples with KK and Daphne before he was allowed out. Interesting to see the different species of ferns that are found here.

By now everyone had made their way back to base. The trappers, the birdos, and the botanists were all chatting amongst themselves over a few 'coldies' while we waited for dinner.

After dinner we proceeded to the formal part of the evening with 'Meet the Scientist' Linc Schmitt. Have to say it was over my head but fascinating none the less. The zoologists reported a 50/50 capture and recapture rate for their mammals caught. Also finding some traps closed by animals too large or too smart to enter. A quoll was captured and we were led to believe that a claw held in a sample bottle belonged to said quoll.

As the cool of the evening descended people gravitated to their swags and tents fairly early. I did anyway – about eight-ish. A few hung about for a while longer but the call of the swag was too irresistible to fight.

Joe Raudino

Day 8: Monday–June 24 Up at 5:00 am (10 degrees C) to head off to Lone Dingo with Ric, Mark, Linc, Trish, Sue, Connie, the Offers, Gane and myself to collect the 200 Elliott and cage traps and process the 52 animals caught. Linc, Trish and I stopped at the pebble mound site – no animals caught but a *Ctenotus robustus* found dead at one of the traps. At Lone Dingo one of the animals caught was a brush-tailed tree rat *Conilurus penicillatus* which was taken as a voucher specimen. Many were *Rattus tunneyi* the pale field rat – some were re-captures. Most exciting was the quoll, an unmated sub-adult female. The photographers had fun trying to snap the animals as they were released. Most

were too fast. Other species caught were *Zyzomys argurus*, the common rock rat, and *Melomys burtoni*, the grassland mosaic-tailed melomys.

Back in time for lunch; the afternoon was spent washing traps and starting to break camp for an early start tomorrow. I was at the creek, fish watching and photographing the lovely aquatic plant *Eriocaulon setaceum* and the tiny yellow-fringed water lily *Nymphoides aurantiacus*. Only two of the fish species in Camp Creek mentioned in the 1980 survey were seen–rainbow fish *Melanotaenia australis* and *Mogunda mogunda*, a gudgeon and an aquatic leach. Janet found a *Litoria bicolor* frog and I added two species of butterfly, a speckled lined blue and purple cerulean–a beautiful purple and irridescent bronze specimen. Photographed a crimson dragonfly and a damselfly was seen too. Birds seen over the creek were blue-winged kookaburra, brown goshawk, double-barred finch and red-tailed black cockatoos.

At 4.00 pm KC took four birders to a site higher up the creek and tawny grassbird was added to the list.

Back at camp we enjoyed a roast pork dinner of the usual high standard and afterwards, for "Meet the Scientist", Kevin Kenneally gave us a most entertaining account of his life and work, and Kate Padgham related her biography, which covered every state of Australia and many career changes.

Butterfly species recorded by Barbara Harvey during the expedition:

Blue Argus (*Junonia orithia*)
Small Grass Yellow (*Eurema smilax*)
Lemon Migrant (*Catopsilia pomona*)
Purple Oak-Blue (*Arhopala centaurus* subsp. *asopus*) (photo)
Common Crow (*Euploea core*)
Small Brown Crow (*E. darchia*) (photo)
Small Pearl White (*Elodina walkeri*)
Checkered Swallowtail (*Papilio demoleus*)
Lesser Wanderer (*Danaus chrysippus*)
Orange Ringlet (*Hypocista adiante*) (photo)
Speckled Line Blue (*Catopyrops florinda estrelia*)

Herpetofauna recorded by Barbara Harvey
Frogs:

Long-footed Frog (*Cyclorana longipes*)
Northern Dwarf Tree Frog (*Litoria bicolor*)
Pale Frog (*L. pallida*)
Copland's Frog (*L. coplandi*)
Roth's Tree Frog (*L. rothii*)
Rocket Frog (*L. nasuta*)
Bilingual Toadlet (*Crinia bilingua*)

Geckos:

Rough knob tailed Gecko (*Nephrurus sheai*)
Crocodile-faced Dtella (*Gehyra xenopus*)
Bynoe's Gecko (*Heteronotia binoei*)

Dragons:

White-lipped Dragon (*Diporiphora albilabris*)

Skinks:

Bauxite Rainbow Skink (*Carlia amax*)
Rough Brown Rainbow Skink (*C. johnstonei*)
Plain Ctenotus (*Ctenotus inornatus*)
Robust Ctenotus (*C. robustus*)

Barbara Harvey

Day 9: Tuesday–June 25 As Gane had started breaking camp at 4:30 am there was no need for the early morning horn blast at 5.00 am, especially for Kate and me. What a big job of breaking camp it turned out to be. The advance parties of KK and KC left about 6:30 am as did the scientists, to set up their traps at Silent Grove.

Anne and Ross were the first of the tag-alongs to pack up and leave followed by the others. We continued to clear and pack the vehicles. However, with many eager and enthusiastic volunteers–and some were very busy indeed!–the monstrous task of packing the gear was finally accomplished with unfailing good humour by Richard, Alex M and Kate. The official 7.00 am departure time actually became 8.00 am.

We left Kate, Liz and Alex B to complete the final mopping up operation and to finally let peace, black kites and Torresian crows descend on our erstwhile settlement.

The OKA slowly followed in Alex M's tracks and, as we started to descend the Mitchell Plateau, the myriad *Livistona eastonii* suddenly disappeared. In the vicinity of the King Edward River area sandstone country appeared. We enjoyed a pit stop at the river while Alex M and Richard 'enjoyed' repairing a broken spring on the OKA. Unfortunately there was no time to see the Bradshaw rock art there.

We continued. Each time a different plant species appeared, e.g. *Callitris intratropica, Nymphoides indica,* Daphne used her microphone skills to inform us. She also pointed out at one stage that the soil had changed, as evidenced by the grey colour of the termitaria. We knew civilisation was approaching when we hit the Gibb River–Kalumburu Road and a road train passed rapidly.

A picnic lunch was enjoyed by all at an unnamed causeway where Gary nearly pitched into the water on a loose boulder. The Drysdale River Roadhouse provided a welcome oasis and a modest spending frenzy. It also meant a quick reorganisation of Alex M's vehicle, as the trailer had developed a severely broken spring and had to be welded. The estimated repair time was three hours. Suddenly the OKA was very full with extra passengers, food and gear. We bade farewell to Alex M and hoped to see him again, maybe in time for dinner.

At 3.00 pm we finally reached the Gibb River Road, which KC told us he had helped to build. The river itself looked beautiful as we forded it but we were

running too late to enjoy it for longer than it took us to cross.

The Barnett Range was really spectacular as it appeared in the east with the late afternoon sun lighting the top sandstone layer with a deep orange glow. The first Boab trees appeared and large interesting specimens were spotted growing in the basalt layers below the sandstone cap.

We swooned at the spectacular sunset and Daphne waxed poetic as the King Leopold Ranges hove into view. We had a brief stop for ice creams at the Mt Barnett Road House, and caught up to date with old footy results.

Suddenly the full orange Kimberley moon appeared and we swooned once more. Still we travelled, well shaken but not stirred. Deb led us in some rousing choruses of "The Quartermaster's Store". So we arrived at Silent Grove at about 7.00 pm with our tongues hanging out; on our arrival, cans of beer were thrust into our hands and the barbecue commenced. Alex M eventually arrived about 10.00 pm, hungry and tired, after repairing the trailer. What a day!

Patricia Novikoff

Day 10: Wednesday–June 26 A great final- night camping at Silent Grove, with barking owls heard in the night. Then, came the last day on the road.

Deb and I leapt from bed at 5:00 am – the trappers were off to do their final collection and the chance for a last wade through the swamp and leap over boulders was too much to ignore! We saw the moon set and the sun rise, and helped with the capture of two quolls, three rats and a minute delicate mouse (*Pseudomys delicatulus*). One of the quolls came back to camp for a photo session and was very obliging by opening its eyes for the cameras.

All helped with the final pack-up and there was much fun putting the load onto the OKA. Barb H's gear was kept separately as she was being dropped off in Derby.

KC took a group for a final bird walk – spotting bar-breasted honeyeaters, lots of bowerbirds, a nest, peaceful and bar-shouldered doves. We also spotted some rosella (*Hibisus sabdariffa*)–an introduced plant–growing in the camp woodpile.

John and Rosemary waved us goodbye at 8:10 am as we set off in convoy. KK, KC, Bernie, Susan, Barb H, Joe, Gane and Alex M were in the cars, and the rest in the OKA. We left the trappers getting in the last of their lines. They ended up with 11 animals and went with the district ranger to see some local tortoises. Just as they were about to set off, they met up with some other zoologists and a tortoise geneticist so Linc had his first sensible conversation for 10 days. They caught up to us much later on.

The road was a great improvement on the previous day and even included stretches of bitumen. We made good progress and were kept informed by Daphne about all we passed. Black basalt on the right; March Fly Creek (dry); spotted harrier, *Brachychiton viscidulus*–the Kimberley rose. Bell Creek (running); wattles (where is the wattle key when you need it?); Marchfly Creek (again) this time with water. *Petalostigma pubescens*–the quinine bush; the palm *Livistona kimberleyana* (different from on the Plateau and growing densely up gullies); *Terminalia platyphylla*, Fern Creek (running), Dog Chain Creek, Kapok (*Cochlospemnum fraseri*), then another two dry creeks. By now some are nodding off, then the Offers pass us; on past another eight dry creeks, then Rifle Point.

We all got out to embrace the view and have a group photo. KC tried to get us to step back-but we had avoided previous dangers and knew not to!

Off again and through Inglis Gap Pass and more dry creeks. Then we saw it-a snake, long brown/black and very quick. Gane was nowhere to be seen and none of us volunteered to catch it for him-much to his chagrin. Then over Boundary Creek (dry), the Oscar Napier Range and Devonian limestone, Mac Creek, Donkey Creek (both dry), a large patch of *Bauhinia cunninghamii* and Queen Victoria's head. With most of the bus dozing there is not much for the diary holder to do, other than to record lots more creeks, lots of raptors, lots of cars, lots of plants, lots of grass, then lots of boabs.

We stopped to get a couple of boab nuts and failed; still, the chance to stretch our legs was appreciated, then it was on to the Willare Roadhouse for drinks and icecreams. Bernie was rescued after being separated from his lunch and money, and refused chips by the shop. We all went on to the Fitzroy riverbank for lunch, and Connie paddled while others watched for crocs. The post-prandial slump set in for all and the tour guide saved her energy for the coming evening. The Logue River was dry; then, at 2:30 pm, the OKA blew the front right tyre. Richard did a fantastic job keeping us upright and on the right side of the road. $500 blown to bits! Alex M, Joe, Gane and the zoologists arrived to help; soon the replacement was complete and we set off again. Gane was presented with another snake skeleton–this one thought to be a king brown.

The remainder of the trip through the pindan and tombstone territory was uneventful, and we arrived at the Palms Resort by 3:30 pm. Gear was unpacked and everyone was taken to their accommodation.

After a shower, swim, etc. we all met at the Mangrove Hotel for dinner and to see the 'Staircase to the Moon'. We all enjoyed a few drinks, noodles, and satay, then Steven Baamba Albert's band capped the evening off. Deb joined in the music on the spoons and Daphne proved she had got enough rest by wearing Joe out on the dance floor. It was then time for the goodbyes to

start and people to go our separate ways–back to our regular lives after a wonderful 10-day adventure.

Janet Pyke

PERSONAL TRIP SUMMARIES

(compiled by Janet Pyke)

Kevin Kenneally: Another magic Kimberley journey under a full moon with a great bunch of people.

Kevin Coate: Fantastic to be back on Mitchell Plateau, and with such a great group of like-minded people.

Daphne Edinger: It was great to renew friendships with so many people of past trips and to meet a lot of new chums. I get a great kick out of showing the magnificent Kimberley to people and increasing their understanding of it. Hope to meet you all on another expedition soon. In the meantime–keep well and happy.

Bernie Hyland: Brilliant. Executed with military precision.

Ric How: Like red wine we grow better with age.

Linc Schmitt: What a wonderful trip with a great group of people–all with boundless enthusiasm and so keen to participate and help. Many thanks.

Mark Cowan: Another delightful *LANDSCOPE* trip with a lot of people who all enjoy Western Australia's fantastically diverse environment.

Chris Done: The Mitchell Plateau is a special place for me, having first visited in 1978. Subsequently I have been back numerous times and am pleased that the area, or at least some of it, is now being managed for conservation purposes. It was terrific to be able to hear people's opinions about the area and to see the enthusiasm of the group as a whole.

Tim Willing: I thought the rock art was very impressive, particularly the rock wallaby and kangaroo. It would be very special if everyone can see a grass wren this trip.

Richard House: Great trip. Great people. Good to get a different outlook on things. Despite being called in at the last minute to help, everything went very smoothly with Kate and Alex M helping. Thanks for being a great group to work with.

Alex Mitic: This trip was exceptional for me. Not only did I meet so many nice interesting people, I learned a lot as well.

Kate Padgham: Lots of interesting people who have filled their lives with fascinating experiences-scientists and volunteers alike. I enjoyed the laughter around camp.

Connie Bricknell: Where else would you find a group of thoughtful, caring people who share your personal interests–leaders, camp staff and co-volunteers–but on a *LANDSCOPE* Expedition? I love them and hope to join many more. Are there any coming up in NSW?

Susan Clarkson: Very good company and a lot of good humour on this trip. What with the pinkie collectors, foresters, etc as leaders life was very busy. A great trip. All the best to all the members of this expedition. Ciao for now.

Gane Doyle: Great trip but missing the snakes. Where are they? I feel the birdos scared them all away.

Barbara Harvey: Great! Highlights were *Nephurus sheai*, the northern quoll and *Gehyra xenopus*.

Ross Ireland: Enjoyed the total experience. Was wonderful to see the trappers in action and the fruits of their endeavours. Opened up a new world of amateur ornithology, and the camping was great.

Anne Ireland: I really enjoyed the company and the laughs. Thanks everyone.

Nancy Kennedy: Lots of giggles and great stories. What an amazing group of people with diverse talents! I'll never forget the birds, the walks and why they didn't build two storey brothels!

Barbara and Garry Latch: A great trip with compatible people. We learned a lot but would have like to be more involved with the work. Especially enjoyed helping out with the zoologists as we really felt useful.

Patricia Novikoff: What a hoot, and such a lot of fun. Pity about the black grass wrens–wrong place at the right time, or right place at the wrong time. Hope to see one or all of you again on another expedition at some time. Cheers.

Maurice O'Connor: Great birds. Great company. Great showers. Great week!!!

Kaye Oddie: A wonderful Kimberley experience that provided so much more than any other trip I've done in Australia. The linkage with and participation in the research projects ('Meet the Scientist' was one of the highlights); getting to see and do things one would never normally have the chance to do; the local colour added by Chris Done, Liz Terry and Kate; the like-minded expeditioners and tag-alongs; the interest, fun, the good cooking and driving; and behind it all, making it a success, the top-notch organisation and running of the expedition.

John Offer: Firstly–great company. I really liked it because the way we went with *LANDSCOPE*, we saw places and did things in a way that would have been very difficult otherwise.

Rosemary Offer: All of the above, plus enjoying the input from the scientists. I found it absolutely wonderful, particularly the 'Meet the Scientists' sessions.

Deborah Perry: I've had a wonderful time in the wilds of the Mitchell Plateau with an interesting group of people including my special sister Janet, gaining more knowledge of birds, vegetation, and trapping.

Janet Pyke: What fun! Great tent-mate, interesting people, places, and things to do and see! A very well run

expedition–thanks to all.

Joe Raudino: This has been an opportunity to re-visit past places, not so much from a past life but from a previous trip. Will have fond memories of this trip also.

Liz Terry: Chilly nights and smoky fires, the toes of rats and roast dinners. Light-hearted competition between the different groups.

Kathleen Verrier: This is my sixth *LANDSCOPE* trip over about eight years. Like all the others, it was just wonderful–visiting places that are not very accessible to the majority of people, seeing how scientists do their fieldwork, and contributing in a small way to that work. As always. the *LANDSCOPE* volunteers, the organisers, crew and scientists were a great bunch of people who got on very well together. Throughout there was humour, camaraderie and an interest in all things around us. The food was excellent, as were the facilities at our bush camp. Overall it was a wonderful experience. Thank you for being part of it.

BOTANICAL COLLECTIONS FROM MITCHELL PLATEAU

By Kevin Kenneally and Daphne Edinger, LANDSCOPE Expeditions

This year was particularly dry on the Mitchell Plateau – the driest that most of the leaders had ever experienced. There was some water in Camp Creek, the Mitchell River was just trickling over the Falls and Airfield Swamp was dry except for the occasional muddy spot. There was an almost complete absence of flowering herbs making botanical collecting extremely frustrating. Interesting collections of freshwater algae were made and these are listed and commented on below by Dr Stephen Skinner. In particular one collection was not only a new record for Australia but was previously only known from China! An article on this discovery is scheduled to appear in *Australian Geographic*.

A bulb of *Crinum angustifolium* R.Br. was collected from Airport Swamp and sent to the Centre for Plant Biodiversity Research in Canberra. This will be grown and flowered in their glasshouse to assist research into the classification of tropical species of Australian *Crinum*.

Dr Bernie Hyland collected material of hemiparasites and herbaceous species from the monsoon rainforest patches for inclusion in the next edition of Australian Tropical Rainforest Plants. He also demonstrated the value of the interactive rainforest identification key, which he co-authored, by encouraging participants to identify plants *in situ* as well. This activity revealed some taxonomic differences between Kimberley and Queensland plants which he will investigate further. Bernie's prowess with a brushhook and slingshot in obtaining plant specimens was much admired by all.

The investigation of the population of *Cycas lane-poolei* proved very interesting. Samples of insects collected from fronds were sent to the Australian National Insect Collection, CSIRO, Canberra for identification. The insects were identified as a "flatid leafhopper" *Colgaroides* sp. (family Flatidae, order Hemiptera). There are three known species of *Colgaroides*, two of which occur in Australia and one in Indonesia and the Philippines. The flatid leafhopper recorded from the Mitchell Plateau may be a new species. Further collections of adults need to be made to confirm its taxonomic status.

The damage to the Mitchell Plateau cycads was most likely caused by the high number of these sap-sucking leafhoppers. Their appearance in high numbers may be attributed to the hot, dry conditions being experienced in the Kimberley at the time.

Further correspondence with Dr Murray J. Fletcher, Director of Collections, NSW Agricultural Scientific Collections Unit revealed that a flatid *Jamelia australiae* spread down the Queensland coast a few years ago doing similar damage to *Pandanus* plants. This was seen as a serious problem because the *Pandanus* plants are part of the landscape that contributes to the tourism industry there. Dr Fletcher said the spread of this species of flatid may have been due to the warmer conditions being experienced on the mid-coast at this time.

During a visit by Kevin Kenneally to the Royal Botanic Gardens, Kew, England in October 2002 mention was made to Dr Phillip Cribb (the Deputy Keeper of the Herbarium) of the insect attack on the Plateau cycads. Dr Cribb mentioned that in 1990, on Vanuatu (formerly the New Hebrides) in the South Pacific he had also seen a cycad (*Cycas rumphii*) looking pretty ill after being attacked by insects and being stripped of all its fronds. A photograph taken by Dr Cribb is included in this report.

Frond material was submitted for examination to plant pathology at Agriculture Western Australia. Their report indicated that the fungus *Trichothecium* was found to be associated with leaf lesions on the sample. This organism is normally regarded as either a weak pathogen or as a saprophyte on a wide range of hosts. They had no previous record of it occurring on cycads. It is likely that the fungus was infecting lesions resulting from the leafhopper attacks.

Other aquatics plants of interest collected included the following:

11765 *Myriophyllum trachycarpum* F. Muell. (Haloragaceae) Emergent aquatic with pale pink flowers in Camp Creek

11774 *Malaccotristicha australis* (C.Cusset & G.Cusset) M.Kato & Y.Kita (Podostemaceae) Submerged aquatic anchored to rocks in fast flowing water above Mitchell River Falls.

11779 *Vallisneria annua* S.W.L. Jacobs & K.A. Frank (Hydrocharitaceae) Emergent aquatic, flowers

white; long, straplike leaves, in pool adjacent to Mertens Falls.

FRESHWATER ALGAE FROM THE MITCHELL PLATEAU

By Dr Stephen Skinner, Royal Botanic Gardens and Domain, Sydney, NSW

The blue-green algae are an interesting assortment, probably reflecting both the healthy nature of the system and the usual seasonal dynamics among raft formers and periphyton. *Cylindrospermum, Scytonema* and perhaps more than the others, *Hapalosiphon* are species that thrive in warm, drying out conditions, forming coatings on both plants and mud and mopping up the nutrients released as other 'deep water' species dry/die back. The three *Gloeotrichia* species are interesting as all three are more or less obligate epiphytes; G. *natans* thrives on dead or static host surfaces [hence the orange blob show - see 'An Algal Oddity' below] while the other two are usually found on the submerged leaves of aquatic plants. Collections are not often made in the temperate south, so it was exciting to see three species in a relatively small area in the tropics. The *Halaposiphon* like blue-greens have true branching and pit connections, rather like red algae, between most cells, not just the heterocyte and the next cell. The group has had only passing study in Australia, and the tropical ones have been lumped into this one genus. It is clear that there are strictly epiphytic ones, with a spreading basal system and erect axes of various kinds, and more facultatively planktonic raft builders. More study, including growing the organisms, will be needed to work out how many there are. *Cylindrospermum* species often develop as a skin on rafts of other algae, or on damp but drying mud. The topical taxa need comparison with those from the Caribbean and Vietnam, where recent studies have been done.

The green filamentous algae have representatives from three Classes, Chlorophyceae (the traditional 'green algae'), Zygnemataphyceae (*Spirogyra*, its relatives and the desmids, filamentous and solitary) and Klebormidiophyceae (the forerunners of land plants group). The Cladophorophyceae are not represented, but that may reflect the nature of the waterbodies and the lack of lime country. The Trentopohliophyceae are soil and bark dwelling taxa in general and those habitats weren't in the sampling scope.

Schizochlamys gelatinosa is a tropical alga in south east Asia and northern Australia, although it also occurs in more temperate parts of Europe and North America. The dingy green to yellow colonies have little shape and it is under the microscope that the alga shines. The flat topped spheres are in groups of four, inside fragments of the mother cell, and have a plume of false flagella (the technical term is German for jelly whips!). The large number of Oedogoniales in a relatively small area is a good thing. All are new records for Western Australia, for lack of previous interest in the fresh water algae (except bloomers!). They show close correspondence with those recorded for the Top End, and little with more southern collections, but this may reflect the state of knowledge rather than real biogeographical distribution. The very fine threaded species (*Oedogonium punctato-striatum, O. areschougii, O. khannae* and particularly *O. inconspicuum*), with depressed globose oogonia suspended like dew drops along the filaments predominate.

At least two of the filamentous Zygnematales deserve a 'mention in despatches'. These are the rather dramatic spored *Zygnemopsis* species, and one of the *Desmidium* species, D. *bengalicum*. *Zygnemopsis* have interesting spores enclosed in an 'H' shaped scaffold. The spore in this case is square pillow-shaped and golden, while the scaffold is made by the backfilling of the two parent cells with solid cellulose-like material. That makes it similar to a North American species, *Z. minuta*, but there are significant differences, especially the presence of two star-shaped chloroplasts in the vegetative cells. *Desmidium bengalicum* is interesting because its reported distribution in Australia is North Queensland and the Northern Territory.

While *Coleochaete scutata* is widespread in the world as tiny green discs on water plant stems and submerged leaves, the other species of *Coleochaete* collected on the expedition may well be a new species. It is a gelatinous cushion-former but the erect branches have only a few balloon-like cells, and the fertile branches, topped with spores, are held well above the cushion.

Name	Family	Locality
Cyanobacteria		
Aphanocapsa sp.	Merismopediaceae	KFK11773
Cylindrospermum sp. affin. *stagnale*	Nostocaceae	KFK11766
Cylindrospermum species	Nostocaceae	KFK11765
Gloeotrichia natans	Rivulariaceae	KFK11771
Gloeotrichia sp. affin. *pilgeri*	Rivulariaceae	KFK11763, 86
Gloeotrichia raciborskii	Rivulariaceae	KFK11786
Hapalosiphon species	Mastigocladaceae	KFK11763, 66,
Microchaete species	Microchaetaceae	KFK11785
Scytonema mirabile	Scytonemataceae	KFK11770
Scytonema sp. *affin. myochrous*	Scytonemataceae	KFK11763
Scytonema spp.	Scytonemataceae	KFK11765, 79,
Tolypothrix species	Microchaetaceae	KFK11765, 66,
Chlorophyceae		
Bulbochaete sp. affin. *monile*	Oedogoniaceae	KFK11766, 86,
Bulbochaete sp. affin. *dispar*	Oedogoniaceae	KFK11766
Bulbochaete species	Oedogoniaceae	KFK11781
Oedogonium areschougii	Oedogoniaceae	KFK11766, 79,
Oedogonium sp. affin. *cyathigerum*	Oedogoniaceae	KFK11765, 79,
Oedogonium inconspicuum	Oedogoniaceae	KFK11781, 82,
Oedogonium khannae	Oedogoniaceae	KFK11763, 81,86
Oedogonium sp. affin. *parvum*	Oedogoniaceae	KFK11765
Oedogonium punctato-striatum var. *limneticum*	Oedogoniaceae	KFK11765
Oedogonium sp. affin. *taylori*	Oedogoniaceae	KFK11785
Oedogonium sp. affin. *undulatum* (sterile)	Oedogoniaceae	KFK11786
Oedogonium species (lantern oogonium)	Oedogoniaceae	KFK11765
Oedogonium species (spiral spore coat)	Oedogoniaceae	KFK11765
Schizochlamys gelatinosa	Tetrasporaceae?	KFK11785
Zygnematophyceae	**	
Closterium kuetzingii	Desmidiaceae	KFK11781
Desmidium bengalicum	Desmidiaceae	KFK11766, 70,
Hyalotheca sp. affin. *mucosa*	Desmidiaceae	KFK11763
Micrasterias foliacea var.	Desmidiaceae	KFK11778
Streptonema trilobatum	Desmidiaceae	KFK11779
Mougeotia sp. affin. *parvum*	Zygnemataceae	KFK11770, 78
Spirogyra spp.	Zygnemataceae	KFK11784
Zygnema sp. affin. *olivaceum*	Zygnemataceae	KFK11775, 84
Zygnema sp. (oval spores)	Zygnemataceae	KFK11770, 78,79,
Zygnemopsis sp. affin. *minuta*	Zygnemataceae	KFK11776, 78
Klebsormidiophyceae		
Coleochaete scutata	Coleochaetaceae	KFK11763
Coleochaete sp. affin. *soluta*	Coleochaetaceae	KFK11763

Footnote: ** indicates that my colleague, Mr Michael Dingley, is preparing some identifications of the desmids, which I will forward to the expeditions program when I receive it.

AN ALGAL ODDITY!

Comments on a bright orange, globular, jelly-like algal specimen collected from Camp Creek adjacent to our campsite.

An alga making bright orange globules, really. Yes really, and a rather interesting one at that! The jelly-like globules are soft but firm and are made from the running together of many smaller globules. The surface is in places knobbly and in places honeycombed, but the honeycomb is rather irregular and four to five sided, not neat hexagons. From the side the pleated tubes can be seen as a radiating series of arcs fanning through the gel. Inside the inhabitants are filamentous blue-green algae (cyanobacteria). Each filament has a spherical basal heterocyte, with a distinct wall and a pit connection linking it back to the rest of the filament. Behind this cell the trichome (that's what a row of cyanobacterial cells is called) begins with squat barrel-shaped cells that gradually get longer, narrower and more cylindrical, while the uppermost few cells become a hair. Behind the heterocyte a concentric series of sheaths or jackets develop, around the first few cells. If the plug is out, the hair end may poke out of the gel. As the trichome matures the first three or four cells behind the heterocyte fuse together and build a double wall around them. This structure becomes a symmetrical round-ended cylinder called an akinete. Sometimes the next cell dies and becomes a blocker cell, and the following cells swell a bit and look like the early cells in a juvenile filament. They never quite get to the akinete stage. This form of sheathed trichome with an external heterocyte is characteristic of the Rivulariaceae, and those members of the family that make akinetes directly behind the heterocyte and live together in radiating colonies belong to the genus *Gloeotrichia*. The ones from Camp Creek on the Mitchell Plateau of the Kimberley appear to be *Gloeotrichia natans*, but none of the books refer to the honeycombing of the gel mass, so it may be a local variety.

JOOST A WEE DRAHM!

By Dr Stephen Skinner, Royal Botanic Gardens and Domain Trust (Reproduced with permission)

This follow-up article by Dr Stephen Skinner on the algae collections from the Mitchell Plateau appeared in the RBG News of 8 January 2003. It was prompted by a visit to Mitchell Plateau in September 2002 by a colleague Allen Lowrie who was requested by Kevin Kenneally to collect additional samples of freshwater algae. To avoid problems of transporting preserving alcohol on commercial flights Allen pickles his botanical collections in Johnnie Walker red label old scotch whisky! This prompted Stephen's opening comments.

It takes a special kind of dedication to sacrifice a drink to preserve your algal samples! But that is just what happened a couple of months back in the Kimberley. Hence I got five little vials and a note reeking of scotch about a week ago - and the blokes from W.A. apologised!

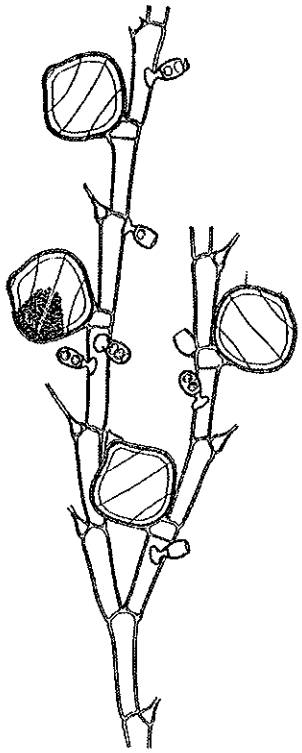
We've been being sent specimens from the Mitchell Plateau and other remote parts of the Kimberley for a couple of years now. Mike Dingley delights in all the tropical desmids, and I get to become ecstatic about all the other filamentous wonders. As with the Darwin samples, there are numerous filamentous cyanobacteria and plenty of *Oedogonium* species.

Silkweeds, *Spirogyra* and its relatives, can be fascinating. This time there were three fertile ones. A *Mougeotia* rather like *M. laetivirens*, with mini oil-drum spores in the conjugation tube, came from Rollies Jump-up. One of the blue, dimple-covered spored *Zygnema* species came from the King Edward River; and *Spirogyra columbiana*, one of the 'text-book' spirogyras, with two or three chloroplast ribbon and brassy football spores, from the swamp at Point Springs Reserve.

The real thrill came in finding the *Bulbochaete* species in spore. We'd had a few in other Kimberley samples but this time two of the bigger ones were fertile and showing all stages of development. *Bulbochaete* is a close relative of *Oedogonium*, sharing its curious form of cell division and the complicated 'egg-in-a-nest' life cycle, but *Bulbochaete* grows as miniature shrubs on other water plants, and is covered in elegant bell-bottomed spines.

Both of the *Bulbochaete* were growing on the narrow fingerlings of the deeply dissected leaves of *Limnophila*, from one of the tributaries of Camp Creek, on the Mitchell Plateau. Both are quite large species but while one has cells decorated with fine pegs and many dwarf males cluster round each egg chamber, the other has smooth walled cells and one or two rather discrete dwarf males on cells near the egg chamber. *Bulbochaete praereticulata* is among the more spectacular members of this genus. Except for the quite long vase-shaped basal cell each vegetative cell, and the oogonial chamber wall, is covered with a spiral of fine pegs so that the plant looks slightly fuzzy. Male plants and female plants are similar but separate. The male plants have plenty of short side branches made of stacks of four cells and a spine on top. Each of the four cells produces one of the mobile cells that travel to the female plant, settle on the oogonial wall and grow into the sausage shaped dwarf male. Female *B. praereticulata* must be very attractive to their males, as the lower half of the globose oogonium is covered with dwarf males, all merrily producing their pair of spermatozoids. The resulting spores from all this frenetic activity are chinese red globes with sharp edged dimples all over the outside. *B. sp.* affin. *wuhanensis*, the other fertile *Bulbochaete* in Camp Creek, has smooth walled cells and produces its egg chambers on very short supporting cells in between vegetative cells,

so that the egg chambers rather push out from the branches. The dwarf males, from separate plants, settle on any nearby cell and consist of a mini spade-shaped cell with two spermatozoids inside. There are only a few on any one female plant. The spores are not quite as flashy, golden brown and the surface pattern a network of irregular shallow depressions. Both these species are recorded for China, and while *B. praereticulata* is found elsewhere, *B. wuhanensis* has not been recorded outside China before.



Line drawing of the freshwater alga *Bulbochaete wuhanensis* (reproduced from *Monographia Oedogoniales Sinicae*: Science Press, Beijing).

NOTES ON ANTS COLLECTED BY DR JOHN OFFER ON THE MITCHELL PLATEAU

by Dr Brian Heterick, Research Fellow, Environmental Biology, Curtin University of Technology, Bentley, Western Australia

Virtually all of these ants are very common inhabitants of the tropical north. Several of the above species in fact, such as the *Crematogaster* and the two *Monomorium*, are also abundant in Australia's Temperate zone.

The range of the tropical species is typically broad, encompassing much of the Torresian zone, i.e. you would also expect to see these ants in the Northern Territory and, in some cases, north-west Queensland (in savannah country) as well. *Rhytidoponera cerastes* is common in the Kimberley.

The *Meranoplus diversus* group are granivores, and one or more Western Australian spcies are important dispersal agents of spinifex (*Triodia*) seeds in the Pilbara.

The green tree ant (*Oecophylla smaragdina* (Fabricius)) is another interesting taxon because of its habits. In Western Australia this ant is only found in the north Kimberley.

Sample

#:

***Crematogaster laeviceps chasei* Forel**

1 Small ant foraging on gum trees and tents. Camp on Camp Creek, M.P. 14° 48' 31.4" S, 125° 50' 26.0" E.

12 Following a trail in Crusher Vine Thicket on *Garuga floribunda*. 140 52' 12.4" S, 14° 48' 31.4" S, 125° 50' 23.4" E. 18 June 2002.

13 On fig tree (*Ficus* sp.) in Crusher vine thicket.

***Camponotus novaehollandiae gp. sp.* JDM 144**

2 Colony under stones 10 m from creek; aggressive. Campsite as above.

26 Under large stone in earth, under fan palm (*Livistona eastonii*), 14°59'50.3"S, 125° 49' 45.0"E.

***Polyrhachis (Chariomyrma) gab* Forel**

3 On tree, several but single. Quick moving; hid when hunted. Campsite as above.

10 Dust on abdomen. From flat black basalt rock of plateau woodland. 14°49'27"S, 125° 49' 33.0"E.

17 Crossing a log in eucalypt woodland between Mertens and Little Mertens Falls. Country burnt with early regrowth and some remnant grass. 14°49'32.8"S, 125° 41' 44.5"E. 19 June 2002.

27 Under stone in laterite country. 14°59'50.3"S, 125° 49' 45.0"E.

***Opisthopsis haddoni rufoniger* Forel**

4 Scavenging on lunch table. Very fast moving, darting. Campsite.

Rhytidoponera taurus (Forel)

5 In Elliott trap on plateau woodland. Big nest. 18 June 2002. 14°49'27"S, 125° 49' 33"E, on sandstone.

8 From nest like a bull ant 60 cm diameter, several adjacent openings; in open area of plateau woodland. 14°49'27"S, 125° 49' 33"E

***Iridomyrmex sanguineus* Forel**

6 In Elliott trap, savannah woodland. 18 June 2002. 14°49'27"S, 125° 49' 33"E

15 Large numbers of these entering several holes on an old termite mound in woodland on track to Mitchell Falls. 19 June 2002. 14°49'32.8"S, 125° 43' 28.1"E

21 On ground in cycad woodland; were following a trail; a few on a eucalypt. Nest in old termite mound. 22 June 2002. 14° 58'23.1"S, 125° 51' 44.2"E.

24 Probably same as 21, but nest in flat ground single entrance but connected to another hole around 3 m away in old termite mound, taking grass down hold. 22 June 2002. 14° 58'16.1"S, 125° 51' 43.3"E.

***Monomorium sordidum* Forel**

7 In Elliott trap, savannah woodland. 18 June 2002. 14°49'27"S, 125° 49' 33"E

***Iridomyrmex sp.* JDM 320**

9 From rocky eucalypt woodland with spinifex beneath. 18 June 2002.

***Oecophylla smaragdina* (Fabricius)**

11 Chunky ant on eucalypt; several, slow moving. In rocky ground on plateau woodland. 14° 49'27"S, 125° 49' 33"E.

14 On same fig tree as 13. Fast moving, foraging in lower part of tree and roots.

18 Collected in Lone Dingo vine thicket. 20 June 2002. 14° 35'13.4"S, 125° 45' 42.6"E.

***Iridomyrmex sp.* JDM 137**

16 On bare rock at Mitchell Falls, fast moving, about 2 per m². 19 June 2002. 14° 49'28"S, 125° 41' 38.3"E.

***Rhytidoponera cerastes* Crawley**

19 On path 100 m from camp at Camp creek. 14° 48' 31.4" S, 125° 50' 26.0" E.

***Opisthopsis haddoni* Emery**

20 Ant with rapid, darting movement. On eucalypt in *Cycas lane-poolei* grove. 14° 58' 23.1" S, 125° 51' 44.2" E.

***Monomorium fieldi* Forel**

22 In cycad woodland; more organised in trails; some carrying material in cycad grove. 14° 58' 23.1" S, 125° 51' 44.2" E.

Meranoplus diversus* gp. sp. *JDM 864

23 Cycad area. Nest a vertical hole surrounded by plant material (probably husks of grass seeds). Ants observed emerging backward from hole pulling material up and depositing it about 3 cm from opening. Also observed about 15 cm from next gathering material. 14° 58' 23.1" S, 125° 51' 44.2" E.

***Myrmecia desertorum* Wheeler**

25 Raised nest, one large hole; aggressive. On edge of track to Mitchell River Station, abandoned. 14° 59' 50.3" S, 125° 49' 45.0" E.

BIRD OBSERVATIONS AND NATURAL HISTORY NOTES

By Kevin Coate, 11 Peak View, Canning Vale, Western Australia

Before leaving Broome there was an opportunity for some of our group to visit Broome Bird Observatory where volunteers on the expedition, *Life on Lands Edge—Birds of Roebuck Bay*, were to be found busily sieving mud taken from core samples in the bay. The purpose of this *LANDSCOPE* Expedition activity was to determine the variety of invertebrates that provide food for thousands of migratory waders from the northern hemisphere. It looked a lot of fun.

In contrast to the shores of Roebuck Bay, we were to encounter a far different landscape on Mitchell Plateau, where the area was experiencing one of the driest years in memory. As we flew over Airfield Swamp onto the landing strip, I looked at the dryness of the plateau and considered the prospects of good bird observations to be somewhat gloomy. Surprisingly, our group of volunteers managed to locate 102 species (51 passerine and 51 non-passerine), which compared favourably with the 1993 Mitchell Plateau expedition in a better season (when 114 species were recorded over a larger area that included Crystal Head). There was however a variation in the species between the two expeditions. Comparisons of bird species in rain forest patches between the 2002 and the 1993 surveys indicated that apart from Varied Triller, and Yellow Oriole, the same species were present.

In comparing the condition of the pocket of rain forest near Crusher Pool to the earlier survey in 1993, no deterioration was apparent. It was noticed though, there was a heavy build up of grass within the fenced area to the edge of the rain forest, which would make for a fierce fire under adverse conditions.

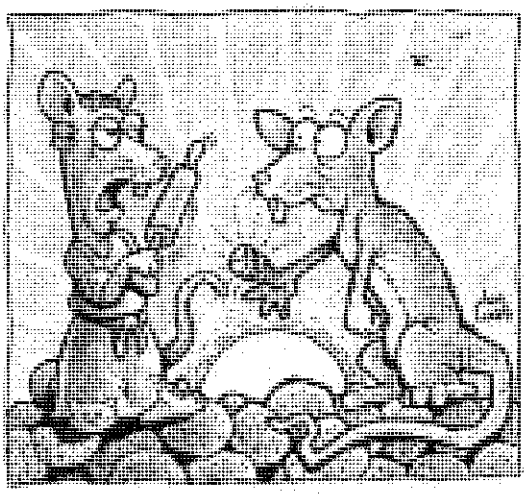
Pied Imperial Pigeon (a non-migratory bird in Western Australia) depend to a large degree on fruit growing in some of these remnant patches of rain forest. They were recorded at the Crusher Pool and Lone Dingo sites, feeding on *Mimusops elengi* and *Aidia racemosa*. Emerald Dove were closely observed at Lone Dingo, where they were feeding on the ground.

Other birds recorded at Lone Dingo, normally dependant on rain forest, were Cicada bird, (rarely seen in the Kimberley) Spangled Drongo, Little Shrike-thrush and Rainbow Pitta. While looking for Rainbow Pitta, we found large, colourful wood-rotting fungi (*Ganoderma lucidum*) growing in what appeared to be an association with *Albizia lebbeck* trees.

Lone Dingo was memorable, not only for the savagery of the recurved spines on the *Capparis* vines that tore into our flesh as we struggled through them, but also for an enormous Orange–footed Scrubfowl mound. This mound measuring approximately 15 m across and more than 2 m in height, was discovered on the laterite cap above the gully that runs down into the creek. The area surrounding the mound had been cleared of top soil to bare rock. It is probable that more than one pair of Orange-footed Scrubfowl maintain the mound during the breeding season. Interestingly, at the time of finding, this mound was the largest recorded in Western Australia. However another almost double the size of this one, has since been found on the Kimberley Coast by a team from the Western Australian Museum.

Everyone was impressed with the number of mammals at Lone Dingo and at some time assisted in their catch and release. I thought that some of our group may well relate to the cartoon depicted below - the late arrival home of one of the inhabitants, after dining out on the best of food along the trapline at the top end of Lone Dingo.

Early morning at the home of *Rattus tunneyi* after the trappers have finished collecting their data from Lone Dingo vine thicket.



"You better have a darn good excuse Mister!"
(illustration by Ian Coate)

Black Grasswren, which are usually easy to locate in jumbled sandstone near Mertens Creek camp, could not be found there this year, but popped up unexpectedly at an art site on Camp Creek about eight kilometres from Crusher Pool. Here, we also collected live snails from a cave and forwarded them to the Western Australian Museum where they were identified by Shirley Slack-Smith as *Amplirhagada mitchelliania* in the family Camaenidae. Other birds such as Black-eared Cuckoo and Partridge Pigeon (the yellow faced form) were found at Mertens Creek. On the walk from Mertens Camp to Mitchell Falls a White-lined Honeyeater was observed gathering material for a nest in vegetation backing onto a sandstone outcrop. An added bonus at this place was the sighting of a Sandstone Shrike-thrush. Liz Terry came upon three Gouldian Finch near the helicopter landing pad as she was leaving to return to Kimberley Coastal Camp on the last day.

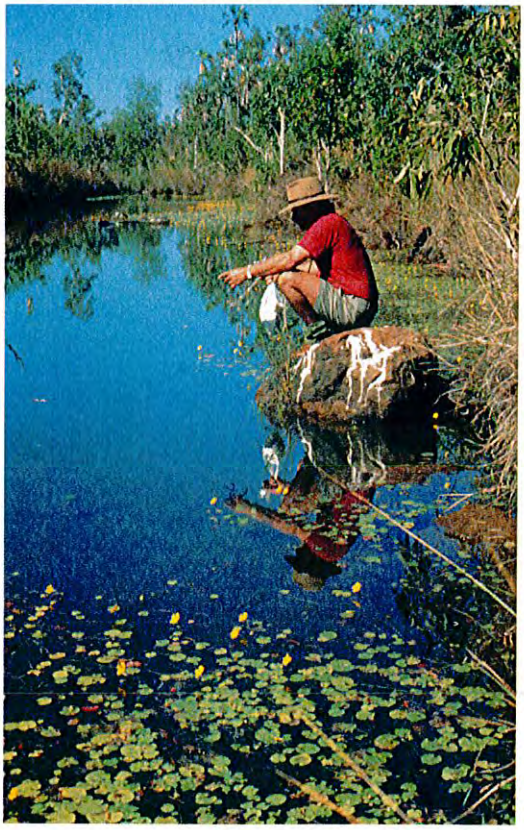
While searching the jumbled sandstone outcrops above Mertens Creek, we came upon several interesting Aboriginal art sites. Liz Terry, who has a passion for these, was able to give a good interpretation of some of the art depicted. This included a mixture of the elegant Bradshaw type art and the later Wandjina form of art. A very well presented fresh water turtle with other animal paintings was also depicted under an overhang.

Spotlighting for night birds along Mertens Creek was unproductive, possibly due to the extra light from the full moon. However, we saw plenty of little red flying fox (*Pteropus scapulatus*) feeding on flowering *Eucalyptus miniata*, as well as a common wallaroo (*Macropus robustus*) with a small joey. At Mertens Creek there was also the opportunity to photograph a very obliging water monitor (*Varanus mertensi*). The only White-browed Robin to be found was located on Mertens Creek at the same place it was recorded on the 1993 survey.

Blue-faced Honeyeater were observed on several occasions, feeding on flowering Livistona palms (*Livistona eastonii*), endemic to the Kimberley from Doongan Station to the Mitchell Plateau. When returning from visiting stands of *Cycas lane- poolei* on the old Mitchell River Station track, we heard Blue-faced Honeyeater chicks calling from a grove of Livistona palms, and on investigation found a nest about 5 m above the ground encompassed in a palm leaf. The nest was well placed and supported by being attached to the outer fronds of the leaf. Nearby, we noticed the parent birds, bills filled with insects. Whilst observing the honeyeaters' nest we became aware of a commotion about 150 m away. A flock of about six Yellow-throated Miners and a couple of Pied Butcher Bird were being very vocal and seemed as if they were attacking something on the ground. Speculating they were attacking a snake, Gayne Doyle, who hadn't had much luck finding reptiles on the trip, quickly grabbed his snake-catching gear and we all hurried toward the activity. To our surprise we found a large female Brown Goshawk on the ground, trying to subdue a Yellow-throated Miner it had caught. On our approach it flew off with the hapless miner in its talons, hotly pursued by the rest of the clan. Barbara Harvey then spotted a Crested Hawk, probably also attracted to the spot by the commotion. Crested Hawk are relatively uncommon

Expeditioners arriving at the Mitchell Plateau airstrip.
Photo: Kevin Kenneally.

Members of the expedition viewing the savanna woodland at the northern end of the plateau.
Photo: Kevin Kenneally.



Joe Raudino collecting freshwater algae from Camp Creek.
Photo: Kevin Kenneally.

Plants of *Cycas lane-poolei* attacked by insects.
Photo: Kevin Kenneally.

Sap-sucking Flatid Leafhoppers (*Colgaroides* sp.) on fronds *Cycas lane-poolei*.
Photo: Kevin Coate

Alasdair Morrison by a monumental tree of *Cycas rumphii*, Efate, Vanuatu. This tree was healthy in 1981 but when Dr Cribb revisited the tree in 1990 it had been stripped of its fronds by insects and looked pretty ill.
Photo: Phillip Cribb

on the Plateau and so we were pleased to observe another hawk flying above the swampy area not far from our base camp, the day before we left.

While walking into Surveyors Pool from the car park, Black–shouldered Kite were observed about halfway along the 4 km track. At this location there was an extensive area of kangaroo grass, and judging by the large amount of dingo faeces almost all composed of hair, indications were that it must be very rich in small mammals. Black–shouldered Kite are attracted to areas with an abundance of small mice and rats.

Returning from Surveyors Pool a bandicoot was flushed from under a tuft of spinifex at the base of a termite mound. After a short chase the bandicoot gave a tremendous leap, for such a small animal, from a sandstone boulder into a heap of jumbled sandstone and disappeared.

Airfield Swamp, where there was still a few small pools of water, was rich in bird life - Brolga, White-faced Heron, White-necked Heron, Sacred Kingfisher, White–winged Triller, Tawny Frogmouth, to name but a few.

Although it was much drier than usual over most of the area, I would have perhaps expected to see more varieties of Finch and common birds such as Jacky Winter. Taking into account the richness of the small mammal population at Lone Dingo and the surrounding area of laterite, it was surprising no owls were recorded there. It would have been a good habitat to locate a Rufous Owl. Nevertheless, considering the overall dryness of the area, we did very well. The camaraderie and good humour experienced amongst the group, like the fresh baked bread from Nancy and Rosemary's camp ovens, was excellent.

Orange-footed Scrubfowl Mound at Lone Dingo
(illustration by Ian Coate)

ANNOTATED MITCHELL PLATEAU SPECIES LIST

CASUARIIDAE

Emu
Dromaius novaehollandiae
Scarce. A scat found near Camp Creek

MEGAPODIIDAE

Orange-footed Scrubfowl
Megapodius reinwardt
Reasonably common in remnant rainforest. Two flushed from rainforest patch near Crusher Pool. A huge mound measuring about 15 m base x 2.5 m high x 3 m across top, at Lone Dingo. It is still in use and must be many years old.

PHASIANIDAE

Brown Quail
Coturnix ypsilophora
Moderately common to common. Flocks (up to 8) dust bathing on the road near Mertens Camp.

PODICIPEDIDAE

Australasian Grebe
Tachybaptus novaehollandiae
Uncommon. One on a number of occasions on Camp Creek.

ANHINGIDAE

Darter
Anhinga melanogaster
Uncommon. One on a number of occasions flying along Camp Creek. Heard at Mitchell River.

PHALACROCORACIDAE

Little Pied Cormorant
Phalacrocorax melanoleucos
Moderately common. On Camp Creek.

Little Black Cormorant
Phalacrocorax sulcirostris
Scarce. One flying along Camp Creek.

ARDEIDAE

White-necked Heron
Ardea pacifica
Moderately common. At Surveyors Pool and in the few small shallow pools in Airfield Swamp, where there were many small frogs.

White-faced Heron
Ardea novaehollandiae
Moderately common. Several at Airfield Swamp and one at Surveyors Pool eating fresh water snails from a rock hole.

Rufous Night Heron
Nycticorax caledonicus
Reasonably common. Several flushed from riverine vegetation along Camp Creek near Crusher Pool.

Black Bittern
Ixobrychus flavicollis
Uncommon. One on several occasions at Camp Creek near base camp.

THRESKIORNITHIDAE

Australian White Ibis
Threskiornis aethiopicus moluccus
Moderately common. At Airfield Swamp and Camp Creek.

Straw-necked Ibis
Threskiornis spinicollis
Moderately common. At Airfield Swamp and one at Camp Creek.

ACCIPITRIDAE

Black-shouldered Kite
Elanus caeruleus
Uncommon. Two between the parking area and Surveyors Pool where there was a large number of dingo faeces (composed of hair) indicating the presence of small mammals.

Pacific Baza
Aviceda subcristata
Uncommon. One flying above swamp area near base camp on Camp Creek and one near the turn off to Mitchell River.

Black-breasted Buzzard
Hamirostra melanosternon
Uncommon. One in plateau woodland and one near Surveyors Pool.

Black Kite
Milvus migrans
Common. Around base camp and rubbish tips.

Whistling Kite
Haliastur sphenurus
Moderately common. Around base camp, rubbish tips and Airfield Swamp.

Brown Goshawk
Accipiter fasciatus
Uncommon. One several times at Lone Dingo and one, which had caught a Yellow-throated Miner, at turn off to old Mitchell River homestead.

Collared Sparrowhawk
Accipiter cirrocephalus cirrhocephalus
Uncommon. One at Airfield Swamp and one at Surveyors Pool.

Wedge-tailed Eagle
Aquila audax
Moderately common, in ones or twos.

Spotted Harrier
Circus assimilis
Scarce. One near Camp Creek.

FALCONIDAE

Brown Falcon
Falco berigora
Reasonably common over the whole area (up to 15 at rubbish tip).

Peregrine Falcon
Falco peregrinus
Scarce. One attacking Rainbow Lorikeets near Lone Dingo.

Black Falcon
Falco subniger
Scarce. One at base camp on Camp Creek.

GRUIDAE

Brolga
Grus rubicunda
Moderately common. Up to 30 at Airfield Swamp. Up to 10 on Camp Creek.

BURHINIDAE

Bush Stone-curlew
Burhinus grallarius
Moderately common around base camp. Heard most nights.

CHARADRIIDAE

Black-fronted Dotterel
Charadrius melanops
Scarce. One at Surveyors Pool.

COLUMBIDAE

Emerald Dove
Chalcophaps indica
Moderately common at Lone Dingo.

Common Bronzewing
Phaps chalcoptera
Scarce. One near Airfield Swamp.

Partridge Pigeon
Geophaps smithii
Moderately common close to Mertens Creek camp.

White-quilled Rock Pigeon
Petrophassa albipennis
Moderately common in sandstone near Mitchell Falls and Surveyors Pool.

Diamond Dove
Geopelia cuneata
Common at Airfield Swamp.

Peaceful Dove
Geopelia striata
Common throughout the area in ones, twos and small flocks (up to 10).

Bar-shouldered Dove
Geopelia humeralis
Moderately common in open woodland.

Pied Imperial Pigeon
Ducula bicolor
Uncommon. One in rainforest at Crusher Pool, feeding on Aidia racemosa fruit, and two at Lone Dingo.

PSITTACIDAE

Red-tailed Black Cockatoo
Calyptorhynchus banksii
Common over most of the area.

Sulphur-crested Cockatoo
Cacatua galerita
Moderately common in pairs along creeks.

Rainbow Lorikeet
Trichoglossus haematodus
Scarce to common. Attracted to areas of flowering *Eucalyptus miniata.*

Red-winged Parrot
Aprosmictus erythropterus
Moderately common over the area.

Northern Rosella
Platycercus venustus
Moderately common in pairs and small flocks (up to 6) mainly in woodland especially with *Eucalyptus miniata.*

CUCULIDAE

Black-eared Cuckoo
Chrysococcyx osculans
Uncommon. One at Mertens Creek and one at Airfield Swamp.

CENTROPODIDAE

Pheasant Coucal
Centropus phasianinus
Uncommon. Two at Lone Dingo.

STRIGIDAE

Boobook Owl
Ninox novaeseelandiae
Uncommon. One flushed from sandstone near Mitchell Falls and another on the road near Mertens Campsite.

PODARGIDAE

Tawny Frogmouth
Podargus strigoides
Uncommon. One pair at Airfield Swamp. One on old Mitchell River Station road.

CAPRIMULGIDAE

Spotted Nightjar
Eurostopodus argus
Uncommon. Seen and heard around base camp on Camp Creek.

AEGOTHELIDAE

Australian Owlet-nightjar
Aegotheles cristatus
Uncommon. Heard during the night around base camp on Camp Creek.

HALCYONIDAE

Blue-winged Kookaburra
Dacelo leachii
Moderately common throughout the area.

Red-backed Kingfisher
Todiramphus pyrrhopygias
Uncommon. One at Lone Dingo.

Sacred Kingfisher
Todiramphus sanctus
Moderately common at Airfield Swamp and along Camp Creek.

MEROPIDAE

Rainbow Bee-eater
Merops ornatus
Common throughout the area.

MALURIDAE

Variegated Fairy-wren
Malurus lamberti
Moderately common in sandstone areas.

Red-backed Fairy-wren
Malurus melanocephalus
Moderately common in grassland throughout the area.

Black Grasswren
Amytornis housei
Uncommon. Found in sandstone at 14°53'38"S 125°45'29"E

PARDALOTIDAE

Striated Pardalote
Pardalotus striatus
Very common in woodland. Breeding. Nesting in roadside banks throughout the area and with dependant young in woodland areas.

ACANTHIZIDAE

Weebill
Smicrornis brevirostris
Common in eucalypt woodland.

White-throated Gerygone
Gerygone olivacea
Moderately common along Camp Creek near Crusher Pool.

MELIPHAGIDAE

Brown Honeyeater
Lichmera indistincta
Common to very common over the whole area. Attracted to flowering *Eucalyptus miniata* and *Xanthostemon paradoxus*.

White-lined Honeyeater
Meliphaga albilineata
Uncommon. Several along Mertens Creek. Breeding - one building nest and gathering cobwebs.

Yellow-tinted Honeyeater
Lichenostomus flavescens
Scarce. Only seen around base camp on Camp Creek.

White-gaped Honeyeater
Lichenostomus unicolor
Common along waterways.

White-throated Honeyeater
Melithreptus albogularis
Common over most of the area.

Blue-faced Honeyeater
Melithreptus cyanotis
Scarce to moderately common. Attracted to flowering eucalyptus and *Livistona eastonii*. Breeding - nest with young attached to palm leaf of *Livistona eastonii*.

Little Friarbird
Philemon citreogularis
Very Common in all woodland habitats with flowering *Eucalyptus miniata, Livistona eastonii* and in sandstone areas with flowering *Xanthostemon paradoxus*

Silver-crowned Friarbird
Philemon argenticeps
Very common in all woodland habitats with flowering *Eucalyptus miniata* and *Livistona eastonii.*

Banded Honeyeater
Cissomela pectoralis
Common nomad. Attracted to patches of flowering *Eucalyptus miniata.*

Bar-breasted Honeyeater
Ramsayornis fasciatus
Moderately common at Surveyors Pool and Mitchell Falls. Attracted to flowering *Xanthostemon paradoxus.*

Yellow-throated Miner
Manorina flavigula
Moderately common in pairs and small flocks in more open areas of woodland. One seen taken by Brown Goshawk.

EOPSALTRIIDAE

White-browed Robin
Poecilodryas superciliosa
Scarce. One in riverine situation near Mertons Falls.

POMATOSTOMIDAE

Grey-crowned Babbler
Pomatostomus temporalis
Moderately common in all wooded habitats.

PACHYCEPHALIDAE

Rufous Whistler
Pachycephala rufiventris
Moderately common in ones and twos throughout the area.

Little Shrike-thrush
Colluricincla megarhyncha
Uncommon. One in rainforest at Lone Dingo.

Sandstone Shrike-thrush
Colluricincla woodwardi
Uncommon. One in sandstone on Camp Creek and one in sandstone on Mertens Creek.

Grey Shrike-thrush
Colluricincla harmonica
Uncommon. One in rainforest at Crusher Pool. Breeding - one pair feeding young in rainforest at Lone Dingo.

DICRURIDAE

Leaden Flycatcher
Myiagra rubecula
Moderately common. Recorded Mitchell Falls, Lone Dingo, Surveyors Pool and old Mitchell River Station road.

Restless Flycatcher
Myiagra inquieta
Moderately common along creeks.

Willie Wagtail
Rhipidura leucophrys
Moderately common throughout the area.

Northern Fantail
Rhipidura rufiventris
Moderately common.

Magpie Lark
Grallina cyanoleuca
Moderately common to common throughout the area.

Spangled Drongo
Dicrurus bracteatus
Uncommon. Two in rainforest at Lone Dingo.

CAMPEPHAGIDAE

Black-faced Cuckoo-shrike
Coracina novaehollandiae
Common in all wooded habitats including rainforest.

White-breasted Cuckoo-shrike
Coracina papuensis
Moderately common in wooded areas and along creeks.

Cicadabird
Coracina tenuirostris
Scarce. One at Lone Dingo.

White-winged Triller
Lalage tricolor
Moderately common.

ORIOLIDAE

Olive-backed Oriole
Oriolus sagittatus
Moderately common along Camp Creek and in rainforest at Crusher Pool. Common at Airfield Swamp.

Figbird
Sphecotheres viridis
Scarce. Two in rainforest at Crusher Pool.

ARTAMIDAE

Black-faced Woodswallow
Artamus cinereus
Moderately common throughout the area.

Little Woodswallow
Artamus minor
Moderately common at Mitchell Falls, Airfield Swamp and Mitchell Station road.

CRACTICIDAE

Grey Butcherbird
Cracticus torquatus
Uncommon. Recorded at Crusher Pool and Surveyors Pool.

Pied Butcherbird
Cracticus nigrogularis
Common throughout the area.

CORVIDAE

Torresian Crow
Corvus orru
Common in ones, twos and around rubbish tips.

PTILONORHYNCHIDAE

Great Bowerbird
Ptilonorhynchus nuchalis
Moderately common. A bower currently in use in the rain forest patch near Crusher Pool contained many shells of the land snail *Xanthomelon prudhoensis*.

PASSERIDAE

Double-barred Finch
Taeniopygia bichenovii
Uncommon. Recorded at Camp Creek and Mitchell Falls.

Long-tailed Finch
Poephila acuticauda
Scarce. Small flock near base camp on Camp Creek.

Crimson Finch
Neochmia phaeton
Scarce. Two near Crusher Pool.

Gouldian Finch
Erythrura gouldiae
Scarce. Three between the helicopter pad and the airstrip.

Chestnut-breasted mannikin
Lonchura castaneothorax
Uncommon. Breeding - a pair with 5 young newly out of nest near base camp on Camp Creek.

DICAEIDAE

Mistletoebird
Dicaeum hirundinaceum
Moderately common in eucalypt woodlands and in rainforest near Crusher Pool and at Lone Dingo.

HIRUNDINIDAE

Fairy Martin
Hirundo ariel
Moderately common.

SYLVIIDAE

Tawny Grassbird
Megalurus timoriensis
Moderately common in swamp area near base camp on Camp Creek.

Rufous Songlark
Cincloramphus mathewsi
Uncommon. Two at Airfield Swamp and one near cycads on Mitchell Station road.

Golden-headed Cisticola
Cisticola exilis
Moderately common near base camp on Camp Creek and grasslands around rainforest patch near Crusher Pool.

AMPHIBIANS, REPTILES AND MAMMALS

By Dr Ric How, Western Australian Museum; Associate Professor Linc Schmitt, Department of Anatomy and Human Biology, The University of Western Australia and Mark Cowan, Regional Ecologist, Goldfields Region,Department of Conservation and Land Management

The Mitchell Plateau area consists of the most diverse landforms and habitats in northern Australia and it also has the highest diversity of vertebrate fauna recorded for any comparable area in Western Australia.

The biological surveys undertaken around the Mitchell Plateau during the 1970s highlighted this diversity of species but the surveys occupied a limited timeframe and were constrained by the difficult and remote terrain. Intensive ecological studies commenced in the early 1980s and showed, clearly, the advantages of an intensive seasonal and habitat focussed approach to sampling by adding several species to the previously recorded vertebrate assemblages, describing the pronounced seasonal activity patterns of many species and documenting distinct habitat preferences amongst mammal species.

Several vertebrate groups in tropical Australia have recently undergone marked population declines. The reasons for these declines are variously postulated as arising from environmental modification caused by climate change and lowered groundwater levels or from a combination of habitat alteration resulting from grazing, changed fire regimes (particularly the shrub layer of tropical savannas) and predation by feral cats. There is anecdotal evidence that the demise of mammal populations may also be occurring at the Mitchell Plateau.

The main focus for the vertebrate trapping team during this *LANDSCOPE* Expedition was to re-examine mammal study sites that were sampled intensively during 1981-82 and compare the species occurrence and trapping rates at the same sites in the same season.

Frogs

In the Kimberley, most breeding in frogs occurs during the wetter months of the year between November and February. As a result of this, we did not expect to be treated to choruses of calling frogs at night and nor would one expect to find the full array of diverse amphibian fauna which is known to be present on the Plateau. However, although the previous wet season had a lower than normal rainfall, a variety of frog species were found in almost all areas where water was present during our trip.

Each night at our campsite on the edge of Camp Creek there was a small chorus of the Bilingual Froglet (*Crinia bilingua*) calling from amongst the tall grasses and reeds. This is the only representative of this genus on the Plateau with all the other members confined to the cooler southeastern and southwestern parts of the continent. Tree Frogs (*Litoria* spp.) are extremely well represented in the Kimberley in general and a stroll along the edge of Camp Creek after dark would be punctuated with the splashing sound of individuals jumping for the cover of the water. Not many fully-grown adults were present but the number of sub adults and juveniles suggested that the drier than normal conditions had probably not adversely affected recruitment during the previous wet season. The most abundant of these frogs were the Wotjulum Frog (*Litoria wotjulumensis*) and the Rocket Frog (*Litoria nasuta*) both of which are long limbed and highly mobile, being able to jump distances upwards of a metre. Careful examination of riparian vegetation revealed another species of tree frog, the Northern Dwarf Tree Frog (*Litoria bicolor*), a small delicate climbing species. This species was also in very high numbers at Airport swamp as marshy areas are the preferred habitat. Other species found at Airport Swamp included the Pale Frog (*Litoria pallida*), the Bilingual Froglet (*Crinia bilingua*) and Tornier's Frog (*Litoria tornieri*).

The daytime walk to Mitchell Falls followed the water course and a close look at the base of many of the partially submerged rocks would be rewarded by the sight of numerous little frogs darting to the back of the moist crevices. This was the Rockhole Frog (*Litoria meiriana*), a very small species that is highly agile and capable of hopping across the surface of the water without breaking the surface tension. It's speed and agility makes it very difficult to catch! Roth's Tree Frog (*Litoria rothi*) was also abundant, around Mertens Falls in particular, where numerous individuals were sighted high off the ground sheltering in narrow rock crevices.

A Peters' Frog (*Litoria inermis*) was found by one of the expeditioners although its location remains uncertain. This is a widespread species that occupies marsh areas as well as permanent watercourses.

In the end we found a total of nine frog species of a possible 23 or so, which wasn't bad going for casual observation and considering the time of the year! Species observed during the *LANDSCOPE* Expedition were: Bilingual Froglet (*Crinia bilingua*), Wotjulum Frog (*Litoria wotjulumensis*), Rocket Frog (*Litoria nasuta*), Northern Dwarf Tree Frog (*Litoria bicolor*), Pale Frog (*Litoria pallida*), Tornier's Frog (*Litoria tornieri*), Rockhole Frog (*Litoria meiriana*), Roth's Tree Frog (*Litoria rothi*), Peters' Frog (*Litoria inermis*).

Reptiles

The observed reptile fauna of the Mitchell Plateau during the June 2002 *LANDSCOPE* Expedition was, to say the least, extremely disappointing. Several reasons can be put forward to explain this including the limited focus on reptiles as a target group during the expedition, the low rainfall during the preceding wet season in the area and the low nocturnal temperatures that occurred during the expedition. The limited number of observations made and voucher specimens obtained are probably, in part, the outcome of all of these factors.

We ran a small pitline (five buckets spaced at approximately five metre intervals and joined by a 30 cm high flywire fence) in the grasslands adjacent to camp creek for some six nights without a single reptile capture! Gayne Doyle, an internationally recognised herpetologist and member of the expedition, spent many fruitless hours trying to observe and capture snakes, a sure sign that the populations were either very low or inactive at this time of the year. In all, the expedition members observed two snakes and, although not positively identified, one was probably an Olive Whipsnake and the other possibly a Taipan.

Of the skinks, Carlia were active in many habitats but nowhere near as abundant as I recall from earlier visits to the Plateau. Where sun penetrated through to the floor of the vine thicket at Lone Dingo there was almost invariably one of two species of Carlia present (*C. gracilis* or *C. johnstonei*) actively foraging in the leaf litter. Along the edge of Camp Creek and through the hummock grass and woodland habitats Carlia munda was the most abundant species. Several Ctenotus species were caught in the Elliott traps set and baited for mammals. In particular, C. inornatus was caught almost everyday on the sandstone habitat. We intensively trapped around what appeared to be active pebble mounds and burrows in grassland habitat and caught two C. robustus, again in Elliott traps, which may suggest that this species is using the burrow systems of other species for refuge. Geckos were not abundant although while head torching in the evening, especially at Little Merten's Falls, several species were observed. The most common of these was Gehyra xenopus, a large species that inhabits rocky areas, particularly large boulders and cliffs. Apart from the small skinks, Dragons appeared to be the most abundant of all the lizard species and Diporiphoras were noted and active at many sites visited.

Gould's monitor, *Varanus gouldii*, and one of the water-dependent monitors, *Varanus mertensi*, were observed on the walk into Mitchell Falls, both being widespread in the Plateau area. In fact some eight species of *Varanus* lizard are recorded from the Plateau making it the richest known site in Australia for these engaging lizards.

Species vouchered from the *LANDSCOPE* Expedition were the geckos [*Gehyra xenopus, Heteronotia binoei, Nephrurus sheai*], the skinks [*Carlia munda, Carlia gracilis, Cryptoblepharus plagiocephalus, Ctenotus inornatus, Ctenotus robustus*] and the dragons [*Diporiphora albilabris and Diporiphora bennettii*]

Mammals

Mammals were the main focus of the 'trappers' during the Mitchell Plateau LANDSCOPE Expedition. Of particular interest was our intent to repeat sampling of mammal grids on the Plateau that we had monitored extensively in 1981-82. This would allow a valuable comparison with other Australian tropical studies that have indicated a decline in some mammal species over the past two decades. This trip was also designed as a key part of our studies of Kimberley island fauna. We were also fortunate to be able to sample the mammal fauna of the Silent Grove/Gardner's Gap area during our travels to and from the Plateau. All these data have been invaluable in formulating our opinions about the temporal and spatial fluctuations of population structure in mammal assemblages in tropical Western Australia.

The success of this part of the expedition is probably best exemplified by the fact that over the 12 days we captured 15 species of small mammals, representing 159 individuals with 61 recaptures. Capture rates varied markedly in the nine sites sampled, being highest at Silent Grove [23 individuals of six species over 139 trapnights] and lowest near the pebble mounds, where nothing was caught during 125 trapnights as well as on the sandstone where only two individuals were caught in 495 trapnights.

The bat fauna was only sampled using mistnets with just two individuals of the Pygmy Long-eared Bat, *Nyctophilus walkeri*, captured over the seven nights of netting.

Continuous Elliott trapping in the tall grassland along Camp Creek near the *LANDSCOPE* campsite revealed a diversified age structure in a population of Pale Field Rats, *Rattus tunneyi*, and two adult Red-cheeked Dunnarts, *Sminthopsis virginiae*.

Comparisons between early July 1982 and late June 2002

As part of a major mammal survey of the Mitchell Plateau area in 1981-82, the Western Australian Museum established eight trapping grids for small mammals. These were selected to represent the major landforms and habitats of the area and each one was monitored for between five and six days during each of five separate periods over the course of the study. In June 2002 we resampled four of these grids for four nights each to compare with our efforts of 20 years ago. These four grids were located on the sandstone [CS] 10 km southwest of the campsite; the Plateau [PW], three km west of the campsite; and two contiguous grids at Lone Dingo [DW/DV] around 30 km north-northwest of the campsite.

Several major changes were noted in the mammal populations between the two sampling periods (using early July 1982 as a comparative seasonal sample) and these are represented graphically in Figures 1 and 2. Capture rates were still low on PW, similar to the situation during the repeated seasonal samplings of 1981-82. None of the four species trapped in July 1982 were the same as the two caught in June 2002, which is concordant with our earlier study where species turnover was high between the five samplings on this grid. Although fire frequently rages through the woodlands of the Plateau, there was no evidence that fire had burnt the PW grid in the last three years judging from the buildup of dead palm fronds, litter and logs.

Perhaps the most marked change to small mammals appeared on the CS grid. In July 1982, no fewer that 53 individuals of five species were captured while data from the *LANDSCOPE* Expedition showed just two individuals of a single species were trapped. No detectable differences were observed in the composition or structure of the *Triodia* dominated habitat at CS when compared to the photos of July 1982, suggesting that something other than resource availability has altered dramatically in the intervening 20 years. A detailed examination of the grid site in June 2002 supported the findings of decreased vertebrate activity with no tracks of small mammals or reptiles on the sandy soils between boulders and no sign or smell of *Wyulda* scats in the deep recesses of fractured sandstone where they had been found previously.

The vine forest and eucalypt woodlands of the adjacent Lone Dingo grids [DV/DW] showed a marked increase in capture rates of some species. Although seven species were trapped in 2002 [compared to six in July 1982] on these sites, trapping success between the two surveys was markedly different. The Pale Field Rat, *Rattus tunneyi*, a species not captured in 1982, was in very high numbers in the woodland site and in the ecotone between woodland and vine thicket in June 2002, while the Mosaic-tailed Rat, *Melomys burtoni*, which inhabits the vine thickets, also was more frequently captured. Capture rates of *R. tunneyi* in the woodland grid [DW] were in excess of 30% each night, suggesting a major population event occurring in this species. Only three of the 80 captures of this species occurred in the vine forest [DV] and these were all recaptures of animals released previously in the

adjacent woodland. These three recaptures were along the access track through the thicket where grasses and invasive species were common, rather than in the vine thicket itself. The Common Rock-rat, *Zyzomys argurus*, was also caught in greater numbers than in July 1982 and was almost entirely confined to the interface between [DV/DW] habitats. The Northern Quoll, *Dasyurus hallucatus,* and Northern Brown Bandicoot, *Isoodon macrourus,* were caught in lower numbers than 1982 even though there was an abundance of 'digging activity' apparent that was attributable to the latter species.

These results have important implications for the genetic variation within these species and the continuing survival of populations. Substantial fluctuations in population size can severely reduce genetic variation within populations (and increase the differences between populations). In these circumstances, migration plays a key role in the maintenance of variation that is vital for species to adapt and survive. If populations are geographically isolated, as they may well be in this highly sub-structured habitat regime, they are far more susceptible to extinction due to a loss of genetic variability. We will be able to test this when the results of our island studies become available. If gene flow between mainland sub-populations is significant then we would expect the mainland groups to behave as if they are one large effective population, and consequently maintain greater genetic variation than the island populations that have been isolated since the Pleistocene rise in sea-level and probably have little or no opportunity to share migrants. If the mainland groups have low genetic variability, comparable to the islands, then there is a greater risk of extinction on the mainland. The apparent anomaly of better survival prospects for populations on islands compared to the mainland even though both have low genetic variation could be a consequence of island populations maintaining greater densities (and gross population sizes) due to reduced competition.

Figure 1. Comparison of capture rates for all mammal species monitored in July 1982 and June 2002 on the four study sites [Camp Creek Sandstone (CS), Plateau Woodland (PW), Lone Dingo Woodland (DW) and Lone Dingo Vineforest (DV)], as well as the LANDSCOPE Plateau Camp in 2002 and at Silent Grove (SG). The data for two contiguous grids, DW and DV, have been combined.

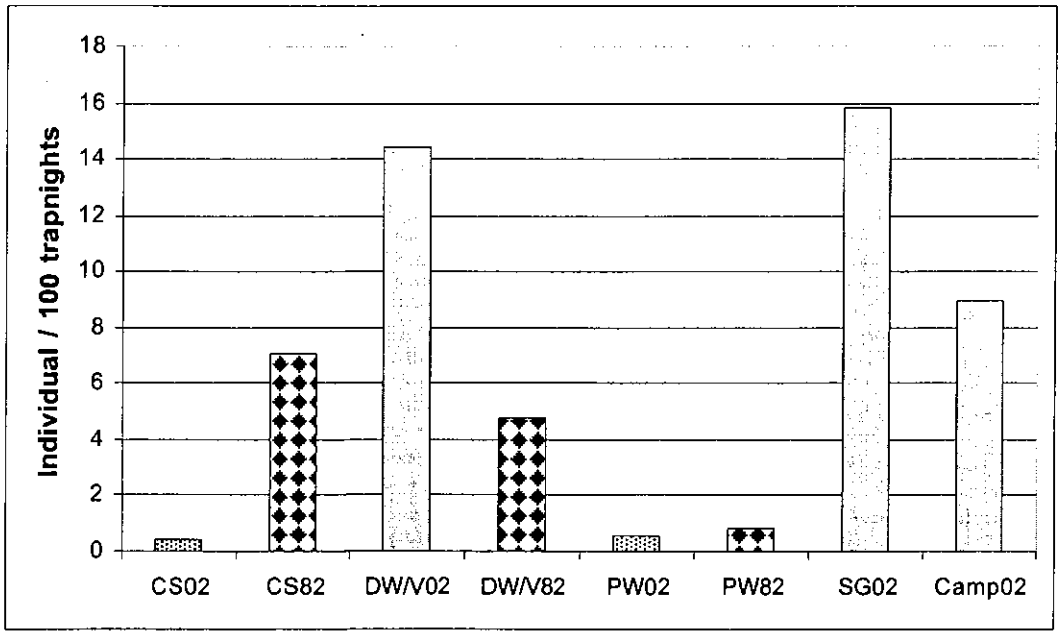
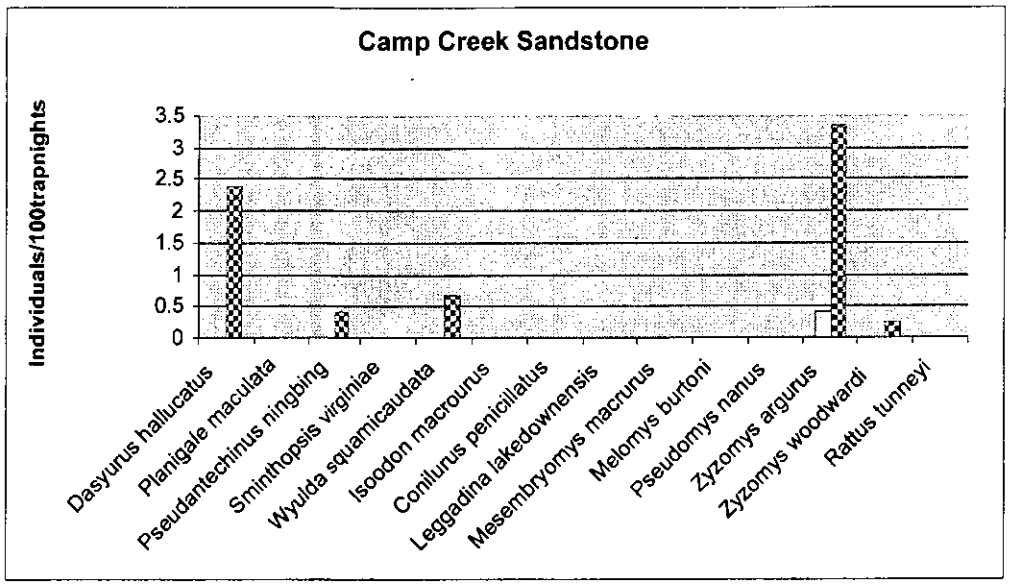
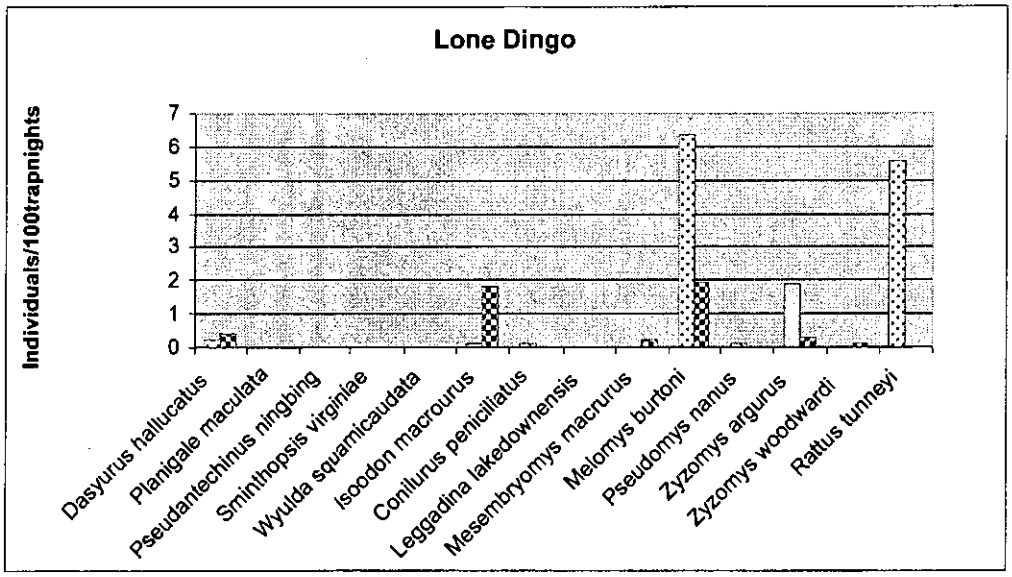
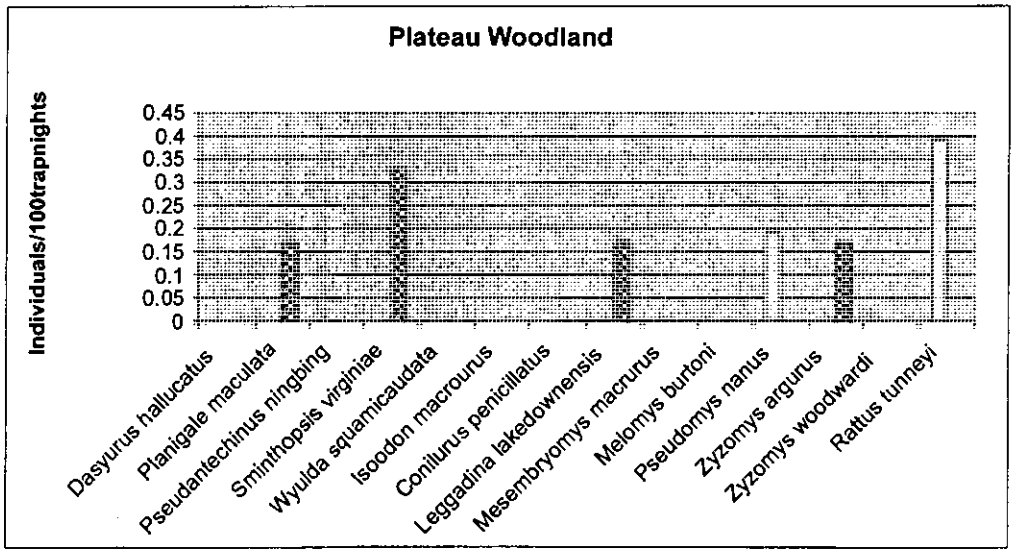


Figure 2. Comparison of capture rates [expressed as individuals/ 100 trapnights] for small mammal species on the four study sites monitored in July 1982 [checked] and June 2002 [spotted]. Note data for the Lone Dingo sites are combined.







VOLUNTEER PROFILES

Connie Bricknell hails from Maclean in New South Wales and this is her second *LANDSCOPE* trip. She visited the Mitchell Plateau privately in 1992 and is keen to return. Connie is a retired physical education teacher, an active and involved grandmother of nine, and has an unquenchable sense of adventure. She loved her trip to the Abrolhos Islands in December last year and looks forward to this experience.

Susan (Sue) Clarkson has been on several *LANDSCOPE* Expeditions, the most recent being to the Carnarvon Range in August 2001. Sue is a council member of the Kimberley Society and her interests include camping, photography, bird watching, SCUBA diving and natural history in general. Susan has an ongoing interest in the flora and fauna of this region.

Gane Doyle has always held a special interest in remote areas, and he is looking forward to helping further knowledge of the Kimberley area. All his life Gane has been keenly curious in natural history, with a particular emphasis on reptiles. He is a member of the Naturalists' Club and Gould League and is looking forward to experiencing an area that he has had many reports about over the years. Gane and his wife June operate the West Australian Reptile Park at Henley Brook.

Barbara (Barb) Harvey will join the expedition after travelling from her home in New South Wales; this will be her third expedition – her first trip was to Mt Elvire in 1994, and she thoroughly enjoyed her last trip, which was to the Gibson Desert in 2001. Barb is a keen photographer and naturalist (birds, frogs, herps, fungi, plants). She is a member of the Sydney Bird Club and Birds Australia, the Frog and Tadpole Study Group, the Australian Herpetologists Society and the Sydney Fungal Studies Group. She enjoys both the educational and social nature of the expeditions.

Garrick Latch is an agricultural scientist from Palmerston North in New Zealand. Garrick is a plant pathologist with particular interest in grasses and their endophytes and works for AgResearch (formerly DSIR). He has carried out plant disease surveys on a number of Pacific islands, made plant collecting trips in China and Southern Europe, and worked on biologic control of insects with fungi. Having seen the spectacular flora of the southern part of Western Australia in 2000, he is keen to see the more tropical flora and outstanding scenery of the Mitchell Plateau. Garrick is a member of the Manawatu Tramping and Skiing Club and is accompanied on this trip by Barbara, his wife.

Barbara Latch is an Australian living in New Zealand. She studied agricultural science at Sydney University, and plant pathology in Wisconsin. Barbara worked in the botany departments of the Victoria and Massey universities in New Zealand, and at the Soil Conservation Centre. She is a member of the Forest and Bird Society, the Manawatu Botanical Society, and the Manawatu Tramping Club, and enjoys camping and being out in the bush. Barbara has seen the flora of Kakadu, Thursday Island, and Cape York Peninsula, and is really looking forward to experiencing and recording the flora and fauna of the Mitchell Plateau with her husband Garrick.

Patricia (Trish) Novikoff lives in New South Wales and briefly visited the Mitchell Plateau in September of 1997. She always wanted to return to see more of its flora, fauna and scenery. Trish also wants to see whether the management of the area has improved, as when she was there last, there was a lot of rubbish around. Trish is thrilled to have reached early retirement and can now set her own agenda; her interests generally encompass the natural world, and include gardening, bush regenerating, bush walking, sailing and, as birds fascinate her, bird watching.

Catherine (Kaye) Oddie of Melbourne is a science graduate (botany and chemistry), who was a medical researcher for most of her working life. The Kimberley is one of Kaye's favourite places, and she has visited on two previous occasions. She is keen to 'put something back' into conservation in Australia. Kaye is involved with local residents' association issues, and is interested in bush walking, travel, and concerts. Her loyal companion is an ancient dog that has produced 16 pups over the years.

Deborah (Debbie) Perry booked this expedition in 2000 and endured great disappointment when it was cancelled due to an unseasonable heavy wet caused by a late cyclone. She lives in Queensland and chose this trip because of its remote location and diversity of activities. She looks forward to discovering new things with a team of experts in the area – not to mention the nightly 'floor show'! Debbie

has a keen interest in nature, especially birds, which she has been observing and recording for about 25 years. She enjoys outdoor activities and sports, with music, especially percussion, a part of her life. Debbie will be traveling with her sister, Janet Pyke.

Janet Pyke first traveled with *LANDSCOPE* in 1996 – this will be her second expedition, and a chance to spend time with her sister, Debbie Perry. Janet lives in Melbourne and enjoys being in new places – she is interested in the plants and wild life of the Mitchell Plateau, having previously visited the Kimberley. Janet is enthusiastic about participating in the valuable research work.

Joe Raudino lives in Denmark Western Australia with his wife Judy. Joe enjoyed the Montebellos Magic trip in 2000, and took part in the first *LANDSCOPE* Expedition to the Mitchell Plateau in 1993, accompanied by his son Tony. He also traveled to the Great Victoria Desert with *LANDSCOPE* Expeditions in 1995. Joe describes himself as fun loving, adventurous, and interested in birds, flora, and fauna, the outback and bush walking. He is a semi-retired builder and runs Karma Chalets, well-known and highly-regarded holiday accommodation in Denmark.

Liz Terry is co-owner/manager of Kimberley Coastal Camp (KCC) located opposite the Mitchell Plateau on the other side of Admiralty Gulf. Liz has been involved in everything from criminology to education; radio stations to building companies. She escaped the Perth hills in 1994, and now lives and works at KCC. Liz enjoys an office with a view over Port Warrender, being entertained by people from all over the world, having someone else to do the cooking, exploring places where no white-fella has ever been before, and being able to learn just a little about the flora, fauna, geology, archaeology, rock art, and history. Liz describes herself as a student of all disciplines and master of none. She will break away from her busy schedule at KCC to join the expedition party on the Plateau and share some of her local knowledge with us all.

Kathleen Verrier is quite literally "leaping" from one trip to the next. She finishes her fifth expedition (Shorebirds of Roebuck Bay) on June 15 in Broome, and starts her sixth on June 17 from Broome. Kathleen's great grandparents were pioneers in the Kimberley, arriving with cattle in the 1890s, three years after leaving Tamworth, NSW. It is one area of the State she has yet to explore thoroughly. Kathleen believes it is very different from elsewhere in the state, or country. She has always had a great interest in nature, as well as in travelling and meeting new people, and she believes *LANDSCOPE* Expeditions are an ideal vehicle to combine these interests. As well as running her veterinary clinic in Rockingham Western Australia, Kathleen has been a registered Conservation and Land Management wildlife carer for many years.

LEADER PROFILES

Kevin Kenneally, a research scientist since 1973, has been the scientific coordinator for *LANDSCOPE* Expeditions since the program's inception. He is an internationally recognised author and specialist on the Kimberley flora. Kevin has led research expeditions into remote areas of Western Australia for more than 30 years. He was awarded a Churchill Fellowship (1979), the Australian Natural History Medallion (1984) and, together with Daphne Edinger and Tim Willing, he was a recipient of the CSIRO medal for Research Achievement (1996). He is an Honorary Associate of the Western Australian Museum, and a member and past president of the Kimberley Society.

Kevin Coate is a naturalist and ornithologist who has been involved in nature based tourism in Western Australia since 1975. Kevin has travelled extensively throughout the State and has written numerous articles on the areas he has visited, as well as a number of papers, primarily on birds. Inn 2000 he was the winner of Western Australian Tourism's FACET Golden Guide Award. In 2001 he was a recipient of a "Premier's Award to Legends of the Hospitality and Tourism Industry", a one-off award that marked the start of the new millennium and the contribution of individuals to these industries over the previous thirty years.

Daphne Edinger graduated from The University of Western Australia with a BSc (Hons) in zoology. A science teacher for 16 years, on retirement Daphne became an honorary research scientist with the Western Australian Herbarium and has worked as a volunteer with Kevin Kenneally since 1982. She has conducted numerous botanical field trips throughout the State and has been with *LANDSCOPE* Expeditions as a leader since 1993. In 1996 she was a joint recipient, with Tim Willing and Kevin Kenneally, of the CSIRO Medal for Excellence in Research Achievement.

Dr Ric How is head of the Department of Terrestrial Vertebrates at the Museum of Natural Science, Western Australia and has over 30 years' research experience in Australia, Indonesia and China. His research on the biogeography and ecology of mammal and reptile communities has spanned the tropical, temperate and desert regions of both Australia and Asia.

Chris Done is the Regional Manager for the Department of Conservation and Land Management in the Kimberley. He is based in Kununurra and has a background in forestry. He is particularly interested in land management and conservation issues in the region.

Mark Cowan is the Regional Ecologist at the Department's Goldfields Region and has wide-ranging expertise in faunal ecology and management with a particular specialisation in frogs and reptiles.

Tim Willing is the Conservation Officer with the Department of Conservation and Land Management based in Broome. He is a graduate of the School of Oriental and African Studies, University of London, and has lived in Broome since 1980. In 1985 he was awarded a Churchill Fellowship and undertook tropical horticultural studies in Africa and Madagascar. In 1996 he was a joint recipient, with Daphne Edinger and Kevin Kenneally, of the CSIRO Medal for Excellence in Research Achievement.

Dr Bernie Hyland (recently retired) was a principal research scientist at the CSIRO Tropical Forest Research Centre, Atherton, Queensland. He is an internationally recognised authority on Australian rainforests. Bernie has undertaken taxonomic research on major rainforest plant groups and is the principal author of the interactive CD-ROM *Australian Tropical Rain Forest Trees and Shrubs* published by CSIRO.

Professor Linc Schmitt is an internationally recognised population geneticist from the University of Western Australia with an interest in animal evolution and speciation. His recent work on island mammal and reptile populations has complemented earlier intensive studies on these groups from the Mitchell Plateau.

TAG-ALONG PROFILES

Ross Ireland and his wife **Anne Ireland** are 4WD enthusiasts who adhere to the "tread lightly" ethos. They enjoy camping and are well outfitted for their first *LANDSCOPE* Expeditions trip, with a diesel Prado and off-road camper-trailer. They are interested in birds, nature photography and plant identification, and were particularly attracted to the destination of this trip, having not toured the area previously. Ross enjoys being challenged by new opportunities and ideas, with interests mainly around his profession as specialist anaesthetist, but also including outdoor sports. Anne has been a volunteer at the Western Australian Herbarium for three years, mainly in the preparation of images for the interactive computer program Florabase. For the last two years she has enjoyed a project of collecting and photographing plants in south-west Jarrah forests. Ross and Anne have two teenage children.

Maurice O'Connor and his wife **Nancy Kennedy** are busy professionals in Perth, and are looking forward to this trip away together. They have chosen this expedition because of its fascinating location and great list of tour leaders/scientists. Maurice previously participated in a *LANDSCOPE* trip, and this will be Nancy's first - they are looking forward to the peace and quiet of the bush, the great birding opportunities and the many educational opportunities the project offers. Maurice is co-owner of the busy Croissant Express and, over the past 10 years, has enjoyed many visits to the Kimberley, including two wet season expeditions, the Kimberley Society's boat trip in 1996 and a *LANDSCOPE* expedition in 1994. Nancy has previous enjoyed two camping trips to the Kimberley and is looking forward to revisiting the Plateau. She has an interest in Aboriginal history and culture, as well as birds and plants of Western Australia. Nancy is a nurse by profession, and works part time at a plant nursery as well as volunteering at Kings Park.

John Offer and **Rosemary Offer** are embarking on their second tag-along expedition, having participated in the Carnarvon Range trip in August 2001. John has never visited this area and is keen to do so with experts and good company. He is

a retired GP and former farmer, with a particular interest in arid zone flora and fauna, rural matters and general conservation. Rosemary is a retired social worker and former nurse. She likes people, new places and good company. These, combined with expert knowledge and scientific research, lead her to believe a good trip is on the cards, especially in a traditional and important Aboriginal area, which is of particular interest to her. Rosemary's favourite pursuits include golf, reading and volunteer work at the Herbarium.

CREW PROFILES

Richard House from Wilderness Wanderer stepped into the breach to help our Expedition when Rick Curtis had to withdraw due to injury. Originally from Devon, England, Richard came to Australia as a young child, and lived in Albany for fifteen years before moving to Perth to finish his schooling. Richard has spent 35 years beekeeping in the south-west, and parts of eastern Western Australia. He has been a member of the Western Australian Rockhunting and Lapidary Club for 37 years, travelling to all parts of the State to search for mineral and gemstone material, leading several convoys including one to Ayers Rock in the sixties. A lasting interest in the desert area of Western Australia grew from his work in the early seventies on the North/South Expedition's dump trips for water and fuel, travelling from Wyndham to Twilight Cove via the Canning Stock Route and Beadells Road- a test of man and machine in extreme conditions. Richard and his wife run tours into the desert areas, and wildflower tours to the midwest and southwest regions. In over 11 years he has taken well over 10,000 overseas tourists to the Pinnacles, and to the rugged coastal scenery over 1600 times. For the last three years Richard has been supplying the Kings Park and Botanic Gardens seed collecting expeditions with transport, food supplies and cooking.

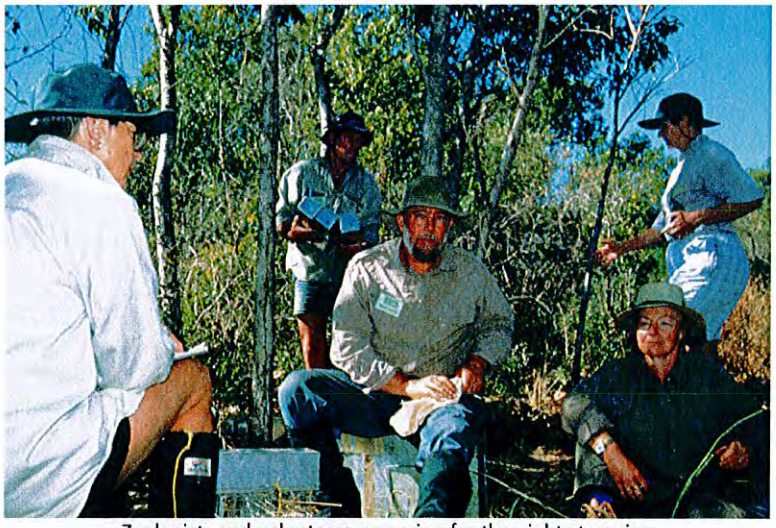
Alex Mitic is a free-lance, bilingual tour guide who has been working for various tour companies since 1993. Born in Liverpool, New South Wales, he grew up in Germany where he studied mechanical engineering, and also computer technology. Alex returned to Australia in 1989 where he changed career to become a driving instructor with the RAC. In 1993 his love for the outback, and meeting people, saw him take another career change. His mechanical knowledge, driving skills, and great sense of humour – combined with his love for the outdoors – resulted in him becoming a highly sought-after tour guide for international and local visitors. Alex has travelled extensively throughout Europe and the Australian outback.

Kate Padgham joined us as the cook's assistant. Based in Kununurra, Kate has worked on stations across the north. She has cooked on Theda Station, and mustered on Avergne Station in the Northern Territory. Kate has also been involved in outdoor education activities, and graduated from La Trobe University of Northern Victoria with a Bachelor of Arts in Outdoor Education. She has taught in Victoria, New South Wales, and Queensland.

National Park Ranger Alex Bowlay with a group of Aboriginal children from the Plateau.
Photo: Kevin Kenneally

The Northern Brown Bandicoot (*Isoodon macrourus*) occupies a range of habitats on the Mitchell Plateau. Photo: Mark Cowan

The Mosaic-tailed Rat (*Melomys burtoni*) inhabits the mangroves and vine-thickets. Photo: Mark Cowan



Zoologists and volunteers preparing for the nights trapping.
Photo: Kevin Coate

This report is to be cited as: Kenneally, K., Edinger, D., Coate, K., Hyland, B., How, R., Schmitt, L., Cowan, M., Willing, T., and Done, C. (2003). "The Last Great Wilderness - Exploring the Mitchell Plateau 2002". LANDSCOPE Expeditions Report No. 49, Department of Conservation and Land Management, Perth, Western Australia.
Graphic design Natalie Jolakoski, Strategic Development and Corporate Affairs. **ISSN 1444-8742**