

NATURE TERRITORY

September 2011



Newsletter of the Northern Territory Field Naturalists Club Inc.

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Club web-site: <http://ntfieldnaturalists.org.au/>

Meetings are generally held on the second Wednesday of every month, commencing at 7:45 PM, in Blue 1.14 (Business Faculty Building) on the Casuarina Campus of Charles Darwin University.

Subscriptions are on a financial-year basis and are: Families/Institutional - \$30; Singles - \$25; Concessions - \$15. Discounts are available for new members – please contact us.



Most tropical regions support the Dengue Mosquito (*Aedes aegypti*), illustrated, the species responsible for the spread of dengue fever. The Top End is an exception, but the mosquito has reached Darwin, and subsequently been eradicated, on a number of occasions (page 7).

This photo was taken in Tanzania by Muhammad Mahdi Karim.

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Disclaimer: The views expressed in *Nature Territory* are not necessarily those of the NT Field Naturalists Club Inc. or members of its Committee.

Club activities

September meeting. Wednesday September 14, 7:45 PM. Blue 1.14 (Business Bldg.), CDU.

Stephen Reynolds

"Brazil – but not the Amazon"

Brazil is a large country with a diversity of landscapes and habitats. Steve Reynolds will talk about his visit to the densely populated south-east of the country, a region of caatinga interspersed with Atlantic rainforest, numerous rivers and wetlands, and plenty of cattle and eucalypts. Some wildlife highlights will include the Sanctuary at Caraca in Minas Gerais state, the area around Bonito including the Rio da Prata, the Pantanal in the west of the country (Mato Grosso do Sul) and brief forays elsewhere.

Steve has very nearly almost entirely completed his PhD at CDU on hydric relations of frogs from monsoonal northern Australia, and would have finished already if he hadn't been spending so much time travelling.

The Club's Annual General Meeting will be held prior to the monthly meeting – details are on page 4.

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September field trip. Sept. 16-18 (Friday to Sunday):
Litchfield National Park bird survey.

In conjunction with NRETAS and the NT Junior Rangers program, this is a camp-out to conduct wildlife surveys and introduce and encourage a new generation of amateur naturalists. It is also an opportunity to explore parts of the Park not often seen by the public including remote swimming holes. We have been given access to the Special Interest Group facility at Litchfield NP for camping – this has manicured green lawns for camping, a large roofed/floored area, kitchen, showers and toilets, and is secure and out of the public eye. Alternatively, participants may choose to grab a bed in Batchelor or day-trip from Darwin.

Please advise interest ASAP, as numbers for this trip are limited.

Contact: John Rawsthorne on 0412 899 051 or kim_john@bigpond.net.au.

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October 2011 meeting. Wed. Oct. 12. Don Franklin: *A naturalist in Timor-Leste (East Timor)*.



Blue-and-yellow Macaw (*Ara ararauna*),
photographed by Steve Reynolds at Bonito,
Mato Grosso do Sul state, Brazil,

Top End Native Plant Society activities

September meeting. Thursday Sept. 15. Donna Lewis: *Vegetation mapping*.

September excursion. Sunday Sept. 25. Mica Beach (by boat). Note: limited nos., must book.

October meeting. Thursday Oct. 20. Greg Leach: *Eriocaulon*.

October excursion. Saturday Oct. 22. East Point.

November excursion. Saturday Nov. 19. Blackmore River Conservation Reserve.

General meetings are held on the 3rd Thursday of the month at the Marrara Christian College, corner Amy Johnson Ave. and McMillans Road, and commence at 7:30 PM (speaker at 8 PM). Visit

<http://www.topendnativeplants.org.au/index.php> or contact Russell Dempster on 8983 2131.

Club notices

Welcome to new members: Betty Lum & family; Françoise Foti & family; Nathan Litjens.

Thank you: the previous issue was proof-read by Tissa Ratnayeke and collated and mailed by Anne Highfield. It was printed by Stuart Young and Don Franklin using equipment kindly made available by Collections, Biodiversity and Biological Parks from the Department of Natural Resources, Environment, the Arts & Sport and the Research Institute for the Environment and Livelihoods at Charles Darwin University.

Newsletter contributions welcome: Sightings, reports, travelogues, reviews, photographs, sketches, news, comments, opinions, theories , anything relevant to natural history. Please forward material to Don at eucalypt@octa4.net.au or the Club's postal address, or contact him on 8948 1293.

Deadline for the October newsletter: Friday September 23.

Need a Club membership form? Go to: <http://sites.google.com/site/ntfieldnaturalists/downloads>.

Club library: The Club's journal and book collection is available to members. Lists of holdings can be found on our web-site: <http://sites.google.com/site/ntfieldnaturalists/library>. The library is housed in two sections:

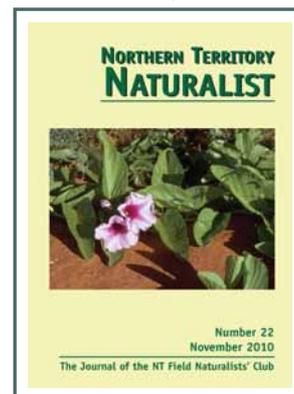
Books, reports and CDs: at the medical clinic of Dr. Lyn Reid in the Rapid Creek Business Village. This can be accessed directly between 9 AM and 2:30 PM Tuesday to Thursday, and 4–6 PM on Tuesday, or indirectly by phoning Lyn at work on 8985 3250.

Journals: in the office of Don Franklin at CDU Casuarina (Red 1.2.34). These can be accessed directly during working hours, or by ringing Don on 8946 6976 (w) or 8948 1293 (h).

Northern Territory Naturalist: The Editorial Committee of the Club's journal, the *Northern Territory Naturalist*, is now finalising material for issue no. 23 and is calling for manuscripts for issue no. 24. The journal publishes works concerning any aspect of the natural history and ecology of the Northern Territory or adjacent northern Australia. and may include Research Papers (Articles or Short Notes), Reviews, Species Profiles and Book Reviews.

The *Northern Territory Naturalist* is a registered, peer-reviewed journal (ISSN 0155-4093) and is recognised as a Category C publication by the Australian Research Council (http://www.arc.gov.au/era/era_journal_list.htm). Author instructions may be downloaded from our web-site: <http://sites.google.com/site/ntfieldnaturalists/journal>.

If possible, manuscripts should be submitted in digital form by email to michael.braby@nt.gov.au. Manuscript editors of the journal are Dr Michael Braby, Dr Lynda Prior and Dr Chris Tracy; the production editor is Louis Elliott.



Change to the editorial team:

Belatedly, we welcome **Louis Elliott** to the team as production editor – a job he has been performing for a fair portion of 2011. Lou has taken over the task from the retiring **Don Franklin** and **Fiona Douglas**. Thanks Lou!

Originals are available of most back issues, some are available as photocopies only, and several recent issues are out-of-print but individual papers are available as pdfs. The journal page of the Club's web-site has an order form for back issues. Free pdfs of papers from issue 18 (2005) onwards are available from the authors or by contacting Don Franklin by email – eucalypt@octa4.net.au.

Comments invited on listing of threatened species

In 2010, the NT Government initiated a review of the conservation status of all species in the Northern Territory. In a first round of public consultation, nominations were sought on changes to the list of Threatened Species. These and nominations generated from within NRETAS were considered by an expert panel who prepared recommendations for the Minister for Parks and Wildlife. The panel included persons from Charles Darwin University, CSIRO, Fisheries, the NT Herbarium, the Marine and Coastal Conservation Unit, and Biodiversity North and South. The proposed revisions to the list are now open for a second round of public consultation. The list is available at www.nt.gov.au/consult or by contacting Biodiversity Conservation on 8995 5000. Comments and recommendations will be considered by the panel of experts and must be submitted by **9 September 2011**.

NTFNC Annual General Meeting

This is to be held as part of our September monthly meeting, on Wednesday Sept. 14 at 7:45 PM in room Blue 1.14 (Business Bldg.), Charles Darwin University Casuarina campus. The audited accounts and financial statement will be presented for consideration, and we will elect office bearers and the management committee (nomination form below).

Summary of Profit & Loss Statement and Balance Sheet for NTFNC for the financial year 2010-11

<u>Income</u>		<u>Expenditure</u>		General expenses surplus	993.89
Subscriptions	3,082.50	NT Naturalist	1,839.90	NHT funds remaining	8,947.00
NT Naturalist sales	419.70	Doggie dinner	761.32	Surplus for year	\$ 9,940.89
NT Nat. © payment	89.39	Newsletter	548.35	<u>Assets and liabilities, 30 June 2011</u>	
Donations	107.50	Insurance	350.00	Assets: money*	\$ 31,246.44
Interest	1,185.47	NHT turtle project	2,053.00	Other assets**	\$ 255.60
NHT turtle grant	11,000.00	other times	391.00	Liabilities	0
Total	\$ 15,884.46	Total	\$ 5,943.57	* term deposit, bank account & cash	
				** books, journals, cabinet	

Members can obtain a full copy of the financial statement from Fiona Douglas, phone 8985 4179 or email fiona.douglas@octa4.net.au. Copies will also be available at the AGM.

NOMINATION FOR NTFNC COMMITTEE, 2011/12

Name of person being nominated: _____

Position being nominated for (circle):

President Secretary Treasurer Committee Member (up to 7 needed)

Signature of Nominee: _____

Proposer's name: _____ and signature: _____

Secunder's name: _____ and signature: _____

Under our Constitution, written nominations received by our Secretary (Ian Hance) prior to the commencement of the Annual General Meeting (AGM) have precedence. Either: (1) mail nominations to NTFNC, PO Box 39565, Winnellie, NT 0821, (2) hand deliver to Secretary or current committee member, or (3) bring them to the AGM.

A copy of the Club's constitution may be obtained by emailing our Public Officer: fiona.douglas@octa4.net.au.

The NT Associations Act can be found at

<http://notes.nt.gov.au/dcm/legislat/legislat.nsf/linkreference/ASSOCIATIONS%20ACT?opendocument>.

What does it take to become the “boss” termite? from *Recent Literature*, page 11

When the reproductive royal pair in a colony of the wood-boring termite *Cryptotermes secundus* require replacement, there is considerable potential for conflict within the colony because all individuals except soldiers are capable of becoming reproductive. However, observation suggested that there is no overt conflict (Hoffmann & Korb 2011). Further investigation revealed that the successful individuals (i.e. those that became reproductive royals) butted their nest mates more, but also fed their nest mates more.

Cryptotermes secundus occurs in mangroves and monsoon forests in northern Australia and Papua New Guinea.



A complex hierarchy of ants from *Recent Literature*, page 11

Following on a theme that Alan Andersen discussed at the May Club meeting, Arnan *et al.* (2011) explored the relationship between dominant, sub-dominant and subordinate species at fine spatial scales using pitfall traps set at 2 m intervals in the Territory Wildlife Park at Berry Springs (yes, Alan is a co-author). They found no evidence that subordinate species persist only in gaps between occurrences of dominant species – on the contrary, there was a positive relationship between the occurrence of dominant and subordinate species. However, there was a negative relationship between the occurrence of dominant and subdominant species, and between subdominant and subordinate species. They suggest that subordinate species are able to survive in an intensely competitive environment in gaps between the occurrence of subdominant species – and those gaps occur because dominant species doesn't allow subdominant species to fully occupy the site.

Three weeks of bird watching in Hawaii

Bird watching on four islands with five organised bird tours

Text and photo by Magen Pettit

A year ago I saw the book *100 Birds to See Before You Die: The ultimate wish-list for birders everywhere* by David Chandler & Dominic Couzens. The catchy title wasn't the reason why I wanted to purchase the book. The attraction was the picture on the front cover of a red-faced morph Gouldian Finch. I'm a born and bred Territorian so Gouldians are iconic and they are my favourite bird (I don't agree with the authors rating Gouldian Finch on their list at No. 14....they definitely should be one of the Top 10 birds you must see before you cark it!).

As I flipped through the pages of beautifully photographed birds from around the world, I realised the reason why I had to buy this book. I have already seen Gouldian Finches in their natural habitat, so in reality I only needed to see the other 99 birds listed before I kicked the bucket. It was a sense of pride knowing I was down to double digits before I had even walked out of the bookstore with my purchase!

Whilst reading Chandler & Couzens' book, I came across No. 22: 'I'iwi. An exquisite Hawaiian honeycreeper thought to have evolved from a single finch-like ancestor some 5 million years ago. The authors wrote "*Through adaptive radiation, the Hawaiian honeycreepers have evolved a remarkable range of bill modifications and colours, more than enough to make the celebrated Galapagos Finches seem decidedly humdrum in comparison, with vibrant yellows, reds and greens to go with everything from heavy seed-splitting bills to the most delicate nectar-drinking, sickle shapes. The regret, however, is that, we have decimated them. No bird family has suffered such a catalogue of extinctions as the Hawaiian honeycreepers.*" It was these words that made me realise that I wanted to tick this bird off the list because it seemed likely THEY might all die out before I got the chance to see them. Today, over half of the 57 species of endemic Hawaiian honeycreepers, along with two-thirds of all native Hawaiian birds, are extinct.



The 'I'iwi – a Hawaiian honeycreeper: a bird to see before you die ... and before it goes extinct.

Born from volcanoes that rose from the sea floor, the Hawaiian Islands were originally populated only by those plants and animals that could traverse vast distances across the ocean – flying, floating along the jet stream, or riding the waves. Seeds came lodged in bird wings, and insects floated in on driftwood, or were blown in by the wind. Most species that landed didn't establish. Scientists estimate that successful species were established maybe once every 35,000 to 70,000 years and they included no amphibians, no browsing animals, no pines, no mosquitoes and only two mammals: a bat and a seal.

In May this year, my family and I packed some bags and caught a Jetstar flight to Hawaii for a three week holiday. My carefully planned itinerary was packed with destinations that would put me close to the birds I hoped to see. Out of the six Hawaiian Islands tourists regularly visit, we would stay on the two bigger islands of O'ahu and

Big Island, and I would have two additional side-trips for birding to the islands of Kaua'i and Maui. Whilst I was bird watching, my husband and daughters were content to swim in turquoise waters, snorkel over coastal coral reefs, watch locals and tourists surf, and make lots of sand castles. They would have relaxing holiday. I, on the other hand, had to maximise my chances of seeing as many endemic species as I could (I sound like a twitcher!). Basically, I had three weeks of island hopping on four islands with five organised bird tours. No pressure!

On past holidays I have been happy to try and see birds on my own. Looking at my Hawaiian bird guide book, I knew it would be impossible for me to identify the small, plain coloured birds hiding in the Hawaiian rainforests. Thus, I took my bird watching to the next level and hired personal bird guides (am I really a twitcher in denial?).

to be continued

Kupang to Broome

In May and June 2011, Trish Bate and Will Duiker crewed on a yacht between Kupang, Indonesia and Broome, Australia, travelling via Roti Island, Ashmore Reef, Scott Reef and the Lacedpedes Islands. Will took these photos along the way.



Left: Brown Booby.

Below: Red-tailed Tropicbird.



Above:
Pearly
Nautilus
Shell.

Right:
Nembrala
Beach,
Roti Island,
Indonesia.



Above: Brown Booby chick.

Right: Common Noddies.



Biosecurity

The August meeting

In short, *biosecurity* is the prevention of incursions of troublesome exotic pests, diseases and weeds. The cost of these incursions may be measured in human health, environmental health, the cost of detection and eradication, and on-going costs for control, e.g. weed and feral animal control and farmers controlling exotic crop pests. Dr Andrew Tomkins spoke about the cost of such incursions globally, nationally and in the Northern Territory, and how he, on behalf of the Northern Territory government, is preparing a strategy plan to deal with these issues. Dr Tomkins comes to the Northern Territory's biosecurity strategy from a background in horticultural entomology. NTFNC members can play a useful role in detecting exotic species, bringing natural history skills that members of the general public may not have. Dr Tomkins has provided a number of relevant web-links and phone numbers which we hope to post on the NTFNC web-site soon – we'll let you know when this is available.

Louise Finch took copious notes at the meeting with the intention of writing a report, but has since taken ill. We wish you a speedy recovery, Louise.



News from the biosecurity front-line from *Recent Literature*, page 11

Coincidentally, this month's literature features a number of relevant reports that relate to mosquitoes and ants.

The mosquito responsible for the spread of dengue fever (*Aedes aegypti*) is not endemic in the Top End. Indeed, the Top End is one of the few tropical regions of the world not to have endemic dengue fever, and it is a biosecurity priority to keep it that way. This is the responsibility of the Medical Entomology section of the Dept. of Health & Families in cooperation with the Australian Quarantine Inspection Service. As a commensal of humans – the species lives in urban areas and breeds in containers that hold water – it is readily transported, and it has been found at transport facilities in Darwin on a number of occasions. Whelan *et al.* (2011) report another such arrival, at Perkins Shipping at Frances Bay in Jan. 2011, and the subsequent eradication of the incursion. Detection of this and other exotic species has been made easier with a new, more target-specific "BG sentinel" mosquito trap, and this is one of five such incursions detected in 18 months.

Another identified area of risk in Darwin for the introduction of exotic mosquitoes and/or mosquito-borne disease is Robertson Barracks north of Palmerston. This is because military personnel serve in and return from areas where malaria and dengue fever are common (e.g. Timor-Leste), and because Robertson Barracks is within mosquito flight range of Millner Swamp. The Swamp supports breeding populations of species of mosquitoes (notably members of the *Anopheles farauti* complex) capable of transmitting the *Plasmodium* protists (simple single-celled organisms) responsible for malaria, though the Top End is believed to be currently free of the protists. Franklin *et al.* (2011) report a year of weekly mosquito monitoring at Robertson Barracks and at a site between the Barracks and Millner Swamp. The trapping demonstrated considerable reduction in the numbers of key mosquito species with distance from the Swamp, though also that some reach the Barracks. They argue that it is important not to extend the Barracks in the direction of Millner Swamp, and provide recommendations relating to monitoring and prevention.

Hoffmann (2010a) reports on progress with the eradication of the Yellow Crazy Ant (*Anoplolepis gracilipes*) in north-eastern Arnhem Land. The species has been eradicated from 20 of almost 100 known locations in that region. The toxic effects of the eradication are judged to be no greater than the effect of the exotic ant, and within 3 to 4 years of eradication, native ant communities at eradication sites are indistinguishable from that at sites never colonised by the Yellow Crazy Ant.

The African Big-headed Ant (*Pheidole megacephala*) and Tropical Fire Ant (*Solenopsis geminata*) are troublesome exotic species that are established around Darwin. Both species were detected on the Tiwi Islands in 2003, probably introduced accidentally from Darwin, and eradication plans subsequently implemented (Hoffmann 2010b). The Tropical Fire Ant infestation is now thought to have eradicated; if confirmed "this will represent the largest eradication of this invasive species in the world". The African Big-headed Ant has been detected at five locations on the islands and eradicated from four of these.

Island are generally more susceptible than mainlands to incursions by exotic ants, and this is thought to be because native ant communities on mainlands are more robust to domination by exotic species. However, the Yellow Crazy Ant has established at mainland sites in Arnhem Land. Hoffmann & Saul (2010) report that the invasive Yellow Crazy Ant in Arnhem Land successfully excludes other large ants at all sites regardless of habitat, in the process increasing opportunities for smaller (< 2.5 mm long) ant species.

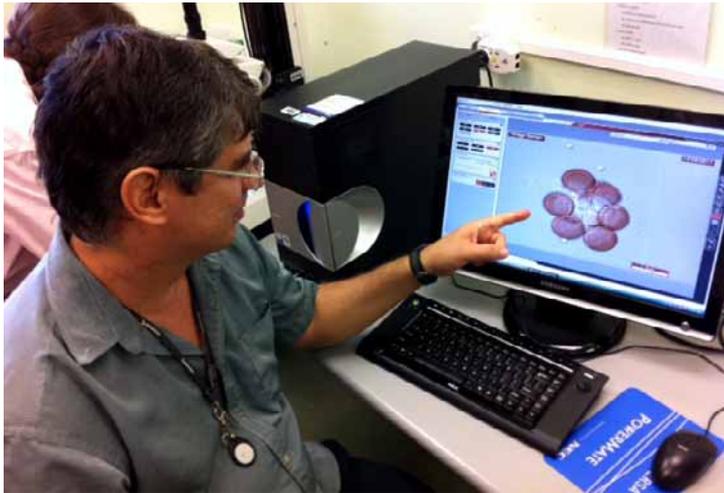
Berrimah Agricultural Laboratories

A report on August excursion

Tissa Ratnayeke

By 9.10 am on Sunday 14 August, about a dozen of us had gathered in the shady car park at the Berrimah Agricultural Laboratories, the Biosecurity facility of the Department of Resources. Our 'tour guides' Brian Thistleton (Principal Entomologist), José Liberato (Principal Plant Pathologist) and Michael Neal (Senior Technical Officer, termite group) came out to greet us.

We were advised that we were too many to fit in the confined inner rooms and so were split into two groups. One group followed Brian and the other José, which was a good idea as many of the rooms were quite small. My group first followed José who led us to one of the labs where rust-infected Frangipani leaves had been setup under microscopes for us to view. We initially observed the samples on a computer monitor from images produced by digital cameras mounted to the microscopes, which made it easy for José to explain to us what we



José Liberato explaining a digital microscopic image of a plant pathogen. Photo: Kit Edwards.

were seeing. We then took turns looking at the rust directly through the optics which made for a much sharper and clearer view. A bonus was seeing a tiny maggot-like insect larva feeding on the rust.

José informed us he had recently made an interesting discovery in this lab. In the late 1990s a rust was introduced as a biological control for the shrub *Mimosa pigra* which is invasive on the northern floodplains. The rust never showed any signs of establishing itself and was thought to have perished. About four weeks prior to our visit fresh *Mimosa* leaf samples were brought into the lab and to everyone's surprise the rust was confirmed to be present in two locations – we can only hope it now continues to spread.

We then followed José to the Herbarium. This was an even more confined space than the lab, and for

us warm-blooded Top Enders it was chilly – 18°C with humidity in the range 40% – 60%. Here, plant specimens that are mostly dried, but some preserved in alcohol, were stored. José informed us that the dried specimens were heat-treated to 80°C to kill any possible pathogens prior to being stored.

We then adjourned and joined the other group for morning tea, which included an assortment of biscuits provided with the compliments of the Department.

After refreshments we swapped tour guides and my group followed Brian to his entomology lab. The surrounding walls were covered in sliding drawers, which we were informed contained 44,000 insect "accessions" (specimens, more or less). These are mostly species of economic relevance to the NT. The soft-bodied specimens were preserved in alcohol, while the more robust ones were displayed with a pin through their thorax.



Brian Thistleton (blue check shirt) demonstrates entomological microscopes. The youngest (?and happiest) Club member is Miguel, with father Jon Clark. Photo: Tissa Ratnayeke.

The entomology lab has both conventional and digital microscopes. The digital ones are very compact and work via a USB connection to a computer. Apparently these are handy for field work, though for more detailed analysis of specimens the preference seems to be the conventional models.

Both tour groups then met outside where Michael took over as our guide to introduce us to the diversity of termites that inhabit the surrounding land. We learnt that some species only eat dead wood, some eat living trees, and others harvest

grass. We were shown examples of all of these by breaking open decaying logs or chipping away at the differently-shaped mounds we came across.

Each termite colony has a queen, alates (winged reproductive male and female forms that swarm), soldiers, and workers – the last are by far the most numerous. Depending on species there may be two forms of soldier; those with large mandibles and, in the genus *Nasutitermes*, soldiers that have elongated, pointy heads capable of squirting defensive chemicals. We collected many termite specimens and took them back to the lab for a closer inspection under microscopes.

We were also shown specimens of *Mastotermes darwiniensis*, one of Australia's largest termites and a species that is a great economic burden in the Top End. This termite tends to be uncommon in its native habitat, but in areas disturbed by humans it proliferates in huge numbers. Their voracious and diverse appetites can spell disaster to human endeavours – they are capable of destroying homes and orchards. One of the suspected reasons for this abundance is the workers' ability to become reproductive when they are separated from the queen, a situation all too common when land is cleared and colonies are disrupted. Brian and his team have an ongoing program of research into this giant termite.

Thank you to Brian, José and Michael for making this an interesting and rewarding morning.



Michael Neal shakes out some termites, watched by Louise Finch (left) and Anne Highfield (centre).
Photo: Sherry Prince.

White Albatross from *Recent Literature*, page 11

In Jan. 2010, Alison Worsnop photographed an unusual white butterfly with broad blackish margins feeding at the flowers of Lime Berry (*Micromelum minutum*) at Howard Springs. It has since been identified as the subspecies *infuscata* of the White Albatross (*Appias albina*) (Braby *et al.* 2010). This is the first record of this subspecies in Australia, the subspecies being endemic to the Indonesian island of Sumbawa 1,500 km to the west-north-west. It is suggested that the individual may have been carried to Australia by monsoonal trade winds.

Subspecies *albina* of the White Albatross is an uncommon resident of coastal vine-thickets at several locations on the Northern Territory coast.

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New species Species described from the Top End in this month's literature (page 11) are:

- a carabid beetle, *Microlestodes arnhemensis*, by Baehr (2010); collected near Maningrida;
- a diving beetle, *Neobidessodes darwiniensis*, from a pool at Harriet Creek, 11 km north-east of Pine Creek on the Kakadu Highway (Hendrich & Balke 2011). Harriet Creek is a tributary of the Mary River; and
- a flower (thynninid) wasp, *Arthrothynnus latipimus*, from near Oenpelli (Brown 2010b). This wasp pollinates the Robust Elbo Orchid (*Arthrochilus latipes*).

In addition, Brown (2010a) – Club member Graham Brown – has described a new genus, *Curvothynnus*, for two "unusual" species of flower wasp, one of which (*C. neptunus*) is known only from the Darwin area, and the other (*C. laevigatus*) from various Australian coastal locations including one near Borroloola.



Curvothynnus neptunus: male (winged, left) and female (wingless, right). Photos: Graham Brown.



Interesting bird sightings

23 July to 26 August 2011

Compiled by Ian Hance

Sightings are as reported (unvetted, unconfirmed) and have been mostly compiled from the e-mail digest of the NT birder website (<http://groups.yahoo.com/group/ntbirds>) moderated by Niven McCrie.

Species	Date	Location	Observer/s	Nos./comments
Waterbirds, seabirds & shorebirds				
Wilson's Storm-Petrel	c. 28/7	Peron Island	Clive Garland	2
Lesser Frigatebird	6/8	Dundee Beach	Stephen Garnett	1
Brown Booby	5/8	Darwin Harbour	Peter Kyne & Micha Jackson	2
Great-billed Heron	4/8	Ooloo Crossing, Daly River	via A & S Keates	2
Glossy Ibis	21/8	Harrison Dam	A & S Keates	c. 80
Chestnut Rail	17/8	Rapid Creek beside CDU	Al Stewart	2 heard
White-browed Crake	5/8	road to Ooloo Crossing	A & S Keates	2+
Little Ringed Plover	9/8	Leanyer Sewage Ponds	Bas Hensen	1
Common Redshank	4/8	Spot On Marine, Ludmilla	Bas Hensen & Neville James	1
Little Tern	4/8	Lee Point	Bas Hensen & Neville James	1
Birds of prey				
Square-tailed Kite	4/8	Marrakai Track	Bas Hensen <i>et al.</i>	1
Pacific Baza	1/8	Yarrowonga	Mike Jarvis	1
Grey Goshawk	29/7	Leanyer	Bas Hensen	pair with young in nest
Swamp Harrier	4/8	Fogg Dam	Bas Hensen <i>et al.</i>	1
Black Falcon	3/8	Holmes Jungle	Jon Clark & Peter Rawsthorne	1
Rufous Owl	5/8	Ooloo Crossing, Daly River	Arthur & Sheryl Keates <i>et al.</i>	1
~	7/8	Mary River Park	Edward Smith	1
Other non-passerines				
Emu	23/7	Kakadu escarpment	Sean Webster	1
King Quail	26/7	Holmes Jungle	Bas Hensen	1 female
Australian Owlet-nightjar	c. 28/7	Douglas Hot Springs	Clive Garland	1; & other sightings
Australian Bustard	3/8	Daly River road	Arthur & Sheryl Keates	2; & 4 on 5/8
Red-backed Button-Quail	6/8	Marrakai Track	Bas Hensen & Neville James	1
Chestnut-backed Button-Quail	22/7	Marrakai Track	Marc Gardner	4; & other sightings
Northern Rosella	26/7	Bellamack	Ian Hance	4
Channel-billed Cuckoo	29/7	Knuckey Lagoon	Ian Hance	1
~	30/7	Rapid Creek	Arthur & Sheryl Keates	1; & other sightings
Little Kingfisher	27/7	Nightcliff	Stephen Garnett	1; & other sightings
Passerines				
Green-backed Gerygone	3/8	Holmes Jungle	Jon Clark & Peter Rawsthorne	2 feeding young Little Bronze-Cuckoo
Cicadabird	29/7	Casuarina Coastal Reserve	Bas Hensen	1 female
~	8/8	Palmerston Sewage Ponds	Bas Hensen & Neville James	1 male
White-breasted Whistler	9/8	Leanyer Sewage Ponds	Bas Hensen	2
Oriental Reed-Warbler	15/8	Fogg Dam	Darryel Binns <i>et al.</i>	1 *
Brown Songlark	4/8	Marrakai Track	Bas Hensen <i>et al.</i>	1
Gouldian Finch	28/7	Bird Billabong road	John Rawsthorne	adult feeding young; & other sightings
~	13/8	Edith Falls Road	Mike Reed	60 to 80

* Oriental Reed-warbler. From Darryel Binns "... on the Dam wall near the first lookout. It was in a pandanus Palm on opposite side. ... lady took a pic and I'm yet to have a good look at it on a computer screen to see what it was like. We all come to conclusion as to what it was, plus it would only respond to the call which I had of a ORW and was not at all interested in ARW calls." [ARW = Australian Reed-Warbler]

Not often seen and rarely photographed: the Chestnut-backed Button-Quail. A rocky site along the Marrakai Track has provided a boon to bird observers in recent months, with many sightings of the species ... and this photo, taken by Marc Gardner. The species is known only from savannas in north-western Australia.



Recent literature about Top End natural history

Back listings and summaries may be viewed at <http://www.cdu.edu.au/ser/profiles/ecologyintopend.htm>.

INSECTS

Compiled by Don Franklin

Not so technical

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[see *Nature Territory* Aug. 2010, p9]

Jacklyn PM. 2010. Investigations into the building behaviour of a minor celebrity insect. *Australian Zoologist* 35: 183-188.

["magnetic" termites]

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Arnan X, Gaucherel C, Andersen AN. 2011. Dominance and species co-occurrence in highly diverse ant communities: a test of the interstitial hypothesis and discovery of a three-tiered competition cascade. *Oecologia* 166: 783-794.

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Peng R, Christian K, Reilly D. 2011. The effect of weaver ants *Oecophylla smaragdina* on the shoot borer *Hypsipyla robusta* on African mahoganies in Australia. *Agricultural and Forest Entomology* 13: 165-171. [Green Tree-ants]

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Mosquitoes

Franklin DC, Bisevac L, Whelan PI. 2011. A year of mosquito monitoring at Robertson Barracks and the nearby Millner Swamp, Northern Territory, Australia. *Northern Territory Disease Control Bulletin* 18: 27-34.

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Whelan PI, Nguyen H, Finlay-Doney M. 2011. Another exotic mosquito interception at Frances Bay port facility, Darwin, January 2011. *Northern Territory Disease Control Bulletin* 18: 24-26. [*Aedes aegypti*, vector for dengue fever]

New species and location records

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Braby MF, Worsnop A, Yata O, Tupper A. 2010. First record of *Appias albina infuscata* Fruhstorfer, 1910 (Lepidoptera: Pieridae) from Australia. *Australian Entomologist* 37: 157-162. [subspecies of White Albatross butterfly]

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Insects and land management

Exclusion of fire doesn't necessarily enhance biodiversity according to Andersen & Hoffmann (2011). They report no difference in mean ant species richness or abundance, nor any marked difference in ant community structure, between sites in the Territory Wildlife Park that have been unburnt for at least 10 years and those adjacent that have been burnt every two to five years. They argue that fire regimes should be targeted to specific, not putative generic, conservation outcomes.

Termites contribute to the restoration of savanna ecosystem function (Dawes 2010). Degraded savanna sites at Berrimah that were mulched and termites reintroduced had better soil structure, more vegetation cover and higher rates of decomposition of leaf litter after 4.5 years than those that were mulched without termites, and very much better/more/higher than those that were not mulched and/or termites.