The Natural News

Central North Field Naturalists Inc.

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The Eastern Barred Bandicoot

Rod McQueen

When our family moved to Westbury from the USA thirty years ago, we knew nothing about the Eastern Barred Bandicoot (EBB), (*Perameles gunni*). I'll never forget our first sighting. For some forgotten reason, we had driven one frosty night to the end of our street where our headlights lit up a grassy walkway leading to the Westbury Town Common. The beam picked up what we thought was a rabbit half-hidden in the grass about ten metres away. Suddenly, it broke cover with a single unrabbitlike leap and made for a nearby gorse patch in a speedy gallop. It was then we saw the stripes. We were instantly hooked.

Seven living species of bandicoot are found in Australia, only two of which—the Eastern-barred Bandicoot and the Southern Brown Bandicoot (*Isoodon obesulus*)—are found in Tasmania. The EBB, or "stripey" as it is known to some, is extinct in the wild on the mainland, due largely to predation by foxes, while the Southern Brown Bandicoot is reasonably common in Victoria and patchily distributed in New South Wales and South Australia. We Tasmanians can congratulate ourselves. Largely due to the absence of foxes, both are still relatively abundant and widespread here, though the EBB is on the decline in some areas (see page 5 *Eastern Barred Bandicoots in the Weegena Area* by Jim Nelson). On the other hand, its distribution has increased with European settlement due to expansion of pastures and hedgerows (see map p. 4).

Being marsupials, young are born in an immature state and complete development in a pouch. The gestation period for the EBB is a vanishingly short 12 days, followed by 55 days in the pouch. Two to four young make up each litter two to three times a year. All bandicoots are omnivores: among other foods, our two species include berries and fungi in their diet along with insects, spiders and, above all, grubs and ooey, gooey, chewy worms that they locate with their acute sense of smell. In the process of digging with their front feet for underground dainties, they leave behind characteristic angled, conical holes that irritate some people but delight us, especially when they appear after an absence of a month or two.

Both species are nocturnal; however, I have never caught a Southern Brown in our headlights, while I have seen them probably a dozen times over the years foraging on the verge in mid-morning while on my daily constitutional. All but one such sighting was at the eastern end of town. A mysterious "Wallace's line" separates Westbury into two distinct faunal zones, with burrowing crayfish, Southern Brown Bandicoots, Eastern Rosellas, Dusky Woodswallow, hares and skylarks only found east of that line. How to explain? By comparison with the paucity of Southern Browns in Westbury, the EBB is a dime a dozen. And they love our end of town!

One night soon after we arrived here, we noticed a bandicoot grubbing on the Westbury Village Green as we drove past. Thus began about ten years of taking a slow drive onto the Green whenever passing at night, a practice only abandoned when the killjoy Council erected bollards to stop hoons doing wheelies on wet grass. Often we would see two or three bandicoots, occasionally with young. To those who might suggest that doing this would drive them away, I can only say that it didn't.

One episode remains indelibly engraved in my memory. As we drew near a big oak, there, perched on a low branch with its gaze riveted on a spot on the ground, was an owl, presumably a Tasmanian Masked Owl. A slight turn of the steering wheel picked up the object of its interest—an EBB about eight metres away.

Eastern Barred Bandicoot in Rod and Martha's Westbury garden. Photo: Martha McQueen.

Seconds later the silent killer swooped towards its quarry but something alerted Stripey and he bolted about a metre before it was too late. More than once we spied felines sitting, as innocent-looking as a tiger snake, just metres from a 'coot, but we never witnessed an attack there.

We live on the very edge of town, with paddocks and hedgerows just across the street and the Village Green down the road. Our ½ acre block with its extensive lawns (thankfully Martha loves mowing), areas of brambles and piles of weeds serves as a mecca for our beloved EBBs. One November evening a few years ago I counted five individuals sniffing and snuffling on our crew cut grass. They can also be spotted in paddocks over the road, in neighbours' yards, and in the cemetery. Many times we have startled them when weeding, or when running the mower close to piles of clods and weeds under the mulberry tree. One was even sheltering under grass overhanging our asparagus patch. Just weeks ago, our grand-daughters were given the task of clipping dead leaves off ferns growing in leaf litter under our California Redwood tree. Suddenly a large bandicoot shot out from under the litter at the base of a fern and vanished. Our girls decided to investigate; they seem to have sensed it might yield treasure. When they gently scraped away the litter they discovered a youngster nestled at the bottom of an excavated depression. It sat motionless long enough for them all to have a pat before it fled.

Another memory. I use a converted garden shed as my office. One afternoon as I was walking towards the shed, a bandicoot shot

An Eastern Barred Bandicoot shelter under a California Redwood tree. Photo: Martha McQueen.

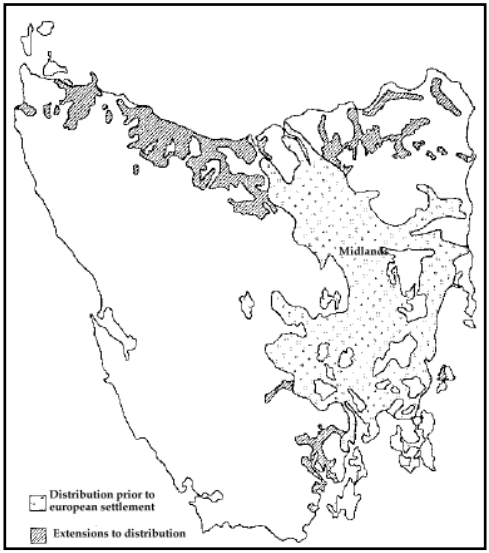
out of a garden patch opposite it, raced across a few metres of lawn and sought shelter in a thick patch of Russian comfrey growing against the wall. Strange, I thought. Anyway, work to be done, so I sat down and got stuck into it. Then I heard scrabbling sounds coming from the comfrey directly beneath the window. I looked up just in time to see a striped cone of fur galloping at breakneck speed across the thirty metres of lawn separating office from loganberry patch. In hot pursuit, about a metre behind, was a butcherbird! What was that all about? Who can say?

Another observation. At 10:00 am on Monday, 6th Feb, 2017, I was watering our tomatoes when something caught my eye on the nature strip across the road. It was an EBB on its haunches staring into a thicket of bushes, acting nervously. A few seconds later it bounded off across the neighbour's yard as if it was chased by the devil himself. It was; Millie Moggie burst out of the bushes and took off in hot pursuit. I yelled, and the cat broke away.

We love our bandicoots. They never dig up our vegetable seedlings or spread Toxoplasmosis. They delight mainland visitors who see them for the first time ever in our yard. I hope you have them at your place.

Reference:
www.parks.tas.gov.au/indeX.aspX?base=4826

Eastern-barred Bandicoot in Rod and Martha's Westbury garden. Photo: Martha McQueen.



Distribution of Eastern Barred Bandicoot. (www.parks.tas.gov.au/index.aspx?base=965)

Royal Spoonbills at Queechy Pond

CNFN members who went to Queechy pond recently were lucky enough to see a Royal Spoonbill in full breeding regalia, i.e. a white nuchal (i.e. nape of neck) crest, which can be up to 20 cm long in male birds and is usually shorter in females. The crest can be erected during mating displays to reveal bright pink skin underneath. Out of breeding season, the nuchal crest is reduced. Royal Spoonbills are most often seen wading in shallow waters, where they sweep their submerged bills back and forth to find food. They feed on fish in freshwater, and shrimps in tidal flats; they also eat other crustaceans and aquatic insects. Cover photo: Sarah Lloyd.

http://www.birdsinbackyards.net/species/Platalea-regia - accessed 27/11/2017

Eastern Barred Bandicoots in the Weegena Area

Jim Nelson

When I first came to Tasmania, I had yet to see a Bandicoot in the wild while living on the mainland. Given the presence of foxes there, it wasn't too surprising. After moving to the rural area of Weegena, it didn't take long to see both the Southern Brown and the Eastern Barred Bandicoots, as they were living on my land and were quite common, especially the Barred.

Barred Bandicoots seemed to go through "boom and bust" cycles in my early days here. I remember one year in particular (1975) when there was a spectacular boom in the population. We counted well over 100 individuals in the yard just around my house during one moonlit evening. It was in springtime, and I assume there was some kind of mating ritual happening because the bandicoots were virtually oblivious to our presence, and were in a frenzied state chasing each other around the yard. I have never again seen anything like that. In fact I rarely even see either species on my place, or even their characteristic signs where they have stuck their pointed noses into the ground to catch various underground prey.

Of course over the years there have been considerable changes in the Weegena area. I was next to the last person on a rural road, which crosses the Mersey River and enters thick forest. These days, our rural area is a scattering of small holdings where the residents enjoy owning various sized blocks of land, and the people range from retirees to commuters to lifestyle escapees like me.

The settling of the area into small holdings occurred in the late 70s when a large property was split up into the original small titles. There was an auctioning off of the land which was at one time small subsistence farms. Over 10,000 acres were auctioned off one small title at a time. I suddenly had lots of neighbours.

The resettling of the Weegena community brought many benefits to the area, including a new "start-up" for the old Weegena Hall. The Hall was once the local school, which a couple of the old residents still living in the area could remember attending.

One of the consequences of the re-settling of the community was the impact on the local wildlife. People moving to the country inevitably bring their dogs and cats, which if not kept under strict control can have a devastating effect on the wildlife and birds. In addition to hunting the wildlife, Toxoplasmosis can potentially be spread with devastating effects.

Thus, we witnessed perhaps the last time in the area the most amazing mating activity. We watched as perhaps a hundred Barred Bandicoots massed (coming from who knows where) to attend a frenzied mating event under some large Macrocarpa trees near my house. They were almost totally oblivious to us, as they leapt around the yard in a frenzy. It was a well lit evening with the benefit of a large and bright moon, so that we didn't need torches to witness the activity.

I would be interested if anyone else has witnessed such an activity with this species. I have never seen it since, and I'm puzzled as to how they all managed to come together at once in my yard. Their numbers used to be reasonable here, but there were never any clues that they were anything more than a "common" species to see at night. I hardly ever see one now.

Me and the EBB
Ron Nagorcka

My first encounters with EBBs were as a child chasing them around the paddocks of Western Victoria. They have since all but disappeared from there. Except that a population was discovered at the Hamilton tip about 30 years ago and since then there has been a concerted effort in the district to protect and extend the population. A farmer/naturalist friend, Keith Graham who is now in his 80s, is convinced the disastrous decline since the 1950s in Victoria was due to the introduction of myxomatosis—foxes needed to eat things other than rabbits!

Around the house here we've only ever seen southern brown bandicoots - but one day I was taking the necessarily relaxed drive down our track when an EBB fell out of the sky onto the bonnet. Freshly dead - but showing little sign of injury. I looked back to see a large blackwood branch hanging over the track. I surmise that the landrover surprised a raptor about to launch into dinner. The suspects would be Grey Goshawk or Collared Sparrowhawk as both are regularly seen at Black Sugarloaf.

Southern Brown Bandicoot. Photo: S.Lloyd

Bandicoots facts

The reproductive success of bandicoots is attributed to several factors. Unlike other marsupials, they have a complex placenta more like that of placental mammals. Young are born after a 13 day pregnancy; litters of 1–5 (mostly 2–3) are weaned at 3–5 months when the mother may immediately have another litter. Their milk is richer than that of other marsupials; by the end of lactation, their milk has 55% solids—richer than any other placental mammal except seals.

Ref: Menkhorst & Knight (2001) *A Field guide to mammals of Australia*, Oxford.
Tindale-Biscoe, H. (2005) *Life of Marsupials.* CSIRO Publishing.

Hop Bitterpea (*Daviesia latifolia*)

Text and photographs by Sue Gebicki

Walking in the bush at the top of our hill one winter, I detected a cloud of fragrance, distinctly sweet. Naturally I began a search for a plant in flower, but without success. Eventually I was able to track the scent to a shrub—the hop bitterpea or native hop bush (*Daviesia latifolia*). Careful examination (which involved much sniffing) revealed that it was the foliage, as there were no flowers present. Since then I have found many more examples of fragrant hop bitterpea, although I have only detected it in the cooler months. My current examination of the plants—while the weather is warm and they are in flower—has not detected any fragrance.

Flowers of hop bitterpea (*Daviesia latifolia*).

The hop bitterpea belongs to the Fabaceae (pea) family, and grows up to 3 metres tall. Characteristic of the *Daviesia* genus, it has phyllodes instead of leaves. They are ovate-elliptic to ovate-lanceolate to about 10 cm long, strongly veined, leathery, alternate, with broadly wavy edges. Phyllodes have fewer stomates (pores) than leaves, so less water is lost to the air. The flowers occur from October to November in Tasmania and are yellow and

The phyllodes of hop bitterpea are about 10 cm long, ovate-elliptic to ovate-lanceolate with wavy edges.

brown in long dense racemes. The triangular pods contain 1–2 seeds with a large aril (appendage).

From observation in my own area around Birralee, I have found the shrubs occur singly and are scattered widely, always in well-drained sites. They are recorded as occurring in forest areas after disturbance or fire, and are endemic to the eastern states, i.e. Tasmania, Victoria, New South Wales and Queensland.

Hop bitterpea phyllodes were reportedly used by indigenous people who infused them in water for tonic and to treat fever. The early settlers used them as a hop substitute due to their bitterness, and to expel intestinal worms and hydatid cysts. The bitter taste in *Daviesia* species is due to daviesine, a dibenzoyl derivative of glucoxylose, a disaccharide, one of the secondary metabolites produced by the plant.

Primary metabolites are compounds that are directly involved in the growth and development of a plant whereas secondary metabolites are compounds produced in other metabolic pathways that, although important, are not essential to the functioning of the plant. Secondary metabolites have been selected through evolution to address specific needs of plants. Examples include floral scents and pigments to attract pollinators; toxins to repel herbivores and suppress growth of neighbouring plants; and chemicals to prevent fruit spoilage.

Plant fragrance is due to the release of volatiles from the flowers, leaves or stems of plants. Volatiles may protect against abiotic stresses (e.g. temperature extremes, drought or excessive water, salinity or mineral toxicity), herbivores, pathogens or competitors. Alternatively they may be produced for the attraction of pollinators, mutualistic microbes, seed dispersers, predators or parasitoids. They have also been found to be a form of communication between plants. For example, a plant may release particular volatiles to indicate to neighbouring plants that it is being eaten

Conspicuous veins on leaf of hop bitterpea.

by a herbivore, which in turn may cause the neighbours to produce chemicals that deter herbivores. The release of volatiles comes at great cost to plants in the loss of carbon—which was originally fixed from atmospheric carbon dioxide—back to the atmosphere. So this serves a purpose for the plant, but why the hop bitter-pea releases fragrant volatiles in winter remains an intriguing mystery.

An alkaloid, Apiosylglucose Dibenzoate, has been isolated from hop bitterpea. Alkaloids are nitrogenous compounds that are produced as a defence mechanism against pathogenic organisms and herbivores; or they are protoxins for insects which further modify the alkaloids and incorporate them into their own defence. (A protoxin is a chemical compound that only becomes a toxin after it is altered in some way.)

References;
Baldwin, I.T. (2010) 'Plant Volatiles.' *Current Biology* Vol 20 Issue 9, 392-397.
Ghosh B. (2000) 'Polyamines and plant alkaloids.' *Indian Journal of Experimental Biology* Vol 38, 1086-1091
Hansson B., Johansson I., Lindberg B. (1966) 'A dissacharide dibenzoate from *Davesia latifolia.' Acta Chem Scand* **20**, 2358-62
https://science.csu.edu.au/herbarium/sws/database/davesia/davesia-latifolia (accessed 9 Nov 2017)

Green Rosellas - what do they eat?

Sarah Lloyd

The endemic Green Rosella is widespread and common, although according to the late Bob Green, not as common as it used to be:

> *'Flocks were once a common sight in agricultural districts, attracted there to feed on ripening grain crops and to congregate along hawthorn hedges where they fed by cracking open the seeds inside the ripe red fruit, dexterously extracting the fruit and eating the kernel, and discarding the pulp. Those large populations are now gone, the once abundant numbers have declined significantly'* (Green 1995).

Many people will be familiar with Green Rosellas because they are quite conspicuous when they feed on the seeds of grasses and native shrubs including hop goodenia (*Goodenia ovata*), sometimes known as 'parrot's food'. They are known to feed 'o*n the ground and in trees … to secure items which include psyllids and other such invertebrates*' (Green 1995). Exactly what they are eating is difficult to determine, my observations suggest this changes with the seasons.

In the past 20 years we have removed large eucalypts that towered above our house and sheds because they were a fire hazard and would be a danger if they fell. It meant we eliminated part of the winter diet of Green Rosellas who would crack the gumnuts to access the seeds and drop them with a 'ping' on the shed's tin roof.

Also in winter, they sit on treefern fronds, grab 'handfuls' with their feet and munch on the spores. Or they feed on the seeds of mountain correa (*Correa lawrenciana*). Last week I added another couple of ingredients to their diet: the invertebrates that are responsible for the galls on eucalypts and dogwoods.

In early November numerous eucalypt leaves with bright red spherical galls fall from the

Green Rosella feeding on treefern (*Dicksonia antarctica*) spores.

canopy. Many of these galls have exit holes from where the responsible invertebrate has vacated its home. But other galls are either intact or they've been split by the parrots to access the tiny invertebrate within, an achievement that requires considerable force.

The birds are also active in the subcanopy. On a recent walk to check a slime mould I noticed the parrots snipping off the branch tips of the dogwoods (*Pomaderris apetala*) and I assumed they were feeding on flower buds. A few days later, when collecting the now mature slime mould, I noticed pieces of dogwood leaves on the ground and on each fragment was a tiny 4–5 mm long capsule that had been split open. Inside one of the galls was a tiny (0.1 mm) white grub and in another a very small pellet.

It hardly seems worth a large bird spending so much time and energy cracking gumnuts or galls for such small rewards. But they spend a lot of time up there. By late November they're feeding on the flowers and seeds of forest daisybush (*Olearia lirata*) and blanketleaf (*Bedfordia salicina*).

Interestingly, when I went in search of some dogwood galls to photograph I found many more in the shaded part of the forest than in the more open area near our house, possibly because the responsible invertebrate prefers a shaded habitat.

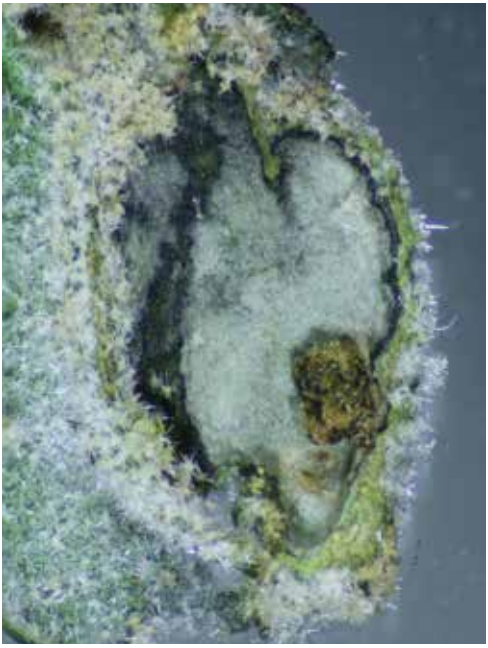
Ref: Green, RH (1995) *The Fauna of Tasmania-Birds.* Potoroo Publishing, Launceston.

Galls on a eucalypt leaf.

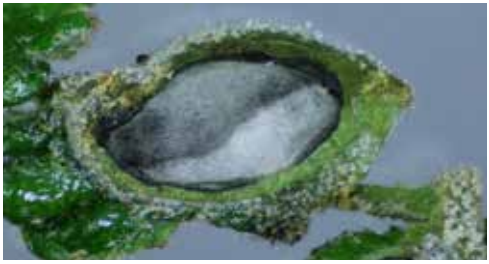
Green Rosellas feeding on grass seeds. Young birds (foreground) have darker green plumage that gradually brightens with each moult.

Green Rosella on mountain correa. Males are slightly larger and more brightly coloured than females.

The 4 mm diameter galls on dogwood leaves are thickly covered in stellate (star-shaped) hairs. Dogwood leaves have scattered stellate hairs on the upper surface and a thick covering of stellate hairs on the lower surface, especially on the veins.



Gall on dogwood with tiny 0.1 mm long invertebrate pellet.



Top: open gall showing white fibrous lining. Below: a black layer underlies the white lining.

CNFN Walks Program February - May 2018

Bring lunch, water, clothes for all weather, hand lens, binoculars and curiosity

Weekend 3-4 February A weekend in the high country at Daisy Dell and Iris Farm. John Wilson and Peter Sims have invited us to camp at Iris Farm. There is a toilet, some shelter and a bbq area. Other accommodation is at Cradle Mt Discovery Park. Entrance to Iris Farm is via a locked gate. Members are welcome to come for one day or the weekend. Further details will be sent later to those who register their intention to participate. Activities include: wildlife cameras; uploading data; setting up light traps; insect pollinators and long-term monitoring. Contact Peter Lawrence - see details below.

Sunday 4 March Meet at the Minnow Picnic Ground at 10.00 am. From the northwest: travel south through Sheffield on Claude Rd (C136), turn left on Paradise Rd (C137).The Minnow picnic ground is just before the bridge that crosses the Minnow River. From Deloraine/ Launceston: travel through Mole Creek and travel north on Union Bridge/Paradise Road (C137), cross the bridge; the picnic ground will be on your left. Leader: Sarah Lloyd - see details below.

Sunday 1 April Meet at Ferndene Reserve, 116 Ironcliff Rd. at 10:00 am (6 km south of Penguin). From east or west take Bass Highway to the northern end of the Dial Range at Penguin. Exit the highway at South Road and continue south for 0.7 km, turn right into Sports Complex Avenue and follow for a kilometre to its junction with Ironcliff Road, turn left and follow Ironcliff Road to the carpark at Ferndene Reserve. All roads are sealed. We will investigate various fern species, Giant Freshwater Crayfish and wet eucalypt forest for 1 kilometre, then 1 km up the flanks of the Dial Range with a final steep ascent. Leader John Coombes Ph: 04 5503 6479

Sunday 6 May Reedy Marsh Reserve and Brushy Lagoon: A walk through the reserve to record species, followed by bird-watching on the Lagoon. Travellers from north west: follow Frankford Rd through Frankford, turn right into Priestleys Lane, turn right onto Brushy Rd. Travellers from Westbury: follow Birralee Rd to turnoff onto Priestleys Lane, then left at Brushy Rd. For everyone, take left fork in Brushy Rd to boat ramp. Leader Sue Gebicki Mob: 0400 860 651

27th January 2018, 7.30 pm ALL NEW NAGORCKA

7 new works and a classic from the 70s to celebrate Ron's 70th.

With an occasional choir that includes several members of CNFN.

"*One of the finest composers of his generation – not just in Australia, but anywhere.*"

(Larry Polansky, Emeritus Strauss Professor of Music, Dartmouth College, NH, USA)

City Baptist Church, 11 Frederick St Launceston (facing Princes Square)

Please email contributions for the next newsletter by March 30 2018

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