Richmond Birdwing Conservation Network Newsletter

No 27. September 2013 *ISSN 1833-8674*

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Richmond Birdwing Conservation Network

The *Richmond Birdwing Conservation Network* (RBCN) operates under the umbrella of *Wildlife Queensland*, publisher of this newsletter.

RBCN promotes conservation of the Richmond birdwing butterfly *Ornithoptera richmondia*, its food plant, *Pararistolochia* spp. and butterfly habitats.

Membership of RBCN is open to anyone interested in the Richmond birdwing butterfly or insects of conservation concern.

RBCN encourages liaison between community members, catchment and landcare groups and government authorities.

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Newsletter: Ewa Meyer

Cover image: *Pararistolochia praevenosa*
Photo © Paul Grimshaw

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Message from Chair

Don Sands, Chair RBCN August 2013

Most growers of birdwing butterfly vines are delighted to see the health of their planted vines, as they have responded to the remarkably moist and mild 2013 winter that benefited much of subtropical south-eastern Queensland and north-eastern New South Wales. Over-wintering survival of birdwing pupae has been better than expected and this spring we can expect good emergences of butterflies in September and through to October. One wonders how winter pupal survival will have benefited pupae producing adults in summer at the high altitude localities, such as at Binna Burra and elsewhere on the Border Ranges, where very cool and dry winters usually cause high mortality or prevent populations increasing.

Recommendations from the last General Meeting led to re-forming the Advisory Group, changing its name to "RBCN Committee" and appointing an Acting Chair (to be reviewed at first Committee meeting). These recommendations were approved and all 4 of the Advisory Group members extended their roles to 2013-2014 on the new RBCN Committee. Three new appointments now provide the full quota 7 members on the Committee. Our sincere thanks those on the Advisory

Group for 2012-2013 and to Chris Hosking for her role as Chair in the previous year.

This year the focus for RBCN will mainly be towards *Conservation*, *Corridors* and *Communications,* for the Richmond birdwing. We will be firming up localities selected as "Flagship Sites", developing focussed plans for planting and monitoring vine corridors, and expanding the RBCN collaboration with agencies and incorporated community groups (e.g. Catchment Groups) as desired. Separate "Master" data bases are now lodged at WPSQ in Brisbane to document and monitor: (i) Wild *Pararistolochia praevenosa* vines, (ii) Wild *P. laheyana* vines, (iii) planted *P. praevenosa* vines and (v) sightings of Richmond birdwing adults and/or immature stages.

The records will be relayed to any needy members or community groups, and routinely added for inclusion in the RBCN website. Eventually the data will form a basis of developing a Revised Recovery Plan for butterfly and its food plant vine. Plans are underway by WPSQ to appoint a RBCN Project Officer, based at the WPSQ head office in Brisbane, to work one day per week. This is a much-needed resource which will enable RBCN committee and members to move forward and undertake our core business of '*Conservation*, *Corridors* and *Communications'.*

Notes from a butterfly gathering

The RBCN's Annual Members' Meeting, 28 July 2013.

Saren Starbridge

The Richmond birdwing butterfly (*Ornithoptera richmondia*) is a rainforest animal, so it is fitting that this community-based Conservation Network (RBCN) should meet in a rainforest setting. More specifically, the meeting was held in a marquee surrounded by mist and, of course, rain in the parking area of the Tamborine Rainforest Skywalk.

Ian Moore, part of the family that has developed this business, told us how a visit to the Coffs Harbour Butterfly House alerted them to the Richmond birdwing and inspired them to support this threatened

birdwing butterfly by locally participating in breeding programs and habitat protection. Alas, they don't get much cooperation from the local wildlife -- young shoots of the larval food plant *Pararistolochia praevenosa* and of butterfly nectar plants such as the native frangipani (*Hymenosporum flavum*) are favourite pademelon snacks.

Outside marquee at Skywalk, from left: Don Sands, Sue Scott, Prof. Roger Kitching, Richard Bull, Keith McCosh.

Maintaining habitat has helped butterfly populations survive, but this is not enough for full species recovery. For example, an isolated population monitored at Kin Kin Creek for 30 years has seen repeated crashes. The isolation that leads to inbreeding and matings between siblings often produce infertile or debilitated offspring. To combat this inbreeding depression, Dr Ian Gynther (Threatened Species Unit, Department of Environment and Heritage Protection) is working on a captive breeding program, as Dr Don Sands Sands (CSIRO, Ecosystem Sciences), reported to the meeting.

Following in-breeding in fragmented birdwing populations, the introduction of genetic variation does result in population growth and expansion, but how long can this effect last? Having worked towards saving the butterflies, the RBCN is now working on developing habitat connectivity so that the butterflies can travel far enough to develop the larger, resilient populations necessary to save the species. A gravid female can fly up to 30km before laying her eggs, so this should not be an impossible task.

In fact, some connections are already happening, as Richard Bull (Tamborine Mountain) reports. Logan Water Alliance needed to rehabilitate an area along Oxley Creek after laying a water main and, in a collaborative project with RBCN, included the butterfly's

food plant, *P. praevenosa* plantings in their plantings. This is a promising location, as the vine naturally grows along stream banks, and Richard says the corridor was looking good as recently as mid-July. Will this planting connect Brisbane butterfly populations with those on Mt Tamborine? It will certainly help. Massive plantings in the Redlands, reported by Dale Borgelt, and the work of Noosa and District Landcare and with Land For Wildlife projects on the Sunshine Coast, as reported by Phil Moran, should also help boost and connect scattered populations.

To help us see if and how this is working, Don Sands tells us, RBCN will have a central data base at Wildlife Queensland to record all vine plantings and butterfly sightings. The RBCN membership is fairly well spread across the original known range of the butterfly (from Grafton, NSW to Maryborough, Qld) and the information collected will help direct future RBCN strategies with the theme of 'Conservation, Corridors, Communications'.

Learning on the wing

Keynote speaker Professor Roger Kitching (Griffith University) chose four Australian butterfly species - Bathurst copper, Apollo jewel, Australian fritillary and Richmond birdwing - to illustrate three ecological points - niche, territoriality and metapopulations. That sounds simple enough -- but his exploration of the interplay of relationships was a reminder of why ecology is so fascinating and why preserving or restoring habitat for a particular species can be a complex undertaking.

Bathurst copper female upperside
Photo © Don Sands

Each of the example species could have a broad climatic niche -- open mountain blackthorn scrub, tropical paperbark wetlands, sub-tropical coastal wetlands, and moist subtropical rainforest. But for each species, the realised niche that includes appropriate food, shelter, mating opportunities and larval and pupal care is much more restricted. Native blackthorn, the crucial

foodplant for the Bathurst copper, grows best on open, sunny, north-facing mountain slopes, not crowded or shaded by introduced broom, blackberry or radiate pine. In addition, the Bathurst copper is one of more than 50 percent of the Australian Lycaenid species that has a mutualistic association with ants. These associations are very specific and, for the Bathurst copper, any location that does not include the correct variety of native blackthorn and *Anonychomyrma itinerans*, the ant species that protects its larvae and pupae, will not support its long term survival. No wonder that land clearing has left this species with only a few isolated, appropriate locations.

Bathurst copper male underside
Photo © Don Sands

The Apollo jewel is another ant-reliant species. It can only survive in mangroves and paperbark swamps that host the ant plant *Myrmecodia beccarii*, a bulbous epiphyte that is home to the ant species that cares for the Apollo jewel larvae. Larvae of the Australian fritillary feed exclusively on the native arrowhead violet, *Viola betonicifolia*, which grows amidst the grass and lomandra understorey of coastal melaleuca wetlands. And the Richmond birdwing relies on areas of rainforest with mature stands of its larval foodplants, the lowland vine *Pararistolochia praevenosa* and mountain vine *P. laheyana*.

Bathurst copper male upperside
Photo © Don Sands

Within these various habitat requirements, butterflies need the right conditions to attract a mate, whether it's an elevated location, a patch of sunlight or some other suitable situation. And, in order to maintain the viability of the species, there must be a set of interacting populations, or metapopulations, sufficient to maintain the genetic

diversity necessary for long term species survival.

Those of us interested in the environment may despair of the low profile for insect conservation on the political agenda. But, it's not surprising. Important as it is, ecology is far too compile to fit easily into the sound bites and three word slogans of our current political agenda.

Bathurst copper: http://www.environment.gov.au/biodiversity/threatened/publications/recovery/copper-butterfly/

No wonder they're threatened

Barb Eldred

Springbrook Mountain is a habitat for the rare *Pararistolochia lehayana* vine which is another, mountain host plant for larvae of the Richmond Birdwing butterfly.

The vine grows in the dense rainforest in dappled light or morning sun and is incredibly difficult to find as it is very shy and prefers to grow in a tangle of other vines, often with similar appearance and uses these vines to draw itself up to the light at the top of the trees where it spreads out in quite large clumps but still camouflaged in the other vines.

I struck my first seeds from a single capsule about 3 years ago. There were about 90 seeds in this capsules and most of them came up over a period of 18 months.

In 2012 a group of locals potted about 600 seeds of both *Pararistolochia* species with overwhelmingly appalling success. Of the 250 or so seeds in my care about 50 came up and others from the group had no germination.

Last year there was no seed produced but a late flush in May produced 2 good capsules and another 2 to come. Still another later flush in June produced about 12 seeds, about 6 of which are still growing.

When the seed capsules are first visible, which is a triumph in itself; I put a small organza bag over them to protect them from predators… probably possums. This also enables me to find the seeds again. This year about half the capsules died and I noticed that these were all bagged in bags I had used before and were a little mildew. Not sure if there is any connection.

So far this year I have planted out 90 seeds all of which seemed to be nice and fat so hopefully there will be a good take of seedlings. We used a seed raising mixture with the big project and I think it was too dry for them.

The biggest challenge is planting out the immature vines. Of the 60 or so I planted from the first batch, about 9 seedlings are doing fine and climbing well. Another 10 or so are surviving and will probably make it. I still have 15 or so seedlings to plant out when they are ready, so the success rate is not good. Some do really well and double their height and then die…. Just broken off. Some of these are resurging but they are so slow.

Initially I was not aware of their need for other vines for support and planted them at the base of trees. Some of these have survived and are using red poly cord to climb on….. well, I didn't have anything else at the time. Another lot I planted along the creek but BELOW the flood level!

I have also found 15 or so self-sown vines which are very slow growing. None of these are near other vines to provide support so I guess they will have to use my rope again….. but I will get green rope this time.

So a quick summary:

- Seeds of *P. laheyana* are very slow germinating
- Vines are very slow growing
- Dappled light or early morning sun
- They must have vines to climb on and hide in.
- If they die don't give up. They often come good.
- Do well on worm "juice"

If you are up Springbrook way, pop in and say hello. Barb Eldred 0413 124 631.

Under your Wing
— RBCN members' page

Recently we asked our members how their vines were faring, especially with above average rains in early winter. Was there active growth in your patch or have there been losses in poor drainage areas?

Thank you to all the members who responded to the call for your butterfly and vine news, here is a selection from around the region.

Hi Don, Gorgeous warm days up here but still cool at night. After all the rain we have had over winter we could use an inch or 2 just to keep the surface soil going. We mulched the whole back garden with 1/2" pine bark last week & it looks great. Have also fertilised the vines.

Mal found a dead male birdwing on the back lawn yesterday (19th Aug). Apart from missing antennae it was perfect & must have flown. The strange thing was that I've been going & forth along that section of lawn during the day yet failed to see it let alone rescue it.

Will keep you posted.

Helen Hepburn, Eumundi

Dear Jenny and Ewa,

Nothing to report at present except that our vines are doing well, although we lost two in the 2011 flood. We have about 12 left. Approx 7 have reached the canopy but no butterflies sighted here in our patch at Fig Tree Pocket. I had 5 good seed pods, at least 50 seedlings so far with more to come.

Niki Hill

Here are a few words about my experiences with the Birdwing vines planted on my property.

We have two and a half acres of sloping eucalyptus bush with some wet and dry rainforest species of plants in the shadier sections. A watercourse runs through the property however this only fills with water after rain events. I have planted 10 birdwing vines since April 2011. The vines would age between 4-7 years. All of them are climbing into the trees but I have had my difficulties.

During the prolonged dry times I was frequently seen struggling down the slope with heavy buckets of water or bags full of old milk bottles full of water (long hoses joined together and run halfway down the hill have helped since). The vines were like my babies and I refused to let them die! I have limited myself to 10 vines because with small children and having to hand water in dry periods, I cannot manage a larger number.

Many times I have read that their root systems do not like to be disturbed; however I have had success in relocating several. Because of extended dry weather and poor positioning, I decided to risk moving 4 of them to give them a better chance.

They would have been in the ground for over 12 months. Goodness knows they were banged around and their roots ripped and broken as I used the pick to get them out but nonetheless all have done well in the 12 months since. One has been potted and brought up to the house and three have been repositioned in a shadier/moister area. Their robustness has been surprising.

Recent rain events have resulted in the maintenance of healthy growth. I intend to plant more vines in coming years and hopefully the butterflies will find their way to our place one day.

Cheers

Emily Corbett, Pullenvale

The story of my vine.

In March 2011, we went to Maleny to check out the venue for our daughter's wedding reception, at a lovely place called 'On Mountain

View', overlooking the Glasshouse Mountains.

To celebrate, I bought a vine at the kiosk at Mary Cairncross Park. Its tag said it would attract butterflies. All good, I thought, not realising what sort of butterfly would come by my house. I just plonked it in a big earthenware pot in the shade, where it could wend its way up a neighbouring tree, which it has been doing at snail's pace ever since, mulched and watered as directed on the tag.

Anything that slow I would normally get rid of, but, because of the wedding connection, I was compassionate, and let it be. I'm still waiting for the butterflies to find our place, but so are lots of other members, as I read in the newsletter. Have any Richmond Birdwings ever been seen in the Lockyer Valley? I wait in hope!

Kind Regards,
Riemke Kelly

From the Glasshouse Mountains

As the weather has warmed for a while, our vines have been sending out wonderful new growth, probably due to the unseasonably wet winter. Flowers have started to form, while oddly enough a couple of green or even ripe fruit remain. We are anxiously awaiting the arrival of the first butterflies as last year there were fewer than the previous year.

In the early winter I received a number of reports of “chewed leaves” on vines. This was well past the time for caterpillars and no larvae appeared to be present. I could only assume that the warm weather well into winter, meant that other insects were feeding on the vines. I also found large holes in my own vines though I could not see what was responsible.

Recently I found another environmental use for one of my larger vines. It has been providing a home for a beautiful little Ringtail Possum.

Gwen Malcolm

Mysteries Of *Aristolochia* Pollination Biology

By Tim New and Don Sands

Fig 1. Flower of vine *Aristolochia erecta* (Texas, USA). Photo © A. Vacek.

In recent years pollinators of the Australian birdwing butterfly food plants (*Aristolochia* spp. and *Pararistolochia* spp.) have sometimes been referred to as "midges", but it became clear that the tiny flies found inside the flowers of the vines may not be midges, and are more likely to belong to other groups of minute flies. Presence of small flies in the flowers of Richmond birdwing vine, *Pararistolochia praevenosa*, prompted us to review information on the various pollinators of the family Aristolochiaceae (Sands and New, in press).

Sands and Scott (2002) referred to the pollinators of *Pararistolochia praevenosa* and *P. laheyana* as "midges" (e.g. *Forcipomyia* spp.), following a comment by Matthew Jebb (1991, re. New Guinean aristolochias) that 'small midges' (identified informally as '*Forcipomyia* spp.', Ceratopogonidae) had been found in flowers of *A. acuminata (*= A. *tagala*).

Fig 2. Foliage of vine *Aristolochia erecta* (Texas, USA). Photo © A. Vacek.

These midges were implicated as pollinators and this reference was subsequently extrapolated to cite *Forcipomyia* as pollinators of the Australian species of Aristolochiaceae. In addition, Razzak *et al*. (1992) stated that *Forcipomyia* was the pollinator they found in flowers of *Aristolochia bracteolata* Lamk. from Pakistan, whereas in India, Murugan et al. (2006) reported another family of small Nematocera flies (Chironomidae) as pollinators of *A. acuminata*.

The name '*Forcipomyia*' has became somewhat of a "holding genus" for the large number of tiny and biologically diverse midges in the family Ceratopogonidae. Many of these midges, in common with small flies in the family of Scuttle Flies (Phoridae), frequent and breed in moist habitats such as decaying vegetation, carrion or dung.

Fig 3. Flower of vine *Aristolochia elegans* (South America)

The flowers of most Aristolochiaceae are curious and variable in shape, for example, the low growing *Aristolchia erecta* (Figs. 1, 2) from the USA but all have a characteristic bulbous basal expansion enclosing the reproductive organs. Large pipe-shaped flowers are characteristic of many American species, for example Dutchmans Pipe (*Aristolochia elegans*) (Fig. 3).

These pipe-shaped flowers are not so usual in species native to Europe (e.g. *Aristolochia clematitis*, Fig. 4), or those of the Pacific region, all having a somewhat 'tubular throat' made up of fused sepals and a small opening to allow entry by pollinators.

Fig 4. Flower and foliage of herb *Aristolochia clematitis* (Europe)

Some species, for example *P. dielsiana* O.C. Schmidt (Fig. 5) from New Guinea, have a shorter tube, widely expanded at the opening with distally tapered sepals. The pollination mechanisms are as curious as the flowers, and in most Aristolochiaceae including Australian species, the protogynous flowers trap small flies (Diptera) after attracting them by compounds secreted near the stigma in the bulbous basal expansion enclosing the reproductive organs of the flower. In some aristolochias, male flies predominant in samples taken from flowers

suggesting pheromone-mimicry by an allomone.

Fig. 5. Flower of vine *Pararistolochia dielsiana* (New Guinea)

After entering a flower, small insect pollinators become temporarily trapped by retrorse hairs of the flower tube, in a way somewhat similar to a fish trap, but the flies are released when the hairs collapse a day or so later, when anthers have ripened. The flies carry pollen after visiting one flower and carry it to another flower the next day. Petch (1924) reported as many as 1-8 flies in a single flower of Dutchmans Pipe Vine (*A. elegans*). A wide variety of saprophagous flies have been implicated as pollinators, for example Phoridae have been most commonly recovered from aristolochia flowers, although Anthomyiidae, Chloropidae, Milichiidae, Sarcophagidae and Syrphidae have also been reported as pollinators (Sakai 2002) as well as Drosophilidae and Cecidomyiidae from the (non-trapping) *Aristolochia maxima* Jacq. in Panama. However, in a broader survey, spanning records from 35 Aristolochiaceae species, Berjano et al. (2009) noted a collective 39 families of Diptera present, with individual *Aristolochia* species yielding from one to 15 fly families. Phoridae were the only group reported with pollen loads from *A. elegans*, but no records from *P. praevenosa* or *P. laheyana* were included. However, Phoridae were the most frequently recorded family, from flowers of 24 species, followed by Chloropidae (14) and Drosophilidae (12) (Berjano et al. 2009).

Within the Phoridae, species of small flies in the large and diverse genus *Megaselia* Rondani are commonly associated with aristolochias, with seven species reported from *A. littoralis* in Florida (Hall and Brown 1993), and this genus was also predominant amongst flies retrieved from an Argentinian species (Trujillo and Sersic 2006). Disney and Rulik (2012) reported species of *Megaselia* from *Aristolochia* species in Italy and noted the 'Phoridae appear to be important pollinators of *Aristolochia* across the world'. In Australia, recent dissections of flowers of *P. praevenosa* yielded small numbers of about three species of

Phoridae, all apparently *Megaselia* spp., adding to evidence that these might be the true pollinators of the birdwing butterfly vine. These small flies belonging to the family Phoridae are often very similar, have complex identities and most have poorly-known life-histories. Many, perhaps most, of the Australian species are undescribed.

The pollinators of *Pararistolochia* will remain difficult to identify until a specific project is undertaken to study the pollinator-flower interactions of Australian aristolochias. Collections from flowers are needed to both accumulate material of Phoridae for critical taxonomic appraisal and to determine whether *Forcipomyia* or other Diptera may also be pollinators.

Acknowledgements.

We thank Helen Hepburn, Ray Seddon and several other members of RBCN for collecting samples of aristolochia flowers containing insects for our study.

References.

Berjano R, Ortiz PL, Arista M & Talavera S (2009) Pollinators, flowering phenology and floral longevity in two Mediterranean *Aristolochia* species, with a review of flower visitor records for the genus. *Plant Biology* 11: 6-16.

Disney RHL & Rulik B (2012) Scuttle flies (Diptera: Phoridae) trapped by flowers of *Aristolochia* L. (Aristolochiaceae) in Italy. *Entomologists Monthly Magazine* 148: 234-236.

Hall DW & Brown BV (1993) Pollination of *Aristolochia littoralis* (Aristolochiales: Aristolochiaceae) by males of *Megaselia* spp. (Diptera: Phoridae). *Annals of the Entomological Society of America* 86: 609-613.

Jebb M (1991) *Aristolochia* in New Guinea. Unpublished Report, Christensen Research Institute, Guide. Madang, Papua New Guinea.

Murugan R, Shiuvanna KR & Rao RR (2006) Pollination biology of *Aristolochia tagala,* a rare species of medicinal importance. *Current Science* 91: 795-798.

Petch T (1924). Notes on Aristolochia. *Annals of the Royal Botanical Gardian* 8: 1-108.

Razzak MA, Ali T & Ali SI (1992) The pollination biology of *Aristolochia bracteolata* Lamk. (Aristolochiaceae). *Pakistan Journal of Botany* 24: 79-87.

Sakai S (2002) *Aristolochia* spp. (Aristolochaiceae) pollinated by flies breeding on decomposing flowers in Panama. *American Journal of Botany* 89: 527-534.

Sands DPA & Scott S (eds.) (2002). *Conservation of birdwing butterflies*. SciComEd, and THECA, Brisbane, 48 pp.

Sands DPA & New TR. Conservation of the Richmond birdwing butterfly in Australia. Springer (in press).

Trujillo CG & Sersic AN (2006) Floral biology of *Aristolochia argentina* (Aristolochiaceae). *Flora* 201: 374-382.

The gradual return of *Ornithoptera richmondia* to the high altitude rainforests of the Queensland/ New South Wales Border Ranges.

(From an interview with Peter O'Reilly)

Susanne Scott

Pararistolochia laheyana stems
Photo © Paul Grimshaw

Pararistolochia laheyana, the montane larval food plant for the Richmond Birdwing, *Ornithoptera richmondia*, has a restricted distribution on rainforest ridges above 600 metres on some of the eastern facing slopes at Springbrook, and above about 800 – 1000 metres at other locations on the volcanic rim surrounding Mount Warning (Springbrook through to Binna Burra and O'Reilly's in the McPherson Range, on the Border Ranges to the west, and on the Night Cap Range in NSW) and on the top of Mt Warning itself. In these areas it is plentiful and safely situated in the mostly-protected National Parks. It is a much smaller, fragile vine when compared with *Pararistolochia praevenosa* (the lowland and coastal larval food plant) and is often found on slopes and ridges entwined in low shrubs, and sometimes ascending (to 4 m) into the low understorey of rainforest. The leaves and stems are smaller and softer than *P. praevenosa* but it has a greater biomass available to larvae than *P. praevenosa* and does not develop the tough leaves that *P. praevenosa* does, as a defence against the voracious appetite of the *O. richmondia* larvae. In the mountains, *P. laheyana* supports only

one generation (univoltine) of feeding by *O. richmondia* larvae per year (from about December to February) whereas *P. praevenosa* supports two generations per year (bivoltine, with adults emerging from late August through to April) or sometimes three (with one near Christmas time) at lower altitudes. Most flowers of *P. laheyana* have been observed in March and April. The flowers are similar to that of *P. praevenosa* being about 20 – 30 mm long with a swollen base but the sepals are broader and are more fluted in appearance. The flowers are pale pink with maroon venation, the inside speckled maroon. There are colour variations in different localities with a bright yellow form occurring in an area north of Kyogle on the Tweed Range. The seed capsules are also pale green and ripen slowly to a greenish-yellow colour. They fall unopened to the ground and are believed to be dispersed by ground-dwelling birds (Sands D.P.A. and Scott S.E., 2002).

Pararistolochia laheyana flower
Photo © Paul Grimshaw

In the early days of the CSIRO Richmond Birdwing School Project, during the photographing of a female birdwing butterfly for a story for *The Australian* newspaper in January 1994, Don Sands and I saw many male and female birdwings flying around the car park and in the rainforest surrounding O'Reilly's guesthouse. There were plenty of eggs laid on the leaves of the *P. laheyana* vines. One leaf on a vine near the treetop walkway had thirteen eggs laid

on it! We met with Col Harman (he established the Botanical Gardens at O'Reilly's) and he told us it was the most birdwings he had seen in a summer for many years. He recalled how many years earlier there had been an unusually heavy snowfall and the following summer there were no birdwings flying. He recalled that it took many, many years for the birdwings to reappear and for the numbers to increase.

In a telephone conversation with Peter O'Reilly from O'Reilly's Guesthouse on May 11th, 2011, Peter recalled how a huge storm had swept through Lamington National Park and flattened large areas of the rainforest. This storm in September 1983, 'blew out many windows in the O'Reilly's guesthouse' and opened up the canopy in wide strips, exposing the lower, normally dark understorey of the rainforest. Damage from this storm can still be seen on a number of walks around the park, for example, not far from O'Reilly's guest house (approx. 1.7 km), near the start to the main Border Track that leads through to Binna Burra, several mature trees were knocked down, and the resulting clearing in the canopy encouraged the growth of small trees and vines. About halfway along the Border track (approx. 10.78 km) there is a track leading to the Mt Merino lookout with spectacular views of the Tweed and Limpinwood Valleys (Lackner T.W., 1989); there you can see some very large specimens of Antarctic beech, *Nothofagus moorei* and nearby there is still evidence of that storm damage. In the year following the storm Peter recalled that there was a very heavy snowfall. He flew over the national park in a helicopter and observed wide strips of brown foliage everywhere where snow had fallen. The only trees not affected by the snowfall were Antarctic beech!

According to the National Park website, 5 cm of snow fell in July 1984 causing damage to the foliage of a number of tree species and even damaging understorey species including tree ferns and the stream lilies, *Helmholtzia glaberrima*. Birdwing larvae carefully select leaves to pupate on that will last them through the long months of winter and spring and normally, the birdwing pupae are

protected from climatic extremes by the dense understorey plants surrounding these larger leaves. With the heavy snowfall damaging large areas of the rainforest, it is thought that this would have opened up the understorey thus exposing the pupae to desiccation from the hot drying winds of spring and summer; resulting in few if any birdwings surviving and emerging in the high country during the 1984/1985 summer. It then took almost ten years for the birdwings to recolonise the high country. As well as our observations of numerous birdwings at O'Reilly's in January, 1994, we received reports from other people living around the Border Ranges and in late January 1994 of birdwings were seen migrating down from the high country – a migratory event not recorded for many years.

Unfortunately the high numbers of birdwings in the high country were not to last. In the following spring (September 1994), the rainforests of the Border Ranges were subjected to strong hot drying winds and much of northern New South Wales and southeastern Queensland was burnt in very hot wildfires. There were no birdwings seen at Binna Burra or O'Reilly's during Christmas 1994 and January 1995. Lyndria Cook from Tallebudgera Valley has been observing birdwings for many years and in November, 1994 Lyndria guided Don and I on a walk on the track from the end of Tallebudgera Valley up to near the edge of the Springbrook escarpment. *P. praevenosa* grows naturally in isolated patches in the Tallebudgera Valley and supports birdwing breeding and above about 600 metres, Lyndria showed us where the *P. laheyana* vines start to be found in the rainforest. On this walk we saw how stressed the rainforest was from the hot, dry winds with many trees having lost much of their foliage and the *P. laheyana* vines were exposed to direct sunlight and appeared very stressed. During the severe drought from 1994 to 2009, Peter O'Reilly recalled that the rainforest canopy around O'Reilly's and throughout the national park had thinned out and he reported that the *P. laheyana* vines suffered severely from the increased exposure. Peter commented that the canopy had opened up so

much that you had to wear a hat when walking in the rainforest to protect your head from sunburn. Following the excellent rainfalls for the 2010/2011 summer, he reported the *P. laheyana* vines were recovering, were growing vigorously and had smothered shrubs with plenty of new soft foliage.

There are a number of excellent specimens of *P. laheyana* easily seen from the treetop walk near the Botanical Gardens but Peter had only seen a couple of female birdwings flying during the 2010-2011 summer. During a visit to O'Reilly's in June, 2011, I examined a number of vines close to the boardwalk leading to the treetop canopy walk and I was pleased to see there were feeding scars from recent feeding by *O. richmondia* larvae on a number of the vines. Also, there had been reports of larvae feeding on *P. laheyana* vines at Springbrook within the last 3 years (Don Sands pers com). Given the wet summers of 2011-2013 and the recent rain in south-eastern Queensland during winter 2013, we can hope the birdwings will slowly return back to the higher altitudes rainforests of the Scenic Rim that surrounds Mt Warning.

References

Lackner T.W. (1989) *Discovering Green Mountains (O'Reilly's) on Foot*, Envirobook, Sydney, NSW.

Sands D.P.A. and Scott S.E. (2002) The Richmond Birdwing Butterfly (*Ornithoptera richmondia* [Gray]): Its natural history and progress towards recovery. In: *Conservation of Birdwing Butterflies*. (Eds. Sands D.P.A and Scott S.E.), pp. 32-47, SciComEd Pty Ltd, Qld.

Brisbane Update

Greg Siepen

Don Sands (left) and Kees Haybroek inspecting 12 month old vines along Kees' rainforest boundary. Photo © Greg Siepen

The birdwing vines planted by Conservation Volunteers Australia (CVA) volunteers last year are growing well. Recently, Don Sands visited some of the sites to assess their status and to get details for the national Birdwing Vine database.

At the sites in Brookfield, very few had died since being planted last September. And many were growing so well they were climbing into the tree canopies. This is a great result. Don thanked CVA Brisbane Manager, Libby Gardiner, for her organisation's contribution to gaining sponsorship to produce the vines and for arranging teams of volunteers to plant them on sites identified by the Network.

Vine growing up the 2 metre bamboo stake into the tree. Photo © Greg Siepen

The vines grown by Gary Einem have proved very resilient and have benefitted from the early winter wet spell. Many of the volunteers were from overseas and it was a rewarding experience for them to get out onto acreage properties, clear weeds, plant vines and have a cup of tea with the property owners.

Groups of 20-30 vines have been planted at a variety of locations along potential corridors which the Birdwing Butterfly may fly during spring and summer. The Network is developing a five plan based on landscape scale and smaller scale corridors which can be targeted for weed control and planting of more vines, if necessary. All sites where vines are planted as well as where wild vines have been sighted are being recorded on the Network's National Database. Sites are notified by GPS recordings to protect privacy.

Redlands Update

John T Moss
(johntimmoss@gmail.com)

In summary, there are three major sites in the Redlands that I know of where there are established, extensive plantings of the Birdwing Butterfly Vine, *Pararistolochia praevenosa*.

John Moss and Lois Hughes planting vine at West Mt Cotton, 10th April 2013. Photo © Teresa Carvalho

The original 1980's Mt Cotton (east) plantings on private property no longer exist as the new owner removed all the vines citing their supposed damage to his trees!

The 2003 plantings at the Eprapah Scout property at Victoria Point, which were done by a Green Corps team under my supervision, are doing extremely well, with all 30-odd vines high in the canopy of the “Butterfly Garden” along with other species of native butterfly hostplant vines, shrubs and trees. Many of these vines have been fruiting for the last 4 or 5 years. Progeny of these have been planted in other areas of the property by well meaning people who were unaware of the correct planting requirements. Consequently those have not progressed! So far there have not been any birdwing sightings in or near the butterfly garden (possibly due to lack of observers?) but the stage has been set for a colony to develop in the Redlands.

John Moss attaching vine leader to tree with a string line at West Mt Cotton. Photo © Teresa Carvalho

However, last year in early spring at the nearby Thornlands property of Lavinia Wood and Robert Eggleton, a newly emerged Birdwing was photographed on their approx 18 year old vines. This was reported to WPSQ's Simon Baltais who brought it to my attention.

Interestingly, a female birdwing had been seen flying around those vines the previous year. Lynn and Chris Roberts, who also live nearby at the Victoria Point end of Thornlands, have a number of approx 6-year old vines doing very well on the fertile red soil, but although flowering well, have not set fruit, probably due to the local absence of the pollinating midge.

Among recent extensive plantings, the property of Steve & Jenny Anthony on Henderson Rd Sheldon was augmented with a further 25 plants on 17 April 2013. This was a planting by Conservation Volunteers Australia, under the auspices of SEQ Catchments with the new funding from the state government's "Everyone's Environment Grant". Jenny & Steve report that the plants are doing very well, even in the recent drier conditions as they got a good start with the SEQ's extended wet season this year.

Lois in her last report mentioned the extensive plantings along a branch of Tingalpa Creek that we did in April this year. In all 50 vines were carefully planted above the flood line in the new extension to Venman's Bushland National Park. This augmented the 2011 plantings of 50 vines, some of which were lost in the 2011/2012 floods. We have been back to check on them (Lois lives next door!) and they are all doing well.

The Redlands Council have also been involved in at least two plantings, one limited number at their Indigiscapes Native Plant Display Gardens and the other at West Mt Cotton in an as yet unnamed council reserve (on the same branch of Tingalpa Creek) opposite the Hughes property and below Karreyman Quarries site. Several of these vines that were planted in March 2008 have grown high into the riparian canopy and have been flowering for some time, although, probably for the reasons espoused above, have yet to set fruit. The scene is set for the arrival of the Birdwing in this sheltered valley below Mt Cotton.

I think I still have the oldest existing vines in the Redlands -- Don Sands provided them shortly after I bought the property in 1991!! In that time I have only found one larva but I have seen female birdwings on the property on at least 3 occasions. Of course my hope is that they will establish colonies in the Redlands and I feel that time is getting closer!

Sunshine Coast and Hinterland Update

Phillip Moran

With funds from Queensland Government's NRM program, SEQ Catchments is supporting landholders and community groups to undertake prioritised weed control and management of native vegetation to improve catchment and landscape health.

One of these projects aims to improve the habitat potential of Kin Kin Creek for the Richmond Birdwing Butterfly by undertaking revegetation and weed management activities that improve and expand the habitat condition of Kin Kin Creek. This project began in March 2013 and was completed in July.

Kin Kin Creek is the northernmost limit of the known current RBB range and re-establishing viable populations of the RBB larval food plant, *Parastolochia praevenosa,* will protect and enhance the butterfly population on the Sunshine Coast.

This project achieved the following:

- Planting of 933 tube stock endemic to the Kin Kin locale, including 160 RBB vines.
- Distribution of an additional 70 RBB vines to students of the Kin Kin Primary school to take home to plant.
- Weed control activities (focussing on cats claw creeper and dutchman's pipe) on an area measuring 7.14ha.
- Community engagement day held on 7 July at Kin Kin Market.

Other Birdwing activities in the Sunshine Coast and Hinterland:

- I gave a talk to tourism operators of Noosa.
- Channel 7 news segment (Local Legends): overview of need for corridor plantings and how suburban gardens can help.
- Also gave talk to Cooroy & Eumundi Garden Club.
- Kin Kin state school planting and birdwing butterfly display .
- Sale of vines steady through our retail outlet in Pomona.
- Noosa Festival of Water on 30 June. RBB banner and brochures on display and vines for sale. 1500 people attended.
- Pomona King of Mountain Festival on Sunday 28 July: Vines and RBB information available. 10,000 people attended.

Recommended Nurseries

Gold Coast & hinterland

EJ and EM McDonald
12 Pharlap Avenue
Mudgeeraba, Qld 4213
Ph: (07) 5530 5299
Grahamcd14@bigpond.com

Richard Bull
87 Bateke Road
Mt Tamborine, Qld 4272
Ph: (07) 5545 1618
rmbull46@bigpond.com

Steve Ward's Rivermill Nursery
Beside the Coomera River bridge at Mt Nathan.
Ph: 0430 205 812
sales@barbstrees.com

Sunshine Coast & hinterland

Florabunda Bushcare
Suzie Pearce
Top of Laidlaw Rd, Woombye
PO Box 272 Woombye Qld 4559
Ph: (07) 5442 1339
florabundabushcare@bigpond.com
www.florabundabushcare.org.au

Noosa & District Landcare
Phillip Moran
PO Box 278,
Pomona Qld 4568
nrmanager@noosalandcare.org
ph. (07) 5485 2155

Typical quality 3-year old vine ready to plant out as sold by Gary Einam

Brisbane Region

Gary Einam, *Proplants*
80 Robbs Road
Morayfield, Qld 4506
einam@westnet.com.au
Mob. 0429 342 259

Andrew Wilson
MCCG Native Plant Nursery
Gold Creek Road
Brookfield Qld 4069
Mob. 0409643881

Dale Borgelt
40 Gap Creek Rd.
Brookfield Qld 4069
daleborgelt@bigpond.com
ph. (07) 3374 1035

Membership of RBCN

$15 per annum payable to “WPSQ-RBCN”.

All correspondence should be sent to:

Richmond Birdwing Conservation Network
c/- Wildlife Queensland
95 William Street
Brisbane QLD 4000

Or you can pay online:

www.richmondbirdwing.org.au

Contributions for next newsletter due 10 January 2014.

NOTICE OF GENERAL MEETING

Richmond Birdwing Conservation Network

SUNDAY 10 NOVEMBER 2013

11 am – 2.30 pm (includes 1 hour lunch break)

Noosa & District Landcare

End of Pavilion Street, Futures Centre, Pomona.

The main business will be an address by Don Sands:

'Designing Corridors for the Richmond Birdwing Butterfly'

RSVP 4 November to birdwing@wildlife.org.au

or phone 3221 0194