Castlemaine Naturalist

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Cadmus excrememtarius - photo by Patrick Kavanagh

Revealing the insect world through macrophotography

Noel Young

Most of us who are interested in natural history find that photography is an important adjunct to that interest, and many find that mastering the technicalities of the camera can enhance our enjoyment of the study of nature. Difficulties and challenges arise particularly at the optical extremes. Good bird photography for instance, requires quality telephoto lenses and the means to prevent them shaking so much that they blur the picture. The other extreme – high magnification of very small subjects is arguably even more arduous, and may account for the fact that at least among amateurs, bird photos are much more prolific than close-ups of tiny subjects such as insects.

For some time now I have been very impressed by Patrick Kavanagh's insect photos which first came to my attention on Geoff Park's Natural Newstead blog. So it was a privilege to hear him speak on the topic at the July meeting where he explained in generous detail his equipment and techniques as he screened a selection of his stunning photographs.

Like Patrick I had dabbled in macrophotography decades ago with SLR film cameras, and my museum collection includes magnifying filters, extension rings, bellows, lens reversing adapter, flash diffusers and so on, but I rarely got a result that I was happy with. The era of digital cameras has made life manifestly easier in all aspects of photography, and the technology continues to make strides. We now take for granted such features as effective stabilisation, high burst speeds, fast auto focusing, face recognition and so on, made possible by the incorporation of powerful computing in cameras, and we also are blessed with very sharp lenses at affordable prices.

But while the tools of the trade enable high quality results, in the end nature photography also requires skill and dedication to the cause, particularly when dealing with live (read unpredictable) subjects. Patrick listed six major challenges which face the insect macro-photographer.

1. Depth of field

At close quarters there is the technical problem of very limited field in focus; this focussed zone can be increased by closing down the aperture, but light is reduced proportionally, and if overdone, quality also deteriorates.

2. Lighting

Needs to be aesthetic as well as adequate.

3. Dealing with movement – both camera and subject – difficult in a highly magnified environment.
4. Finding and posing subjects
5. Dealing with the background
6. Finding out what it was that you photographed

Traditionally the need to use both low aperture (for adequate depth of focus) and high shutter speed (to overcome magnified movement) usually precludes the use of natural light, and so recourse to flash lighting is needed. Flash however, like direct sunlight, is a harsh light and aesthetically undesirable. Commercial methods recognise this problem in the form of ring flash or twin flash heads, but these also have drawbacks.

Having tried different flash setups, Patrick has resorted to a home-made “snoot” which he brought along to show us - a housing which covers a small flash unit on top of the camera and spreads the light so that it comes from either side and above the lens in a very diffused form, giving a pleasing and more natural light.

If a tripod is used to prevent camera movement it needs to be of the type that can lower the camera to ground level, and for close work a focusing rack is very desirable to shift the camera on the tripod. Patrick demonstrated his, though he admitted that most of his insect shots are with the camera held in one hand while steadying the branch or whatever it is on with the other. While this sounds difficult, it is much more flexible than fixing the camera position.

Many newer cameras are capable of high speed “burst” shooting for various settings such as exposure, colour intensity, white balance and so on; the pre-defined rapid shot sequence allows you to select the best frame from the sequence. In some cameras this capability is extended to 'focus stacking', a feature especially valuable in macro-photography to overcome the depth of field problem. For some time, computer software has been available to resolve a series of shots at shifted focal points into a single picture, sharp through a greater depth than otherwise possible. Patrick showed us several photos treated in this way with spectacular results, some apparently taken by shifting the camera manually to vary the focal plane. This is probably best done with the focusing rack on a tripod. The main drawback is that the subject must stay still while the sequence is shot.

Faced with a monstrous glass eye, the insect subjects naturally tend to fly, or try to hide, so a slow approach is essential to gain their confidence. Knowing the habits of the species is a help of course. “Know your subject”. With flash, the effect often results in a dark background, so Patrick tries to use the sky as backdrop, or pin one of several coloured cards behind the subject.

Finally, having photos of something strange and unfamiliar, there are various resources available to solve the mystery. Patrick mentioned some - on the web;

iNaturalist, Natureshare, arachne.org.au (spiders); brisbaneinsects; Insects of Tasmania. And references such as Jenny Shields' spiders (Bendigo FNC).

In conclusion the large audience thanked Patrick for a fascinating insight to a specialised pursuit, and an address which is bound to inspire some of us to try a bit harder.

A Dill(wynia)'s Quiz!

Can you match these descriptions to the photos below?
(Email members can zoom in on the photos for more detail.)

1 Grey Parrot-pea (Dillwynia cinerascens)
Widespread and fairly common open shrub.
Identify by:
- the broad standard
- the flowers are clustered at the ends of the branches
- the narrow leaves which are curved back at the tip
- the greyish colour of the leaves.

cinerascens: becoming ash grey.

2 Smooth Parrot-pea (Dillwynia glaberrima)
Uncommon locally.
Identify by:
- the broad standard
- the green slender long hairless leaves
- the long stalked flowers from the end of branches
- the mainly yellow flowers

3 Red Parrot-pea (Dillwynia hispida)
Uncommon. Most local records are from the Maldon district.
Identify by:
- the reddish flowers with a broad standard
- the long stalked flowers which rise from the ends of branches
- the short cylindrical leaves which are not spirally twisted
- the short stiff hairs on the leaf tips and flower stalks.

hispida: rough with short stiff hairs.

4 Small-leaf Parrot-pea (Dillwynia phylicoides)
Moderately common south of Castlemaine e.g. Fryers Ridge and Porcupine Ridge.
Identify by:
- the broad standard
- the flowers which are clustered at the ends of the branches
- the short, spirally twisted green leaves
- the leaves with a rough surface.

phylicoides: like the genus Phylica, referring to the small, narrow leaves.

5 Bushy Parrot-pea (Dillwynia ramosissima)
Bushy Parrot-pea is most common in the southern forests.
Identify by:
- the branchlets end in short spines
- the short leaves are not spirally twisted.

ramosissima: very much branched.

6 Showy Parrot-pea (Dillwynia sericea)
The most common local Parrot-pea.
Identify by:

the broad standard
the more or less straight, finely-warty leaves about a centimetre long
the almost stalkless flowers
the crowded flowers along the branches, sometimes resembling an egg and bacon bottlebrush
the leaves may be parallel to the stems, or diverging.

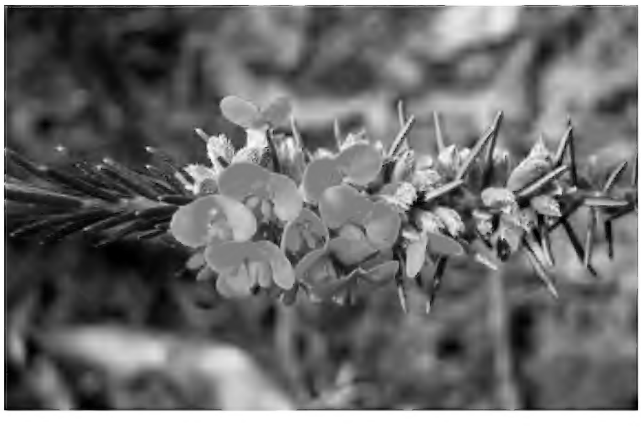
sericea: silky. (The silky hairs may be present or absent.)

Geraldine Harris

(ref: The new coloured edition of Egg & bacon Peas of the Central goldfields is now available from CFNC.)








Observations from "Wildlife" magazine. Aug 1940

George Broadway

There were fewer specimens sent in to Crosbie Morrison this month which I suppose is not surprising, most critters overwintering in the form of eggs, or pupae. I have been interested to note how certain specimens keep being sent in, however in 1940 the magazine had not been in existence for very long. Even so some specimens were repeats. Here following is what we have.

PESTS

Kew: Pea-mite. Spray with white oil emulsion

Gembrook: Chafer Beetle grubs, a pasture pest

Millicent S.A.: Larvae of the carpet beetle, very destructive in the house. There are commercial sprays available

Ararat: Carpet beetle

Tongala: Cabbage butterflies. Remember that in 1940 these were still not well known to many people

FAUNA

Campbells Ck: If the nest is large enough and open the cuckoo will lay its egg. In the case of the double nest of the Tom-tit (Thornbill), the cuckoo will lay her egg nearby, then carry it to the nest of the Tom-tit, placing it inside and removing one of the Tom-tit eggs to make the substitution less obvious to the Tom-tits.

Balmoral: I have no knowledge of the longevity of the common silver-grey possum. I imagine however that the feminine Methuselah which adopted you 17 years ago and is still keeping up her average of two babies a year would be exceptionally old. As a general rule the normal life span of an animal is roughly proportional to its size, so a possum would expect to live for about 12 years.

Hawthorn: Your description fits the little Sunbird, usually found only in the tropical parts of Queensland. It is possible that this was an escapee from an aviary. Only the male has the brilliant blue with gold on the under surface. If instead a duller colouring with a white throat and a dark band below would make it an Eastern Spinebill a much more likely visitor to a Hawthorn garden. It is very unlikely that it would be a Riflebird.

MISC

Burnie Tas: Eggs of a slug. Several slugs lay eggs with thin shells.

Windsor: Specimen of the "Prawn-killer" a member of the crayfish family whose official name is Ibacus. It lives on the bottom in shallow water and feeds on shrimps and the like. A species of Ibacus is known as the "Balmain Bug".

Abbotsford and

Regent: Shield-bearer centipede or "Johnny Hairylegs" Scutigera. Beneficial and harmless, eats insects [Feb '17]

INSECTS

Surrey Hills: Pine Swift Moth. The caterpillar often does considerable damage in pine plantations.

Carrum: Eggs and cocoon of the Leopard Moth, distinguished by its orange-red body with black spots. The caterpillar is a "Woolly Bear" which feeds on Tea-tree.

Ballarat: Longicorn or Long-horned Beetle. Phorocantha. [Previously described Feb '18] The larvae eat tunnels in wood and are frequently found in firewood.

Devonport Tas: An Ant-lion, the larva of one of the Lacewings. [See July '16] Creates a funnel in loose sand and lurks at the bottom waiting for an ant to fall in.

Heidelberg: Field cricket - harmless Tiger Moth. Another larva which is “Woolly Bear’, often a pest in gardens.

Kerang: Large leaf Phasma, related to the grasshopper. Resembles sticks and leaves. [see June ‘16]

Maryborough: Cup Moth caterpillars. Familiar to us now as they have in recent years defoliated areas of forest [see Feb’18]

Warburton: A silk bag with fine hairs all over it is the cocoon of one of the larger moths, *Chelepteryx.* The hairy caterpillar when it pupates pushes the hairs through the walls to act as protection. The hairs are sharp and can produce severe irritation.

TallyHo and

Stawell: Long-horned solitary Grasshopper. Feeds on decaying wood, hence the huge jaws.

Regent: The little grey-brown boxes with the double row of white spots on top are the egg packets of the praying mantis [See Mar’18]

Boonoonar: Small praying mantis, a dry country type, most likely found in the Mallee.

Neuarpur: Silver-streak Vine Hawk Moth. [See Feb’18]

Heidelberg: Old Lady Moth, smaller than gum emperor moth and has eye spots on the fore wings only. The caterpillars feed on gum leaves [see Apr ‘17] Tachinid fly, resembles a blow fly but is a beneficial fly which lays its eggs on caterpillars of harmful insects.

Woodend: Mountain grasshopper *Acridopeza reticulate.* Flightless female with brilliant colour as “shock” protection.

Book Review - *The Allure of Fungi* by Alison Pouliot

Those who attended our June meeting can attest to Alison Pouliot’s talent as an engaging educator. At the meeting Alison talked about the importance of the unseen part of the fungal world — the network of mycelium that connects, breaks down, recycles, and intermittently produces the diverse forms of fruiting bodies that we commonly think of as fungi. In her book “The Allure of Fungi” Alison expands this broader concept of fungi as “sophisticated entangled systems” and continues to delight with stories and observations that challenge the way we perceive fungi, not as something strange and possibly poisonous, but as something of immense value and importance that may well be the connective tissue of terrestrial life.

Australia’s isolation, size, variable climate and countless fungal habitats make it a fungal utopia. Yet acknowledgment of fungi in Australian environmental management and biodiversity conservation is negligible and “mostly involves a command-and-control approach, rather than recognising its values and protecting its inherent connectedness”.

Alison lives part of each year in Switzerland and part in Australia. As an acute observer, she looks at the differences between fossickers and foragers, between European and Australian attitudes to fungi, between the classifiers and those who get “into the dirt”. She talks about her most illuminating interactions with fungal folk occurring “in the field” where attitudes to fungi are largely unspoken but “evident in their physical gestures, facial expressions, pauses, hesitations, the way they move through the forest, and the way they handle the fungi”, be it with care, caution or disdain.

There are illuminating descriptions of fungal spore-bodies and their dispersal mechanisms, about the places they grow, and the fascinating insights that are revealed in the language that has developed around fungi. There are stories of people with passionate and diverse associations with fungi, each one adding further insights into this mysterious and largely unknown world.

Even the photos at the end of each chapter encourage and challenge the reader to look at the world of fungi in a new and imaginative way.

"The Allure of Fungi" combines good research and an open minded approach. It invites us to see our bush as a place of discovery and enchantment, and provides stories that teach us a variety of ways to value fungi. It alerts us to the importance of fungi in our world and why it must be conserved. I found this book fascinating and could not put it down. And now I have finished it I want to read it over again.

Geraldine Harris

The Birds of Sutton Grange - July

Nigel Harland

I have been away for much of the month, but here is my list:
Superb Fairywren, Australian Raven, White-browed Scrubwren, Long-billed Corella, Sulphur-crested Cockatoo, Yellow-tufted Honeyeater, New Holland Honeyeater, Eastern Spinebill, House Sparrow, Crimson Rosella.

September CN deadline for articles is by Friday August 30 - Ed.

Observations

Geraldine at Barkers Creek reported seeing **Restless Flycatcher**, E. Shrike-tit and Wedge-tailed Eagles apparently returning to a previous nest site on her property.

Also at the July meeting, another report of a **Rose Robin** in the CBG

PHOTOS

Claire Morgan - June sightings:

Echidna – Leanganook,
Gang Gangs – Daylesford,
Diamond Firetails near Vaughan

Disclaimer: The opinions expressed in this newsletter are those of the contributors and not necessarily those of the club

Castlemaine Field Naturalists
Coming events

3-4 August – Swift Parrot & Regent Honeyeater survey weekend

Fri August 9 Meeting: speaker PAUL BATES (DELWP)

Sat August 10 field trip: TBA

Wed September 11 – **Wildflower Wanders** commence

Fri September 13 meeting: speaker DAVID CHEAL on 'Regeneration and recovery in the Victorian Mallee'

October 4 – 7 SEANA in Castlemaine

VISITORS ARE WELCOME AT CLUB ACTIVITIES

General meetings - (second Friday of each month, except January) are held in the Uniting Church (UCA) Hall (enter from Lyttleton St.) at 7.30 pm.

Field Trips - (Saturday following the general meeting) leave from the car park opposite Castle Motel, Duke Street at 1.30pm sharp unless stated otherwise. BYO morning and/or afternoon tea. Outdoor excursions are likely to be cancelled in extreme weather conditions. There are NO excursions on total fire ban days.

Business meetings - third Thursday of each month, except December, at George Broadways; 24a Greenhill Ave., at 6.00 pm. Members are invited to attend.

Club website (Web master: Ron Wescott) - http://castlemainefnc.wordpress.com/

Subscriptions for 2019
Ordinary membership: Single $35, Family $50
Pensioner or student: Single $25, Family $30
Subscription includes postage of the monthly newsletter, Castlemaine Naturalist

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