BUTTERFLY CONSERVATION SA INC.

NEWSLETTER

No. 52: July, 2014

Butterfly Conservation SA Inc.

Invitation to our

BUTTERFLY FORUM

"ATTRACTING BUTTERFLIES INTO YOUR LIFE"

Learning from each other

at Waite Campus Day Care Centre
Paratoo Rd. URRBRAE (off Waite Rd.) Gate 6.

Sunday 27th July 2014 2pm - 4.30pm

Program

- Marvel at the mysteries of Ants and Butterflies
- Hear how the butterfly is used in the school curriculum
- Learn from a native plant grower 'What to plant for bio-diversity in the home and community.
- Tag a Butterfly! How and Why
- Nectar and larval plants - for sale
- 'Butterfly Site ' Gardens will be 'on view' (photographs, plus)
- Guided tour of the Waite Campus Day Care butterfly garden
- Afternoon tea
- plus Books, posters, activities for children.

RSVP by July 17 to:
Jill Davy 24 Hart Ave. Unley SA 5061
ph. 8 373 6772 jilldavy@adam.com.au
or
Lorraine Woodcock
alwoodcock@bigpond.com

Butterfly Site

Painted Lady Butterfly *Vanessa kershawi*
Photo: E.Steele-Scott

IN THIS ISSUE

CONGRATULATIONS

to

David and Beth Keane on being awarded the Premier's Certificate of Recognition for outstanding volunteer service to Butterfly Conservation SA Inc.

LAUNCH

of our two new posters ***"SPIDERS and their allies of the Adelaide Region"*** on Tuesday 2nd September at 6.30pm by Steve Walker NRM Education.

see page 9

followed by a Public Talk by Robert Lawrence

"Orchids and lilies of the Adelaide Hills"

Orchids can be used as an indicator of ecosystem health. Author of "Start with the leaves" Robert Lawrence, will show how to identify native orchids and lilies of the Adelaide Hills with a well- illustrated presentation. Books will be available for sale.

Brush-footed trapdoor spider Photo: David Hirst

BUTTERFLY CONSERVATION SA. INC. Membership enquiries: info@butterflygardening.net.au
Membership payments ($10pa): Treasurer: C/- South Australian Museum, North Terrace, ADELAIDE. 5000
Cheques to be made out to Butterfly Conservation SA Inc.
Direct Debit details: BSB 805-022 Account No: 02247994 Account Name: Butterfly Conservation SA Inc.
Please email Treasurer if paying by direct debit: mima@esc.net.au

2014 ANNUAL GENERAL MEETING
BUTTERFLY CONSERVATION SOUTH AUSTRALIA Incorporated

TUESDAY 5th August, 2013 at 6.30pm
Clarence Room, Clarence Park Community Centre
72-74 East Avenue, Black Forest (just next to the railway line)

AGENDA

PRESENT:

APOLOGIES:

PREVIOUS MINUTES: 6th August 2013

CORRESPONDENCE:

BUSINESS ARISING:

CONSTITUTION – see notice in Newsletter 51

REPORTS

Chairman – Jan Forrest OAM

Treasurer - Mike Moore

Membership – John Wilson

ANY OTHER BUSINESS

ELECTION OF OFFICE BEARERS

Chairman:

Secretary:

Minute Secretary

Membership –including database entry

Treasurer:

Committee Members

Appointment of Auditor:

OTHER BUSINESS:

MEETING CLOSE

GUEST SPEAKER: "The wild life of wildlife - procreation oddities" Professor Steve Donnellan
The need to breed has created many opportunities for evolution to enhance sexual "apparatus" and behaviour in the animal kingdom. Join us for a brief tour of the bizarre kinds of equipment and rituals that have led to the marvellous array of biological diversity on the planet.

Please join us for supper

NOMINATION FORM

I (name).....wish to nominate ….....….....……

Signature of proposer ....……

Seconded name: .....Signed …….....

For the position of ☐ Chairman ☐ Secretary ☐ Treasurer ☐ Committee Member

I accept nomination for the position indicated (signed)

…….....
Please complete nomination form and send it to Jan Forrest OAM, 30 Churchill Avenue, CLARENCE PARK by Friday 25th July 2014 or email to janforrest@hotmail.com - you may self nominate

WEED ALL ABOUT IT
'TO WEED OR NOT TO WEED, THAT IS THE QUESTION'
SOIL RECOVERY AND RESTORATION OF BUSHLAND

by *D. Keane*

We are often told that weeds are 'plants out of place'. What that means is that they are alien to a particular environment. We are also told that plants that appear on 'weed lists' are to be treated as 'villains'. Yes, most are bad, if allowed to take hold and take over, especially the perennials.

A 'real weed' is actually 'any plant that has a detrimental effect on the long-term natural environment' and 'one that has no benefit to the natural order'. These are listed as 'declared weeds' and must be controlled or eradicated under legislation. However some plants are transitional or evanescent and may be helping to correct an imbalance due to some disturbance or lack of the indigenous competition.

The 'transitional plants' often appear for the first time when there is soil disturbance, change or weakness in a balance of the settled environment. They are part of a natural sequence, a succession of weed stages. If an immediate reaction is to use a 'misguided treatment' (such as complete eradication) it can cause an immediate impact that could worsen the existing state and leave an inability to fully recover for some time or not at all.

Aggressive action could alter the natural recovery sequence taking place (which is usually unknown to us), and can favour further opportunistic perennial weed species to take hold creating another period of recovery. Blanket chemical spraying for example will often begin another weed cycle that could damage soils and kill off any natural biological remains.

Weeds or 'plants in place' can be an essential component in the recovery of natural systems, controlling erosion, stopping other invaders, providing food, nectar, habitat and more importantly sustaining the health of the soil.

We need to understand what is actually happening to the ecology and what stage of recovery or decline it is in before we can intervene with a remedy.

If a plant appears on a 'list' it does not mean it must be totally destroyed at all costs, the immediate loss of the vegetative cover may create greater problems. If we are to increase our knowledge on how 'ecological restoration' works, we need to be cautious and learn to read natural sequences and the consequences of inappropriate actions.

Certain plants such as "black nightshade" (*Solanum nigrum*) and the "groundsels" (*Senecio* spp.), yes even 'African daisy' have the specialised ability to perform in a sequential phase that actually sustains and heals the soil and protects against potentially more serious circumstances.

These plants die out naturally in the short term without any human intervention if left alone. Others include *Fumaria* and *Epilobium*.

The chain of events might be that if a roadside had a balanced situation, say of introduced grasses, this area would be blanket sprayed and would create an immediate impact giving the opportunity for a different set of plants to infest the bare soil, killing off habitat, invertebrates which are a food source for birds and animals.

Once a regime of spraying is underway it carries on 'for ever' with an increase of maintenance for erosion, uncontrolled chemical use and the false economy destined for a continuous negative and costly outcome.

If the 'grassed' area was mown then the balance would be maintained as there would be no 'loss or disturbance of the soil or solar baking'.

Weeds can often be controlled by other management techniques such as planting native grasses, shrubs and understorey. Weed control is about changing from a perceived negative situation to a positive one with subtle changes, allowing nature to work for a long-term ecological outcome that is sustainable.

To summarize; the moral of the story is that if you do not know your plants (both weeds and natives) or understand how an ecosystem functions, get the right advice. Managing the environment is not the same as gardening, just getting rid of weeds. At the end of the day it should be about the long term not short term ideals.

Photo: David Keane

LOOKING TO A GREENER FUTURE WITH NEW ONLINE TOOLS

Two free online tools are now available from the Botanic Gardens of Adelaide to provide greater understanding of green space and its importance in urban environments. The ***Green Infrastructure Evidence Base and Plant Selector*** are resources that will help us grow healthier, greener, cleaner and cooler towns and cities. The two tools complement each other to provide a comprehensive resource for the whole community.

The Green Infrastructure Evidence Base brings together research, information and resources about why we need to incorporate nature into our urban environments.

Plant Selector is an extensive, searchable database of native and exotic plants suited to urban South Australian environments, from groundcovers through to tall trees. The selector enables you to find the most suitable plants for your local area by entering your postcode or suburb.

Find the Green Infrastructure Evidence Base and Plant Selector on the Botanic Gardens of Adelaide website.

The Green Infrastructure Project is a partnership between the Department of Planning, Transport and Infrastructure, Natural Resources Adelaide and Mt Lofty Ranges, Renewal SA, and the Botanic Gardens of Adelaide. Development of Plant Selector has been assisted by the Local Government Research and Development Scheme and SA Water.

SENSORY NATURE TRAIL

The Friends of Glenthorne have been invited to be part of this creation – The Marion Steiner Bush Playgroup welcome our help.

This Marion Steiner Bush Playgroup project, partly funded by Marion Council, is to design and create a Sensory Nature Trail on the grounds of Sheidow Park School to enrich children's experiences in nature with aspects engaging the five senses and physicality. The trail will incorporate activity 'stations', a snack track, nectar alley, frog pond and gathering place.

This is an exciting collaboration with Sheidow Park School, environmental sculptor Evette Sunset, local community groups and YOU.

Bring your spade, shovel, rake, hammer, gloves, elbow grease and ideas to help make this a reality!

Set aside these dates and times: 9:30am - 12:30pm
- Saturday July Sat 5
- Saturday July 12
- Saturday July 19
- Sunday July 20.

For more information see www.evettesunset.com and register your interest with Narrah on 0437 445 400 or narrah@adam.com.au

BUSHCARERS MAJOR DAY OUT

Sunday 7th September
for information:
http://www.bushcaresmajordayout.org/

SA URBAN FORESTS
MILLION TREES PROGRAM
GROWING A GREAT FUTURE

PLANTING DAYS

The million trees program invites you to attend its community planting days. Help improve our local environment by returning native plants to our open spaces and grow a greener future for Adelaide.

- O'Halloran Hill Recreation Park - Saturday 12th July
- Maslin Beach - Saturday 9th August
- Onkaparinga Estuary - Saturday 13th September

from 10.00am - 3.00pm
includes hot drinks, lunch or a sausage sizzle
dress for the weather, bring gloves and wear sturdy shoes.

Please RSVP to info@urbanforest.on.net with name, numbers attending and any special dietary requirements, or call 8278 0600

More information on these and other events at:
www.naturalresources.sa.gov.au/adelaidemtloftyranges

INVITATION to BCSA members to an excursion to HINDMARSH ISLAND 19th October from 10.00am

View the revegetation on Chris and Karen Lane's 80 acre farm at 81 McLeay Road, Hindmarsh Island and view habitat plantings for local fauna including butterflies, vernal wetlands, sand dune and rising ground areas.

Bring a warm coat, good walking shoes, insect repellent and own lunch. Tea and coffee facilities available

Butterfly experts available on the day to answer questions and butterfly and moth displays to view. Karen has also worked for 25 years as a native plant grower and revegetation/bushcare consultant.

Revegetation supported by HI Landcare (Murray Mouth Estuary Restoration Project) and Clean Energy Federal Biodiversity Grant. Registered Butterfly Conservation S.A, Butterfly Site.

RSVP: Jill Davy 8373 6772 or jilldavy@adam.com.au by 10th October, 2014.

81 McLeay Road, Hindmarsh Island

Butterfly Conservation South Australia Inc.

presents

a PUBLIC TALKS PROGRAM 2014

2014 PROGRAM OF SPEAKERS

5th Aug ***"The wild life of wildlife - procreation oddities"***
The need to breed has created many opportunities for evolution to enhance sexual "apparatus" and behaviour in the animal kingdom. Join us for a brief tour of the bizarre kinds of equipment and rituals that have led to the marvellous array of biological diversity on the planet. This talk by Professor Steve Donnellan will **commence at 7.00pm following a short BCSA AGM at 6.30pm.**

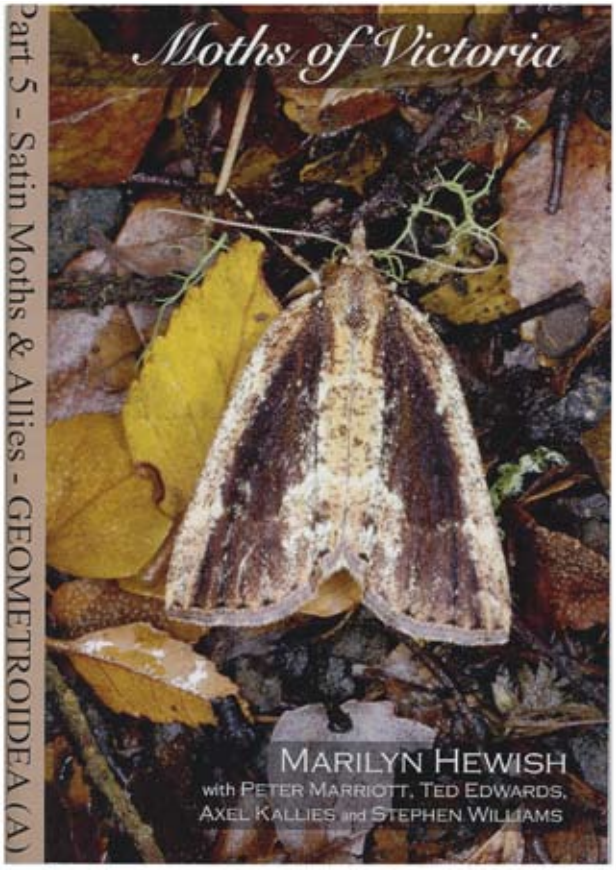
2nd Sept: ***"Orchids and lilies of the Adelaide Hills"***
Orchids can be used as an indicator of ecosystem health. Author of "Start with the leaves" Robert Lawrence, will show how to identify native orchids and lilies of the Adelaide Hills with a well-illustrated presentation. Books will be available for sale. This talk will be preceded by the launch of the new BCSA Spider and other Arachnids posters.

7th Oct: ***"Weeds and wildlife"***
We know that wildlife sometimes use weeds as habitat – but does it really matter? Jasmin Packer, University of Adelaide, will reveal why weeds are sometimes critical habitat.

4th Nov: ***"Remarkable fossils from Kangaroo Island"***
Some of the best preserved Cambrian fossils in the world come from Kangaroo Island. They are about 515 million years old and include specimens with guts, appendages and some of the best preserved very early eyes. Presented by University SA Adjunct Professor Jim Jago.

In the case of an advertised speaker not being available, a speaker of similar interest will replace that advertised.

MOTHS OF VICTORIA - PART 5



This publication is part 5 of a series published by the Entomological Society of Victoria and covers the Satin Moths and their allies viz: Fam. Geometridae, SubFam. Ennominae - Tribe Nacophorini.

The illustrations are wonderful, many of living moths in their natural settings as well as plates of pinned specimens showing the different species. A number of larval images show the diversity of this group.

The accompanying CD provides over 400 additional pages of information in PDF format.

Author: Marilyn Hewish with Peter Marriott, Ted Edwards, Axel Kallies and Stephen Williams.

Published: Entomological Society of Victoria, 2014 pp36. Cost $12 plus postage $4

Order form available from the society: www.entsocvic.org.au/
The other four moth books are also available plus the booklet Collecting and Sampling Insects, $10 plus postage.

Article on 'moth eggs' by Noel McFarland from pages 346-352 of the Australian Natural History magazine June 1970 Vol 16 N0.10
Ref: D. Keane

MOTH EGGS!

By NOEL McFARLAND
Assistant Curator of Insects, South Australian Museum, Adelaide

INSECT eggs, so frequently overlooked (even by entomologists), show an incredible variation in shape, surface texture, and colours. A few of the countless interesting forms and adaptations to be encountered in Australia are illustrated here by greatly enlarged photographs of the eggs of nineteen species of moths.

If some butterfly eggs had been included a considerably different series of shapes would be seen, even though butterflies and moths are very close relatives within the same major insect group—the order Lepidoptera. If representative eggs of certain other insect orders were also included (such as Hemiptera, Coleoptera, Hymenoptera, Neuroptera, or Diptera) the variety of egg forms would be increased still further. That, of course, would be far beyond the scope of a short article. Therefore, I decided to limit this article to eggs selected from twelve families, using only moths as examples. To put this small effort into the correct perspective, it is important to realize that there are over 100 families of moths in the world, and that 75 of these families are represented in Australia. Some of these families contain thousands of species. *Perhaps these photographs will alert Australian entomologists and naturalists to an intriguing area of study that has hardly been touched in this country.*

Moths, butterflies, and some other insects can often be readily identified as to genus, and sometimes as to species, by differences in their eggs. Some species are, in fact, more easily separated from their close relatives by their eggs than by the adult insects themselves. The egg should never be overlooked by taxonomists, or by others interested in accurate identification of species. There are, however, many closely related species whose eggs are hard to separate without careful study of all details, including the micropylar region, using high magnification. The micropyle is a minute opening through which spermatozoa enter during fertilization. (See fig. 10). Other entomological terms used here are: ovipositing or oviposition (the act of depositing eggs by the female moth); ovipositor (a tubular structure, in the tip of the adult female moth's abdomen, by means of which the eggs are deposited); foodplant (the specific plant, or plants, upon which the larvae of a moth feed). The use of the term "glue", to describe the adhesive with which eggs are attached to the plant, is a term of convenience, quite clear in its meaning. (There is no need to disguise the meaning with a longer word!).

The glue is usually a colourless fluid, which hardens upon contact with the air as the eggs are being deposited. It is more-or-less waterproof once set. This is imperative in the case of species whose larvae feed upon trees, tall shrubs, or high-climbing vines; otherwise, the eggs could be washed from their points of attachment on the foodplant leaves or stems during rainstorms, and the minute, newly-hatched larvae (caterpillars) would then have little chance of returning to the correct leaves during the short period, after hatching, when they are able to exist without food. Exceptions are found among some of the moths whose larvae are "general feeders" upon many kinds of plants, or upon weeds, grasses, or other low plants that densely cover the ground, or upon the roots of plants. These moths often deposit their eggs free (unattached—no glue), or the glue, when present, may be quite weak and the eggs readily become dislodged, which does not matter under these conditions. Such eggs frequently approach a spherical shape. Young larvae of these species rarely have any trouble finding their food near at hand when they hatch.

The time required for moth eggs to hatch varies greatly, depending on the season and temperatures, the species, its life-cycle, the growth-cycle of its foodplant, and the part of the plant eaten. A large number of species will hatch within an average period of 5 to 15 days. But many others, especially autumn or winter moths of cool or temperate regions, are known to spend from 3 weeks to several months in the egg stage.

Some pass the winter in the egg stage; others may pass the dry season of deserts or semi-arid regions as eggs. Eggs of such species are often protectively coated in some way, or deposited in crevices, or the shell is hard and tough.

Methods for inducing moths to oviposit in captivity and techniques of egg photography cannot be covered in this article, but these topics are partially covered by some of the publications listed at the end.

Comments on the illustrations

Most of the eggs illustrated in this article were deposited by moths in captivity. Many of the moths were attracted to ultraviolet lights in my garden at Blackwood, South Australia. [The ultraviolet lights were G.E. F15T8.BL (a "black light"); substitutes are not recommended if the best results are desired.] All the eggs illustrated (except fig. 9) can be found in the State of South Australia, and some of them eastward to New South Wales; of the remaining eighteen species, fifteen can be found in the Blackwood-Belair region of the Mount Lofty Range, south of Adelaide, South Australia. When no locality is given below the name the eggs were deposited by moths captured at Blackwood.

The figures in this article were selected from available egg photographs of over 100 species, primarily to illustrate some of the amazing *differences* that exist between the eggs of moths in various families, and sometimes even within one family. (Eggs of birds seem quite uniform by comparison!) Basic *similarities* between species of different genera, within the same family, are illustrated by figs 10 and 11, while figs 7 and 8 show the easily-distinguished eggs of two closely related species of anthelid moths, far less readily separated in the adult stage. All photographs are by the author, and all show living, unhatched eggs.

In the study of insect eggs, some important differences to look for (and record) are: (1) The manner in which eggs are deposited by the moth—dropped on the ground and in no way attached to anything, or attached or glued to a certain part of the foodplant (note which part); strength of the adhesive (heavily or lightly glued); attached singly, in twos or threes, in rows, flat or heaped masses, in stacks, or in other formations, which may be regular or irregular; (2) naked as against covered with hairs, scales, or some other substance (e.g., dried frothy covering, soil particles, etc.); (3) basic shape or outline of the egg, and its various profiles as viewed from different positions; (4) type and extent of surface sculpturing (ribs, granulations, pits, etc.); (5) general hardness or softness of the shells; (6) transparent as against opaque or partly-opaque shells, and degree of surface-shine; (7) *all* colour changes that are observed during incubation; (8) measurements of all dimensions in a sequence of *diminishing maximums;* (9) mode of exit by hatching larva, and from which part of egg (side or end); is shell devoured (entirely, partially, or not at all)?

Many moths can be found flying only during certain months of the year. (Dates given are the months during which adults may be collected at the locality indicated.) Some of the spring and summer species have more than one generation during a year, but many others do not. The majority of autumn and winter species are single-brooded. As a matter of interest to readers in the Northern Hemisphere, it should be mentioned that in southern Australia the four seasons are as follows: September–November = Spring (moist grading to dry); December–February = Summer (mostly dry and warm to hot); March–May = Autumn (dry grading to wet); June–August = Winter (mostly wet and cool to cold). October in coastal South Australia corresponds roughly to April in coastal southern California. Annual average rainfall is 28 inches at Blackwood, S.A.; most of this falls between May and September. Occasional heavy summer rains can also occur.

Because the magnifications used in many series of photographs are not necessarily indicative of the relative sizes of the various eggs, the actual measurements should always be recorded for each species to an accuracy of at least 0·05 millimetres. (This can be easily done with metric dial calipers). Anything more exact than 0·05 millimetres is not necessary or meaningful with larger moths, because the eggs of many species can vary by as much as 0·10 millimetres (in length and/or width) within a batch obtained from one female. Great variation in egg size is sometimes the case within certain species of the family Geometridae, for example.

The eggs illustrated here (along with numerous others), usually accompanied by the associated larvae, pupae, and adult moths, are preserved under specific code-numbers for each species. These preserved specimens (as well as corresponding field notes and photographs, etc.) will become available to qualified specialists for future study.

THE ILLUSTRATIONS

Superfamily Hepialoidea

Family Hepialidae (Ghost Moths)

Fig. 1: *Aenetus blackburni* (late March to early April). These eggs are dropped free by the female moth (in no way attached to any surface). This is the typical mode of oviposition among the Hepialidae. Some hepialid eggs are more or less perfect spheres, and the shell is usually rather soft and easily dented. Some collapse of the shell takes place during development. When freshly deposited the eggs of this species are pure white, but they soon become opaque black.

Superfamily Zygaenoidea

Family Zygaenidae (Foresters, Burnet Moths)

Fig. 2: *Hestiochora rufiventris* (late November to December), 43 miles west of Eucla, Western Australia. As in many (perhaps all) other zygaenoids, the eggs are notably soft-shelled. They are attached in long series up and down the leaves and stems of the foodplant, closely end-to-end, but rarely in actual contact. Colour, pale yellowish.

Family Limacodidae (Slug Moths, Cup Moths)

Fig. 3: *Doratifera oxleyi* (mid-March to mid-April). The shells are very soft and easily broken; it is almost impossible to separate these eggs without damaging them. They are extruded by the resting female in long and sinuous chains, rather like tooth-paste being squeezed slowly from a tube. Colour, translucent yellowish; surface shiny.

Fig. 4: *Pseudanapaea trigona* (October to mid-May). The photograph shows two eggs, close to hatching, as seen from the underside. (They were deposited on a thin sheet of clear plastic.) The small larvae are clearly visible through the colourless and transparent shells. The shells are exceedingly thin, pliable, and easily ruptured. In nature, they are attached singly to the foodplant leaves, appearing (at first) like tiny, clear, flattened droplets or water, barely visible when viewed from above; later, they could be mistaken for flat, shiny scale insects adhering to the leaves. When being deposited by the moth, they are so soft and flexible that individual eggs often have entirely different shapes, depending upon the angle of contact of the moth's abdomen with the leaf surface (and the pressure exerted) at the moment of oviposition. Thus, only "average" measurements of egg length and width can be made for this species. *Of all species I have seen to date, this one would seem the ideal subject for anyone wishing to study larval development as it takes place inside an insect egg.*

Superfamily Pyraloidea

Family Pyralidae (Pyralids), Subfamily Epipaschiinae

Fig. 5: *Epipaschia pyrastis* (November–April). These are very much flattened, soft-shelled, and "scale-like", with a finely-pitted surface which results in a sparkling surface shine. They are deposited in distinctive flattened masses, like shingles on a roof, each one partly overlapping those in front of it. The photograph shows only a part of one mass, as attached to the foodplant leaf.

Superfamily Bombycoidea

Family Lasiocampidae (Lappets)

Fig. 6: *Digglesia rufescens* (December–February; May–July). Typical of most bombycoid eggs, the shells are tough and firm. The eggs are securely glued to the surface—in this case a piece of stiffened muslin, which is ideal for causing many moths to oviposit in captivity. The white areas of the shell are opaque. When the eggs hatch, the dark areas will show as transparent on the empty shell, and the opaque white markings will remain (on the empty shells) exactly as seen in the photograph. The general appearance of these eggs is typical of many other lasiocampid eggs.

Family Anthelidae (Anthelids)

Fig. 7: *Pterolocera* species (April–May). Ten miles west of Vivonne Bay, Kangaroo Is., South Australia. These are very tightly glued to each other, wherever they contact along the sides. The shells are opaque. See the dry rings of colourless adhesive (glue) on the two eggs that have been broken off the main mass (upper right). This species occurs in scrub areas away from the immediate coast around Adelaide, and on Kangaroo Island. A related species in southwestern Western Australia has strikingly different eggs, although similar to these in shape.

Fig. 8: *Pterolocera* species (April). Halletts Cove, South Australia. The egg in the upper right corner shows the end view. The shells are opaque. The adult female moths of this genus are wingless. The adult males of this and the preceding species look quite similar at first glance, but clear-cut differences in the eggs of these two species are immediately obvious (both in shape and markings). This species occurs along the coast in certain areas near Adelaide, and on Kangaroo Island.

Family Carthaeidae

Fig. 9: *Carthaea saturnioides* (late September to early December). Stirling Range, near Toolbrunup Peak, Western Australia. For details on the larval, pupal, and adult stages of this superb moth, see Common (as in "Further Reading" list at the end of this article). The eggs are at first a uniform light yellowish with a bright surface shine. They are normally glued in irregular small groups (twos or threes, etc.) on the new leaves of the foodplant.

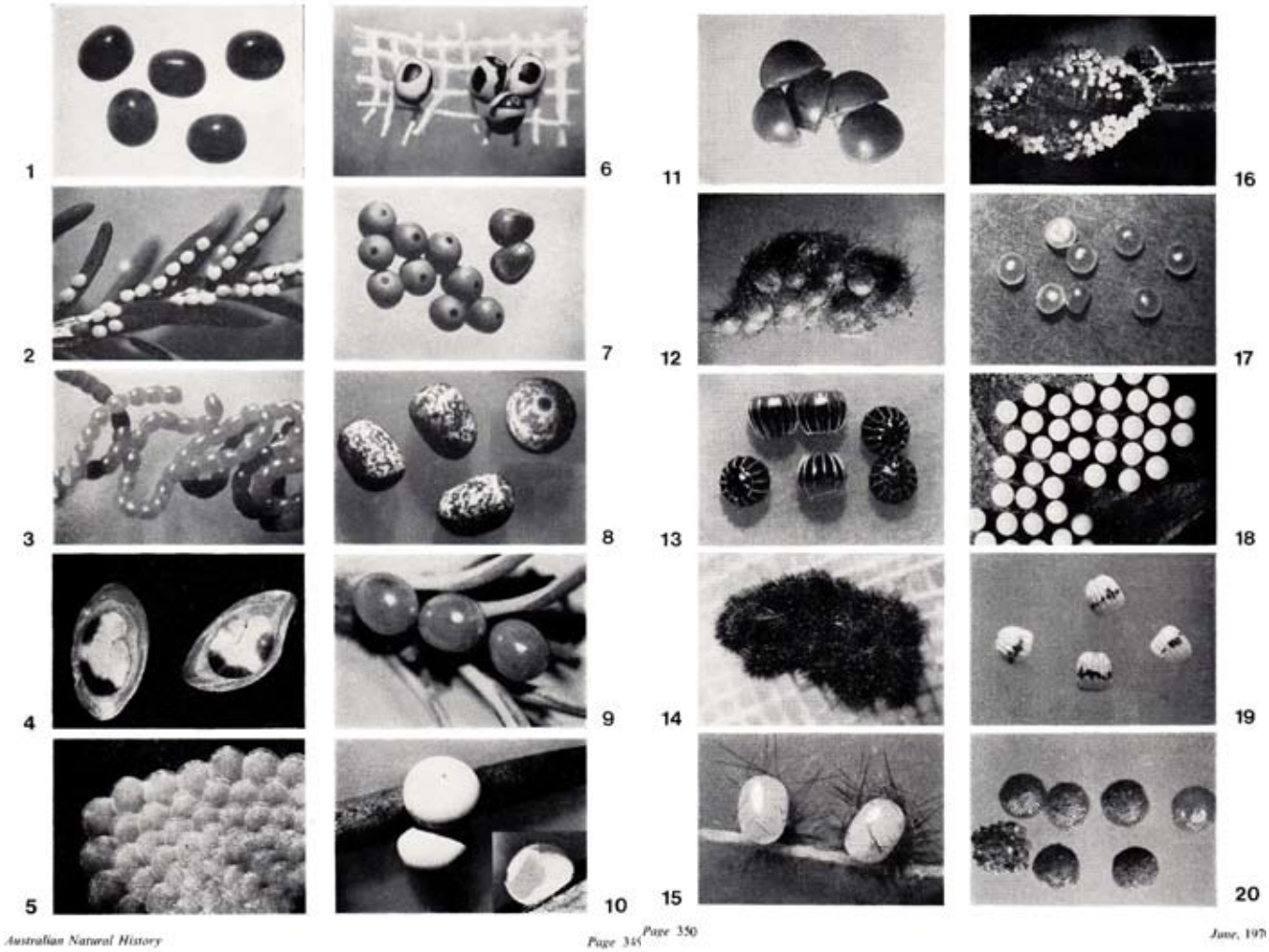
Superfamily Notodontoidea

Family Notodontidae (Prominents)

Fig. 10: *Danima banksiae* (March–October). Ten miles west of Vivonne Bay, Kangaroo Is.,

Continued next page

DOES ANYONE KNOW A THOMAS KELLY OR KELLY THOMAS?
If so, please contact Membership Office John Wilson c/- info@butterflygardening.net.au
We have received an EFT deposit however there is no record of this person on the database!



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MUTTON COVE PLANTING DAY

Mutton Cove is one of the last remaining areas of mangroves and samphire on LeFevre Peninsula.

Come along and join the Friends of Mutton Cove Conservation Reserve to plant and help restore this unique area, and learn more about this special place. Free BBQ lunch provided!

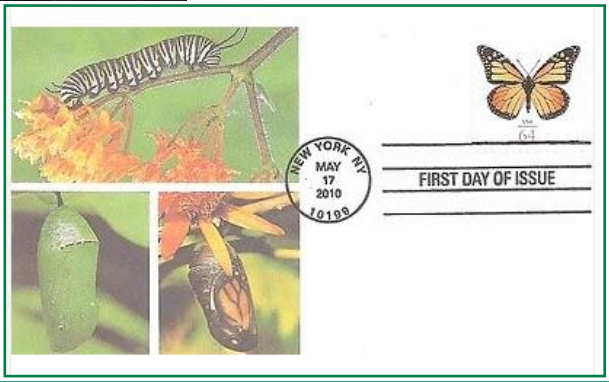
This Saturday 5th July 2014, 9.30am till 12pm, followed by BBQ lunch
At Mutton Cove Conservation Reserve, Mersey Road, Osborne (contact Emma below for a map)
RSVP: Registrations by Thursday 3rd July 2014 to Emma Stephens E: estephens@holdfast.sa.gov.au
T: 8229 9826
Registrations are essential. (Please let Emma know if you have any special dietary requirements).

Bring: long pants and boots (or at least closed shoes – no thongs/sandals), long sleeved shirt, rain jacket, hat.

To be provided: tools and equipment for planting, drinking water, BBQ.

As from 1st July a charge will be made for Newsletters that are posted - approved at the last AGM

MONARCH BUTTERFLY STAMPS



There is a copy of the book Butterflies of South Australia by Robert Fisher on Gumtree is anyone is interested: Link: http://www.gumtree.com.au/s-ad/west-lakes/text-books/butterflies-of-south-australia-by-robert-h-fisher-1978/1050446753

South Australia. These large, intensely chalk-white eggs are so conspicuous on the dark green linear leaves of certain species of *Hakea* that they are quite easily seen with the naked eye from distances of 10 feet and more! They are usually deposited singly. Field-collected eggs of this species (from Kangaroo Is.) were found to be commonly parasitized by a minute black wasp. The small dark spot, on top of the egg, covers the micropylar area. The inset shows a partially-eaten shell from which the larva has recently emerged. Note that the shell is uniformly opaque, not a common feature among moth eggs except in the Bombycoidea and a few other groups. With opaque eggs it is not possible to see colour changes as the larvae develop inside.

Fig. 11: *Hyleora* species (March to early May). These eggs illustrate the commonest notodontid egg profile—quite flat on the bottom and evenly dome-shaped above, without ridges or other major surface sculpturing. (Similar eggs are seen in many Northern Hemisphere notodontids). The shell is very tough in this species, but not opaque; the colour changes are spectacular.

Family Thaumetopoeidae (Processionary Caterpillars and relatives)

Fig. 12: *Epicoma melanosticta* (November–May). These eggs are evenly-curving over the top, with flat bottoms, but the lower rim is not sharp. During oviposition they are covered and interwoven with pale golden-tan "hairs" from the tip of the female's abdomen, which bind them together into a somewhat flexible cluster. In the photograph the egg mass is shown lighted from beneath.

Fig. 13: *Discophlebia catocalina* (mid-November to early February). These are securely glued upright, in short irregular rows and smaller groups (sides usually stuck together), never with any attached scales or hairs. They are prominently ribbed and shiny, with a peculiar two-tone (internal) colour pattern. The lower one-third or one-quarter of the egg is milky-whitish, while the remaining upper area is dark sooty-brown. The two uppermost eggs, and one in the middle, are seen lying on their sides; the other three are standing upright as they are deposited.

Figs 14, 15: *Oenosanda boisduvalii* (mid-March to mid-May). The two eggs in fig. 15 were removed from the densely-covered egg mass shown in fig. 14. Some of the dark "hairs" (from the tip of the female's abdomen) are still adhering, and the eggs remain standing end-up, as they were attached to one of the strands of muslin upon which this mass of twenty-five eggs was deposited. The elongate-cylindrical egg shape, with weak longitudinal ribs, is unusual in the Notodontoidea.

Superfamily Noctuoidea

Family Arctiidae (Tiger Moths and relatives),
Subfamily Lithosiinae (Lichen Moths)

Fig. 16: *Xanthodule ombrophanes* (October–November; February–June). This photograph is a rather poor copy from a colour slide, but was included because it shows a most unusual form of oviposition among the Arctiidae. The flightless female moth waits on her cocoon until the winged male locates her; after mating she rapidly deposits her eggs all over the surface of the cocoon, then falls to the ground and dies. A shrivelled moth (about to die), having laid all her eggs, is seen clinging to the right end of the cocoon; the thin, shiny and nearly colourless empty pupal shell, from which she emerged a day or two earlier (with a huge abdomen full of eggs), can be vaguely seen inside the cocoon. The egg shape could almost be described as a blunt pyramid.

Fig. 17: *Scoliacma bicolora* (October–November; January to mid-April). Aldgate, Mt Lofty Range, South Australia; collected by Andrew Smith. A unique feature of these small eggs, which are glued in groups close together but not touching (much like those in fig. 18), is their almost water-clear translucence when freshly deposited. The uppermost egg is turned over, showing the more flattened underside, which has been slightly dented. The second egg from the left, in the lower row, is standing on its edge, to show the lateral profile (its bottom faces to the right). The newly-hatched larvae eat their egg shells entirely before dispersing.

Subfamily Nyctemerinae

Fig. 18: *Nyctemera amica* (December–June). These rounded, smooth, shiny eggs are, in general appearance, typical of many arctiid eggs the world over. They are slightly flattened on the bottom (where attached), and so are not perfectly round, although they seem to be when viewed from above. It is interesting to note that this species does not deposit its eggs in actual contact with each other; even though they are very close together in a mass formation, the precise spacing is always maintained. Part of a mass is here shown as attached to the surface of the foodplant leaf.

Family Noctuidae (Owlet Moths, Cutworms, etc.)

Fig. 19: *Cosmodes elegans* (October–June). Here is an egg shape typical of many noctuids. Also, note the ribs. When first deposited the eggs are pure white. After a day or two, an irregular dark-brown band-pattern can be seen developing through the shell as changes take place inside. The eggs are deposited weakly glued and unattached.

Family Agaristidae (Day Moths)

Fig. 20: *Apina callisto* (mid-April to mid-May). Walkerville, Adelaide, South Australia; very localized distribution in open grassy-weedy areas, but usually abundant where it is present. This species is amazing for the habit of the female moth during oviposition: she deposits her eggs on the ground, attached to bits of litter or soil particles, or even to dry pieces of horse manure! (At this time the foodplant is not present on the dry ground). Just prior to oviposition the female crawls along, "dabbling" the tip of her abdomen in dusty-dry soil, picking up fine particles. A few eggs are then deposited, and the first of these will be heavily coated with soil (see one in lower left corner). The soil-dabbling is then repeated during a short walk by the moth, and a few more eggs are deposited. Most of those in the photo have been brushed partially clean, to show the distinctive sculpturing on the upper surface of the shell, but the one at the lower left represents the natural condition of a first egg deposited after soil-dabbling. The one at the

Continued next page

DO YOU DISPLAY A BUTTERFLY SITE SIGN AS A REGISTERED BUTTERFLY SITE?

If so, you should have received an invitation to provide images and information on your site from Jill Davy, convener of the **Butterfly Forum on 27th July** - see details on page 1.

We would love to hear from you and see images of your garden, please contact Jill.

far right shows the smooth and shiny underside, rubbed clean of soil particles.

[I am indebted to Mr I. F. B. Common, CSIRO, Canberra, for identification of the adult moths of nine of these species; to Mr R. Ruehle, S.A. Museum, Adelaide, for developing and printing all the photographs; to Mrs B. K. Head, S.A. Museum, for help in preparation of the plates.]

FURTHER READING

Common, I. F. B. (1966): "A New Family of Bombycoidea (Lepid.) Based on *Carthaea saturnioides* Walker from Western Australia". *Journal of the Entomological Society of Queensland*, 5: 29–36.

Döring, E. (1955): *Zur Morphologie der Schmetterlingseier*. Berlin. (Contains hundreds of detailed illustrations of the eggs of European moths and butterflies.)

Karp, T. (1966): "Super Close-ups with your SLR". *Modern Photography*, February, 1966.

Mackay, M. R. (1968): "About Lepidopterous Immatures". *Canadian Entomologist*, 100 (4): 337–341.

McFarland, N. (1964, 1965): "Notes on Collecting, Rearing, and Preserving Larvae of Macrolepidoptera". *Journal of the Lepidopterists' Society*, 18 (4): 201–210, and 19 (4): 233–236.

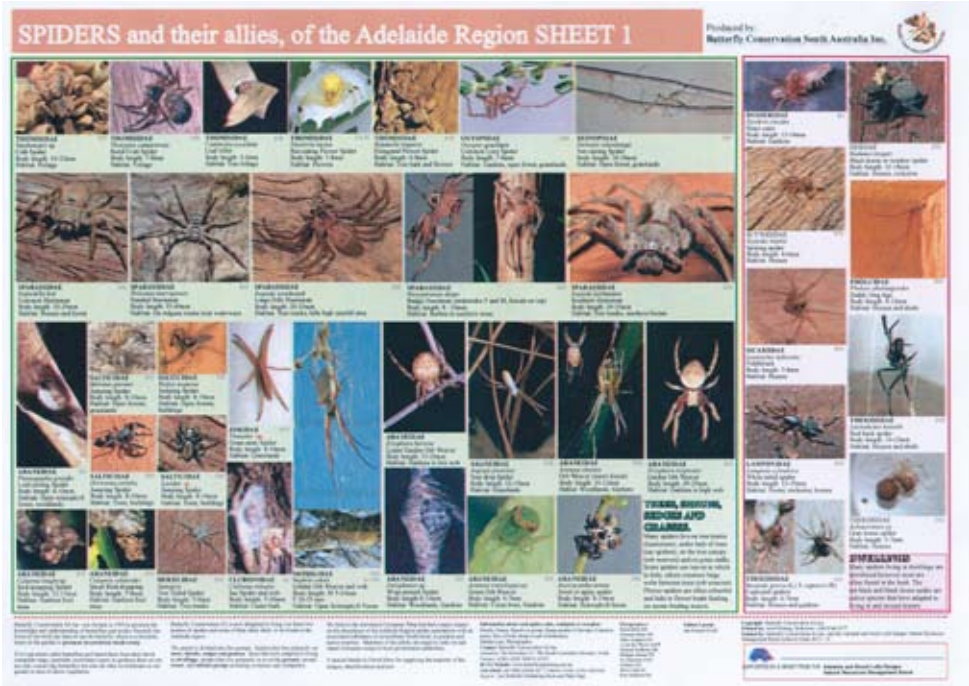
Peterson, A. (1960): "Photographing Eggs of Insects". *Florida Entomologist*, 43 (1): 1–7.

SPIDER POSTERS

Produced by David Hirst and Jan Forrest on behalf of BCSA these two posters feature 63 species of spiders, 2 harvestmen a group closely aligned to spiders, 4 scorpions, 3 millipedes and 1 centipede. Assistance was also given by Nicholas Birks, Ashley Borgheest and the team at Arial Printing. The posters will be available from 3rd September 2014 and will be available to schools for the cost of postage. Members price $10 a set plus postage $10. There are sill some moth posters available.

COME
TO THE
LAUNCH
AND
BE ELIGIBLE TO
RECEIVE ONE OF
TEN FREE
POSTER
SETS

see Page One
for launch details



No they are not printed yet, these are draft copies.

WHAT'S FOR SALE?

BOOKS ***"Attracting butterflies to your garden, what to grow and conserve in the Adelaide Region"*** Published by BCSA 2007 - Our price $25 (members may purchase one book for $20). Postage $7.

"the Making of a Monarch" Published Linda Shmith 2013 - BCSA members price $20 plus postage $5..

DVD ***"Butterfly Garden"*** produced by Tracy Baron and Carolyn Herbert - BCSA members price $15, postage and packaging $5. One book plus one DVD postage $12.

POSTERS ***"Common Moths of the Adelaide Region"*** Published by BCSA 2012 - set of two $10 plus postage $12. (available FREE to schools - all they need pay is postage costs, contact Secretary for an order form).

SITE SIGNS: Application form to register a butterfly site available on the butterfly gardening website. Cost of sign including postage is $50.

POLO-SHIRTS with Butterfly Conservation logo. Prices between $35 and $40. Includes postage. A wide range of colours are available.

If you would like to order any of our merchandise or would like an order form for a site sign, polo-shirt or schools poster set, please email: info@butterflygardening.net.au or write to the Secretary C/- SAMuseum, North Terrace, ADELAIDE. 5000.

NOTICES FROM DEPARTMENT OF ENVIRONMENT

Please provide your email address to Chairman Jan Forrest if you wish to receive notices from DEWNR, these often include invitations to open days and information from Friends of Parks groups and other organisations.

ENTOMOLOGICAL CABINETS

The SAMuseum has reserved several entomological cabinets for purchase by BCSA members at a reduced rate. Contact Jan Forrest if you are interested. Conditions apply.

FOR SALE

2 Genuine Akubra hats
Mens 'Stockman' size 56
Ladies 'Down Under' size 53
Contact: Editor Jan Forrest
82978230

BUTTERFLY CONSERVATION SA Inc.

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Consultants: Roger Grund and Peter McQuillan
Public Officer: Beth Keane

DIARY DATES

COMMITTEE MEETINGS - Meetings are normally held bi-monthly (usually the second Monday of the month) at 6.00pm at a committee members home. All members are welcome to attend. If you would like to attend please contact Chairman, Jan Forrest.

AGM 5th August see agenda in this newsletter

PUBLIC TALKS PROGRAM 2014: first Tuesday March - November, Clarence Park Community Centre 6.15pm for a 6.30pm start to 8.30pm.
Next talk: **5th August:** ***" The wild life of wildlife - procreation oddities"***
Professor Steve Donnellan, Evolutionary Biology Unit, South Australian Museum.

WEB SITES

Butterfly Gardening - www.butterflygardening.net.au
South Australian Butterflies (R Grund private site) - http://www.sabutterflies.org.au
Butterfly Watch and **Butterfly Challenge** - will soon be available on the NRM Education website.
NRM Education - http://www.naturalresources.sa.gov.au/adelaidemtloftyranges/home 'Get involved' - 'Education' - for students, **school monitoring activities** / for educators. See also other regional NRM Education sites.

WELCOME TO NEW MEMBERS:

Michelle Richardson
Margaret Chandler
Susan Sweetman
Maxie Ashton
Francesca Kinnane
Midori Jones and Andrew Granger
Sarah Marshall
Kate Graham
Rod Belchamber
Tina Miljanovic
Wendy Steele

MEMBERSHIP FEES of $10 pa WERE DUE 1st July, 2014 If you hve your newsletter mailed please include an additional $10pa

Butterfly Conservation South Australia Inc.