



BUTTERFLY CONSERVATION SA Inc.

NEWSLETTER

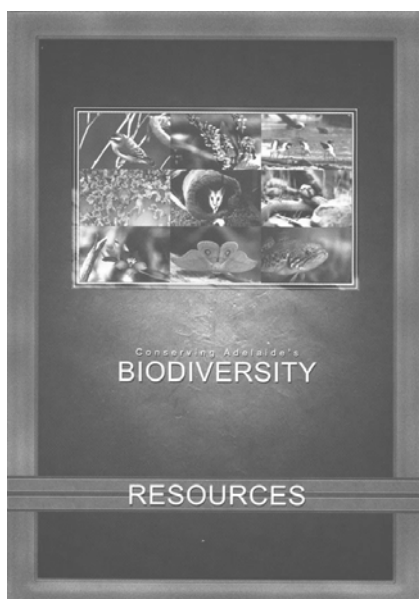
No. 8: August 2001

Conserving Adelaide's Biodiversity Resources

Turner, M.S. (2001) Urban Forest Biodiversity Program, Adelaide 176pp

The South Australian Urban Forest Biodiversity Program (UFBP) was initiated in 1997 to provide a coordinated regional approach to biodiversity conservation across the Adelaide metropolitan area. The UFBP vision is to redress biodiversity loss in metropolitan Adelaide by protecting remaining native flora and fauna and increasing the biomass of locally indigenous species.

The book depicted, 'Conserving Adelaide's Biodiversity Resources' was launched recently by the Federal Minister for the Environment Senator Robert Hill. This book is just one of the UFBP initiatives and provides up to date technical information on Adelaide's biodiversity. It includes location maps of priority vegetation types and remnant bushland sites and site descriptions, species lists and technical information on the region's flora and fauna.



Although the publication concentrates primarily on vegetation and vertebrates it is pleasing to note that some invertebrates have been listed including butterflies.

The book will be a valuable resource to all who are interested in conserving what is left of Adelaide's remnant vegetation and fauna.

Other initiatives of the UFBP are a series of publications to inform and encourage best practice in the management of our natural heritage. The package includes:

- Conserving Adelaide's Biodiversity: A planned approach—summary document provides up to date information, guiding principles and specific actions for biodiversity conservation.
- Project Outlines—series of project descriptions
- Brochure series—tailored to specific community, industry and professional sectors.

Jan Forrest

Inside this issue:

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ATTRACTING BUTTERFLIES TO YOUR GARDEN,

Compiled by David Keane

Certain plants are needed to attract butterflies to the garden, as a nectar source, a meeting place and for protection from predators. A garden should not be just a collection of plants which you like or are given, but rather a balanced environment attractive to living things.

“All man-made gardens are artificial to some extent and the more we try to impose order and tidiness on our surroundings the more we are interfering with nature” Newman (1967). Ref: Butterfly Conservation by T.R. New, a highly recommended read.

Butterflies are said to be “cold-blooded” and need a certain amount of warmth before they can become active. As soon as they are mobile they will search for the warmest, sheltered spot to bask in the sunshine and then find a nectar source for refueling. The basic needs for butterflies are nectar, scent and bright colours. It is obvious that a garden which is cold, windswept, exposed, dark, neat and awash with pesticides has no attractions for butterflies, and they are not going to visit you.

Added artificial attractions in the garden can be “butterfly feeders”, but these are usually in enclosures such as butterfly houses. Like bird feeders they can entice butterflies to the garden with rewards. Usually they are a platform with bright coloured dishes which contain a syrup mixture of sugar and water. The downside of this is that bees and wasps are also attracted.

To be useful to butterflies gardens have to be designed with an abundance of nectar plants, spread out around the garden. Butterflies like to patrol an area, flitting from plant to plant. A single plant would become too crowded, as they all end up on the same bush. Relative safety from predators, in the form of birds or other more aggressive butterflies like the monarch, also needs to be spread around.

Another haunt of butterflies is the sunny shallow soak or mud patch, and also the warm stones and rocks in sheltered places.

Generally plants favoured by butterflies have small multiple or composite flowers, and range in colour from pink to purple and blue. Other colours are also used to source nectar, but are not usually their preference.

It is important to realise that some exotic plants should not be grown near bushland areas or reserves of native plants, as they can escape into the wild. Check carefully when considering your selections.

The following plant list is a start to creating a garden which will bring butterflies in to feed. If you want them to stay and breed, well that’s another story. The plants on which eggs are laid and caterpillars feed are not necessarily the nectar plants. Many butterflies need such things as native grasses and sedges, mistletoe, or introduced citrus trees and milkweed plants on which to breed.

The main families of plants that attract butterflies are: Loganiaceae (buddleias), Compositae (daisies, thistles), Boraginaceae (heliotropes), Labiatae (salvias or sages), Verbenaceae (lantanas), Cruciferae (nasturtiums, cabbage), Dipsacaceae (scabious, teasel).

Buddleia species are probably the most famous throughout the world for attracting butterflies, hence the common name “Butterfly Bush”. *Buddleia davidii* and cultivars (pink, purple and white). Other buddleias such as *B. alternifolia*, *B. weyerana* (cream), *B. globosa* and *B. madagascariensis* (which are both yellow and the latter is quite rampant and invasive).

Verbena spp., either as annuals or perennials, have really bright colours.

Scabious spp., which is a weed of roadsides and woodlands but is often the only nectar source during summer months, has many pink to purple forms.

Lavenders attract lots of insects and butterflies.

Hebe or **Veronica** with its many varieties and colours are hardy plants used as a hedge.

Thistles are excellent for butterflies. There are a few cultivated ones in nurseries.

Lantana, which is a pest in the tropics, can be grown in the dry hot areas of SA.

Salvia spp. are plentiful and attract butterflies.

Continued next page

Stokesia spp., a small herbaceous perennial (daisy) with mauve flowers.
Erigeron karvinskianus, a garden fleabane which attracts coppers and skippers.
Vittadenia spp. ,which is a native having an abundance of pale purple flowers.
Taraxicum officinale, the **Dandelion**, similar to Cat's ear, grows well in abandoned lawns.
Valerian or "**Kiss-me Quick**" is very hardy.
Phlox are grown in cooler areas.
Clovers in lawns will attract blue butterflies, so **lucerne** and **small pea flowers** will attract.
Boraginaceae family of plants, such as **Heliotrope**, attract certain butterflies.
Sedum spectabile, which is an abundant flowering succulent. Keep in pots.
 Annuals such as **Ageratum** and **Alyssum**.
Pentas in warmer areas.

References: Gardening for Butterflies – British Butterfly Conservation Society Ltd
 How to attract Butterflies to your Garden – Densey Clyne
 Butterfly Gardening by Tim New – Butterfly Conservation 1991



Member Profile JOHN HUNWICK

I was born in Tumby Bay in 1944 and except for 12 months in Sydney and 16 months in New Guinea have lived in South Australia. My interest in animals began as a child and has since developed into an understanding of ecology and the necessity for environmental protection. For many years I read about and visited national parks, and soon realized that their management had to be improved. More than that, public acceptance and understanding of nature reserves was the only guarantee that they would fulfill their function.

I became a high school teacher somewhat by accident and used my position to teach about science and the natural world. It was not long before I became a tutor at a Teachers College and then a Lecturer. The Institution became part of Flinders University and I taught there for more than 25 years. During that time I taught ecology and environmental education, and was involved in the writing and production of the Year 12 Natural Resources Management course.

My personal interest has always been mammals, and anything to do with their preservation. As a result I have been involved in a number of Government committees, in particular the SA Bilby Recovery Team. These animals are now doing well and will soon be introduced to Venus Bay and, in time, Flinders Ranges National Park.

Since its inception I have been associated with the Threatened Species Network, and have been responsible for raising money through the Threatened Species Foundation.

My expertise in butterflies is non-existent, but I believe that they can be used by teachers to encourage student interest in the natural environment. More than that, they offer the opportunity for young people (and others) to become involved in saving threatened species in their local area. This can more easily come about if relevant materials and support for an interest in butterflies is encouraged by Butterfly Conservation SA.

BUTTERFLY CONSERVATION SA Inc.
 Membership \$10.00 pa
 Applications and renewals to: David Keane
 c/- P.O. INGLEWOOD, 5133 S.A.

PLANTS, ANTS AND BLUE BUTTERFLIES

Part 1: Life History Diversity

David Lohman

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With about 30 - 40% of the world's species, Lycaenidae (blues, coppers, and hairstreaks) is often regarded as the world's largest butterfly family. More astounding than its species richness, however, are the tremendously varied lifestyles of lycaenid butterfly caterpillars.

While most groups of insect herbivores are characterized by dietary uniformity (the predilection for crucifers by pierid butterfly caterpillars, for example), the family Lycaenidae as a whole consumes an unusually wide array of plants. Legumes, euphorbs, and mistletoes are all eaten, as are some foodstuffs used by few other organisms: ferns, cycads, lichens, aphids, and ant vomit. Why have so many subgroups within the Lycaenidae made radical shifts onto new host plant taxa or other food resources? The causes and consequences of host plant specialization in insects has been a subject of intense study for the past 25 years. One finding of this work is that, in most cases, a single insect species is constrained to feed upon a narrow range of host plants that share a common set of defensive chemicals that the insect is adapted to tolerate or metabolize. Why do some lycaenid caterpillars flagrantly disregard this rule by feeding on a diverse array of host plants? *Hypochrysois ignita*, for example, feeds on plants in at least 17 different plant families. Perhaps the answer to this conundrum lies in the fact that *Hypochrysois ignita* is always found with just one species of ant, *Papyrius nitidus* (a.k.a. the coconut ant; Fig. 1), and, for many lycaenids, securing the appropriate species of attending ant can be crucial to survival.

'Ant attendance' refers to caterpillars that are occasionally or constantly surrounded by a retinue of ant workers. Infrequently, ant associated caterpillars live in ant nests or in ant byres – special caterpillar 'garages' constructed just for them. Ant attendance is known from at least nine lepidopteran superfamilies, but nearly all of these are single instances in otherwise non-ant associated taxa. Conversely, about one-half of all lycaenid butterfly caterpillars are ant-associated, and – as with patterns of host plant use – these ant associations are remarkably varied.

A small number of species are

parasitic and live within ant nests feeding upon the ant's brood or on liquid food regurgitations provided by the ants. Other 'myrmecoxenous' caterpillars feed upon aphids that are attended by ants. The caterpillars and ants do not interact with one another, and the ants will in fact walk right over the caterpillars, oblivious to their presence. Since ants normally protect their aphid 'cows' from predators, however, this lack of an interaction is an ecologically important 'interaction'. The most common type of association is mutualism in which amino acid and sugar-laden secretions are produced from several types of specialized glands and consumed by ants. Laboratory and field experiments have shown that ant colonies with access to lycaenid caterpillars produce more offspring than those denied access, and that the ants protect their caterpillar partners from predators and parasitoids.

Lycaenid butterfly caterpillars show tremendous variation in host **ant** specialization, just as they do in host **plant** specialization. Some caterpillars are always found with the same species of ant (*Hypochrysois ignita* with *Papyrius nitidus*, for example), while other lycaenid species may be tended by different ant species in different locations, or occasionally be found unattended. Experimental manipulations of lycaenid butterfly caterpillars often demonstrate that switches in species-specificity cannot be induced. For example, *Iridomyrmex anceps* and *I. rufoniger* ants tend *Jalmenus evagoras*, while *J. iclinus* is almost exclusively attended by the common purple-headed meat ant *I. purpureus*. When *I. purpureus* ants are given access to *J. evagoras* caterpillars, they are invariably attacked and eaten. Observations like these have led many to postulate that chemical signals are involved in the mediation of these interactions, and are no doubt responsible for the ant species-specificity of lycaenid caterpillars. The complex story of how lycaenid butterfly caterpillars seem to have 'broken the code' of chemical communication used by ants in order to associate with them will be the subject of an article in next month's newsletter.



Figure 1. A larva of *Hypochrysois ignita* with its attendant ant *Papyrius nitidus*.

KEEPING YOUR COLLECTION SAFE FROM THE MUSEUM BEETLE

Anthrenus commonly called ‘Dermestids’ or ‘Museum beetles’ are the main cause of damage to natural history specimens including butterfly collections. These small beetles from the Family Dermestidae lay their eggs on specimens and when the larvae hatch they can cause havoc in collections.

In the past, various fumigants were used to treat collections however with knowledge of the effects of these chemicals on people the present method of treatment is **early detection** and then when evidence of the beetle is located collections are frozen for a minimum of ten days. Frass (it looks like fine dust) from the beetle can usually be detected under the specimen. Specimens should be inspected with a magnifying glass as frass in the early stage of infestation is hard to see.

In the South Australian Museum the 1.5 million pinned specimens in the entomology collections are individually checked bi-annually for evidence of *Anthrenus* frass. Last year the whole collection was inspected by two senior staff over a twelve month period. Where damage was detected the whole drawer was frozen. The staff no sooner finish inspecting the collection that they have to start all over again. A bit like painting the Sydney Harbour bridge really.....

Jan Forrest



Some of the current committee at the Urrbrae Resource Centre earlier this year.

From Left: Mike Moore, Lois Hasenohr, David Keane, Beth Keane, John Hunwick and Bob Edge.

Photo: Jan Forrest

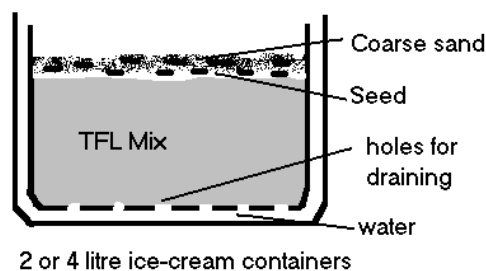
GROWING *Gahnia filum* FROM SEED

Remove seed from husks/flower heads by shaking; seeds are black, 2-3mm long and about the thickness of thick hair.

Consult Neville Bonney, “What seed it that?” for collection times.

Put seed in trays eg 2 litre ice cream tub in which to drainage holes have been drilled to grow the seeds; in summer (hot weather only) put this tub in another 2 litre tub without drainage holes; this will keep the soil water logged.

Almost fill the tub with TFL (Trees for Life) mix, sow the seed on the surface and cover with a fine layer of coarse sand. Sow the seed from December. Seed may take two to six months to germinate.



Plants will appear as very fine green stems about the thickness of human hair. Pot on the seedlings into 10cm high square forestry pots when the leaves are well developed and have hardened up; if the leaves are soft they will tend to die.

Takes about a year to produce a good sized plant.

Forestry pots are available from Smoults ph 8259 1633 at 1000 for \$72.00 plus GST.

Carol Shields

Adriana klotzschii

If anyone is interested in growing *Adriana klotzschii* from cuttings or seed please contact David Keane - C/- PO INGLEWOOD 5133 ph 08) 83892352

WHAT INSECT IS ASSOCIATED WITH ALL THESE WORDS?

BANNERS:THE DUTCHMAN'S BREECHES
BUSH:OF THE GENUS BUDDLEIA & GAURA
DAM:TYPE OF PIVOT DAM
DAMPER:A VALVE OR COCK
DANCE:A FLUTTERING DANCE
DOCK:A BUTTER BUR
FISH:A BLENNY
FLOWER:OF THE GENUS SCHIZANTHUS
LILY:OF THE GENUS HEDYCHUM
MAP:A LAND MAP,MERCATOR'S PROJECTION
ORCHID:OF THE GENUS PLATANThERA
PEA:OF THE GENUS CLITORIA
PLANT:OF THE ONCIDIUM
RAY:A STING RAY
TABLE:DROP-LEAF
TULIP:THE MARIPOSA LILY
WEED:OF THE GENUS ASCLEPIAS
NUT:A WINGED NUT
STROKE:IN SWIMMING

NET:FOR CATCHING INSECTS OR FISH
RIDGE:ANGOVE SCRUB TTG
HOMESTEAD:NR.NT&SA BORDER IN WA
TOWN:IN WA NORTH OF KALGOORLIE
FLAG:AUST.NATIVE IRIS,DIPLARRENA
WINGS:MUSIC BY CHOPIN
FILM:1981 STARRING STACEY KEACH
PLANE:TOM SWIFT'S SPEEDY MONOPLANE
LIGHT:A DIFFUSER USED IN CINEMA
CIRCUIT:A DIFFERENTIAL CAPACITOR
CUT:A CUT OF MEAT OR CHOP
CAKES:COOKING
A MADAME: KNOWN AS CHO-CHO-SAN
GUNARD:A FISH
NOSE:A SPOTTED NOSED DOG
SHAPED:PAPILIONACEOUS (BOTANY)
SHELL:OF THE GENUS VOLUTA
CLUSTER:GROUP OF STARS IN SCORPIUS

Butterfly of course

BUTTERFLY CONSERVATION SA Inc.

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Fundraising: Lois Hasenohr

Committee members: Marcus Pickett, Roger Grund, Lindsay Hunt, Mike Moore, John Hunwick and Bob Edge

Honorary Member: RH (Bob) Fisher OAM

OUTREACH PROGRAM

AO size panels from the Exhibition "Where have all the Butterflies gone?" are available free of charge from Jan Forrest at the South Australian Museum for use by Landcare and other Conservation groups at seminars, conferences and workshops or just for display. Included are five introductory panels, and seventeen panels from seven habitat areas: Coastal, Grasses, Mallee, Urban, Migration/Vagrant, Eucalyptus Forrest/Woodland, Arid, Wetland and Lower South East.

The full exhibition is also now available. It includes full sized panels, model and butterfly specimens. Contact Senior Exhibition Officer, at the SAMuseum for further details.

DIARY DATES

MEETINGS

Committee meetings are held monthly (usually the second Monday of the month) at 6.00pm in the Urrbrae Wetlands Resource Centre, Cross Roads, Urrbrae. All members are welcome to attend. If you would like further information or receive an agenda please contact the Secretary Jan Forrest at the address above.

WEB SITE (produced by Roger Grund)

'South Australian Butterflies' <http://www.adelaide.net.au/~reid/>

We welcome the following new members:

WILLIAMSTOWN GARDEN CLUB

