

“MYSTERIOUS AUSTRALIA”

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****FOR A CHANGE OF PACE THIS MONTH WE BRING TO YOU A
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US FOR SOME TIME.**

INSECTS AND SPIDERS – THE GREAT WORLDWIDE EXTINCTION!

by Dr [hc]Rex Gilroy PhD
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The Internet report accompanying my article reveals what many scientists have known about for some years, and about which many have also been in denial, namely the unthinkable proposition that these beautiful creatures that grace our gardens and bushland are rapidly declining in numbers, with some close to extinction.

Yet this is not just Australia's catastrophe, but a world-wide threat. It cannot be blamed upon over-collecting by so-called Entomologists in the past, although the bulldozer and land development by the thoughtless and uncaring Big Business/Real Estate Developers community has and will continue to cost Australians vast tracts of forestland, and rainforests in particular upon which our birdlife and other wildlife depends for its survival.

The human reduction of habitats containing the food plants of individual species in the course of the development of the former scrublands of outer Sydney, for example has seen many once common species reduced to a handful of still-surviving creatures. Many 'Blues' and 'Coppers' which are limited in distribution and which rely upon a certain type of habitat have either already become extinct, or are in decline heading in that direction. Migratory species such as the Caper White, Painted Lady, the Wanderer or Monarch Butterfly, which this author recalls filling the air with their tens of thousands in migrations through Sydney during the 1950s [even the Blue Mountains] may soon be no more, for there seems no way of preventing this massive extinction, the insect equivalent to the death of the dinosaurs!

I hope I am awfully wrong and that this horrific decline will cease, that Nature will repair itself. Yet Man himself has to be overcome; the land developers, factory owners and mining companies filling the air with pollutants as they are our rivers and creeks. What hope have our insects and spiders got?

Back in the late 1960s into the 1970s some people will remember my lone struggle with the Blue Mountains City Council over efforts by certain people to collect specimens of the Blue Jewel, a metallic-coloured little Lycaenid butterfly species, at its only known local colony. My efforts to save the species were treated as a joke by local Aldermen, and even the Australian Museum Sydney entomological staff ignored my findings, one prominent academic stating from his armchair that "*Butterflies cannot become extinct in Australia like they largely have in Britain*"! Needless to say, the colony was soon wiped out! I finally gave up Entomological research after gathering some common species variations in 1999. I have since used my collection as a Conservation weapon and for many years have campaigned for laws to prevent the collection of rare species of Australian butterflies, moths, beetles, other declining insects, and spiders. And have their habitats & food plants protected by law.

Once our bushland, even on the Blue Mountains, was filled with millions of all manner of beetles, particularly the Jewel Beetle species. For some years now the bush has been silent with their absence.

We cannot blame the dreaded collector, for even the depths of our densely forested, largely inaccessible valleys no longer possess these insects and, with their passing our bird species which rely on them as a food source have largely left some areas. Even this week we have seen comments such as "*Where are all the common Sparrows in our gardens*".

I observe a decline even in local Funnel Web Spider numbers, and what of those 'common' bush species that sometimes enter homes on warm nights, the harmless Huntsmen spiders [16 species on the Upper Blue Mountains alone!], the Nephilla spiders and many more. I am not concerned that certain species such as the Funnel Web, Red-Back or other Spider species are dangerous, for like the Grey Nurse Shark and the Taipan, they are all part of the biotic community of which we also are members. To exterminate a species just because it is dangerous to humans - as some people have proposed occasionally - is an ignorant attitude to take. If any one species is exterminated it creates a break in the biotic chain causing a reaction.

Right now the world's insect population is declining and with it bird species among other creatures. As we are part of that chain it must inevitably in the future affect us!

Some people are blaming ChemTrails from jet airliners but if this is one cause it is not alone. We are poisoning our environment and ourselves, our landscape, rivers, creeks etc. Wake up fools and start doing something about it!

Climate Change is the major culprit, the rise of temperatures which many insect species cannot adapt to and are therefore dying off at an alarming rate. While scientists struggle for solutions, the general public must join this fight, grow insect-attractant plants [books of Australian Butterflies and Moths contain this information] in your gardens, join in the conservation of our irreplaceable natural forests upon which all manner of our precious wild life depends for its existence. Our Local Members and other Parliamentary representatives cannot be trusted with the preservation of our heritage any more than we can trust the scientific community for answers. Much could have been done by them years ago and they ignored the warning signals. Now we are paying for their procrastination with the 'great extinction' now threatening us.

Will our future children never know the sight of a butterfly on the wing, moths flitting around lamp posts on a warm, moist night, the humble beetle chewing a leaf, or the beauty of a spider and its web spun amid the garden flowers?

If the current trend continues the trees will become empty of their koalas, possums, sugar gliders, and birds; the forests and scrublands grow suddenly quiet, and the "Silent Spring" of author Rachel Carson will become a reality.

Dr [hc] Rex Gilroy PhD,
Conservationist.

****Articles from the print media on this topic!**

Insect Population Decline Leaves Australian Scientists Scratching for Solutions.

ABC Far North

By Mark Rigby

24th February 2018



Photo: Entomologists are concerned Australia's insect populations are in decline. (ABC News: Penny McLintock)

A global crash in insect populations has found its way to Australia, with entomologists across the country reporting lower than average numbers of wild insects.

University of Sydney entomologist Dr Cameron Webb said researchers around the world widely acknowledge that insect populations are in decline, but are at a loss to determine the cause.

"On one hand it might be the widespread use of insecticides, on the other hand it might be urbanisation and the fact that we're eliminating some of the plants where it's really critical that these insects complete their development," Dr Webb said.

"Add in to the mix climate change and sea level rise and it's incredibly difficult to predict exactly what it is."

'It's left me dumbfounded'.

Entomologist and owner of the Australian Insect Farm, near Innisfail in far north Queensland, Jack Hasenpusch is usually able to collect swarms of wild insects at this time of year.

"I've been wondering for the last few years why some of the insects have been dropping off and put it down to lack of rainfall," Mr Hasenpusch said.



Photo: Jack Hasenpusch says he usually collects thousands of insects at this time of year, but this summer is particularly quiet. (ABC South East: Cassie Steeth)

"This year has really taken the cake with the lack of insects, it's left me dumbfounded, I can't figure out what's going on."

Mr Hasenpusch said entomologists he had spoken to from Sydney, Brisbane, Perth and even as far away as New Caledonia and Italy all had similar stories.

The Australian Butterfly Sanctuary in Kuranda, west of Cairns, has had difficulty breeding the far north's iconic Ulysses butterfly for more than two years.

"We've had [the problem] checked by scientists, the University of Queensland was involved, Biosecurity Queensland was involved but so far we haven't found anything unusual in the bodies [of caterpillars] that didn't survive," said breeding laboratory supervisor Tina Kupke.



Photo: There are concerns far north Queensland's iconic Ulysses butterfly species is also disappearing from the wild. (Supplied: Australian Butterfly Sanctuary)

"We've had some short successes but always failed in the second generation."

Ms Lupke said the problem was not confined to far north Queensland, or even Australia.

"Some of our pupae go overseas from some of our breeders here and they've all had the same problem," she said.

"And the Melbourne Zoo has been trying for quite a while with the same problems."

Limited lifecycle prefaces population plummet.

Dr Webb, who primarily researches mosquitoes, said numbers were also in decline across New South Wales this year, which was indicative of the situation in other insect populations.

"We've had a really strange summer; it's been very dry, sometimes it's been brutally hot but sometimes it's been cooler than average," he said.



Photo: Entomologist Dr Cameron Webb says dry conditions can affect the lifecycle of many insects, which in turn affects entire populations. (ABC: Nicola Gage)

"Mosquito populations, much like a lot of other insects, rely on the combination of water, humidity and temperature to complete their lifecycle.

"When you mix around any one of those three components you can really change the local population dynamics."

According to Dr Webb, when conditions are less than ideal the lifespan of mosquitoes and other insects plummets, thus reducing the sustainability of the entire population.

"If you're used to living for about three weeks when it's nice and warm and humid, and then you're only living for a week or so because it's really hot and dry then you don't have to chance to lay as many eggs, or do as much mating," he said.

"Those things have a knock on effect and it means the overall populations can often be much lower."

Important to listen to anecdotal evidence.

At this stage, reports of insect population declines in Australia are only anecdotal.

And, without formal scientific research into the phenomena, Dr Webb said it was difficult to make accurate predictions or assessments about insect numbers.



Photo: Dr Webb says corroborated anecdotal evidence from field researchers is often a sign that more formal research is required. (Supplied: Stuart Pettigrew)

On the other hand, he said, it is important to listen to the entomologists, ecologists and researchers who are in the field on a regular basis.

"You get a feel for what the general insect populations are like when you're doing a lot of field work," he said.

"I don't study cicadas, but I know what cicada numbers are like from year to year because I'm out and about in my local wetlands.

"When experts are relaying this kind of information it is something that we need to turn our mind to and think about what could be going on, and more importantly how do we work out if this is actually happening and what we do about it."

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CONTROVERSIAL WEEDKILLER COULD SPELL BIG TROUBLE FOR MONARCH BUTTERFLIES IN THE US.

Environmental group reports over the next year more than 60 million acres of the monarch's US migratory habitat will be sprayed with dicamba

By 2019, a weed killing chemical—designed to be used in tandem with genetically modified cotton and soybean seeds—is projected to be sprayed on more than 60 million acres of monarch butterfly U.S. migratory habitat, according to a report released today by the Center for Biological Diversity.

Citing this potential devastation to monarch populations, which have already decreased an estimated 80 percent over the past two decades, the report calls on the U.S. Environmental Protection Agency not to renew the registration of the weed killer, called dicamba, when it expires at the end of this year.

The concern is the chemical could cause more habitat loss and decreased milkweed, which is the only food plant used by monarch caterpillars. Monarchs winter in Mexico and some warm areas of Southern California and they return to areas throughout the U.S. in the spring.

"America's monarchs are already in serious trouble, and this will push them into absolute crisis," said report author Nathan Donley, a senior scientist at the Center, in a statement.

Donley and colleagues looked at monarch habitat in the U.S. and estimated how much dicamba will be sprayed. In addition to the estimated 60 million acres to be sprayed, an additional 9 million acres could be threatened by the chemical drifting.

The weed killer gained notoriety this year as farmers planted more than 25 million acres with new soybean and cotton seeds genetically modified to be resistant to dicamba. Monsanto, BASF SE and DowDuPont all make dicamba-based herbicides.

In many areas the weed killer drifted onto nearby fields and killed crops, spurring lawsuits in Arkansas, Missouri, Kansas and Illinois. Arkansas banned dicamba; North Dakota, Missouri and Minnesota put restrictions in place.

"In 2017 there were reports of at least 3.6 million acres of off-target, herbicide-induced damage to agricultural crops and an unknown amount of damage to native plants and habitats, including forests," according to the Center's report.

Dicamba is a threat to monarchs because it can destroy flowering plants that provide nectar for adult butterflies as they travel south for the winter and by harming milkweed, which is the "only food source of the monarch caterpillar" and "provides an essential resource for reproduction," stated the report.

"When dicamba's use on [genetically engineered] cotton and soybeans comes up for re-approval later this year, the only responsible thing for the EPA to do is allow that approval to expire," Donley said.

We've reached out to Monsanto to comment on the report.

MAN FOUND GUILTY OF KILLING ONE OF BRITAIN'S RAREST BUTTERFLIES.

Magistrates told that Phillip Cullen was spotted chasing large blues with a net at Gloucestershire reserve Steven Morris

Fri 17 Mar 2017 05.18 AEDT



Phillip Cullen at Bristol magistrates court on Thursday. Photograph: Brad Wakefield/Rex/Shutterstock

A man has been found guilty of unlawfully collecting and killing specimens of one of Britain's rarest butterflies, the large blue.

Phillip Cullen, 57, was spotted armed with a child's shrimping net chasing the insects at a nature reserve in Gloucestershire and was seen the next day at another prime location for the butterfly in Somerset.

When he was challenged by a volunteer at one of the reserves, Cullen claimed he was interested in parasitic wasps and orchids.

Police later raided his home in Cadbury Heath, near Bristol, and found dead, mounted butterflies in about 30 trays, including two large blues labelled with the letters CH and DB.

Prosecuting, Kevin Withey said the letters stood for Collard Hill in Somerset and Daneway Banks in Gloucestershire, the two places where Cullen had been seen. The defendant claimed CH stood for "cobalt hue" and DB for "dark blue".



The large blue butterfly can fetch up to £300 if it is mounted and made to look like a Victorian specimen. Photograph: Butterfly Conservation/PA

Bristol magistrates were told the large blue became extinct in the 1970s and has been reintroduced to a few sites. The panel heard there was a market for large blues, which sell for up to £300 a butterfly when they are mounted and made to look like Victorian specimens.

Cullen conceded that he traded butterflies but said he bought them from farms in Europe, set and pinned them in cases and then sold them at auction. He insisted he had not caught or killed any large blues for decades.

The lepidopterist denied capturing, killing or possessing the large blues, which are protected under conservation of habitats and species regulations, but was found guilty after a trial.

Neil Hulme, from the charity Butterfly Conservation, told the court the large blue was an “iconic species”. He described seeing Cullen and a second man clambering over a padlocked gate at Daneway Banks, near Cirencester, in June 2015. He was carrying a child-size net. Hulme said the second man “secreted himself” under a beech tree as a lookout while Cullen “worked” a slope with his net, chasing large blues.

Asked how big a problem illegal collecting of large blues was, Hulme said: “It’s probably really a small hardcore of people. It’s not widespread but the people involved are quite determined.” Hulme said capturing just a few large blues from a site where they were doing poorly could have a huge impact.

Volunteer Mark Greaves said that he spoke to Cullen at Daneway Banks and was told he was interested in parasitic wasps and green-winged orchids.

Rosie Clegg, a volunteer large blue ranger at Collard Hill, said she had spotted Cullen there the day after his visit to Daneway Banks. He told her that he was interested in the cuckoo wasp.

In Victorian times, the large blue was a highly prized specimen because of its wonderful colour and rarity.

It could not be bred in captivity and was declared extinct in the UK in the 1970s, but the determination of two scientists brought it back to life.

Jeremy Thomas, a professor of ecology at Oxford University, worked out what it needed to survive: well-grazed meadows and the presence of a particular red ant for its caterpillars to feed on.

David Simcox, a conservation consultant for the Centre for Ecology and Hydrology, drove his VW campervan to Sweden, collected some eggs from the large blues there and released caterpillars in the south-west of England.

The large blue has a remarkable lifecycle. Eggs are laid on the flower buds of wild thyme. The larvae burrow into the flower heads and, when they are about 4mm long, they drop to the ground and wait to be found by foraging red ants, attracting them with sweet secretions from a “honey” gland. The ants place them in their brood chamber and the larvae feed on ant grubs. They turn into butterflies, crawl above ground and fly from mid-June to late July.

There are 59 species of butterflies in the UK. Of these, 25 are afforded some kind of protection and six, including the large blue, are fully protected, meaning they cannot be collected, killed or sold.

Cullen will be sentenced next month.

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SENTENCE FOR BRISTOL COLLECTOR WHO CAUGHT AND KILLED THE UK'S RAREST BUTTERFLY.



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On 7 April 2017, Phillip Cullen, 57, of Cadbury Heath, Bristol, was given a six-month sentence, suspended for two years, at Bristol Magistrates Court. On the 16 March 2016, Cullen had been found guilty of six charges contrary to the Conservation of Habitats and Species Regulations 2010 relating to the capturing, killing and possession of two large blue butterflies. He had previously pleaded guilty to possessing 36 dead specimens of large blue, large copper, southern festoon and clouded apollo, contrary to the same regulations, and possessing 49 dead Schedule 5 specimens of black veined moth, fiery clearwing moth, marsh fritillary, heath fritillary, high brown fritillary and swallowtail contrary to the Wildlife and Countryside Act 1981. He was also ordered to carry out 250 hours of unpaid work, given a five-year criminal behaviour order banning him from three nature reserves managed for the large blue plus costs of £380.



© NWCU

In June 2015 CULLEN was seen entering the Gloucestershire Wildlife Trust's Daneway Banks Nature reserve, this reserve is a limestone grassland owned and managed in order to provide protection to the rare Large Blue butterfly. CULLEN was observed carrying a small green net that he used to try and catch butterflies on the reserve. When questioned by one of the witnesses he denied trying to catch butterflies but said he was trying to catch parasitic wasps and was looking for Orchids, neither of which were present. The following day CULLEN was seen on the Collard Hill Nature reserve in Somerset, this is owned by the National Trust and is another important site for the Large Blue Butterfly.

As a result of enquiries made by the police and National Wildlife Crime Unit (NWCU) a search warrant was executed on 12th February 2016 at the home of CULLEN by officers from the Avon and Somerset Police accompanied by members of the NWCU and specialists from the Natural History Museum, London.



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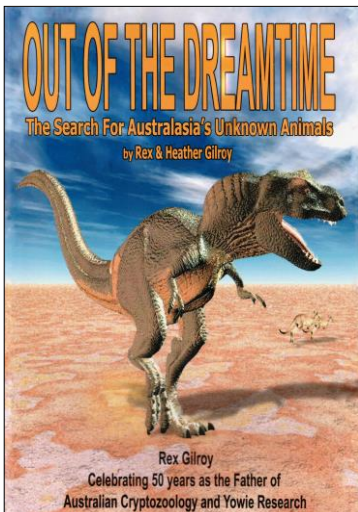
As a result of the search 13 trays of mounted butterflies were seized, CULLEN was arrested in relation to offences under the Wildlife and Countryside Act 1981 and The Conservation of Habitats and Species Regulations 2010. Later that day he was interviewed at Keynsham Police Centre. He admitted that he had been collecting butterflies for about 50yrs and that he had previously caught them himself but that had been ‘decades ago’, these days he just videoed butterflies and caught wasps which he caught in a small net, similar to a child’s shrimping net.

Experts took the butterfly’s that had been seized to the Natural History Museum for examination, they were able to identify 89 specimens that were protected by UK and European legislation. Two butterflies of particular interest were two Large Blue Butterflies that had the labels ‘DB18’ and ‘CH18’ alongside them. In March 2016 CULLEN was further interviewed, he admitted that he had caught butterflies a number of years ago and the remainder he had purchased on the internet.

He admitted going to both the Daneway Banks and Collard Hill reserves but denied catching any butterflies on these reserves, when it was suggested the ‘DB18’ and ‘CH18’ related to the names of the reserve and the ‘18’ was the date he had been seen on the reserve (18th June 2015) he denied this and said that it described the colour variations of the butterflies, the ‘CH’ stood for Cobalt Hue and ‘DB’ stood for Dark Blue, he couldn’t remember what the ‘18’ stood for.

The NWCU would like to thank the Natural History Museum, recently retired WCO Sgt Andy Whysall and Jonathan Richards and colleagues in the CPS for their work in presenting an unusual case in a very professional manner.

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In the interests of Insect Conservation Rex & Heather Gilroy are including Chapters Three and Four from their ground-breaking book “Out of the Dreamtime – The Search for Australasia’s Unknown Animals” [URU Publications 2006] in this newsletter. Reference is made in Chapter Three to larger than average species of butterflies, moths, dragonflies, stick insects and spiders. Due to the limitations of space in this [March] newsletter that chapter will be published in ‘Mysterious Australia’ at a later date.

The book is available through us or from Lulu.com [\$65 plus p&h].

Anyone wishing to know about this topic and how they can help [ie by growing butterfly/insect friendly plants etc] please feel free to contact us.

ENIGMAS OF THE INSECT/SPIDER WORLD.

CHAPTER THREE.

Insect Mysteries.

by Dr [hc] Rex Gilroy PhD.

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Before advancing on to those larger than life forms with which Cryptozoologists are normally concerned, let us digress to the study of Entomology, which concerns itself with the fascinating world of insects, spiders and their kin.

Why insects and spiders in a book on Cryptozoology, you might ask?

Because the place that these creatures occupy in the world of living things is important, as most plants and animals are affected in some way by their presence. Furthermore, no other class of animals is so intimately involved in the intricacies and complexities of the biological world as are insects and spiders. With the exception of ground-dwelling, cave-dwelling species, both these life forms are primarily terrestrial in habitat and found in just about every environment.

My main reason for including these creatures in this book is to reveal information certain to surprise many readers, for as with larger animals still being discovered by scientists, not a year passes that as many as several thousand new species of insects and spiders are, it is estimated, being discovered and named worldwide, which means there are well over one million identified species in the world today!

They too therefore have their own “unknown animals” and they are not all small creatures by any means, for I am about to introduce to YOU giant butterflies and moths, dragonflies and stick insects, and spiders that are the stuff of nightmares. Other mysteries of this hidden world will also be examined, which I have studied in the course of a lifetime of collecting and studying these fascinating creatures.

The details of the early evolution of insects and spiders are shrouded in the mists of the beginning of life on Earth. This is partly due to the fact that the earliest insects [which were wingless] and spiders were small, fragile creatures that disintegrated long before they could become fossilised; and in part to the almost total absence of rocks that contain fossils of the land animals from the period when insects and spiders were beginning to appear.

Scientists believe that it is quite probable that some of the early members of the Trilobites, marine arthropods found in Cambrian period rocks at least 570 million years ago, were allied to the ancestral insects. The Trilobites survived for some 140 million years before dying out, but the span of their existence largely covers the long, blank period of insect evolution.

Then in the Devonian period, around 400 million years ago, spiders and wingless insects, together with millipedes and mites made their first appearance. It is in rocks of the Carboniferous period, which followed the Devonian around 350 million years ago, that we find the first winged insects, and from a study of these scientists have identified a number of well-differentiated orders.

There are many highly varied insect fossils from the Permian period, which succeeded the Carboniferous around 250 million years ago. They occur abundantly worldwide, and include remains of some truly fantastic species that reached sizes unthought of in modern insects. As early as the Carboniferous period the precursors of our modern dragonflies had evolved, often of gigantic sizes of at least a metre in wingspan, perhaps more. Stick insects were not much different in gigantic size by today's standards. There are some species of large butterflies and moths that today give us a hint of possible larger ancestors of the past extending far back to the appearance of the first winged insects, when butterflies and moths diverged from a common ancestor. Of these, the Queen Victoria Birdwing, *Ornithoptera victoriae* [female] of the Solomon Islands, and the female Atlas Moth of far north Queensland, measuring up to 30cm in wingspan, are the largest known butterfly and moth species on Earth [the males of both species are smaller in size.

A word about Birdwings. These often indescribably beautiful butterflies, with their metallic greens, blues, yellows and gold wing markings rival the metallic blue [often large] Morpho butterflies of South America. Their reflecting colours are the result of the minute scales covering the wings, which in this case produce a waxy sheen, reflecting the sunlight. The wing scales of non-reflecting butterfly and moth species often includes many strikingly beautiful species in their own right, even though the scales making up the wing patterns of these species lack the waxy sheen.

The Birdwings form the three basic genres within the family Papilionidae; these being Trogonoptera, Troides and Ornithoptera. Trogonoptera and Troides species occur throughout the India and island south-east Asia region, the Troides extending to New Guinea where the genus Ornithoptera covers Melanesia and Queensland with one species, the smallest, the Richmond Birdwing, being found in the Tweed Heads-Clarence River district of far north-eastern NSW. All the Queensland-NSW Ornithoptera are known for their metallic green winged males, the females [which are larger than the males] having non-reflecting wings with colour markings of greys, blacks and whites. The Birdwing Butterflies are practically all Aristolochia feeders in the larval stage while a few species also feed upon allied plants.

The much larger Cairns Birdwing, *Ornithoptera priamus euphorion* has a range extending from Mackay to Cooktown, beyond which the Cape York Birdwing, *Ornithoptera priamus pronomus* extends to Thursday Island. In recent times the race *O.P. macalpinei* has been identified from the Claudia River to the McIlwraith Range, Silver Plains and Coen-Cape York Peninsula region. All are large, metallic green-winged male and larger grey/black/whitish female creatures. For example, the Cairns Birdwing male's wing expanse is up to 12.5cm, that of the female being 15cm. The New Guinea Birdwing, *Ornithoptera priamus poseidon*

is even larger, particularly in the female, while in the Solomons, the equally large *Ornithoptera urvillianus*, whose male possesses metallic dark blue, rather than green markings, dominates the jungle glades.

I mention these beautiful insects because of their great sizes in relation to the more generally smaller species around them. It seems incredible that other Ornithopterids of this size could escape scientific discovery, even on isolated Melanesian islands or in the well-trodden parts of the New Guinea continent where Entomologists have been collecting and identifying insects since the 19th century, yet this could still very well be the case. It is not at all beyond the realms of possibility that some hitherto unknown, perhaps even larger species could await discovery, hidden in some restricted, out-of-the-way corner of any one of the Melanesian islands, or high up in the vast mountainous interior of the New Guinea continent, still largely inaccessible to researchers.

The discovery of a hitherto unknown insect [or spider] species can be just as important and exciting a discovery to an Entomologist as a new reptile or mammal species is to a zoologist. All are part of the whole, and of equal importance to our knowledge of the countless life forms with which we share this planet.

Consider the emotions of Alfred Russell Wallace, when on the island of Batjan in 1859, he discovered the New Guinea Birdwing butterfly:

*“The beauty and brilliancy of this insect are indescribable and none but a naturalist can understand the intense excitement I experienced when I at length captured it.
On taking it out of my net and opening the glorious wings, my heart began to beat violently, the blood rushed to my head, and I felt much more like fainting than I had done when in apprehension of immediate death. I had a headache for the rest of the day, so great was the excitement produced by what will appear to most people a very inadequate cause.”*

Cryptozoologists who overlook the Arthropoda - the Order of creatures to which insects, spiders and their kin belong - miss much. As an Entomologist myself, and having spent most of my life collecting and researching these creatures, in the course of which I have formed a collection gathered from throughout Australia and worldwide, numbering many thousands of specimens, I am able to draw upon my own personal field experience and knowledge, in the inclusion of these all-too-often overlooked “unknown animals” in this book.

I have witnessed many strange sights in a lifetime of observing the habits of insects, particularly those more highly organised of the insect kingdom, the Ants.

One day in 1968 I was exploring bushland near Katoomba, on the Blue Mountains west of Sydney, when I came upon a large mound of meat ants, from which there led off through the leaf litter of the forest floor, a 10cm or so wide ‘highway’ extending off over the ground for quite some distance. The ‘highway’ had been worn 1 to 2cm deep in places from generations of ants moving back and forth.

Fascinated, I followed it until it reached another large nest 30m away. On this particular day the highway was a hive of activity, with hundreds of meat ant workers moving back and forth. Some were carrying eggs from one nest to the other, while others were carrying food items.

At one point a large twig stretched over the highway and it was about 30cm or so from here that I noticed the ‘traffic’ becoming congested. There were far too many workers and perhaps 50 or more suddenly had the highway blocked in both directions!

Then, from further up the ‘highway’ I noticed six ants approaching the ‘traffic jam’, one behind the other in single file. Upon reaching the cluster of workers, these six ants suddenly took up positions in such a way as to begin directing the workers into two groups, each group being directed by the six ‘traffic policemen’ ants who made movements back and forth organising the workers. One group [those carrying eggs] were directed off the ‘highway’ and up over the aforementioned twig and on their way to the nest to which they had been carrying the eggs of their young, together with the food-carriers headed in the same

direction, while those headed for the other nest were directed beneath the ‘overpass’ twig and on up the ‘highway’ as the ‘policemen’ stood to one side observing the flow of ‘traffic’ as it returned to normal!

Insects are smarter than we think. During the August, 1987 Hawkesbury River flood, I was standing near the river bank at Wilberforce, near Windsor, when I noticed the grass around me was alive with hundreds of little beetles, tiny grasshopper nymphs and other little insects. All appeared to be moving towards and climbing up a tall post on the river’s edge. Within a few minutes the water was rising over the bank and seeping rapidly through the grass around my feet. The post was by now ‘alive’ with seemingly hundreds of tiny creatures, and as the water rose they began moving higher up the pole, until it was so congested that they were standing two and three deep on top of one another. They clung for dear life to the top half of that pole until after the floodwaters receded the following day, before crawling back onto the muddy grass to disperse in all directions!

The study of Entomology is a complex field of research, far too detailed to adequately cover in this book, and those readers wishing to pursue these matters further will find no shortage of publications in libraries and good book shops on this fascinating subject. I have therefore limited this chapter, and the two to follow, to aspects of a Cryptozoological nature, such as mystery giants of the insect and spider world.

Throughout the insect-spider world dwarfism, like variations in colour markings within a given species is not uncommon and is the cause of genetic mutation, and the Lepidoptera [Butterflies and Moths] are a good example of this phenomena. Yet for a given species to suddenly produce a mutation far larger than its normal wingspan is a possibility dismissed by our university-based Entomologists.

A lifetime of collecting and researching insects in the field long ago taught me to expect the ‘unexpected’. One January day in 1957 I was collecting butterflies at Blackheath on the Blue Mountains of NSW, on a track leading through bush down an embankment to the local swimming pool. I had been trying to ‘net’ a chocolate-brown and orange coloured Swordgrass Brown or two, when some metres away, gliding down the path towards me I spotted a very large, orange and black butterfly barely a couple of metres above the ground. Then it rose to settle upon a flowering shrub 2 metres above me on the trackside embankment and I realised it was a “Wanderer” or ‘Monarch Butterfly’, *Danaus plexippus* [Linnaeus]. This species’ topside wing colour markings consist of black edging with white speckle markings bordering central large orange patches on both fore and hind wings. What I realised immediately as this butterfly opened its glorious wings to the sunlight, was that, instead of the usual wingspan of 9.5cm to 10cm, this specimen had a wingspan of 15-16cm.

I attempted to net the specimen, but it eluded me, gliding off high above the track, leaving the bush to fly above the crowds of bathers out of sight!

One thing I had noticed about the butterfly; it was a male, due to a central black raised scent pouch on the hind wings [not found on the female] adjoining one of the prominent black wing veins which are a feature of this species.

We shall return to the wanderer to study its worldwide migratory habits - another miracle of nature - in the next chapter.

One prominent feature of the Arthropods is the ability of a great many species to camouflage themselves and this is especially noticeable among insects.

In the butterfly world many exotic species have evolved in such a way that while the topside reflecting or non-reflecting wing colours are quite noticeable, the underside colours are often quite dull or resemble leaf litter-type colours and some; like the famous ‘leaf-wing’ and swallowtail butterflies, have evolved ‘tails’ resembling leaf stalks, which when the wings are closed when the butterfly alights on a branch, help it to resemble a live or dead leaf, and thus avoid the unwanted attention of birds and other predators.

This genetic trait is common also to moths, beetles and other insects, including stick insects.

Stick insects averaging 10cm or so length, with their green or brown body colours can often be quite hard to spot, and there are some forest giants up to 20cm that frequent the treetops of rainforests.

Stick insects belong to the *Order Orthoptera*, which includes roaches, locusts, mantids and their kin. I have caught a pair of giant ‘sticks’ at Cairns, Far North Queensland in 1976 that were easily 22cm long but never met up with anything larger in size.

Vast regions of gum forest in the Jenolan Caves-Kanangra Boyd wilderness were devastated during the great stick insect infestation of 1955-1956 according to Jim Stretton, at that time an employee of the Caves House guest house.

I shall continue with the insect crisis in the next “Mysterious Australia” Newsletter.

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Morpho amathonte Dayrolle. Family Morphidae, Genus Morpho. The name Morpho is Greek for beautiful and like all the other members of this family, this butterfly is no exception. *Morpho amathonte* is found in Columbia, South America, and is typical of a number of large, metallic blue species. These butterflies are now protected by law, due to past depredations by collectors, but particularly jewellery manufacturers who were using the wings of these beautiful insects in a variety of ways, such as creating flower patterns under glass-topped dining and coffee tables as well as tea trays etc!

Specimen from the Rex Gilroy insect collection.

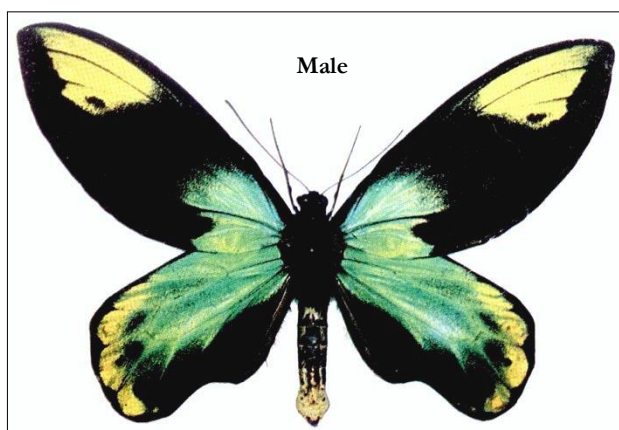
Photo copyright © Rex Gilroy 2018.



Troides oblongomaculatus Goeze subspecies *papuensis* Wall. [aberrant specimen], New Guinea. This species, one of a large number of brilliant black forewinged and metallic yellow Birdwing butterflies best represented from mainland to island South-East Asia is, like its Asian cousins protected by law for much the same reasons as the South American Morpho Butterflies. The Triodes, like their Ornithoptera Melanesian-Australian relatives, are large, showy species. During the 1970s Rex Gilroy carried out a study of the genetic links between the *Troides*, *Ornithoptera* and *Papilio* butterfly genera, which suggest that the *Ornithopterids* evolved from the Asian *Troides* group, and that it is from the *Ornithopterids* that the genus *Papilio* evolved. Similar conclusions were reached by Japanese Entomological researchers about this time.

Specimen from the Rex Gilroy insect collection.

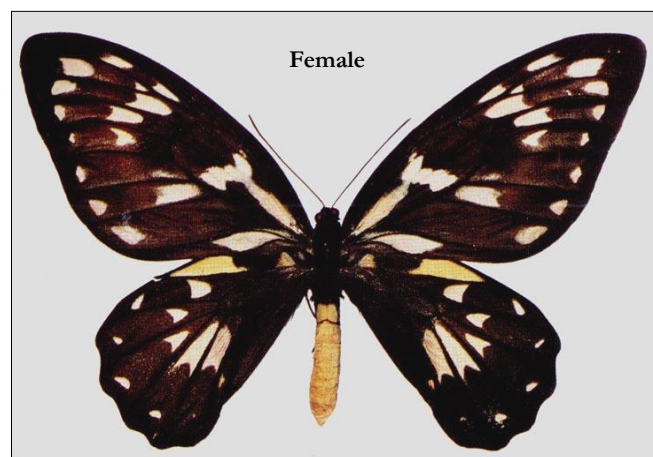
Photo copyright © Rex Gilroy 2018.



Queen Victoria Birdwing.

Ornithoptera victoriae Gray [male] Family Papilionidae, Tribe Troidini, Genus *Ornithoptera* Boisduval.

The female of this species is the largest butterfly in the world, measuring 30cm in wingspan. Her wing colouration is blackish with greyish-white markings, whereas the smaller male has metallic green and greenish yellow colours. The species is found in the Solomon Islands and is protected by law. Like other Birdwing species, it was once ruthlessly collected for its size and brilliant colours. Photos of specimens from the Rex Gilroy insect collection 2018. Photos copyright © Rex Gilroy 2018.





Australian Atlas Moth.

Coscinocera hercules Miskin [male]

This is the largest of all Australian moths and belongs to the family Saturniidae, which includes the Emperor Gum Moths. The Atlas Moth male measures 20cm in wingspan. It is found in Far North Queensland. The numbers of this species have been seriously reduced due to the destruction of much of its rainforest habitat, where its caterpillars feed on several trees including *Dysoxylum*, *timonius*, *Polyacias*, *Homalanthus* and *Glochidion*. This species is also found in New Guinea.

Photo of specimen from the Rex Gilroy insect collection.

Photo copyright © Rex Gilroy 2018.



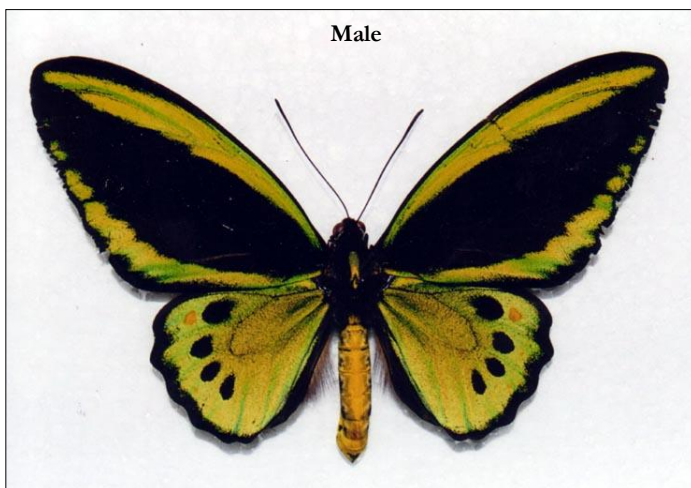
The Giant Wood Moth.

Zelotypia staceyi Scott. Superfamily Hepialoidea, Family Hepialidae [Ghost Moths, Swift Moths].

This forest giant belongs to a family noted for often large species. The Giant Wood Moth approaches the Birdwing Butterflies in size, measuring 22cm wingspan by 10cm in body length [as in this specimen]. It is restricted in its distribution, occurring from the Blue Mountains and Central Coast to north-eastern New South Wales, especially in hilly forested areas. This specimen was found by Rex Gilroy at Katoomba after someone had trodden on its abdomen. This specimen is the only one so far found on the Blue Mountains. The species is extremely rare due to the reduction of its forest habitat through land development and logging.

Specimen from the Rex Gilroy insect collection.

Photo copyright © Rex Gilroy 2018.



Cairns Birdwing [male]

Ornithoptera priamus euphorian [Gray] 1852. Family Papilionidae, Tribe Troidini, Genus *Ornithoptera* Boisduval.

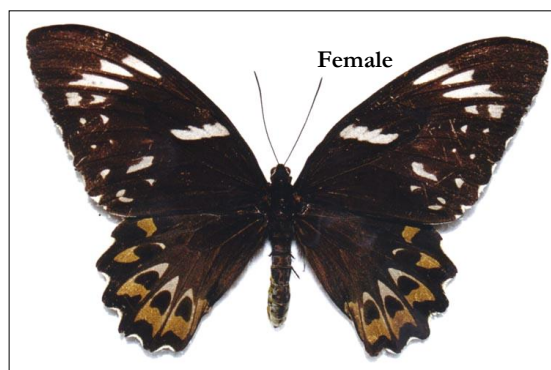
Found from Mackay to Cooktown Qld., it is seen throughout the year, but commonest in the summer months and autumn. Its food plants are species of *Aristolochia*. The species numbers had been declining through over collecting and the depredations of 'professional' Entomologists and butterfly jewellery manufacturers, until it was proclaimed a protected species some years ago. Its metallic green and black velvety wings made it a highly sought-after species.

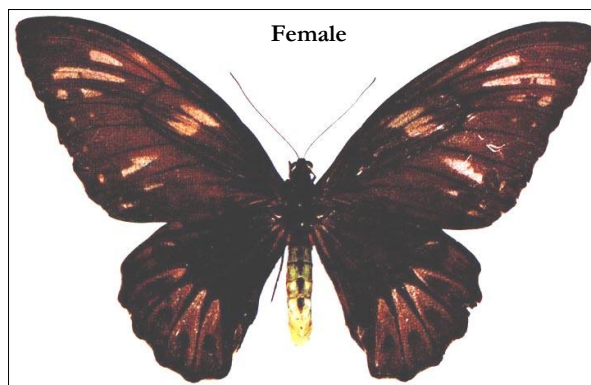
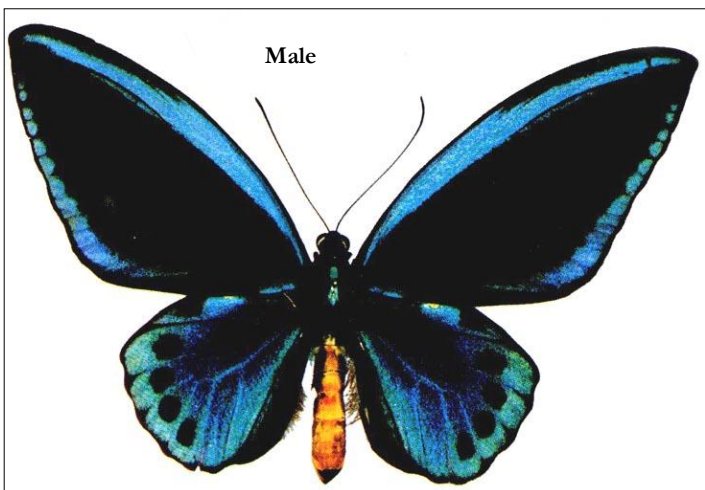
Photos of specimens from the Rex Gilroy insect collection. Photos copyright © Rex Gilroy 2018.

Cairns Birdwing [female].

The wingspan is 15cm. The female is much larger than the male, with black and whitish coloured wings.

Photo copyright © Rex Gilroy 2018.



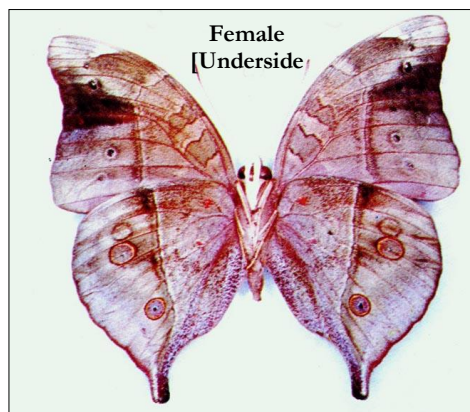


Urvillianus Birdwing.

Ornithoptera urvillianus Guerin, Family Papilionidae, Tribe Troidini, Genus *Ornithoptera* Boisduval. This beautiful species resembles the Australian Birdwings. While the female [larger than the male] displays black and grey markings, the male has metallic bluish-purple wings, where the Australian species have metallic green. Their distribution is the Solomon Islands, where they are protected by law. Photos of specimens from the Rex Gilroy insect collection. Photos copyright © Rex Gilroy 2018.



A group of orange and black bodied **Sugar Ants** [Order Hymenoptera] have begun digging a new nest. While the five nearest the new burrow take turns at the digging, the three in front of the workers stand guard. The three at the bottom of the picture appear to be scouts ready to give warning of the approach of any enemies! Photo copyright © Rex Gilroy 2018.



Australian Leaf-wing Butterfly [male topside and female underside]. *Doleschallia bisaltide australis* Felder 1867. Family Nymphalidae, Subfamily Nymphalinae, Genus *Doleschallia* Felder. Found from the Richmond River [Northern NSW] to Cape York and the Torres Strait Islands, this species flies throughout the year in the north, and from spring to late summer in the south. The larval foodplant is *Pseuderanthemum* variable. The butterfly's topside colours consist of a black border down the outer edge of the forewings merging to a dark brown in the hindwings, while the central area of the forewings are orangey. Underneath, the brownish colour and markings give it the appearance of a dead leaf when folding its wings when alighting upon a twig. There is a pointed 'tail' at the bottom of the hindwings which, when touching the twig while the butterfly rests, presents the appearance of the 'stem' of the 'leaf'. This perfect camouflage protects it from predators such as birds. Photos of specimens from the Rex Gilroy insect collection. Photos copyright © Rex Gilroy 2018.



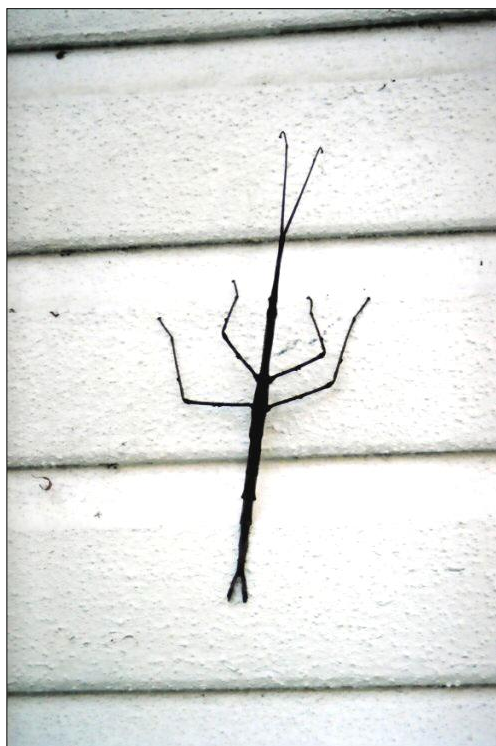
This Giant Stick Insect, Order Phasmida, one of two captured at Cairns, North Queensland in 1976 by Rex Gilroy, measures 22cm in length. These fascinating creatures of perfect camouflage are commonplace to the rainforests and eucalyptus forests of the region. Tales of far larger, truly giant forms are a subject of this Chapter! Specimen in the Rex Gilroy insect collection. Photo copyright © Rex Gilroy 2018.



On Saturday 24th June 2006, Rex Gilroy discovered this giant stick insect under the eaves of his home beside the back door. It was an opportunity to photograph and measure the specimen, before releasing it on bushes. It measured 26.5cm in length with its front legs extended forward. The front legs were 10.4cm in length, the middle legs 7.5cm in length and the back legs were 9.5cm in length. The body length was 16.5cm by 9mm in width, with a wingspan of 5.5cm. The antennae were 2.5cm in length. Photo copyright © Rex Gilroy 2018.



The wings of this species are short compared to those of other stick insect species, and are principally for the purpose of gliding from tree to tree. They are often found on gum trees. Photo copyright © Rex Gilroy 2018.



*These insects are known to remain in the same position for hours at a time, particularly when trying to avoid predators by imitating a twig, or while waiting for insect prey to pass by.
Photo copyright © Rex Gilroy 2018.*



Rex Gilroy is used to 'creepy-crawlies' such as stick insects, which are quite harmless to humans! Photo copyright © Rex Gilroy 2018.



*When resting upon the bark of tree trunks, or on the ground, their camouflage colouration makes them hard to detect.
Photo copyright © Rex Gilroy 2018.*



*The Giant Christmas Beetle. *Anoplognathus viridiaeneus* Donovan. Family Scarabaeidae. Unlike its smaller orange, coloured subspecies, *A. olivierie* Dalm; this beautiful golden coloured beetle about 30mm in length, was once common in the Sydney bushland and north coastal New South Wales. Like its smaller relative it feeds on eucalyptus tree foliage.
Sketch courtesy Shell Picture Cards.*



*The Giant Stag Beetle. Xylorupes Gideon [Fabricius]
Family Scarabaeidae.*

These glossy black beetles have strong legs armed with sharp spines. The fearsome horns of the male [not found in the female] and their size place them among the 'dinosaurs' of the insect kingdom! Males are 45-55mm in length making them larger than the females. Their habitats include rainforests, wet and dry sclerophyll forests and residential areas of Queensland, northern New South Wales and Northern Territory. The males and female specimens shown here are from the Rex Gilroy insect collection. The male measures 55mm in length with a leg span of 7.5cm, the female being 35mm long with a leg span of 55mm. Photos copyright © Rex Gilroy 2018.



*The female Stag Beetle, which lacks the horns of the male.
Specimen from the Rex Gilroy insect collection.
Photo copyright © Rex Gilroy 2018.*

*Profile view of a male Stag Beetle, displaying its characteristic fearsome-looking horns.
Specimen from the Rex Gilroy insect collection.
Photo copyright © Rex Gilroy 2018.*



CHAPTER FOUR. Migration Mysteries.

*by Dr [hc] Rex Gilroy PhD.
Copyright © Rex Gilroy 2018.*

The study of insects, spiders and their kin has come a long way since they first came to the attention of thinkers of the ancient world. An account of migrating plague locusts is to be found in the book of Exodus, written about 1500 BC, which tells of a plague of these insects in Egypt. Yet even before the writing of the Book of Exodus, about 2350 BC, a locust was depicted upon the wall of an Egyptian tomb of the 6th Dynasty [about 2625-2475 BC], and from the 7th century BC there is an Assyrian bas-relief showing locusts being brought to the table of King Assurbanipal as part of the menu.

Upon the wall of an Egyptian tomb dating to around 1000 BC is the painting of a prince hunting waterfowl in a boat. As he prepares to hurl a boomerang at a flock of birds taking flight from reeds, a butterfly is shown to one side. Its markings and orange colour are unmistakable; it is a Wanderer Butterfly, a world-renowned migrant species in modern times.

The ancient Chinese made studies of insects as did the classical Greeks, but we can thank the Anglican monks of 12th century Britain for turning the study of insects, spiders and their kin into a science.

In finely executed illustrations in illuminated manuscripts they described and named a variety of species. By the time of Henry VIII butterflies and moths had caught the attention of lords and ladies of the Court, who made it their pastime to collect, and display in a crude fashion, species which, sad to say, are today either totally extinct in Britain, or else very rare, due to indiscriminate land development, pollution, and the depredations of unscientific collectors [as apart from researchers].

It is known that Henry VIII rewarded his courtiers with a gold sovereign for capturing butterflies for his collection. Despite the crude collecting, killing and display methods of those times, the early collectors had, through keen observation, discovered the intricate life-cycles of a number of secretive species of 'blues' and 'coppers'.

The first known book on British, as well as European insects was Sir Theodore de Mayerne's *Theatrum Insectorum*, which he published in 1634. Sir Theodore de Mayerne was a physician to Charles I and a contemporary of Lucius Cary, Viscount Falkland, who was killed at the first battle of Newbury fighting on the Royalist side, and who is noted for having once stated that he "pitied unlearned gentlemen on a rainy day".

Other famous works followed, each adding to the list of British and continental species; most notable of these was "The Aurelian", by Moses Harris in 1766. In those days, as the science of Entomology dawned, collectors called themselves 'Aurelians'; a name derived from the golden [aureolus] chrysalis of some butterfly species.

By the time of the Napoleonic wars, the study of insects was becoming more refined, with improvements in the killing, setting, display and preservation of specimens and collections as a whole. For example, in the days of Moses Harris, collectors used the 'Batfowler', favoured by farmers to catch bats or birds in their orchards, which consisted of two hockey-like bent sticks to which was sewn a deep gauze bag 5 to 6 feet long. The collector used both hands to swing the contraption, bringing the sticks together and thus closing the net when a specimen was caught. The 'Batfowler' was used well into the early part of the 19th century, until replaced by the hoop net of today.

In those days the modern killing jar did not exist and specimens were killed in the net by pinching of the thorax with thumb and forefinger, or placed in a box of crushed camphor leaves, whose fumes eventually killed the specimen. Camphor would be used also as a preservative. The coming Age of Darwin would see Entomology rise to become one of the major sciences of modern times.

Australia, to be sure, has its own history of Entomology, as does neighbouring New Zealand. 382 species have been recorded from Australia and its island state of Tasmania, with just 27 from New Zealand, 12 being immigrants, leaving 15 native species, although that country has 1,000 moth species. The first insects known to have been recorded in Australia were termites and bushflies, whose unwelcome attentions were vividly described by both Pelsaert [1629] and Dampier [1688] during visits by these explorers to our shores.

The first butterflies to be collected in Australia were those gathered by Banks and Solander, naturalists of Captain Cook's Endeavour, when the Endeavour arrived in Botany Bay on the afternoon of 29th April 1770 and remained until 7th May. The Banks collection still preserved in the British Museum of Natural History, contains 715 butterflies of 462 species including 37 Australian species.

There is little doubt that the most significant contribution to our knowledge of Australian butterflies, was made by one man, Dr G A Waterhouse [1877-1950]. Although since his passing a number of new species have been identified, and a considerable amount of scientific research into butterfly and other insect genetics has been carried out, particularly into variation. The author has also devoted many years research into variation studies, particularly upon a good many of the 130 or more Blue Mountains butterfly species.

Insect migration has a prominent place in these researches, and from 1963 to 1965 I assisted in the tagging of hundreds of Wanderer, Painted Lady and Caper White butterflies, as part of the butterfly migration studies undertaken by the Australian Museum Sydney.

The reasons for this phenomenon among many species of butterflies, moths and other insects [which is similar to many species of bird, animal and fish species worldwide] has perplexed researchers for generations and is still not yet completely understood. A good example is the migratory habits of the Wanderer.

This species is related to a number of ‘tiger’ and ‘crow’ butterflies [*subfamily Dinainae*] grouped within the Family Nymphalidae, which contains a number of prominent migratory species, of the subfamily Nymphalinae, namely the Australian Painted Lady, *Vanessa kershawi* [McCoy], and also the European Painted Lady, *Vanessa cardui* [Linnaeus], which is found widespread throughout Europe, Asia, Africa and North America, beyond which it is rare or absent from South America. In south-east Asia it is found from India to Sri Lanka, Malaya and Sumatra. Some of these butterflies have been known to cross the Indian Ocean, reaching Perth, where the first known Australian specimens were captured. W.E. Wright took a specimen in Perth in January 1958, and during the 1970’s other specimens have been found flying commonly around Bunbury and Rottenest Island, south Western Australia. This species looks likely to become well established here, and perhaps eventually spread elsewhere in Australia. The European Red Admiral, *Vanessa Atalanta* [Linnaeus], which also reaches south-east Asia, has been reported seen on-and-off and captured in the Perth area over the years.

The Wanderer, or Monarch Butterfly is the world’s most travelled migrant of its kind and it has spread wherever its food plant [Milkweed] grows. It spread from North America to the Hawaiian Islands about 1854 and by 1870 it had spread through the Pacific Islands to Australia, with some earlier arrivals [such as a sighting by a Dr Ramsay at Ashfield, Sydney in 1856] prior to that year.

In America the Wanderer or Monarch migrates regularly around late Autumn [Fall], southwards to overwinter in Florida, Texas, California and Mexico - vast, uncountable numbers - and there are several locations near the coast containing trees which are used year after year by the roosting butterflies. At Pacific Grove, California an ordinance has been passed protecting the butterflies from human interference, because the arrival of massive numbers of Wanderers each year attracts tourists from all over the United States.

In the spring the roosting colonies begin breaking up as the butterflies fly northwards, producing broods along the way. It has been found that up to four broods are produced each summer and the descendants of the spring migrants move south again when autumn comes.

In Australia a number of over-wintering tree sites are known in the Sydney district and in the Mt Lofty Ranges near Adelaide, South Australia.

A common myth is that butterflies only live a day or two and die. In fact, the shortest lifespan on the wing for some species is a few weeks, while others live up to six months. Breeders of butterflies have found some species live up to a year on the wing, particularly the Wanderer.

In eastern Australia, one annual migration takes these butterflies from breeding grounds in south-eastern Victoria up the east coast, passing through the southern highlands south-west of Sydney, where numbers of roosting trees occur, they mate and lay eggs on the way. They continue on, eventually reaching over-wintering trees in the Brisbane area and south-east Queensland.

With the onset of spring the hordes of Wanderers begin to stir and commence a return flight south. However their lifespan is just about over and they die on the way. Yet, their young, laid as eggs on the way north have hatched as larvae, gone through the pupa stage and hatched as butterflies. They in turn fly north, eventually to reach the very same trees their parents once occupied.

The mystery is: they have never known their parents, so how are they able to locate the very same trees that their parents once occupied? The tagging experiment carried out by The Australian Museum, Sydney Entomologists, assisted by numerous other researchers, including this author, has helped unravel some of the mystery surrounding butterfly migration, and it is suspected by many researchers that individual butterflies lay down scent trails, which their offspring are able to detect and follow even months later.

The Wanderer or Monarch Butterfly is a sturdy insect, enabling it to undertake the great migratory flights that have seen it spread out across the earth. They have been clocked at as much as over 30 miles an hour, so are fast flyers.

Similar to migratory flights is the phenomena of individuals of certain species being seen or captured great distances from their recognised range of distribution.

An example is the beautiful Ulysses Butterfly, *Papilio ulysses joesa* Butler. The topside wing colouration of this species is metallic sky blue with thick black edging down the outer side of both fore and hind wings, the hind wings possessing a prominent tail. Its underside markings are such that, when it alights upon a plant and closes its wings, it resembles a dead leaf to a bird or other predator. These butterflies, both

male and female, have a wingspan of 10cm and like the metallic green and black male Birdwings, are an unforgettable sight when observed flying high above the rainforest canopy. The Ulysses Butterfly's range extends northward from Sarina up to Cape York, following the Atherton Tableland above Cairns.

It is traditionally a coastal and inland mountain rainforest dwelling species, and yet a few tattered specimens have from time-to-time been captured or seen in gardens or bushland hundreds of kilometres from their normal habitat, as far away as Mt Isa in western Queensland, and as far south as the Noosa district, between Gympie and Nambour just north of Brisbane, south-east Queensland. How they have flown so far afield is a mystery. Perhaps heavy wind currents in storms from time-to-time may blow individuals far from their normal habitat, it is hard to say. Such long flights for the Ulysses are out of character as it is not recorded as a migrant species.

Similarly, the Cairns Birdwing, *Ornithoptera priamus euphorion* Gray, normally found from Mackay northwards to Cooktown, has occasionally been found great distances from its coastal rainforest habitat of Queensland's far north. A battered specimen or two, male and female, have been claimed seen as far south as Townsville, even Charters Towers, and also far west of the Atherton Tableland, perhaps swept to these areas unwillingly by strong wind currents, for like the Ulysses Butterfly, they also are not migrants by habit.

Ornithopterids and Papilios are strong flyers, compared with much smaller species, such as the Common Grass Blue, *Zizina otis labradus* [Godart] and Pea Blue, *Lampides boeticus* [Linnaeus] of the family Lycaenidae, subfamily Lycaeninae. Yet, like the Australian Painted Lady, *Vanessa kershawi* [McCoy]; Australian Admiral, *Vanessa itea* [Fabricius] and Meadow Argus, *Precis vilida calybe* [Godart], these 'blues' have somehow managed to make the long flight across the Tasman Sea to New Zealand, where they are all well established!

The Caper White, *Anaphaeis java teutonia* [Fabricius], of the Family Pieridae, subfamily Pierinae is not known to have reached New Zealand.

Another member of the Pieridae, subfamily coliadinae, the Lemon Migrant, *Catopsilia pomona pomona* [Fabricius] is not known at all from Lord Howe or Norfolk Islands, but a single male specimen with its creamy white and lemon yellow wings was captured in the grounds of St John's College, Auckland, in New Zealand's North Island some time prior to 1876. Like other members of its genus in Australia, it is a migrant species, and might very well have arrived there by a direct route from northern NSW or even south-east coastal Queensland where these butterflies are commonplace. Perhaps the butterfly in question had been caught in a strong wind current and carried far out to sea and drifted with the winds until it reached the North Island.

The Evening Brown, *Melanitis leda bankia* [Fabricius], of the Family Nymphalidae, subfamily Satyrinae, is best seen in early mornings or late afternoons in forest glades from north of Sydney to Cape York, Northern Territory and Torres Strait Islands. A large 70mm wingspan species with a floppy wing movement and not known as a migrant, it some time ago made the flight from the NSW north coast to Lord Howe Island. Perhaps it was from here that just two individuals have been recorded as having reached North Island; the first being attracted to the lights of a house at New Plymouth in April 1962, and the second being caught at Houhora, north of Kaitaia in May 1972, after several days of strong north-west winds. As with other Australian species of butterflies and moths that have made the crossing, its food plants are found in New Zealand, so that if ever an egg-bearing female immigrant should reach those shores, it could be possible for a brood to be produced there and the species become established.

The Common Eggfly, *Hypolimnas bolina nerina* [Fabricius], family Nymphalidae, subfamily Nymphalinae, is known as the Blue Moon Butterfly in New Zealand, because it turns up there "once in a blue moon" as the saying goes!

The first New Zealand capture - that of a male specimen, was by Dr Sinclair of Auckland, who sent it to the British Museum sometime prior to 1855. Since then over one thousand specimens have been seen, mostly sporadic immigrants, although 720 of them arrived in 1956 and 96 in 1971. All arrived on the west coastlines of New Zealand; none have been caught at Kaikoura, Canterbury or Southland, with the possible exception of one believed to have been seen at Christchurch prior to 1855 by a Dr Barker. A few have flown over the North Island ranges to reach Hawkes Bay and the Wairarapa district.

The species is both tropical and sub-tropical, rarely breeding as far south as Sydney, and therefore those migrants to make the flight across the Tasman Sea more likely begin their journey from anywhere

along the mid to far northern NSW coast. The Eggyfly is a migratory species in Australia. As it is a long-time resident of Lord Howe Island and occasional visitor to Norfolk Island, it may also reach New Zealand from these islands.

There is a ‘maybe’ list of possible future immigrants thought to be capable of making the long flight from Australia, either by a direct route, or via the aforementioned island “stepping stones”. These are all Papilios and include the Orchard Butterfly, *Papilio aegeus aegeus* [Donovan]; the Checkered Swallowtail, *Papilio demoleus sthenelus* Macleay; Macleay’s Swallowtail, *Graphium macleayanus macleayanus* [Leach] and Blue Triangle, *Graphium sarpedon choredon* [Felder]. All but the Blue Triangle have been recorded from Lord Howe Island, so whereas the others might conceivably one day reach New Zealand’s North Island from here, the Blue Triangle would have to come by a direct route from anywhere along the NSW east coast, presumably aided by strong winds.

On the afternoon of Thursday 16th March 2000, during one of our New Zealand field trips, Heather and I were visiting friends on a farm at Wangamata north of Tauranga, in the south-east of North Island. As we all sat in the lounge room talking, I happened to look out their large window overlooking the front garden to see what looked to be a large male [black and white wing coloured] Orchard Butterfly, flutter characteristically past the house across the lawn from south to north.

The butterfly was gone in an instant. It could not have been any smaller species, like a Cabbage Butterfly against a black background to create an illusion, and it was certainly not a bird. This species is a citrus feeder in the larval state, and despite the brief view I had of it, the butterfly looked quite fresh and undamaged, as if it had only recently hatched. The thought afterwards crossed my mind that, perhaps a brood of this species may have become established in the orchards hereabouts through eggs from an immigrant female, and could be breeding up, unknown to local entomologists. Only time will tell, and in any case I would much rather see these creatures allowed to breed up than be collected out of existence by overzealous entomologists.

This has not been the full picture of New Zealand’s Lepidoptera by any means, and I have merely chosen certain species for the purpose of demonstrating the mystery of migration among butterflies. There are many migratory moth species also, such as the Bogong or cutworm Moths, whose migrations are often in the millions and were a former source of “bush tucker” of our early Aboriginal people.

I will never forget the night in November 1965, when net and collecting bag in hand, I made a moth collecting trip from my parents’ then north Katoomba home up to the main street of the town. The time was about 2am and the whole street appeared to be in darkness, not one streetlight and not one shop window in the entire main street shone. It was then that I realised what was happening. The air was full of Bogongs. I walked up to a shop window and realised it was coated in a thick moving mass of Bogongs. With the two forefingers of my right hand, I gouged out a slit in the fluffy moving mass, and a shaft of light shone forth!

The next day I took a walk up to the shops to see large numbers of Bogong moths, of more than one species, squashed on the sidewalks by passers-by, while some still clung to the undersides of shop awnings and around windows.

That such seemingly flimsy creatures as butterflies and moths could conquer untold thousands of kilometres in their migratory journeys across continents, and also cross great expanses of ocean non-stop, is enough to create in us all a feeling of awe and wonder. We may never really discover the answers to the many puzzles surrounding the migratory habits of insects, for Mother Nature never reveals all her secrets to we mere mortals.

Rather than just seek to discover the answers to these hidden mysteries of nature, we should all work to guarantee the survival of these unique creatures and their habitats, and clean up the environment, so that future generations may also watch in wonder, at the thousands of winged beauties as they continue to perpetuate a phenomenon that has persisted since the dawn of time.

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Wanderer or Monarch Butterfly, [male].
Danaus plexippus [Linnaeus] 1764. Family Nymphalidae, subfamily Danainae, Genus *Danaus* Klak.

Undoubtedly the world's most famous butterfly migrant. Its migrations from the Melbourne district northwards through Sydney once numbered in the hundreds of thousands in the mid-1950s [as the author can remember]. Land development of its habitats, pollution and also a disease that went through populations in the early 1960s, greatly reduced the species' numbers. The species continues to migrate in Australia, but in numbers nowhere near those of the 1950s and early 1960s.

Photo of specimen from the Rex Gilroy insect

The Wanderer, with two other migrating species of the same genus; **Lesser Wanderer**, *Danaus chrysippus petilia* [Stoll] 1790. [male, centre], and **The Blue Tiger**, *D. hamata hamata* [Macleay] 1872. *D. chrysippus* is found throughout much of Australia, although it is sporadic in the south with only an occasional record from Tasmania. The species has been found migrating alongside *D. plexippus*. *D. hamata* ranges from northern Australia and the Torres Strait Islands, Western Australia as far south as Derby, and down the east coast to the northern rivers of New South Wales. It occasionally reaches Sydney. Rex Gilroy has a specimen caught in Katoomba in 1959, and has caught one as far south as Narooma, on the NSW far south coast. Both these single captures are of specimens that flew far beyond their normal range.

Photo of specimens from the Rex Gilroy insect Collection.

Photo copyright © Rex Gilroy 2018.



Ulysses Butterfly [male].

Papilio Ulysses joesa Butler 1869. Family Papilionidae, Tribe Papilionini, Genus *Papilio* Linnaeus.

Happily protected by law, it had previously been endangered like the Birdwing butterflies through over collecting due to its beautiful metallic blue and black wings. It flies throughout the year, but is commonest from February to May. Its normal distribution is from Cape York to Sarina, but has occasionally been found at widely-distributed locations in Queensland's north.

Photo of specimen from the Rex Gilroy insect collection.

Photo copyright © Rex Gilroy 2018.



Checkered Swallowtail [female].

Papilio demoleus sthenelus Macleay 1827. Family Papilionidae, Tribe Papilionini, Genus *Papilio* Linnaeus.

This species is distributed throughout mainland Australia and northern offshore islands. It is accidental to Lord Howe Island and being a strong flyer, it is on the 'maybe' list of species capable of eventually reaching New Zealand on strong wind currents from the Australian east coast. It is a citrus feeder, and also undertakes extensive migratory flights from inland regions to the coast, sometimes in many thousands.

Pictured specimen from the Gilroy insect collection.
Photo copyright © Rex Gilroy 2018.

Pea Blue [male top, female bottom].

Lampides boeticus [Linnaeus] 1767. Family Lycaenidae, Subfamily Lycaeninae, Genus *Lampides* Hubner.

An interesting little species whose genus is widely distributed from Europe to Asia and from England to the Pacific islands as far east as Hawaii. The Australian species flies throughout the year in the north, and from September to April in the south. Its food plants, among others include lupins, Broom, edible peas, Sweet Peas and *Crotalaria* spp. It originally reached New Zealand from eastern Australia.

Specimens from the Rex Gilroy insect Collection.
Photo copyright © Rex Gilroy 2018.



Common Grass Blue.

Zizina otis labradus [Godart] 1819 [female], Family Lycaenidae, Subfamily Lycaeninae, Genus *Zizina* Chapman. This little species is found Australia-wide including Tasmania. It flies throughout the year in the north, and from September to May in the south. Its small size has been no obstacle to it crossing the Tasman to New Zealand. Its food plants are clover, lucerne and other legumes. In New Zealand's South Island it has developed a southern sub-species, *Z.o. oxleyi*. While *labradus* has a wingspan of 12mm, *oxleyi* is smaller at 9mm and has darker blue colouration to its Australian relative.

Specimen from the Rex Gilroy insect Collection.
Photo copyright © Rex Gilroy 2018.



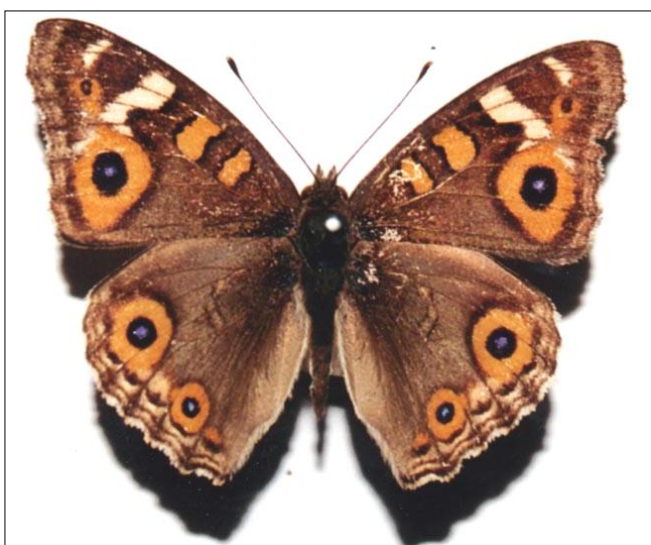
The European Painted Lady, *Vanessa cardui* Linnaeus [female left] and **Australian Blue-spotted Painted Lady**, *Vanessa kershawi* [McCoy] 1868, Family Nymphalidae, Subfamily Nymphalinae, Genus *Vanessa* Linnaeus. Both species are famous migrants, the European form having spread into Asia, where it can be found in India and Sri Lanka – from where it has reached the Western Australian coast via the Indian Ocean! The Australian form has spread through similar migrations to Lord Howe and Norfolk Islands and New Zealand. Specimens from the Rex Gilroy insect Collection. Photo copyright © Rex Gilroy 2018.



The European Red Admiral, *Vanessa atalanta* [Linnaeus] [top female], with the **New Zealand Red Admiral**, *Bassaris gonerilla gonerilla* [Fabricius] and the **Australian Admiral**, *Vanessa itea* [Fabricius] 1775 [called the Yellow Admiral in New Zealand]. While the European Red Admiral has reached the Western Australian coast near Perth, by crossing the Indian Ocean from Sri Lanka, mystery surrounds the evolution of the New Zealand Red Admiral, for no other forms of Red Admiral exist between here and Sri Lanka/India. The Australian Admiral has migrated to New Zealand in the past and become well established, for like its other *Vanessid* relatives it lives upon nettles, which occur throughout New Zealand. Specimens from the Rex Gilroy insect collection. Photo copyright © Rex Gilroy 2018.

Australian Meadow Argus.

Precis villida calybe [Godart] 1819 [male]. Family Nymphalidae, Subfamily Nymphalinae, Genus *Precis* Hubner. This species is found throughout Australia and in northern and eastern Tasmania. New Zealand Entomologists regard it as an exciting insect due to its rare status there. It has never been reported breeding anywhere in New Zealand although its larval food plants are common. It was first recorded there in the summer of 1886-1887, when literally hundreds, probably many thousands invaded the country. Since then only spasmodic records of odd specimens have been made. Only seven specimens are known to have been caught between 1968 and 1975. This migratory species, like other migrants, could be caught in strong winds on Australia's east coast and blown across the Tasman Sea to New Zealand, where it usually appears in the western districts, particularly around New Plymouth and Nelson. It has also been seen at Whangarei, Auckland, Haumoana, Levin, Waiuku, Wellington, Dunedin, Greymouth and Franz Josef. Specimen from the Rex Gilroy insect collection. Photo copyright © Rex Gilroy 2018.





Caper White, *Anaphaeis java teutonia* [Fabricius] - male top, female bottom. Family Pieridae, Subfamily Pierinae, Genus *Anaphaeis* Hubner. Distributed from Banks Island and possibly other Torres Strait Islands, in Australia the main breeding areas for this hardy migrant species, are west of the Great Dividing Range. It is common inland but usually only seen along the coast when migrating. Occasionally specimens cross Bass Strait to Tasmania. The Caper White's season is from around October through to December when it is usually seen migrating from Victoria northwards through the Blue Mountains and Sydney into southern Queensland. While it has reached Lord Howe Island it has not yet been recorded from New Zealand. Some researchers think it might have at times, hidden in clouds of Cabbage Butterflies [*Pieris rapae*] and thus been overlooked, otherwise it is remarkable that this species has not reached New Zealand. Perhaps this is only a matter of time. Specimens from the Rex Gilroy insect collection
Photo copyright © Rex Gilroy 2018.

The Lemon Migrant. *Catopsilia pomona pomona* [Fabricius], Family Pieridae, Subfamily colliadinae, Genus *Catopsilia* Hubner.

This migratory species' range extends from northern to eastern Australia, sometimes penetrating hundreds of miles inland from the coast. It is a rare visitor to Victoria where it has been recorded only two or three times in the last century. The food plants of this butterfly are various species of *Cassia*. Beyond Australia the species is found as far afield as India to the Solomons. It is known to have reached New Zealand in the past, where a single male specimen was captured in the grounds of St. Johns College, Auckland, some time prior to 1876. Possibly the butterfly in question had been caught in a strong wind current, and was carried far out to sea, from where it drifted with the winds until it reached North Island. It is unknown from Lord Howe Island and Norfolk Island.

Specimen from the Rex Gilroy insect collection.
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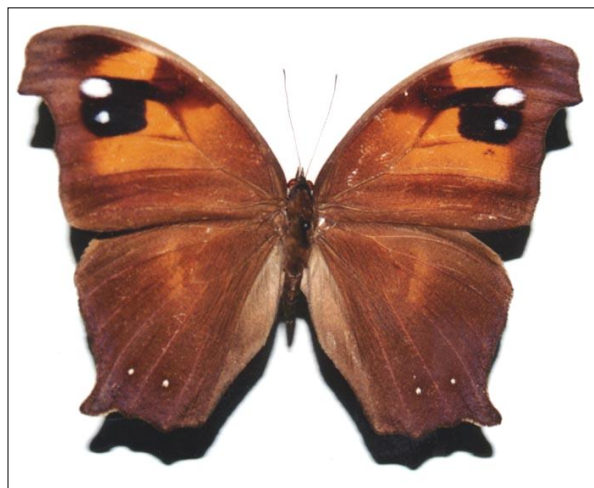


The Cabbage White. *Pieris rapae rapae* [Linnaeus] 1758, [male] Family Pieridae, Subfamily Pierinae, Genus *Pieris* Schrank.

Found from southern Queensland to Tasmania and west to Western Australia. Its food plants are cabbages and cauliflowers. In the north it is seen year-round, and in Victoria it flies from mid-September to May. It can occasionally be seen on the wing on the warmer wintry days. Over generations it has spread from its original home in Europe to North Africa, most of Asia including northern India and Japan. It was introduced by man into North America, New Zealand and Australia. It first appeared in Victoria in 1939, but first found in New Zealand at Napier in 1930. The species, which produces variations, is a favourite study subject of student geneticists.

Specimen from the Rex Gilroy insect collection.
Photo copyright © Rex Gilroy 2018.





The Evening Brown. *Melanitis leda bankia* [Fabricius] 1775, Family Satyridae, Subfamily Satyrinae, Genus *Melanitis* Fabricius. Rare in the Sydney district, it becomes more common along the north coast of New South Wales, and is found as far as Cape York, the Northern Territory and Torres Strait Islands. It flies throughout the year. Its food plants include *Imperata*, sugar cane and a wide variety of grasses. When in flight, at the first sign of danger, it can be seen to immediately alight on the ground or in grass where its closed wings resemble an old dead leaf. Its camouflage serves it well and varies in shades of brown [the author has made a study of the extensive variation in this species]. Although not a migrant, winds have carried it from the east coast to Lord Howe Island. It reached New Zealand at New Plymouth in April 1962 and a second specimen was caught at Houhora, north of Kaitaia in May 1972, following several days of strong west winds. As its food plants exist in New Zealand, an egg-bearing female immigrant might produce a brood. Specimen from the Rex Gilroy insect collection.

Photo copyright © Rex Gilroy 2018.

The Common Eggfly. *Hypolimnas bolina nerina* [Fabricius] Family Nymphalidae, Subfamily Nymphalinae, Genus *Hypolimnas* Hubner. Distributed from northern Australia, the islands of Torres Strait and eastern Australia as far south as eastern Victoria, although from Sydney southward it is a rarity. The author tried to catch one in North Katoomba in February 1959 [a female]. It has not been recorded on the Blue Mountains since. It flies throughout the year. Its larval food plants include *brasiliensis*. The species has reached Lord Howe and Norfolk Islands. It is a large species with a wingspan of 85-110mm. In New Zealand it is called the “Blue Moon Butterfly” because it only turns up ‘once in a blue moon’ as the old saying goes! [The male has an iridescent blue patch around a white centre on the central area of the fore and hind wings]. It was first caught in New Zealand at Auckland some time prior to 1855. 720 were caught in 1956 and 96 in 1971. A male was seen to hatch from a pupa on a hibiscus plant in a Hamilton garden in the summer of 1972, and another male was seen at Matangi, east of Hamilton on 15th May 1972. It was a Mr Johannes Anderson [1924] who gave it its New Zealand name after capturing one in Westland.

Specimens from the Rex Gilroy insect collection.

Photo copyright © Rex Gilroy 2018.



Bogong Moth. *Agrotis infusa* Boisduval, Superfamily noctuoidea, Family Noctuidae, Genus *Noctuidae*. [male left, female right]. The spring migrations of this species have become famous, beginning in the southern alpine district, they fly in their hundreds of thousands, even millions northward through coastal and inland New South Wales. The larvae cause considerable crop damage.

Specimens from the Rex Gilroy insect collection. Photo copyright © Rex Gilroy 2018.



There is a 'maybe' list of possible future immigrants to New Zealand from Australia. All are *Papilios* and strong flyers capable of arriving by a direct route from Australia's east coast. One of these is the **Orchard Butterfly**, *Papilio aegaeus aegaeus* Donovan 1805 [male top, female beneath]. The author may have actually caught a brief glimpse of one on a farm at Wangamata north of Tauranga [south-east North Island] on Thursday 16th March 2000. There were Citrus plants about the house, which are the food plants of this species. This is the largest butterfly species to be found in the Sydney-Blue Mountains district and further south. It occurs from the southern Torres Strait islands and Cape York to Victoria and South Australia. Its Family, *Papilionidae* contains some of the largest Australian species outside the Birdwing Butterflies. Specimens from the Rex Gilroy insect collection. Photo copyright © Rex Gilroy 2018.

From the Genus *Graphium* Scopoli come two more 'maybe' immigrants to New Zealand - the **Blue Triangle**, *Graphium sarpedon choredon* [Felder] 1864 [this specimen is a female], top and **Macleay Swallowtail** *Graphium macleayanus macleayanus* [Leach] 1814 [bottom male]. The Blue Triangle is found from southern New South Wales to Cape York and the Torres Strait islands. Its food plant is Camphor Laurel among others. The food plant of the Macleay's Swallowtail is Sassafras, Camphor Laurel among others. It is primarily a mountain species. While the Blue Triangle flies throughout the year in the north, it is seen from September to May in the south. Macleay's Swallowtail is found from Kuranda in north Queensland to Victoria and the mountains of southern Tasmania. It is on the wing throughout the year in the north but further south it appears on the coast of New South Wales from August to April, and in the mountain country from late October to the end of February or early March.

Specimens from the Rex Gilroy insect collection.
Photo copyright © Rex Gilroy 2018.





Rex Gilroy, collecting insects near Queenstown in New Zealand's South Island in 1986. He has never collected any endangered insect species on principal and is a strong advocate of Butterfly/Moth/Beetle and other insect conservation. He ceased active Entomological collecting in 1999. Photo copyright © Rex Gilroy 2018.

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Two New Books from Rex & Heather Gilroys' URU Publications:


We are pleased to announce the impending release of two new books: "UFO Dreaming – Australian Aboriginal Encounters with Extraterrestrials", which deals entirely with Aboriginal contacts with Extra-Terrestrial beings, sightings of UFOs, and other aspects of Ufology usually linked with Europeans. This is a ground-breaking book for it is the first one to present an entirely Aboriginal perspective of the UFO mystery.

The second book "Living Dinosaurs – Reptilian Nightmares of Australasia" is an important event in Australian Cryptozoological literature as the first Australian book concerning the mystery of living dinosaurs [other than Burrunjor] in Australia and its island neighbours. With much up to date sightings reports, fresh footprint finds of living sauropod and theropod creatures in the depths of the Australian bush, Papua New Guinea & South-east Asia, pterosaur sightings and close encounters, as well as living plesiosaurs seen and photographed in eastern Australian waters, this will be an exciting volume for Cryptozoologists! The book includes the latest Burrunjor encounters. And the fossil history of our dinosaurs is covered with new finds by the Gilroys and their assistants. This book is a 'must' for any collector of Australian Cryptozoological literature!

Watch this newsletter and the Gilroy websites for impending publication of these books and their prices.

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HAIRY MAN OF THE BLUE MOUNTAINS WILDERNESS – A HISTORY OF YOWIE ENCOUNTERS FROM 1820 TO THE PRESENT.

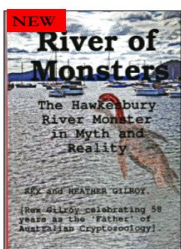
For researchers of the Yowie mystery “Hairy Man of the Blue Mountains Wilderness– A History of Yowie Encounters from 1820 to the Present” is a book which concentrates on a single region of Australia, revealing the earliest known sightings and close encounters between pioneer settlers and the “Hairy People” from the 19th century to the present day.

This book is also a celebration of Rex Gilroy’s 58 years of achievement as Australia’s one and only true ‘Yowie Man’!



RIVER OF MONSTERS- THE HAWKESBURY RIVER MONSTER IN MYTH AND REALITY.

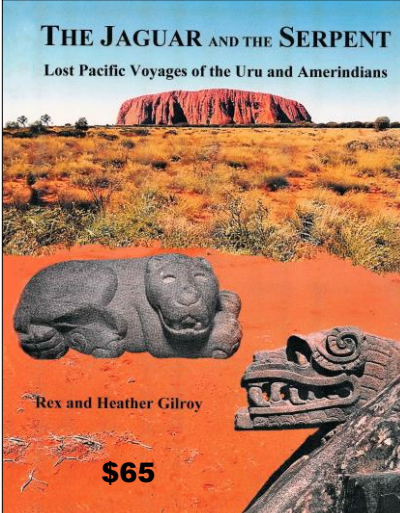
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PLEASE NOTE: The next meeting will be held on 21st April, 2018, same time, same place. Our previous meeting was a good one and we look forward to seeing you at our next one. There should be some good Skywatches ahead of us up here at Katoomba weather permitting. Meanwhile, there is a lot happening ‘up there’ at present so –until our next meeting –Keep safe and

‘Watch the Skies!’
Rex and Heather