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CONTENTS

Further investigations of the effect of low temperature on the phenotype of the adults of *Precis octavia* (Cramer) (Lepidoptera: Nymphalidae)

By Len McLeod 48

The nymphaline genera *Precis* Hübner, 1819 and *Junonia* Hübner, 1819 (Lepidoptera: Nymphalidae): Resolution of a long-standing debate.

By Mark C. Williams 56

Lesotho – A tale of two mountain passes

By Owen Garvie and Tim Gilbert 61

Gundani Forest – Two sandmen left us dancing

By John-Paul Brouard 68

In Memoriam: Dr C.B. (Kit) Cottrell

By Stewart Fisher 74

Letter to the Editor

By Shaun Walton 76

Malelane – A new adventure

By Owen Garvie (with contributions by Jeremy Dobson and Mark Williams) 79

Letter from Kwa-Zulu Natal, July 2007

From Steve Woodhall 84

Front cover: *Precis antilope* ♀: J. Dobson

Back cover:

Top left: *Precis octavia* f. *sesamus* ♀: L. McLeodTop right: *Precis octavia* f. *sesamus* (extreme) ♂: S. CollinsSecond row Left: *Precis octavia* f. *sesamus* (extreme) Upperside ♀: L. McLeodSecond row Right: *Precis octavia* f. *sesamus* (extreme) Underside ♀: L. McLeodThird row Left: *Precis octavia* f. *sesamus* (extreme low temp. form) Upperside ♀: L. McLeodThird row Right: *Precis octavia* f. *sesamus* (extreme low temp. form) Underside ♀: L. McLeodFourth Row: *Precis octavia* (intermediate between f. *sesamus* and f. *natalensis*) Upperside ♀: S. Collins

Further investigations of the effect of low temperatures on the phenotype of the adults of *Precis octavia* (Cramer) (Lepidoptera: Nymphalidae)

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Introduction

The tendency within certain animals for temperature to provoke physiological changes which induce an increase or decrease in the amount of dark pigmentation (as well as other characters) may possibly have been one of the subjects upon which natural selection could exert its influence. In the Lepidoptera, the Nymphalidae, Satyrinae and Pieridae contain species which exhibit different seasonal forms in which variable amounts of dark pigment are involved.

It has been demonstrated that seasonal polyphenism exists in those regions of the world where there is a regular, reliable cue to the forthcoming environmental changes. In the Holarctic region both photoperiod and temperature are available to animals as cues to future environmental changes. Here, we see seasonal forms in both invertebrates and vertebrates. The remarkable seasonal changes in external appearance of certain arctic birds e.g. the Ptarmigan (*Lagopus mutus*) and arctic mammals e.g. the Arctic Fox (*Alopex lagopus*), are renowned. However, in the vertebrates, seasonal changes occur within the individual animal, whereas within invertebrates, the seasonal changes occur between generations.

In comparison with the Holarctic Region, large areas of the Afrotropical Region experience an annual photoperiod which is almost constant. Thus photoperiod is not available as an environmental cue in this area. Under these conditions some species of the nymphalid genera *Precis* and *Junonia* and the satyrid genera *Bicyclus* and *Melanitis* evolved making use of temperature alone as an environmental cue which triggers their seasonal polyphenism.



Junonia hierta cebrene ♀: J. Dobson



Precis ceryne ceryne ♂: J. Dobson

In areas where seasonal polyphenism had been lost as a result of constant environmental conditions, the pathways of evolution would be limited to only one of the two ancestral colour morphs. In the genera *Precis* and *Junonia* this may have resulted in two groups of non-polyphenic species, one group having a predominance of blue/brown ground colour (e.g. *J.rhadama* Boisduval., *P.touhilimasa* Vuillot, *P.artaxia* Hewitson, *P.natalica* Felder) and another group having a predominance of red/orange ground colour. (e.g. *P.cuama* Hewitson, *P.antilope* Feisthmel, *P.ceryne* Boisduval).

It would appear that in Africa, environmental factors not only induce seasonal polyphenism in the genus *Junonia* but also provoke seasonal differences in the ultraviolet reflectance patterns on the wings. These differences are correlated with alterations in the wing scale ultrastructure (Miller 1999).

The African butterfly, *Precis octavia* Cramer, is, without doubt, the most extreme example of seasonal polyphenism in the Lepidoptera. The differences are such that initially the two seasonal forms were thought to be different species. Both dorsal and ventral wing surfaces are dramatically transformed between the wet and dry seasons. The alternative phenotypes and their differences in behaviour, have evolved as an adaptive response to seasonal differences in environment which provoke alternation of the importance of crypsis and epigamic colouration (Owen 1972, McLeod 1976, 1984, Brakefield & Larsen 1984).

The wet season form, *P. octavia*, f. *natalensis* is basically red on the upperside and pinkish red on the underside, with prominent black discal spots and a black border. The wingshape shows no projections and is far from being cryptic. Form *natalensis* is highly active, flitting from flower to flower, amongst luxuriant green vegetation. Under these conditions crypsis is unnecessary. It is the predators themselves which are cryptic and their predation is not density-dependent. Praying mantids, assassin bugs, robber flies, spiders and chameleons sit silently and motionless waiting for their hapless prey to arrive. The more active predators, such as birds and dragonflies, can sometimes show a semi-density-dependent predation when butterfly numbers are high. This is particularly evident when hilltopping of butterflies occurs, and this behaviour has sometimes been observed with *P.octavia*.

In comparison to the bright red of the wet season form, the upperside ground colour of the dry season form, *P. octavia* f. *sesamus*, is blue with black striations and red post-discal areas, and the underside ground colour is almost entirely black. Here, the wingshape tends to be falcate, making the butterfly extremely cryptic when at rest. Form *sesamus* is far less active than f. *natalensis* and aestivation is frequently observed in such places as under banks of rivers, overhanging rocks, caves and quarries. In rural areas, well shafts, garden sheds and eaves of houses and huts are favoured haunts for roosting and aestivation. In this inactive state, which may carry on for several days, crypsis is of primordial importance. Under these dry, arid

conditions the main predators are lizards, small mammals and birds which diligently seek out their prey. Even when f. *sesamus* is active and feeding, the butterflies can quickly descend to the ground when disturbed, the wings remaining closed and only the black underside remaining apparent. This black underside resembles an area of shade, particularly when a butterfly settles on a rocky hillside in bright sunshine.

Naturally, there are some geographical differences in sequence of seasonal morphs. In Uganda and southern Sudan, where temperatures show little variation and remain fairly high throughout the year, f. *natalensis* predominates. Under such constant conditions seasonal polyphenism may be lost in certain species or subspecies, as with *P. archesia ugandensis* (McLeod 1980). In all areas, survival from one season



Precis archesia archesia ♂: J. Dobson

to another can sometimes result in mixed populations of the two seasonal morphs, but those few survivors from the previous season are generally at a disadvantage and do not live for long. Intermediate forms also occur from time to time when climatic conditions show a temporary abnormality.

In 1977 I visited the Booth Museum, Brighton, with the objective of examining specimens of *P. octavia* Cramer which had been collected and bred in South Africa early last century by Miss M.E. Fountaine. One specimen of f. *sesamus* was of particular interest because it exhibited extreme reduction of the red areas situated distally to the post-discal spots. In this specimen, the dorsal forewing showed the red area to be greatly reduced in cellule 1, and in addition, the dorsal hindwing totally

lacked the red areas in cellules 4 & 5 and had greatly reduced red areas in cellules 1, 2 & 3. (Fig.5). I later saw an illustration of a similar specimen, also lacking the red areas, in *A Field Guide of South African Butterflies*. (Migdoll 1987). The illustration was incorrectly identified as a rare intermediate between *f.sesamus* and *f. natalensis*.

Experiments performed

From the above two examples I concluded that it might be possible to produce forms which were more extreme than *f. sesamus* and which were totally lacking in red pigment. I decided to expose *P. octavia* final instar larvae and pupae to very low temperatures, which would not be experienced in the wild by this species. With this objective in mind I set about finding a suitable supply of *P. octavia* eggs. Allan and Angie Hanekom of Durban, Natal, agreed to send me large numbers of eggs which were regularly laid on the variegated *Plectranthus* in their garden.

In 1991 and 1992, using the constant temperature room of the Entomology Department, University of Stellenbosch, also the Constant Environment Rooms of the Fruit & Fruit Tree Research Institute, Stellenbosch (FFTRI), many hundreds of *P. octavia* were exposed to various low temperatures between 1°C and 10°C during their late larval and early pupal stages. Despite the frequent high mortalities of larvae and pupae, a number of adult butterflies were obtained which were variations of *f. sesamus*, some being very extreme. The variation involved the reduction of red pigmentation and the extreme suffusion of black scales over the majority of the wing surfaces. Ecdysis was poor and wing deformities common. Wing symmetry was often lost, perhaps because one side of the pupa had been resting against the container and was thus slightly protected from circulating air.

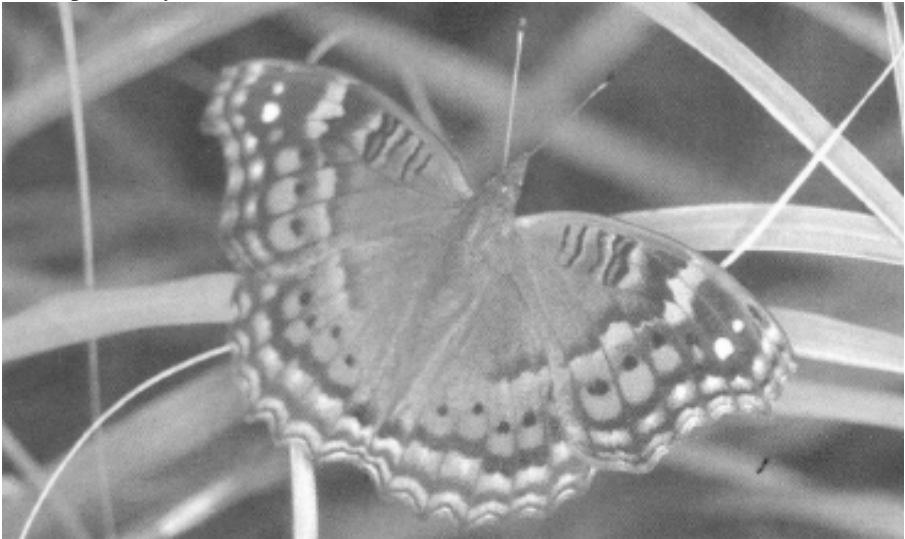
Conclusions

The reduction and obliteration of the red areas of *f.sesamus* under conditions of low temperature was confirmed. It would not be practical to illustrate the many variants which were obtained during this study. However, some very extreme forms were obtained and it is worthwhile to illustrate at least one of these. (Figs1 & 2). As well as an extreme suffusion of black scales over most of the wing surfaces of both upperside and underside, the sky-blue lunules of the outer border are exaggerated and highly pronounced, particularly on the underside.

Having completed this study and having examined a large range of temperature forms, it has come to mind that ab. *falkei*, which was taken near Sipi on Mount Elgon, Uganda in 1972 (McLeod, 1975) may be a temperature form and not, as previously thought, a genetical aberration.

The rise and fall of species

The 26,000 year orbit of our solar system around the much larger sun *Alcyone* correlates with the time cycle of “sudden” climate changes and reversal of the magnetic field of our planet (recorded in geological evidence and ancient records). At the end of every cycle, a contraction of Afrotropical rainforest took place accompanied by a “retreat” of much of the African insect fauna to the few zones



Precis octavia sesamus ♂: S. Woodhall

which remained relatively unaffected (Cameroon, Gabon, Congo, Central African Republic, DRC, Southern Sudan) (Larsen 1997). In this central African region the conditions remained fairly constant while the remainder of Africa suffered dramatic changes involving movements of the tectonic plates, earthquakes, volcanic activity, flooding and temperature variations. The last and one of the strongest of these contractions was in the late Pleistocene. This 26,000 year cycle (25,827.5 years = Precession of the Equinoxes) has probably resulted in sudden extinctions and in a burst of speciation in those areas of Africa where these cataclysmic changes occurred. “Regular cataclysmic changes act as an evolutionary *agent provocateur* to quicken the resident life forms to the next evolutionary phase”. Those Lepidoptera with the most highly developed adaptation to seasonal differences ie. those exhibiting seasonal polyphenism, would undoubtedly be more suited to survive these severe upheavals.

At the April 2007 meeting of the United Nations Climate Panel, representatives of 100 nations met concerning the deteriorating situation of our climate. Scientists put forward the shocking proposition that perhaps 30% of the fauna and flora of our planet will become extinct in the near future. It was stated that Africa was one of those areas of the world which will suffer extreme drought and dramatic increases in temperature (although the latter may be temporary). It is under such changing environmental conditions that seasonal polyphenism may become even more highly beneficial to a species, allowing survival under severe conditions.

Acknowledgements

I am grateful to Angie and Allan Hanekom of Durban, Natal, for providing me with eggs of *Precis octavia*.

My thanks are extended to Dr. Ken L. Pringle of the Entomology Department, University of Stellenbosch, for permission to use the constant temperature rooms under his control, and also to Kobus van der Merwe and Lindi Benic of the Department of Post Harvest and Wine Technology, Infruitec, Stellenbosch, for permission to make use of their constant environment cabinets.

My thanks go to Dr. Michael Miskovsky and Patricia Birkett of the Natal Museum, Pietermaritzberg for permission to photograph their unusual specimen of *P. octavia*, also to Steve Collins, African Butterfly Research Institute, Karen, Nairobi, Kenya, for supplying photographs of the two east-african specimens of **P. octavia**.

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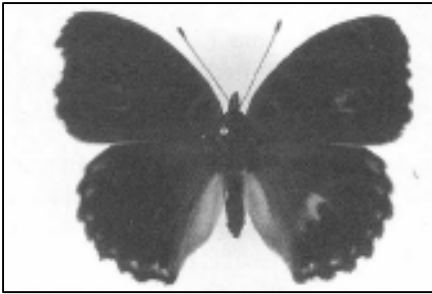
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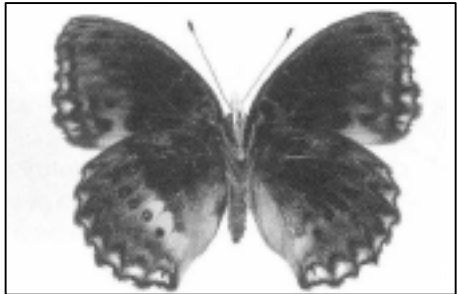
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ILLUSTRATIONS

One example of many unusual forms of *Precis octavia* (Cramer) produced when late larval and pupal stages were subjected to abnormally low temperatures. In the collection of L.McLeod.



P. octavia f. *sesamus* (extreme low temperature form) Upperside ~ : L. McLeod (See back cover third row left for colour)



P. octavia f. *sesamus* (extreme low temperature form) Underside ~ : L. McLeod (See back cover third row right for colour)

An unusual extreme example of *P. octavia* f. *sesamus* which is in the collection of the Natal Museum, Pietermaritzburg. No collecting data available.



P. octavia f. *sesamus* (extreme) Upperside ♀: L. McLeod (See back cover second row left for colour)



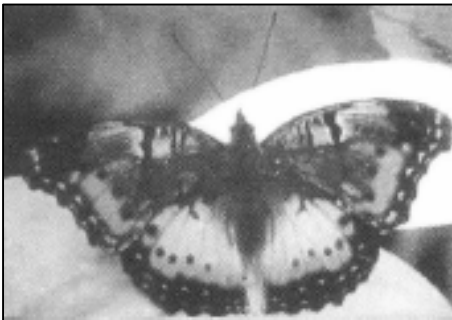
P. octavia f. *sesamus* (extreme) Underside ♀: L. McLeod (See back cover second row right for colour)



Precis octavia f. *sesamus* ♀: L. McLeod (See back cover top left for colour)



P. octavia f. *sesamus* (extreme) ♂: S. Collins (See back cover top right for colour)



P. octavia (intermediate between f. *sesamus* and f. *natalensis*) Upperside ♀: S. Collins (See back cover fourth row for colour)

The unusual example of *P. octavia* f. *sesamus* bred by Miss M.E. Fountaine in South Africa and now in the collection of the Booth Museum, Brighton, England. This is the insect which stimulated the writer to carry out this investigation.

Two unusual forms of *P. octavia* from East Africa which were illustrated in the talk given by Steve Collins at the 2006 Conference of the Lepidopterists' Society of Africa, held at Pietermaritzburg. No collecting data available.

The nymphaline genera *Precis* Hübner, 1819 and *Junonia* Hübner, 1819 (Lepidoptera: Nymphalidae): Resolution of a long-standing debate.

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The relative taxonomic status of the genera *Precis* and *Junonia* has always been controversial. Various authors of recent regional works on the Afrotropical butterflies



have treated them as separate genera, synonyms or as subgenera of each other. For example, Swanepoel (1953) lumped all the South African species under *Precis*, Van Son (1979) and Pringle *et al.* (1994) treated *Junonia* as a subgenus of *Precis*, Heath *et al.* (2002) and Vári *et al.* (2002) treated all species as belonging to *Junonia*, and Larsen (1991, 2005) and Woodhall (2005) treat *Precis* and *Junonia* *Precis antilope* ♀: J. Dobson

as distinct genera.

That *Precis* and *Junonia* are, in fact, distinct genera there is now no doubt. In 2005 Wahlberg *et al.* published a phylogeny of the subfamily Nymphalinae based on an analysis of DNA sequence data from one mitochondrial and two nuclear genes. Their study showed that the two genera are not even sister genera, *Precis* being most closely related to *Hypolimnas* Hübner, 1819 and *Junonia* to *Salamis* Boisduval, 1833 and *Protogoniomorpha* Wallengren, 1857.



It has long been known that the male genitalia can be used

Junonia orithya madagascariensis ♀: J. Dobson

to separate the genera (see e.g. Van Son, 1979) but even the astute Roland Trimen (who did not examine genitalia) confused members of the two genera when examining the adult wing patterns. Adults of the two genera can actually readily be separated by the nature and arrangement of the postdiscal markings on the upperside

of the wings. In *Precis* black spots are present between most of the wing veins, usually within the postdiscal bands. They are more or less even-sized, small, and solid black (in some species of *Precis* the spots on the forewing have white centres (e.g. *archesia* dry-season form)). In *Junonia* the number and size of the postdiscal spots is variable and they are concentrically ocellated. Two Afrotropical species of *Junonia* may cause some confusion. *J. terea* has yellow median bands containing spots but these spots are ocellated, while *J. sophia* has solid black, even-sized spots, as in *Precis*, but the spots are distad of the median bands.

Besides these, somewhat subjective, differences in wing markings, there are a number of differences in the biology of the genera. The genus *Junonia* is



Junonia natalica natalica ♀: J. Dobson

cosmopolitan, with members in the Afrotropical, Holarctic, Oriental and Australasian biogeographical regions. *Precis*, on the other hand, is a purely Afrotropical genus. Both genera probably originated in the Afrotropical region (Wahlberg *et al.*, 2005). This statement is supported by the current distributions of the six extant genera included in the tribe Junoniini Reuter, 1896. *Junonia* has about 36 species, 17 of which are Afrotropical; *Hypolimnas* has 15 Afrotropical species and 10 species in the rest of the Old World tropics; *Precis*, *Salamis*, and *Protogoniomorpha* are restricted to the Afrotropics, and *Yoma* Doherty is a small Oriental genus closely related to *Salamis/Protogoniomorpha*. A detailed phylogeny of the approximately 90 species in the tribe Junoniini, together with the calibration of a molecular clock, will allow a better appreciation of the historical biogeography of the tribe.

Although both *Precis* and *Junonia* are characterized by temperature-induced seasonal polyphenism ('wet' and 'dry' season forms) this is much more marked in the former (McLeod, 1970; 1984). Indeed, *Precis octavia* probably exhibits the most striking seasonal polyphenism of any insect.

In addition to the morphological differences between the seasonal forms, *Precis* seasonal phenotypes also have very different behavioural repertoires. The wet season form (WSF) adults are active, breed soon after eclosing and have a short lifespan. The dry season form (DSF) adults are sedentary, usually do not breed soon after eclosing, and are long-lived. In South Africa, after eclosing in autumn (March/April) adults of *P. octavia* and *P. archesia* search for dark, sheltered places, such as holes in embankments, rock overhangs and even the eaves inside buildings, where they enter diapause for five to six months. During this diapause they may become active on warm sunny days, going back to a torpid state during cold spells.

One September, a few years ago, a pair of DSF *Precis archesia* were noted roosting in a shady corner on the outside of a log cabin in Lekgalameetse Nature Reserve (Limpopo Province). Every morning the male would become active at about 11h00 and perch in a sunny spot on the wooden deck of the cabin, chasing other flying creatures out of his territory until about 14h00, when he would resume a roosting position near the diapausing female. On the third day the female was deliberately roused at noon. As she flew away from her resting place the male, who was sunning himself on the deck, chased after her but within 5 minutes she returned to her roosting spot. When we left two days later, at 09h00 the male and female were still roosting in their chosen spot. The distinct impression was gained during the five days that the pair observed was a 'devoted couple' and that the male was 'guarding' this female until such time as she was ready to mate. Numbers of other DSF *P. archesia* males were noted hilltopping on knolls of a nearby spur of the mountains during the same period, apparently using a different mate-locating strategy.

During winter, numbers of DSF *Precis tugela* individuals have, on occasion, been noted diapausing communally on forest understorey shrubs. In one instance, in Malta forest (Limpopo Province), in June one year, more than 50 specimens were noted roosting among the dead leaves of a bush no taller than 1,5 m. They were so well camouflaged that I initially only perceived a single individual, which I captured with a hand net. My surprise can be imagined when dozens of 'dead leaves' flew out of the shrub! Within an hour most of the rudely disturbed individuals had found their way back to the obviously much favoured diapause site.

An obvious question arising from the costly strategy of diapause in *Precis* is what fitness benefits it confers on individuals that evince it. Many years ago I visited a grassland locality in the Ixopo district of KwaZulu-Natal where I had previously seen large numbers of WSF *P. octavia* in mid-summer. At this time I had noted females ovipositing on specimens of a pungent lamiate (Lamiaceae) that were growing among

rocks in the otherwise featureless grassland. A second visit to the same locality was made at the end of May, following the first frosts. Not only were there no adults of *P. octavia* to be seen, despite a warm, sunny day but the above-ground leaves and stalks of the larval hostplants were frosted and lifeless. At a later date it was noted that the hostplant is a perennial, which flushes from the rootstock in spring, thus providing the DSF females that have been in diapause for the previous six months or so with fresh foliage on which to oviposit. In the case of forest-dwelling species of *Precis*, such as *P. tugela*, the lamiate plants on which the larvae feed retain their leaves but it is doubtful that they are utilized in the winter or dry months. This aspect, however, requires further investigation.



Junonia terea elgiva ♂: J. Dobson

Afrotropical species in the genus *Junonia* almost invariably use plants belonging to the family Acanthaceae as larval hosts. The above-ground parts of acanthaceous plants growing in frost-prone habitats, such as temperate grasslands, are not adversely affected by frost. On numerous occasions I have observed females of *Junonia* species laying eggs on their larval host plants in the middle of winter in the highveld of Gauteng. Occasionally larvae have also been noted on the plants in mid-winter. Diapause strategies are therefore not evinced by species of *Junonia*, and the adults remain active all year, albeit less so during the colder months. Seasonal polyphenism is therefore slight in *Junonia* and appears to be aimed at camouflage and/or thermoregulatory strategies.

In summary, it would seem that adult phenotypical and behavioural diapause strategies have evolved in the genus *Precis* in response to the phenology (seasonal growth phases) of their lamiate larval host plants. A better understanding of whether diapause in *Precis* is an ancestral or derived trait must await a more robust phylogeny of the genera in the tribe Junoniini and of the angiosperm plant families utilized as larval hosts.

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Lesotho – A tale of two mountain passes

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Careful planning and co-ordination between the KwaZulu-Natal and Gauteng branches of LepSoc resulted in a very exciting and successful trip to Lesotho over 3 days from 26 to 28 January 2007. This serves as a good example for other branches to follow suit.

The Gauteng contingent, led by Jeremy Dobson and accompanied by Mark Williams and Owen Garvie, travelled south from Johannesburg on a hot sunny Friday afternoon of 26 January 2007, entering Lesotho at the Caledonpoort border post and drove up the lofty Moteng pass, spending the night at the Oxbow Lodge (Figure 1.).

Steve Woodhall and his group from Durban traveled westwards, leaving the N3 highway at Howick and travelled through Boston, Bulwer and Underberg to reach the base of Sani Pass on Friday



Figure 1: Steep grassy slopes covering stepped, flat basalt lava layers on Moteng Pass from western Lesotho.



Figure 2: Twisting rough 4x4 track up the Sani Pass from KZN: Tim Gilbert.

evening. They stayed the night at the Seaford Country Lodge. Tim Gilbert, from Gauteng, was on business in KZN and he met up with the KZN group at the bottom of the pass that evening. Early Saturday morning Tim transported the KZN team up the steep, torturous, twisting Sani Pass in his trusty 4 x 4 Land Rover to Sani Top at an altitude of 2874 meters above sea level (Figure 2).

Tim Gilbert, Steve Woodhall, Jenny Norman and Elena Russell spent the day lepidopterising and photographing butterflies, damsel flies and lizards on the roadside between Sani Top and Mokhotlong.

The weather was certainly going to play a big part on this trip, as the forecast for Lesotho indicated 80% rain for Saturday and 60% for Sunday, but in spite of clouds moving in from the south west over Oxbow, the lepidopterists remained optimistic and were early to bed.

Saturday dawned cloudy with drizzle at Oxbow Lodge as we made our way to breakfast. Over hot maltabela porridge, scrambled eggs, toast and coffee we



Figure 3: *Pseudonympha machacha* ♀: Jenny Norman.

planned the day. As we headed westwards back over the Moteng Pass, at 2840 meters, the sunshine broke through the clouds. A short way below the peak of the pass, at the view point, we crossed the stream and clumped up the steep grassy slope to the base of rocky cliffs, searching for *Lepidochrysops lerothodi* (Lesotho blue). Instead, we found four satyrines flying together. Masses of *Serradinga bowkeri* (Bowker's widow) were fluttering all over the hillside. *Pseudonympha varii* (Vari's brown) and *Pseudonympha machacha* (Machacha brown) were also out in good numbers, together with a few *Stygionympha paludis* (Paludis brown), which appear darker in flight and were spotted bobbing up and down the grassy slope. Despite a thorough search along several rocky ledges no *Lepidochrysops lerothodi* were found.

Luckily, the sun followed us as we searched the northern slopes on the Oxbow hill, but still no sign of *L. lerothodi*. Perhaps we were too late for this one as they are more prolific in early January. However, Mark was delighted to find specimens of the foodplant *Selago flanaganii*, with long thin green leaves and bright lilac coloured flowers with yellow stamens. These plants were localized, growing close to where Owen found two *lerothodi* males on a previous trip in mid-January 2005. Two ant nests were discovered under flat rocks close to the food plants and Mark collected these black *Camponotus* colonies and several flower heads, with the hope of finding larvae and eggs to study the life history of *L. lerothodi*. The Tsomo Blue (*Harpencyreus tsomo*) was also not flying in green marshy areas along streams and vleis in the Oxbow area, but again *P. varii* and *P. machacha* were everywhere.

With our eyes continually on the weather Jeremy drove us on to the Mahlasela Hill and Ski Resort, at 3220 meters, where *Pseudonympha penningtoni* (Pennington's brown) was plentiful and at this higher altitude fewer *P. machacha* were flying on the hillside. But with the clouds building fast and the cool wind picking up we moved on quickly to the Motete River where we found Steve, Jenny, Elena and Tim having lunch, munching on pies and sandwiches. They reported that the day had started off sunny in the east at Sani Top, but by 11 o'clock the thunderstorm clouds had covered



ChrySORITIS pelion ♂: J. Dobson

the sky. The weather was also closing in on us from the west. Regardless of lightning flashes and booming thunder claps echoing across the valley the optimistic lepidopterists covered the ground hurriedly. After a brief search along the rocky shoulders of the hill close to the river Jeremy managed to flush out two *ChrySORITIS pelion* (Machacha opal).

Moving on eastwards as the first heavy drops fell we stopped here and there on the way to Letseng Diamond Mine and Mokhotlong, but no butterflies were spotted and it appeared all had taken shelter from the heavy storm developing as the afternoon drew on. Generally, the mornings are the best part of the day for lepidopterising in Lesotho, and by midday the thunderstorms dominate the rest of the day.

At Mokhotlong we turned towards Sani Top and left the tar road traveling slowly on a gravel road for 55 kms through the Sehonghong valley. By now the rain was pelting down and, at places, streams flowed across the track, causing washaways and deep ruts in the road. We pulled off the gravel road in a flat area known as "the car park" for a quick look at the enormous Sehonghong Mountain that we planned to climb the

next day to find elusive species such as *Lepidochrysops loewensteini* (Loewenstein's Blue), and *Torynesis pringlei* (Pringle's widow). As Jeremy turned his Colt 2.5 litre double cab around the vehicle skidded and wheels spun on the wet muddy surface. We knew we were in trouble. Despite Mark, Owen, Tim and Steve pushing hard together, it took several attempts to get the vehicle out. Each time Jeremy raced the engine the back wheels kept spinning, covering the support team in mud from head to foot while they courageously pushed on the side and rear of the Colt. Jeremy eventually handed over to Mark, who took the wheel, and with a determined look on his face, revved the engine, skidding the vehicle on to a patch of harder gravel and in one movement turned the Colt to the right. It rocketed out of the muddy patch, up the slope and onto the gravel road. Mark braked hard to avoid going into the donga on the other side of the road, but managed to crush a cow skull lying on the far edge of the road. Cheers and sighs of relief came from the pushers who by now were soaked to the skin, wet, and covered in mud. Jenny Norman had captured the whole thing on video and the five soaked lepidopterists posed in front of the Colt for a final picture, which surely deserves to make the cover of *Metamorphosis* (Figure 5).



Figure 5: Exhausted, covered in mud, but relieved to get Jeremy's Colt free of the mud are from left to right (Messrs Tim Gilbert, Jeremy Dobson, Steve Woodhall and Owen Garvie): Jenny Norman.

Arriving at Sani Top Chalet, our base for the night, we quickly showered and changed into dry clothes. Before long we were all in good cheer after a few brown ales, recounting the interesting highlights of the day. Hot soup and tasty stew and

vegetables, washed down with more brown ale had us all in very good spirits. New members of LepSoc, John and Vee Dench, from KZN, had joined the party, while the rain continued throughout the night. Several rounds of Allesverloren Port went down well, each one of us trying to avoid the last inch of port at the bottom of a bottle, which, to seasoned lepidopterists is well known to be pure poison, especially if we are to have the stamina to climb the “mother of all mountains” the next morning. After a few too many night caps we headed for bed, some sooner than others, hoping that the weather would clear.

Those who had indulged wisely the night before woke at 5:30 am to a glorious bright clear day, while others stayed in bed trying to gain strength for the hard climb ahead. True to form, Steve was up early to photograph a stunning sunrise over the escarpment, while the rest of us sipped coffee and tried to con ourselves into believing we could make it to the top of the Sehonghong Mountain to search for *T pringlei*. Porridge, followed by eggs, bacon, tomato, toast and more coffee filled our “tanks” with “petrol” for the testing climb ahead. The weather was perfect and we were grateful for that, giving us a chance at *T pringlei*. Jeremy remembered climbing the monster mountain, two years ago, all the way to the top, but no *T pringlei* were flying. It was mid-January 2005 and he was perhaps too early, as *T pringlei* had not hatched and this time around, he was determined to find them now at the end of January 2007.

We thanked Jonathon Aldous (owner of Sani Top Chalets) for his warm hospitality and drove to the base of Sehonghong Mountain to begin the long climb, while the mornng was still cool, in order to get to the top in good time, before *T pringlei* goes to roost by mid-day or before the afternoon thunderclouds blot out the sunshine (Figure 6).

Jeremy, the youngest and fittest went ahead, while Owen, the oldest in the group, followed a short way behind Jeremy. Mark (the lazy one) had a different strategy, slowly searching the lower slopes below the first ridge of rocks for *Orachrysops nasutus* (Nosy blue), and a small, swiftly-flying deep chocolate-brown *Lepidochrysops*, which, in the past, had been assumed by many to be *L. ketsi* (Ketsi blue). Mark was sceptical about this butterfly being *ketsi* as it seems to fly too high for *ketsi* at 2500 meters above sea level and may be a different or new species.

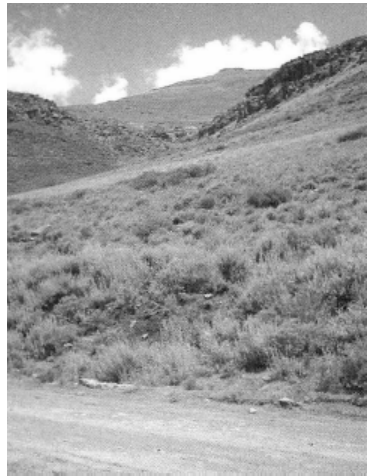


Figure 6: Sehonghong Mountain where *T. pringlei*, *L. loewensteini* and other exciting butterflies can be found.

Above the rocky ridge Jeremy and Owen searched for *Lepidochrysops loewensteini* (Loewenstein's blue) but none were seen, as it was probably too early for them to fly. We therefore decided to push on and we hoped we would find them on our way back later in the day. We climbed on up the steep slope over some rocky dome-like grassy areas with masses of yellow and blue flowers growing in shallow valley depressions on the steep slope. Suddenly, Owen noticed a different satyrine, floating on the breeze, gliding towards him and there she was, his first *T pringlei* and a female at that! He was shaking with excitement, yet another primary experience. Jeremy also found a few females and we knew they were flying and so our pace quickened as there was now good reason to get to the top ASAP (Figure 7).



Figure 7: Underside of *Torynesis pringlei* ♀: J. Dobson

More *T pringlei* were encountered in patches of yellowish green *Merxmuellera* grass higher up the slope. As Jeremy climbed up to about 100 meters from the peak he chose to wait patiently for them to fly past. Owen moved up to about threequarters of the way up to the edge of the mountain and found a patch of thick stubby grass on an east-facing slope, out of the wind, where *T pringlei* were concentrated in a small area, flying in large numbers. Both freshly-emerged males and females were fluttering above the grassy tufts and then settling on the bare ground between individual clumps of grass and open rocky or pebble covered areas. This large Widow differs from the other Widows in having darker brown ground colour, and narrower white post-discal bands on the forewings. Females have more rust-red than yellowish suffusion over the brown in the discal areas of both forewing and

hindwing on the upper side. When in flight *T pringlei* resembles *Serradinga bowkeri*, but at this high altitude of 3,100 meters, few *Serradinga* were seen flying with *T pringlei*.

By this time Mark had climbed up the western side of the mountain to a rocky ridge at about 2900 meters above sea level, where he found a colony of freshly emerged *Chrysoritis chrysaor*. These fast-flying lycaenids are bright red with black spots on the fore- and hind wings. Mark was surprised to encounter this Lycaenid at such a high altitude, as they are more commonly found throughout the central, eastern and southern Free State and also occur at sea level near Port Elizabeth in the Eastern Cape Province.

True to form, by 10:30 am clouds were beginning to build into major thunderstorm cells and it was time to make our way down the mountain. The northern slope of the mountain has a slight depression covered by small scrubs and bushes. We all focused on looking for *L. loewensteini*, but none were found. Instead, *O. nasutus* was playing between the bushes. At times, one walked from one colony into another, and, in places, they were swarming. Many were past their best, having worn, brownish blue wings, but occasionally freshly hatched specimens were encountered. Arriving back at the Colt by midday we were totally exhausted from the long climb.

Traveling eastwards to Sani Top we happily recounted our amazing experiences and described the many interesting butterflies we had observed on the long climb. At Sani Top we passed through the Lesotho border post and began our slow, twisting descent of the Sani Pass, over a 7 km section of very rough road, negotiating the many hairpin bends and rough steep sections of the pass, dropping down into the rolling green hills of KZN. The descent took us an hour to complete and we cleared customs at the South African border post by 14:30. Traveling into the little town of Himeville it was clear that road works have already started to upgrade and tar the Sani Pass route into Lesotho.

We reached Howick and took the N3 back to Johannesburg arriving safely back home at 18:30, tired but very happy lepidopterists, who had had an overdose of amazing scenery as we traversed the “roof of Africa” across the exceedingly beautiful mountainous kingdom of Lesotho. We unanimously concluded that our hobby is the “king of all hobbies” as it takes one to such interesting and exciting places.

Gundani Forest-Two sandmen left us dancing

John-Paul Brouard

The village of Gundani in the far north-east of Limpopo Province is located near the only known patch of Miombo (*Brachystegia*) Woodland occurring within South Africa. This small, relict and beautiful woodland is home to some fauna and flora, particularly *Brachystegia spiciformis* (Msasa tree), typically only found hundreds of kilometres to the north in Zimbabwe.



Miombo (*Brachystegia*) Woodland near the village of Gundani: J.P. Brouard

Dave McDermott agreed to show Tim Gilbert and me around this mysterious woodland in late April 2007. Our aim was to produce a checklist of butterflies within the area, which would be forwarded to LepSoc database specialist Bennie Coetzer for entry into Lepibase and subsequent transfer to the SABCA atlas project. Tim and I also wanted to locate two species so far found only in this woodland within South Africa's boundaries, namely: *Acada biseriata* (Axehead skipper) and *Charaxes guderiana* (Blue-spangled emperor).

After much preparation we departed Johannesburg at lunchtime for the Levubu Guest house, some 60km east of Louis Trichardt on the main road to Thoyohandou and ultimately Punda Maria. Tim's trustworthy Land Rover Discovery ensured a spacious, comfortable ride, despite being jam packed with nets, traps, bags, food and (not surprisingly) some cold ones. I observed Tim slip a bottle of Allesverloren port into the boot, while Tim spotted Dave, whistling cheerfully, carefully place a bottle of Seagrams gin and some beers on to the back

seat. This was not a good sign! These two gentlemen have had way more experience with port and other concoctions than I. My limited experience from previous LepSoc outings is that the youngster always comes off second best in the social aspect of our hobby.

The five hour drive was long. I personally didn't mind as it gave me an opportunity to bombard Dave and Tim with questions about bugs. A stop at a new shopping complex in Polokwane for fuel and some fresh provisions and ice provided an opportunity for me to check out the local talent while Dave and Tim handled the shopping list. Then came a bit of a detour to get out of town because the road signage, or rather the lack of it, for the N1 North leaves much to be desired. A local provincial government

official was very helpful and gave us accurate directions back to the main drag and we arrived at Levubu just after dusk and moved quickly into two comfortable cottages. We then burned various forms of protein on the braai and, as usual, some of us overdid the beer, wine, gin and port. Saturday morning dawned. Three battered lepidopterists rose like a multiple phoenix from the ashes (this expression comes from Dave being his description for Tim emerging from the bedclothes) [for those who know Tim the thought of him emerging from the bedclothes with a massive babalala instills a sense of subdued awe Ed.]. Dave cooked a very enjoyable English breakfast, while Tim and I made the sandwiches. Before we left, I had a quick look in the riverine forest by the cottage. Unfortunately it is the



Charaxes etesipe tavetensis ♀: S. Woodhall.

only tract of indigenous vegetation on the farm, the rest being cultivated with Macadamia nut trees. A blue-mantled flycatcher darted from tree to tree, while a *Zintha hintza* (Hintza blue) flitted above the grass.

On the way to Gundani we stopped in Thoyohandou to stock up on liquids (water and Energades). Dave pointed out to us the locality where *Platylesches tina* (small hopper) had been found in the past. The food plant, *Parinari curatellifolia* (Mobola Plum or Grysappel) was still present on the road verges. However, unchecked development has ruined the overall habitat and this little skipper has not been observed there for some years.

The journey to Gundani is through interesting countryside with well-treed hills and slopes that have probably not been adequately explored by lepidopterists. Perhaps SABCA will provide an opportunity for expeditions to these areas.

Arriving at Gundani village before 09h00, we greeted the locals and headed down towards the campsite. A very reasonable fee allowed us to enter the woodland, which lay within the valley below the campsite. The woodland now generates some revenue for the local people and it is also on the Soutpansberg Birding Route.

It was a warm day with clear skies above, perfect for enthusiastic lepidopterists. While Tim and I unpacked our equipment, Dave “frolicked” (not a term that one



Eiochrysops hippocrates ♂: JP. Brouard

would normally associate with Dave McDermott in full collecting gear Ed.) around the car park. A solitary *Acraea caldarena* (Black-tipped acraea) flew between *Acraea oncaea* (Window acraea) and *Acraea natalica* (Natal acraea), which were both out in good numbers.

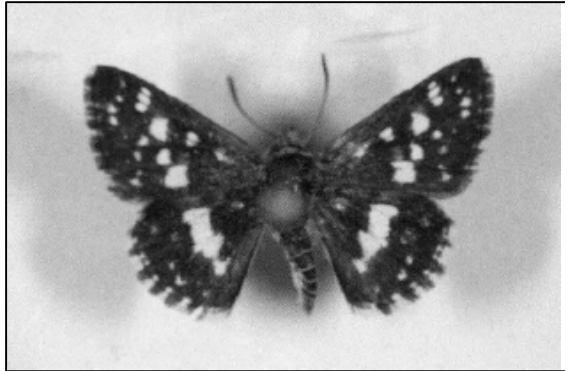
We marched forward down the north-facing slope towards our target. A *Platylesches robusta* male (Robust hopper) darted around in a sandy patch, a *Colotis evagore antigone* (Small orange tip) flew in the shadows and a freshly emerged dry season form *Charaxes zoolina* female sat enticingly on a tree trunk. Before we could fully wander around this magnificent woodland, however, we had

the chore of banging our traps. I decided to do this on the upper half of the slope, while Dave and Tim wandered down towards the riverine section.

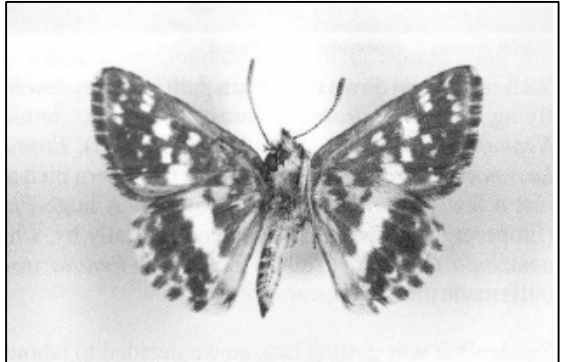
As there are very few areas within the valley where a cell phone signal can be obtained, I couldn't contact Dave or Tim to find out where they had got to. So I just lurked around the central area within the woodland. A few *Mylothris agathina* (Common dotted border), *Dixeia pigea* (Ant-Heap white) and *Platylesches robustus*, graced me with their presence. I decided to look for my companions and descended down the slope. Sitting down on a rock in the shade, and gulping down some water was just what the doctor ordered. As I was seated a small, orange-yellow skipper landed to my right. *Acada biseriata*, a beautiful female, sat on the rock next to me. A first for me! A quick decision was required: net or camera. The latter was the pick of the moment, but proved the wrong choice. As I looked through the viewfinder, she disappeared. Fortunately I came across another about 10 minutes later.

Eventually I found Tim and Dave. They were searching around the riverine forest at the bottom of the valley, where Dave saw a *Charaxes etesipe tavetensis* male (scarce forest emperor) fly past. Tim was concentrating on Lycaenidae and was rewarded with a pair of *Azanus mirza* (Mirza blue). During our lunch break, Dave let me scrounge through his bug packets. He had found *Acada biseriata* and *Parinara monasi* (Water watchman) close to the stream, as well as a number of *Spialia* (Sandmen). Going through the packets, a small *Spialia* came into view. I couldn't believe my eyes. A

Spialia confusa confusa male (Confusing sandman), freshly emerged that morning. Galvanised into action, I immediately began searching the vicinity in earnest. This paid off as within an hour, I managed to find another male on tiny white flowers close to the ground further downstream.



Spialia confusa confusa upperside: JP. Brouard



Spialia confusa confusa ♂ underside: JP. Brouard

Dave told me that these two captures were quite significant as most of the South African records for *S. confusa* come from Zululand in the Mhlosinga/ Hluhluwe/False Bay area, Makhathini Flats and, more recently, Tembe Forest. There is also a record of two specimens from Waterval-Onder in Mpumalanga and a single record from Musina, Limpopo. So perhaps it is more widely distributed than previously thought and maybe it escapes attention as it is so small and easy to overlook.



Spialia dromus ♂ upperside: JP. Brouard

Walking up and down the stream path was very rewarding, as lots of butterflies were flying. *Spialia dromus* (Forest sandman), *Acada biseriata*, *Parnara monasi*, *Nepheronia thalassina* (Cambridge vagrant), *Eronia leda* (Autumn leaf vagrant), *Lachnocnema laches* and *L. bibulus* (Southern pied and common woolly-legs) were just a few of the species on the wing. A huge *Papilio ophidicephalus entabeni* (Emperor swallowtail) flapped energetically by, while much more relaxed *Alaena amazoula ochroma* (Yellow Zulu) and *Pentila tropicalis fuscipunctata* (Spotted buff) made the odd appearance.

Suddenly it was getting late, so we decided to labour our way out of the valley and collect our traps. Tim was the most successful, as his one trap produced a stunning, absolutely fresh and perfect male *Charaxes guderiana*. Other than this one specimen, we failed to turn up any more of these glorious Charaxes. (Andrew Mayer visited Gundani a week later and despite cooler weather, saw several *C. guderiana* as well as *C. bohemani*.) Other Charaxes that came to the traps were *C. achaemenes*, *C. jasius saturnus*, *C. zoolina*, *C. ethalion*, *C. brutus*, *C. candiope* and *C. varanes*.

On the way out we decided to stop off for a quick search on a hill just outside Gundani. Despite it being after 16h00 various species were still sporting about in hill-topping mode. *Iolais silarus* (Straight-line sapphire), *Hypolycaena caeculus* (Azure hairstreak), *Cigaritis ella* and *natalensis* (Ella's and Natal bar) were just some of the butterflies on the wing. A very fresh but stunted runt of a *Deudorix dinochares* (Apricot Playboy) was taken by Dave, while I was fortunate to net a wet season form *Precis anti/ope* (Darker Commodore) to round off an exciting venture.



Junonia terea elgiva ♀ upperside: JP. Brouard

Without doubt, I will be making a date to try Gundani again in the Spring, when the Graphiums will also be flying. My thanks to Tim for transporting us and to Dave for providing general entertainment and good breakfasts.

In Memoriam: Dr C.B. (Kit) Cottrell

Stewart Fisher

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Dr. C.B. (Kit) Cottrell died of cancer on 19 March 2007.



Dr. C.B. Cottrell: Photo in the Transvaal Museum 1987/88 Annual Report
adept conjuror, and entertained my brother and myself with several baffling tricks.

I first met him in December 1952 at Shiwa Ngandu. He was travelling with his father John Cottrell, who was an education officer, and both butterflies and birds were a major part of the trip, although of course visiting schools was the prime purpose.

I knew Kit by reputation, having read of his discovery of a new *Mycalesis* (now *Bicyclus*), which had been named after him. With pride I showed Kit a specimen of *Papilio hesperus* that I had caught. This was new to him, but he was disappointed in my poor setting technique. Next day we searched for further examples. It was a dull wet day with little flying, and Kit answered my endless questions with great patience and attention to detail. He was also an

Later, in 1957, in Grahamstown, while Kit was studying botany and entomology at Rhodes and I was at St Andrews prep, we met again. A friend and I had found some pupae of a *Lepidochrysops* in an ants' nest. It was one of the *methymna* group. Kit was intensely interested, as he was rearing the larvae and ants in the lab. Days out in the veld followed which were wonderful for me. Kit's knowledge of butterflies was encyclopaedic, and much of our discussions I can recall to this day. Kit's interest in the habits and early stages of the *methymna* group developed into one of his main interests.

After graduating from Rhodes with first class honours in 1957 he went to Cambridge to study under Prof Vincent Wigglesworth. Kit had been intrigued by the problems of the emergence of the adult lycaenid from the ants' nest, and felt that the blow fly would be a useful laboratory model to study the mechanisms involved in wing expansion and delayed cuticular hardening during emergence. He isolated the hormone responsible for this process.

Following his PhD he took a post doctoral fellowship at Churchill College, Cambridge before taking up a fellowship at the University College of Rhodesia and Nyasaland in cotton pest research. It was here that he met Meriol for the second time (they had met before in Lusaka). They married in 1962 and had two sons. John was born in 1964 and Noelin 1966.

From 1965 to 1970 he worked as Principal Research Officer at the Cotton Research Institute at Kadoma, Zimbabwe. He returned to the University of Zimbabwe in 1979 as Senior Lecturer, becoming Professor of Zoology in 1980, and remained there until 1986, when he left to become Head Curator of the Lepidoptera department at the Transvaal Museum.

During his time at the University the Cottrells took a sabbatical, travelling and camping in a caravan in the Western Cape to study the butterfly fauna and its association with the Cape flora.

In 1992 he returned to Zimbabwe as Head Entomologist at the Kutsaga Tobacco Research Station where he remained until he was forced to retire in 2005. With Meriol he went to Bangor, North Wales, attracted by the research interests of the university there.

Kit's mind was unique in its scope. At heart was a deep fascination with the evolutionary process and the interaction of different organisms at every level. He seemed just as at ease discussing the physiology of marine organisms as he was with the taxonomy of the Lepidoptera. For me this seems best exemplified in his seminal papers on the biogeography of the Southern African Butterflies. In this he was able to bring together his knowledge from many areas, resulting in a synthesis which provides a background for new research into the origins and evolution of the Cape fauna and flora.

I was fortunate in being able to visit him and Meriol last year.

Although seriously weakened by cancer, his mental powers did not falter. He found a colony of the Common Blue near his home and succeeded in breeding them through. Whenever he had any respite from the pain, he would tussle with some new book or idea. On a walk along the Anglesey coast last year he correctly pointed out to us that we were looking at not one but two species of gorse.

A wonderful example of the victory of mind over matter.

Now that he has gone I find that already there are many questions that I wish I had discussed with him.

Letter to the editor

Dear LepSoc Members

I am a third year student at Rhodes University in the Eastern Cape. I am incredibly passionate about butterflies and am studying towards a career in entomology. For my honours project next year I am planning to investigate the molecular phylogeny of the butterfly subtribe Dirina. The Dirina include genera such as *Dira*, *Dingana*, *Serradinga*, *Torynesis* and *Tarsocera*. I need to collect all the species from each of these five genera so that I can investigate the phylogeny of the entire subtribe. This will require extensive collecting and field work and thus I would like to appeal to you for assistance in gathering the necessary specimens. The specimens preferably need to be freshly collected as this makes it easier to extract the DNA, however dry specimens up to 5 years old can potentially also be used. If you would like to help it would be most appreciated. Could you please contact me at my e-mail address g05w0525@campus.ru.ac.za, and I will then make arrangements to send you the necessary preservation material i.e. 70 % ethanol. Below is a list of the subtribe Dirina composed of 26 species and 14 subspecies which I would like to investigate.

I look forward to hearing from you.

Kind regards

Shaun Walton

SUB TRIBE DIRINA [26 species (34 taxa)]
Verity, 1953

Genus *Dira* Hübner, [1819] [4 species (6 taxa)]

Dira clytus (Linnaeus, 1764)

Dira clytus clytus (Linnaeus, 1764)

Dira clytus eurina Quickelberge, 1978

Dira jansei (Swierstra, 1909)

Dira oxylus (Trimen, 1881)

Dira swanepoeli (van Son, 1939)

Dira swanepoeli isolata van Son, 1955

Dira swanepoeli swanepoeli (van Son, 1939)



Dira jansei ♀: J. Dobson

Genus *Dingana* van Son, 1955 [7 species (7 taxa)]

Dingana alaedeus Henning & Henning, 1984

Dingana alticola Henning & Henning, 1996

Dingana angusta Henning & Henning, 1996

Dingana clara (van Son, 1940)

Dingana dingana (Trimen, 1873)

Dingana fraterna Henning & Henning, 1996

Dingana jerinae Henning & Henning, 1996



Dingana dingana ♂: J. Dobson

Genus *Serradinga* Henning & Henning, 1996 [3 species (7 taxa)]

Serradinga bowkeri (Trimen, 1870)

Serradinga bowkeri bella (van Son, 1955)

Serradinga bowkeri bowkeri (Trimen, 1870)

Serradinga clarki (van Son, 1955)

Serradinga clarki amissivallis Henning & Henning, 1996

Serradinga clarki clarki (van Son, 1955)

Serradinga clarki dracomontana Henning & Henning, 1996

Serradinga clarki ocrea Henning & Henning, 1996

Serradinga kammanassiensis (Henning & Henning, 1994)



Serradinga bowkeri ♂: A. Coetzer

Genus *Torynesis* Butler, 1899 [5 species (6 taxa)]

Torynesis hawequas Dickson, 1973

Torynesis magna (van Son, 1941)

Torynesis mintha (Geyer, 1837)

Torynesis mintha mintha (Geyer, 1837)

Torynesis mintha piquetbergensis Dickson, 1967

Torynesis orangica Vári, 1971

Torynesis pringlei Dickson, 1979



Torynesis pringlei ♀: J. Dobson

Genus *Tarsocera* Butler, 1899 [7 species (8 taxa)]

Tarsocera cassina (Butler, 1868)

Tarsocera cassus (Linnaeus, 1764)

Tarsocera cassus cassus (Linnaeus, 1764)

Tarsocera cassus outeniqua Vári, 1971

Tarsocera dicksoni (van Son, 1962)

Tarsocera fulvina Vári, 1971

Tarsocera imitator Vári, 1971

Tarsocera namaquensis Vári, 1971

Tarsocera southeyae Dickson, 1969



Tarsocera dicksoni ♀: J.P Brouard

Malelane - A new adventure

Owen Garvie (with contributions by Jeremy Dobson and Mark Williams)

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At a Gauteng Butterfly Club meeting at Jeremy Dobson's home on 1st March, 2007 it was agreed that collecting trips to lesser-known or new localities should be undertaken during late summer. A visit to the Mpumalanga Lowveld in the Malelane area was planned for the weekend of 19-20 May. Jeremy tempted us with tales of butterflies that he and Chris had found there previously, such as *Borbo detecta* (Rusty Swift), *Borbo borbonica* (Olive-haired Swift), *Bicyclus ena* (Grizzled Bush Brown), *Anthene liodes* (Liodes Hairtail), *Graphium porthaon* (Cream Striped Swordtail), *Salamis anacardii* (Clouded Mother-of-Pearl) and *Cymothoe coranus* (Blonde Glider). We were hoping, with a bit of luck, that our timing might be just right for *S. anacardii* and *C. coranus*.



Cymothoe coranus ♂: S. Woodhall

Malelane is situated on the southern boundary of the Kruger National Park, approximately 50 km east of Nelspruit on the road to Komatipoort (the border-post between South Africa and Mozambique). Lieveke Mulcaire had previously drawn our attention to the amazing variety of butterflies on the mango-farm owned by Gavin and Glynis Hardy, on which extensive patches of riverine forest are found. Jeremy and his son Chris had visited the Hardy's farm on previous occasions and had established a fairly impressive list of 128 butterfly species. Because of the large number and rich diversity of butterflies on the farm, the Hardys had named their farm "Butterfly Farms".



Graphium porthaon ♂: S. Woodhall

Because of the large number and rich diversity of butterflies on the farm, the Hardys had named their farm "Butterfly Farms".

Mark Williams, Jeremy Dobson, Raimond Schutte, Amanda Greeff (a new LepSoc member), her boyfriend Ettiene, Wendy and I made up the group on this trip. We were excited to be going to a new spot and there was a sense of adventure in all of us as we left Gauteng, early on Saturday morning (05h30) and headed eastwards on the N4, bypassing Belfast and Machadodorp on our way to the Lowveld.

In his usual efficient manner, Jeremy had arranged everything, provided directions to the Hardys' Farm near Malelane, and booked us in at River Cottage, a delightfully comfortable B&B resort on the banks of the Crocodile River, overlooking the Kruger Park.



Cigaritis natalensis ♂: J.Dobson

small dam, it was evident that *Protogoniomorpha anacardii* was not out. Jeremy recalled that *P. anacardii*, although chipped and worn, were plentiful in June the previous year, and were swarming around the mango trees, which were in full flower. This year, following the serious drought from January to March, it was clear that the mangoes had not flowered and *P. anacardii* was not on the wing. This realization served as a harsh reminder that each season is different and one cannot expect to hit the peak of the

The group arrived at our destination by 09h30, approximately 7 km SE of Malelane on the Jeppe's Reef Road (GPS 25° 32.763 S and 31° 35 .672 E) and were warmly received by Gavin and Glynis. The weather was hot and humid and butterflies were evident everywhere. Pierids were common, flying about briskly, particularly *Catopsilia florella* (African Vagrant), *Eronia cleodora* (Vine-leaf Vagrant), *Eronia leda* (Autumn-leaf Vagrant) and *Belenois gidica* (African veined White). Also flying was *Hamanumida daedalus* (Guinea Fowl). After a short walk along the edges of the mango plantation, where *Colotis vesta* (Veined Tip), *Acraea natalica* (Natal Acraea) were sporting, and after a search around the

emergence of *P anacardii* by visiting the locality two weeks earlier in the following year. Wendy and I focused our attention on a flowering shrub, which was attracting several lycaenids. The Common Woolly legs (*Lachnocnema bibulus*), Brown Playboy (*Deudorix antalus*), Apricot Playboy (*Deudorix dinochares*), Common Scarlet (*Axiocerses tjoane*) and Natal Bar (*Cigaritis natalensis*) were seen feeding on the tiny pink flowers. However, no *Anthene liodes* were spotted.

Amanda Greeff was having the time of her life running in all directions and enjoying capturing of all the common species mentioned above. As old timers it was fun to watch her and Ettiene, delighting at the excitement of this adventure. Ettiene had also been lucky enough to get close to and photograph a male Boisduval's False Acraea (*Pseudacraea boisduvalii trimenii*) sunning itself on a leafy bush close to the dam.



Pseudacraea boisduvalii ♀: A. Coetzer

While Mark and Jeremy ventured up into the thick riverine forest in the kloof between the hills, Wendy and I remembered that there was a certain rugby match (Super 14 Final between the Sharks and the Bulls) that the whole of South Africa wanted to watch at 15h00 on that Saturday. We drove back to River Cottage, checked in to our comfortable chalet and, whilst waiting for the others to arrive, enjoyed a cold beer under the lapa, watching a herd of buffalo and a few waterbuck drinking at the river's edge. This resort is characterised by large, shady trees, colourful flower beds and well-manicured lawns, which gives the place a similar feel to the Royal Livingstone Hotel on the banks of the mighty Zambesi River in Zambia. This resort gives one a truly 'out of Africa' experience, within four hours of Gauteng.

Our party consisted of a mix of Blue Bulls and Shark supporters and we all gathered in Jeremy's air-conditioned chalet to watch the game on TV. After much yelling and

screaming and several beers, the game was over and although the Sharks should have won the game, the Super 14 trophy went to the Blue Bulls who scored a try in the last minute of the game. The end result was 20 to the Bulls 19 to the Sharks, a closely contested final. That evening, during braaing and beering, we chatted about the experiences of the day. Mark Williams did well to catch a female False Wanderer (*Pseudacraea eurytus*) in the kloof forest in the afternoon. Only two specimens of this butterfly are known from Mpumalanga. One was taken “near Nelspruit” by an unknown collector and the other was captured on the Sabane River, near Hazyview, by Dave Upshon.

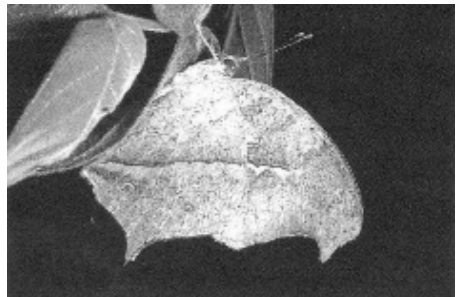
Sunday morning dawned cloudy, with a cool wind, indicative of frontal weather ahead of a massive cold front sweeping across the Cape Province and bringing the start of winter across South Africa. Rising early, Wendy and I were keen to put in some game viewing, but the elephant, which were seen the previous evening, had disappeared into the thick bush. A single hippo and many ducks, other water birds, and bee-eaters gave us a relaxing start to the day. After a sumptuous full English breakfast, with abundant tropical fruits and eggs made to order in the garden Gazebo overlooking the swimming pool and the river, we were keen to get back to ‘Butterfly Farm’.

Moving higher up in the forested kloof in which Mark had caught the *P. eurytus* female the previous day, we found a strong colony of the butterfly. Despite the initial windy and cloudy weather more than a dozen specimens were observed, flying together with *Pseudacraea boisduvalii* and *Pseudacraea lucretia*. False Acraea heaven! We also had a close encounter with a large Black Mamba, which broke cover less than two metres from Jeremy. Fortunately, the snake disappeared rapidly down the valley, in the opposite direction from where Mark and Jeremy were standing. A young local field guide, who accompanied us for the day in order to learn more about butterflies, said to Mark: “Now I don’t go downwards, I go sideways”.

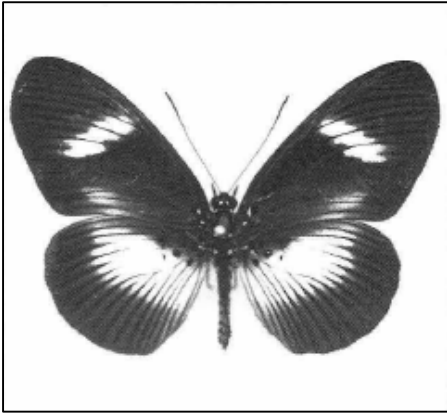
Other noteworthy butterflies found over the weekend included *Cymothoe coranus* (Blonde Glider) and *Borbo detecta* (Rusty Swift). I caught a *Charaxes cithaeron* (Blue-spotted Emperor), which is believed to be a new record for Mpumalanga. All in all a very enjoyable weekend.



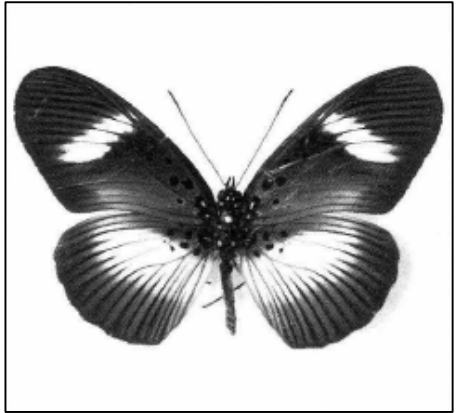
Pseudacraea eurytus ♂: A. Coetzer



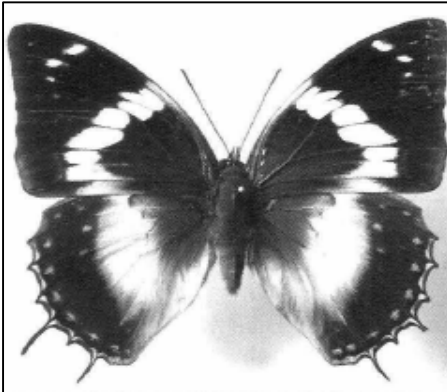
Salamis anacardii ♂: S. Woodhall



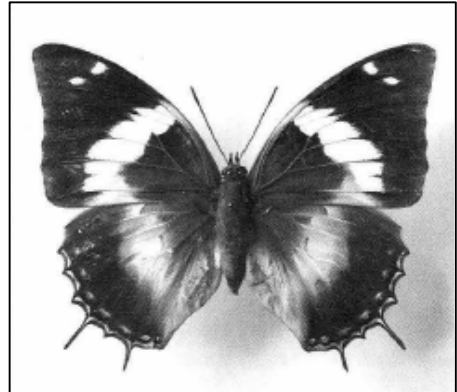
Pseudacraea eurytus ♀ from Malelane



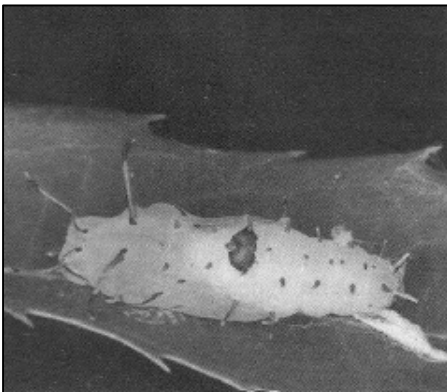
Pseudacraea eurytus ♀ from Umtumvuna Gorge



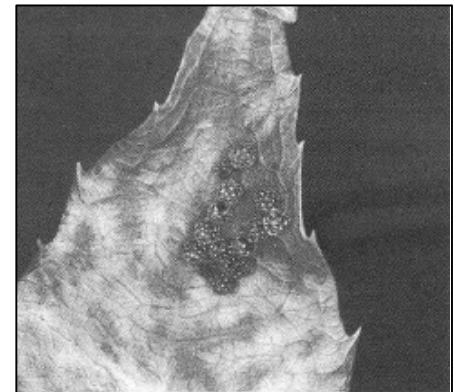
Charaxes cithaeron ♀ from Malelane



Charaxes cithaeron ♀ from KZN, Oribi Gorge



Lachnoptera ayresii pupa



Cymothoe coranus eggs

Letter from KwaZulu-Natal, July 2007

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I thought it might be an idea to write a 'letter' to *Metamorphosis* every so often to let the readership know what we're up to. Dave Edge used to do a very good 'Letter from Knysna' some time ago (hint...) and it'd be great if the other branches did them too.

Here goes ...



Myrina dermaptera pupae: S. Woodhall

This winter has been poor for butterflies, unlike last year when our best spots were heaving with winter form Coast Purple Tip *Colotis erone*. And of course we have had visitors hoping to see them. Bill Steele was down last weekend and we saw none at Delville Wood. Bill and Christina came to our Sunday Bird Club/Lepsoc outing to Shongweni Dam reserve. Butterflies started to appear, including *C. erone*, and we walked around the reserve enjoying the winter sunshine.

Jenny Norman had the day before seen a Lesser Fig-tree Blue *Myrina dermaptera dermaptera* on rushes next to the river. We found a fig tree right on the spot. Several *dermaptera* were making their funny 'walking' flight around the little figs and fresh red leaves. I thought we'd found the 'Holy Grail'; one of those storied trees with dozens of freshly emerged specimens swarming up the trunk. Not so, but I did find something I'd always wanted to find a little treasure trove of pupae tucked away in a crevice, like Ivor Migdoll described. I spied a handful of dead leaves sitting in the crook of a branch, so I grabbed one ... and hey presto! Three pupae on one leaf, and two more, one still a prepupa, on another leaf. Bill took these and the others are at home waiting to emerge. I still need a good digital of an adult *dermaptera*. And there are a lot more leaves now sitting in that crook. I want to start a *dermaptera* ranch like the one Bertie le Roux had once on his Dad's farm ...

Few butterflies have been around my garden this winter, but always a few Common Vagrant *Catopsilia florella*. Always the 'Yella Florella' type. Intrigued, I started watching, trying to get close for a digipic. Noticing them lurking around my Granadilla vines, I crept up for a shot and disturbed about a dozen of them, like autumn leaves taken life. As they landed, every one carefully selected a leaf that was just her shade of yellow-and tucked herself in for a nice sleep.

I remembered similar behaviour from the Saffron Sapphire *Iolaus pallene* at Hartebeespoort Dam three years ago. Butterflies must be able to see yellow, if they can be so choosy about the colour of their hibernation spot!

KZN Branch is very involved with the SABCA project. Kevin Cockburn and I have been building a recognition course, and we are busy planning a survey schedule with Silvia Mecenero. We'll have to lean heavily on our new members, and our friends in the Botanical Society and Bird Club. Hence the course. The whole thing will kick off with a talk by Silvia Mecenero on Thursday 30 August at 18h30 at the Interpretative Centre in Kranskloof Nature Reserve. It's open to all, members R10, non-members R20 per person. We're hoping that the permits will have been finalised by then so we can plan a survey schedule.

On the weekend after, 1-2 September, the annual Indigenous Plant Sale of the Durban Branch of the Botanical Society takes place at Munies Sports fields near the Botanical Gardens. The theme will be 'Butterfly Gardening' and like last year, Lepsoc will have a stand. Silvia will be there, and I have commitment from several Lepsoc members to help man the stand. We will publicise SABCA. I have three spare beds and we have plenty of hospitable people around here, so if you want to come and need accomodation, please let me know.

Well that's all for now folks!



Catopsilia florella ♀: S. Woodhall



Granadilla vine, the home of *C. florella*: S. Woodhall

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