

METAMORPHOSIS

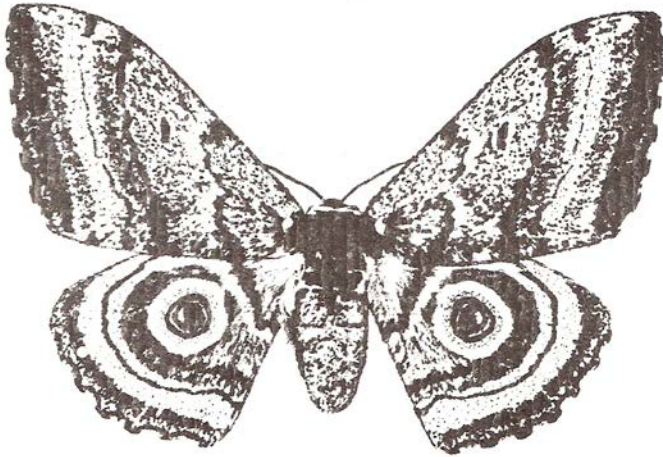


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Gynanisa maia (Saturniidae) female
(Forewing length 60 - 66 mm)

LEPIDOPTERISTS' SOCIETY OF SOUTHERN AFRICA

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Membership of the Society is open to all persons interested in the study of Lepidoptera. There is no geographical limit to membership.

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All drawings, unless otherwise stated, are by
S.F. Henning.

EDITORIAL

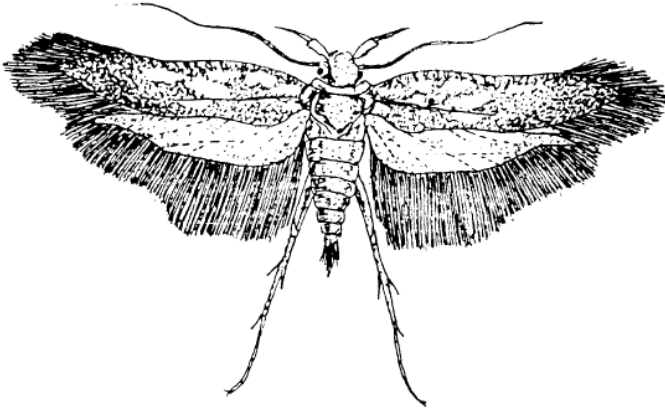
We have had several very successful meetings in the PWV area over the past few months, plus a long weekend excursion to Mkuze in Natal. However we are seeing the same twenty or so faces at all these meetings. Where are all the hundred or so other members who live in the PWV area? These meetings give you an opportunity to get to know a variety of other butterfly fanatics and share your opinions and ideas. We also try to introduce a theme to the meeting so that you can learn some new technique such as making microscope slides, or even just setting difficult specimens. Please come and join us.

Once again I must take the opportunity to call for more papers for *Metamorphosis*. We cannot continue publishing in this way without your support. Over the past season you have all gone on collecting trips, so why not put pen to paper and share your experiences with us. The paper by Jan Kielland in this issue is a shining example of how interesting an article can be about a collecting trip.

We also still need more scientific papers such as checklists, descriptions of new species, life histories and behaviour.

For those who have already contributed, thank you for helping to make *Metamorphosis* as enjoyable as it has become.

W.H. Henning



Phthorimaea operculella (Gelechiidae) male upperside

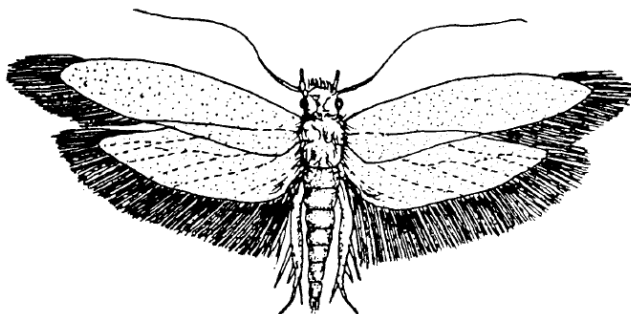
COMMENT BY THE PRESIDENT

The Conference and AGM are on the 15th and 16th of August 1992, so I must call again for your participation to make it a success. There is still time to submit slides for the photographic competition or decide to present a paper. Remember the papers do not have to be scientific, we would love to hear about your trip to Zululand, the Cape or other places of interest. If you do not have your own slides to illustrate your talk, we can supply them for most areas and butterfly species. If you are interested please contact the Secretary. Do not forget on Sunday the 16th of August 1992 you can all be involved by bringing along your own good captures, rarities, new net designs or whatever, in our open workshop.

The Natal Butterfly Atlas project is now well underway (see progress report by Dr Londt in this issue). This is a most worthwhile exercise and hopefully similar projects will be initiated throughout Southern Africa. I would also like to add my plea for all members to participate by providing the project supervisors with details of label data for all specimens in their collections collected in Natal.

Our book *A practical guide to butterflies and moths in Southern Africa* is now nearing completion. It has already been assigned an International Standard Book Number (ISBN) and we may even see the first copy at the Conference and AGM in August. This is probably one of the major achievements of the Society to date and I would like to give my heartfelt thanks to all of those involved in the project.

Stephen Henning



Tineola bisselliella (Tineidae) male upperside

REGIONAL ROUNDUP

During early April a weekend field trip was arranged by the council to a private farm near Mkuze in Zululand. This trip was organised through Herman Staude. A good time was had by all. Records included the Red Data species *Anthene minima* (Trimen) and also some *Chloroselas pseudozeritis* (Trimen). A full account of the proceedings is eagerly awaited.

Other captures in Zululand during April were *Acraea rabbaiae* Ward on a flowering *Albizia* near the Elephant Reserve, *Ornipholidotos peucetia penningtoni* near Hluhluwe by Reinier Terblanche who further added *Charaxes etesipe tavetensis* Rothschild from Ubombo and *C. protoclea azota* (Hewitson) from Manguzi. *Euryphura achlys* (Hopffer) was conspicuous by its absence and one wonders if the captures of the last few years have now come to an end. The Terblanches' again found larvae and pupae of *Deloneura millari* at the quarry near Hluhluwe.

During this profitable time in Zululand I was busy wasting my time in the Cape. Such wonderful places were visited and so few butterflies seen!; Struisbaai, Caledon, Stellenbosch, Kreeftebaai, Bain's Kloof Pass, Michell's Pass, Breerivier, Red Hill, Bredasdorp and Hermanus. My thanks to Jon Ball, Alan Heath and Tony Brinkman for taking me along on a trip to the mountains north of Morreesburg to catch some interesting *Poecilmitis* and a few *Alooides*. Without these pleasing captures I would have returned home virtually empty handed. It was also a great privilege to see their collections and to swap stories and localities. Fortunately this was supposedly a holiday and not a butterfly trip so I had a great time anyway.

Rudolf Swart started a series of *Appias sabina phoebe* (Butler) trips during April and May by catching a number of females at Malta Forest. Chris Ficq, Bill Steele, Nolan Owen-Johnston and myself spent a fine day at Woodbush and collected a good number of specimens. Only two yellow-hindwing females were collected and a third missed (all by me!). Chris had caught one earlier at Malta and it is interesting see the yellow hindwing with the orange wing bases. This was indeed a good year for *A. sabina*.

Paul Kruger from Pietersburg, who discovered the spot for *A. sabina* in Woodbush, had not seen any earlier in April. He reports large parts of the northern Transvaal affected by the drought.

Ivan Bampton paid us a flying visit and told us of his activities over the last few months. Such places as only you and I dream of! São Tome, Comoros, Tanzania and Kenya are now his collecting grounds and he is apparently having great success as well.

Chris Ficq and Steve Collins ventured into Kaokoland during early April and caught such wondrous things as *Acraea brainei* Henning, *A. hypoleuca* Trimén and *Colotis danae walkeri* (Butler). To top it all off they caught a couple of *Acraea ella* Eltingliam, a new record for Southern Africa! On investigation we found an earlier specimen collected by Chris in 1984 at Namutoni and identified as *A. axina* Westwood to which it bears a very close resemblance. A couple of satyrids near *Coenyropsis natalii* (Bosiduval) were also caught and may prove interesting. We hope to get full details from either Chris or Steve in the near future.

Martin Lunderstedt regaled us with tales of woe about his eastern Cape trip in November last year. From the sounds of it camping in foul weather led to the imbibing of too much fermenting brew, to quote "I had to be poured into my bed at around 02h00 the next morning. Headaches and dryness abounded the next day (09h00)". Despite his rather crippling state he proceeded to have the best day of the trip collecting on Joubert Pass and recorded

Pseudonympha southeyi Pennington, *P. trimenii ruthae* Dickson and a *P. gaika* Riley. Later in the day 23kms south of Bloemfontein they found a good hatch of *Stygionympha irrorata* (Trimen) on flowers. Other records for the trip despite torrents of rain were *P. trimenii ruthae* and *Kedestes barbarae* (Trimen) at Molteno and from Queenstown, a few *Orachrysops major* (Bethune-Baker), *Cupidopsis jobates* (Hopffer), and one *Lepidochrysops asteris* (Godart). Martin was accompanied on this trip by Gustaf Peach who did not imbibe quite as much as Martin.

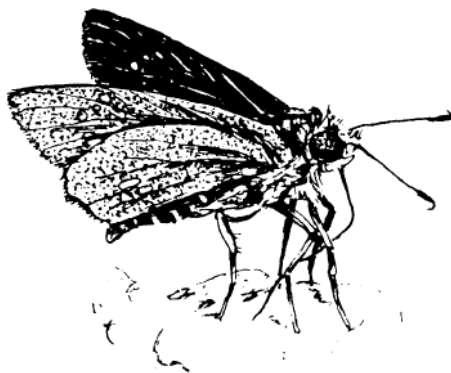
On a more sober note Martin went to Windsorton in late December and just outside the town, on some purple flowers, found a great number of *Acraea stenobea* Wallengren, *Spindasis phanes* (Trimen), *S. ella* (Hewitson), *Stugeta subinfuscata* Grünberg, *Lepidochrysops plebeia* (Butler), *L. patricia* (Trimen), *Colotis lais* (Butler), *C. evippe omphale* Godart plus many other *Colotis*. Two very interesting captures were a male *Aloeides gowani* Tite & Dickson and a male *Spindasis mozambica* Bertolini (a new Cape record?).

In late May Nolan Owen-Johnston and the Curle brothers visited Manguzi and Hluhluwe in Zululand. Besides a couple of female *Deudorix dinomenes* Grose-Smith there was very little else to be had.

Steve Woodhall went to Zululand during the long weekend at the end of May and found *D. dinomenes* at a number of localities. They were quite plentiful at Makatini Flats feeding on the flowers of Euphorbias along with lots of *C. pseudozeritis*. The highlight of the trip was the rare *Borbo ferruginea dondo* Evans. Johan Greyling was encountered during his travels and he too had caught a *B. ferruginea dondo*.

All told I think the last few months were very productive and it is indeed pleasing to hear of so many trips being undertaken in spite of the recession. Please keep me informed of your activities. Telephone No. Work 474-1466 & Home 768-1949 (both 011).

GRAHAM HENNING



Borbo ferruginea dondo male underside

BUTTERFLY COLLECTING IN NORTH-WESTERN TANZANIA

By Jan Kielland

4916 Boroy, Norway

For several years I have had in mind to investigate some forests in Tanzania close to the border of Uganda.

I had visited the Kagera (Bukoba) District very briefly many years ago, but for some other purpose, however I had time to look around a bit for butterflies as well. I managed to snatch up five or six species and races which I had not seen elsewhere in Tanzania, so I knew that the area was very interesting. So on my last trip to Tanzania in 1991 I was determined to have the Kagera Region as my first priority on the list of places to collect.

As usual, it took me about 14 days in Dar es Salaam to obtain the necessary permits, including Research Clearance and a Temporary Resident's Permit. Eventually, I was able to set off in the Landrover of a friend of mine, who kindly let me have it on loan. The slow moving old diesel Landrover took 16 hours (including two hours for repair) to take me the 600 kilometres to my first destination, to my good friend Colin Congdon in Mufindi. He is a Director of a large tea estate, and a very keen butterfly collector and breeder. After having passed Iringa it started to darken, and I switched on what I thought were the headlights. Nothing happened. I had used this car many times in earlier years, so I knew its rather unusual gadgets, tried them all, but no luck. Climbing out to look in front of the car, I could just discern a faint light in one pair of the headlights, so there was nothing else to do but to carry on as best I could. Each time I met a car I was completely blinded and was compelled to stop on the roadside, which I could just see, until it had passed. But in the end, I managed to get to Mufindi where the car finally broke down, of all places, in his garden! I thought that an axle had broken so I put it in four-wheel drive, but nothing happened!

Colin remarked that I couldn't possibly go on to western Tanzania without a four-wheel drive, with which everyone will agree who has seen those roads! The end of it was that I carried on in his spare Nissan pickup which was a lot faster.

I had a Tanzanian with me in the car who was going to collect for my friend in Dar es Salaam, and after we had done short collecting trips to the Mbeya Mt. and Tatanda near the Zambian border, I drove on to Mpanda. Before I got that far though, I was forced to stay overnight in Sumbawanga as one of the front wheels threatened to come off. Got that mended somewhat in the garage of an Arab. When I was about to leave, however, he refused to take any payment as he learnt that I was a good friend of Salum Said, popularly called Salumu Tumbu (Salumu the Stomach), a 146 kg heavyweight living in Mpanda, and he, likewise, was a good friend of Salumu.

This was mid-January, early in the rains and the roads were still passable, so I got through to Mpanda that day without mishap. Having collected my two African helpers at Sibweza, outside Mpanda and, of course, visited Salumu Tumbu, I decided to take an 8 to 10 day foot safari to some nearby mountains, the beautiful, uninhabited hills at Kamissa and Sitebi Mountain which are the south-eastern end of a sandstone ridge, running all the way to Lake Tanganyika. The ridges are covered in open grass and with thick riverine forests in every gully and valley, in places over 2000 metres high.

Not more than 20 years ago these hills were teeming with elephants and buffalos, but, alas, not any more. When they stopped issuing licences for elephants, the ivory prices went up and poachers moved in for good. However, occasionally elephants still pass by in September-October when a particular fruit, *Uapaca*, is ripe. The mountain reedduck, *Redunca fulvorufula* is quite common, but very shy.

After having camped at Kampissa river with very minor results, we climbed the mountain near Sitebi and followed an open ridge, covered in bright green grass, down to Katuma river which has its origin just below Sitebi Mountain.

I have been to this area dozens of times, but never before seen so few butterflies on the wing. The same was the case at the other places we had been to, earlier in the month. The reason was probably the failure of the short rains, delaying emergence. Usually there is a mass emergence in December, but this was late January. We had a number of *Charaxes* traps up, trying particularly for the very rare *Charaxes xiphares sitebi* Plantrou, a subspecies endemic to this area, but there was no sign of it, nor did I get it last time I tried, three years before.

In the afternoon it started to rain buckets. We were camping where I usually camp, close to a stream (Katuma), and about one o'clock at night I was awakened by an ominous increase in the noise from the stream. When shining the torch, I discovered that the water was right next to the tent, and a few seconds later it was underneath it and started pressing on its side. I just managed to grab my sleeping bag and clothes and wade through water rushing up to my knees in order to bring them to higher ground. At the same time I hailed the Africans who were sleeping under a rigged up plastic sheet. They did not wake up before the water rushed around them and carried most of the light things with it. I went back a second time for my rucksack which luckily, was still there. The tent I ripped up so all the pegs went flying, except one and dragged it after me, with amongst other things, my camera inside, through the rushing water. Once I heard a distinct tear when the tent got temporarily stuck on a floating log. With much pulling and struggling I got it to safe ground. The Africans had plenty to do with their own problem, so there was not much help from that side to start with. As it was still raining, everything was soaking wet, including us. The rest of the night, of course, was spent sitting hunched up under a plastic sheet. In the morning we salvaged what we could, digging up an axe and a panga (machete) from under loads of sand and debris. The matches had gone, most of the cooking utensils and many other things; and the food was soaked, so all we could do was to set off towards the nearest habitation, which was a tiny village (one family), seven hours stiff walk ahead. The Mbende tribe is very hospitable, so we had no fear of going hungry after reaching this little village. They even refused payment for two meals for four persons on the grounds that they had known me from 30 years back.

I should have known that such flooding could happen, as I have plenty of near-similar experiences, but this little river was quite deep down from its banks and had never been seen to overflow its banks. Moreover, this was a year with very little rain.

Our next destination was past Uvinga to Kasulu where a friend of mine, Anders Bjornstad was teaching in a secondary school. The road to Uvinga is quite unbelievable; not being repaired for 12 years I was told. This road is certainly a test for any car, and one of the most shocking in the whole of Tanzania (which takes a great deal). Anyway, it was comparatively dry, but long stretches of it looked like riverbeds on a particularly rocky hillside.



Disaster camp (before the flood) at upper Katuma River

Other parts of it had deep ruts with nasty sand which, however, the Nissan negotiated comparatively easily, much better than a Landrover I was surprised to learn. On the other hand, it has less clearance so the exhaust pipe and silencer got rather battered and steadily more noisy. But nothing much disintegrated (apart from the exhaust) and I reached Kasulu the day after having camped by a pretty river, miles away from people.

Anders had briefly been to Minziro Forest, near the Ugandan border a couple of times before. We talked of going there together, but as he could not leave so soon, I pushed on ahead with my chaps. I camped at Nyakanazi, Biharamulo District, near an old quarry which had been used by a road construction gang some time before. Anders told me that last time he camped there he got an *Alaena* (Lycaenidae) which possibly is new. It belongs to the *A. bicolora* Bethune-Baker group, almost identical to *A. madibirensis* Wichgraf. I did not find any, but Izidoro, one of my collectors found a forewing and soon after a hindwing on the ground, proving that it very recently had been there. However, in a riverine forest nearby, I got a rusty red *Euphaedra* which very probably is a completely new species.

We only stayed two nights there and early next morning I set off for Bukoba, which I reached after some minor trouble with the car. The next day we were on our way to the much-

talked-about Minziro Forest. This forest crosses into Uganda and the part of it on the Tanzania side is approximately 200 square kilometres.

At the crossing of Kagera River at Kyaka there is a barrier, manned by soldiers, but after showing my research clearance and a letter which I had procured at the Regional Office in Bukoba (there are always lots of formalities) they cheerfully let us through. I had to pass this place and also another barrier many times over the months I stayed in the area, and in the end they got so used to the crazy butterfly catcher so that when they saw my car in the distance they just opened the gate and waved us through without stopping us. Twenty kilometres later, on a narrow, bumpy road, we reached a thick wall of forest trees, the Minziro Forest! As one enters the forest one crosses a tiny bridge over some standing water. A cloud of butterflies rose from the mud, so I naturally stopped to investigate. In less than half an hour we collected 8 species and subspecies which had not been recorded from Tanzania before! Two *Neptis*: *N. metella* Doubleday & Hewitson and *N. carpenteri* Eltringham; two species of *Acraea*; two *Mylothris*, a new race for Tanzania of *Colotis elgonensis* (Grose-Smith) and *Danaus formosa mercedonia* (Karsch) which I had not quite confirmed yet as occurring in Tanzania. Later we also of course got its mimic *Papilio rex mimeticus* Rothschild. But we had to look for a place to camp, so could not linger for long in this spot. After being thoroughly stuck one place, we eventually found a satisfactory spot to make camp, just at the edge of the forest, in a large open area inside it. The place I call MI on the map.

The following days new records were pouring in. One day we got thirteen species and subspecies new for Tanzania.

There are certain, very profitable spots in that forest where new things turn up all the time. Some places, close to nests of *Crematogaster* ants, were much favoured by *Epitola* and other Liptenid butterflies. One of my chaps, Elias, got quite used to finding "*Epitola* spots". There were three particularly good places on a small hill on the opposite side of the road from our camp. He used to spend hours almost every day perched high up in the trees, waiting for an opportune moment to make a sweep. Many *Epitola* and also other Liptenids fly high, often fighting each other in a crowd amongst the tree tops. Once he got about six *Epitola crowleyi* Sharpe in one sweep, but alas, they all, except one, escaped through a large tear in his net! I got one *Epitola* which I do not know, and which probably is new to science. In all, we got 15 species of *Epitola*, two *Epitolina*, one *Hewitsonia* and a male *Iridana jacksoni* Stempffer. Only two of these were known to me before.

I wanted badly to get *Iridana* as I knew several species were known from Uganda, so one would expect them to turn up in Minziro. One morning I showed an illustration to Elias and Izidoro, telling them that they were extremely fast on the wing. Great was my surprise when Elias the same day brought me a strongly iridescent "gem" which I immediately saw was an *Iridana*, and which turned out to be *I. jacksoni*. When Elias arrived I could tell from his grinning face that he had got something special. He said it whipped past him a couple of times before he managed to catch it. Also the *Epitola* are fast, powerful flyers, but if you can get close to the place where they frequently establish territories, they are not difficult to catch as they are often whirling around each other in practically one spot for seconds at a time. With most other butterflies you only get one try with your net, and then they are gone if you miss. Not so the *Epitola*, they keep returning until you get them, and they come regularly to the same spots day after day, but mostly early in the day, towards noon you hardly see any.



Camp at MI Minziro Forest, Tanzania

The little hill close to our camp (MI) has an open, grassy ridge with forest reaching up on three sides, in some places to the top. I soon discovered a spot of about ten square metres on the forest edge which was exceedingly rich in Lycaenids. In that tiny place I must have taken more than 20 species never before recorded from Tanzania! They ranged from *Epitola* and *Ornipholidotos* to *Hypocopelates* and *lolaus*. I particularly remember the first time I got a female of *Liptena o-rubrum teroana* Talbot, strange creature, flying lazily about in the half shade. Before I had consulted D'Abrera's book I was at a loss as to what it was! I never found males and females in the same place and to start with I thought that they were two different species. The males often flying low about the ground, settling on low vegetation in the half shade. Many of the Liptenids have dark colours and flutter about in the half shade of heavy

forest where they are easily seen when passing a sunny spot, but suddenly "disappear" while entering the shade again. They are therefore not always so easy to catch. The *Argyrocheila* are lovely, delicate creatures, feebly fluttering about in dark places of the forest. Two species occur there: *A. undifera* Staudinger and *A. inundifera* Hawker-Smith. I do not think that they could be lichen feeders, as their behaviour differs from those species. The lichen feeders like *Eresina* and *Mimeresia* and also *Mimacraea* all have the habit of circling around the trunks of trees. *Eresina* males are also frequently involved in territorial fights close to the tree trunks, occasionally perching there, but often very high up and out of reach of even a long handled net.

Tetrarhanis ilma (Hewitson) was very common indeed in Minziro Forest, but fairly localized, slowly flying in the shade from two to four metres above ground, occasionally lower. This species was represented by two races in Minziro Forest! The subspecies *daltoni* (Eltringham) with large white patches on both wings occurs on the north side of Kagera River; while the subspecies *lathyi* (Joicey & Talbot) without any white in both sexes, is found in the extension of the forest to the east of Kagera. This part of the forest is called Kikuyu (MIV) on the map. Just Kagera River was enough to act as a barrier for this feebly flying species. If this species is a lichen feeder or not I do not know, it does not behave like one.

I several times observed female *Epitola* hovering around ants' nests in the trees. The *Epitola* lay eggs on lichens growing on trees, close to ants' nests and the larvae are attended by the ants, but apparently not taken into their nests. I examined two nests of *Crematogaster* ants and found two white larvae in one of them, but they were probably beetle larvae.

The feebly-flying *Megalopalpus zymna* was an abundant species nearly everywhere in Minziro. It is very similar to a small day-flying moth, and on the wing it was difficult to separate them. The same with *Ornipholidotos ntebi* (Bethune-Baker) and *O. paradoxa* (Druce) which were both present there. Somewhat quicker, with more whirling flight was *Falcuna orientalis* (Bethune-Baker), which preferred more open, sunny edges of forest glades, but frequently settled on twigs.

Twenty-six species of *Charaxes* were recorded in Minziro. Less than in some of the Kigoma forests (Kasye, Ntakatta) with around 40 species in each. But many were subspecies not found elsewhere in Tanzania, and *Ch. porthos dummeri* Joicey & Talbot was a new species record. Many of the traps we had put up along the road had been stolen at night or early morning, so from then on traps anywhere near the road had to be taken back to camp at the end of the day.

At night strange sounds were heard. Particularly one was quite persistent most of the night, starting with a rather nice fluting sound, which however, gradually was getting more and more raucous and rude, and then suddenly stopped. After a while it started again, answering its relatives in various parts of the forest. I thought perhaps that it could be a tree hyrax, but certainly nothing I have heard before. I have never experienced the sound of a Potto; perhaps it could be that?

Many birds in this forest are not found in the rest of Tanzania, and also, many beetles and other insects do not occur in the rest of the country. Not to speak of vegetation! Anders Bjornstad is a botanist and used to Tanzanian flora, but in Minziro there were numerous plants and trees he had not seen before.

Minziro is probably the most thorny forest I have ever penetrated, almost every bush and tree carry thorns. I particularly remember a large, bushy tree which had the lower trunks and branches covered in huge, wooden spikes, up to 20 cm in length! Some of the spikes had minor spikes sprouting from their sides.

For a week we camped at Munene Forest, just south of Kagera River. This forest is rather badly exploited for firewood and butterflies were not so abundant there. Nevertheless, several additional species were found. Amongst others, *Myrina sharpie* Bethune-Baker, a very pretty thing. After Munene we set off for Rumanyika Orogundu Game Reserve in Karagwe District, close to the border of Rwanda.

Before reaching Karagwe we had a puncture. When I was stuck at Minziro, I soon discovered that at a Nissan was not really a car for sitting in mud. There are no places for putting a big jack without ripping up the body, so I had to use a tiny spare jack I had, which is almost useless in mud and water. However, for a puncture on a hard road it's okay.

Rumanyika is a forest of higher altitude (1300 to 1860 m) and in contrast to the flat Minziro (1200 m) it is quite hilly. Butterflies, however, were not so abundant; only 168 species were recorded in six days and two days on a later trip. Not many additional species were taken, but we got *Charaxes zoolina mafugensis* Jackson there, and a few "new" Lycaenids.

After having been to several places, including Rubondo Island in Lake Victoria (a National Park) and a trip to Dar es Salaam which I was compelled to do, we again returned to Minziro. It was now June, and the butterflies less abundant than during the rains.

Before arriving at Minziro a corner of the car battery had been knocked off as it refused to stand still where it belonged. Luckily, I got it mended in Minziro village by somebody with a bicycle shop! He had parts of another battery which he melted and used it for closing the hole. There was still spark in the battery so it started as soon as it was filled up. However, I had lots of trouble with that battery on my way back to Mufindi. It jumped off again, and the proper garages did not do half as good a job as the bicycle chap!

Anyway, every day still brought "new" species to light, and after a while we went to Kikuyu Forest (the part of Minziro which is situated east of the Kagera River) to camp site MIV. This turned out to be a super place. First of all, the natives there were very friendly indeed, and made absolutely no attempts to steal. We could leave the camp open and nobody touched anything, and no traps were stolen. All the time people came with presents of bananas, papai, muhogo (casava roots) and ananas, and when they heard we soon were leaving, a lot of people came to say good bye. I have hardly ever experienced anything like it. Some even came to dance for us.

In spite of this being late in the season, mid-July, we spent a very exciting eight days here as well, increasing my list of "new" species by nearly twenty. This forest turned out to be much more varied than Minziro proper, with both swamp forest and forest covering small hills. The first day we recorded not less than 200 species, which says something about the abundance! One of the most exciting finds was my first *Elymnias bammakoo ratrayi* Sharpe. The male, with the orange forewing band, most of all looked like an ordinary *Bematistes poggei* (Dewitt) which was very common there. The flight was practically identical, so you hardly could see the difference before you had him in your net. This species also went into traps with banana bait.

Earlier I had got a single female *Tanuethira timon orientalis* (Hulstaert) at camp site M2 in Minziro, but here it was almost common and I also got males. This species has enormously long tails.

Of *Bicyclus* I got both *B. dubius* (Aurivillius) and *B. technatis* (Hewitson) in banana traps. These were not found in any of the other places of the forest. Also *Lachnocnema magna*

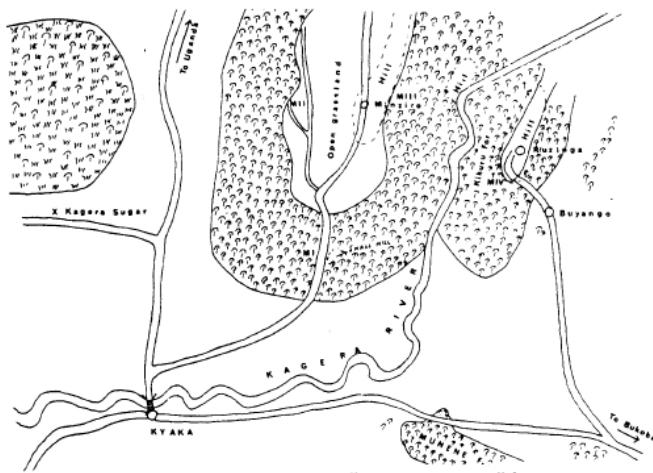
Aurivillius was only found here, and some large Hesperiids. A species which I only got at MIII was *Abisara talantus caeca* Rebel, quite an exciting find!

In spite of the flat and even altitude of Minziro Forest, from 1150 m at Kikuyu to about 1200 m in other parts of the forest, and only a few hills rising to 50 or 100 metres higher, the species density is quite astounding! Not less than 510 species were recorded in a total of 44 collecting days at MI, MII and MIII (mostly MI) and 8 days at Kikuru (MIV).

Almost 50% of all Lycaenids recorded were new for Tanzania (around 80 species). The second best family was Hesperiidae with possibly 33 "new" species. In all, I reckon that we got close to 200 taxa (including subspecies) which had not for certain been recorded from Tanzania before. With regard to taxa new to science, it is too early to tell, but there certainly are quite a few; even *Neptis* and possibly a *Euphaedra*. The last is being studied by Dr Jacques Hecq in Belgium.

We were exceedingly lucky with the weather. Only two or three days were spoilt by rain.

The large forest area (70 square kilometres) at Kagera Sugar on the map has been heavily exploited for firewood, and is now sadly reduced to evergreen bush with scattered taller trees. This forest has not been investigated. The upper end of the map is the approximate border to Uganda. The map is schematic. The open centre of the forest is not included in the 200 square kms. On the Uganda side of the forest a few other species of *Charaxes* and *Papilio* have been recorded.



Minziro Forest. MI to MIV - collecting areas. Tall forest. Evergreen bush with scattered forest trees.

**DIMORPHIC LARVAE OF *PAPILIO DEMODOCUS*:
AN URGENT AND INTERESTING RESEARCH TOPIC IN SOUTH AFRICA**

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Introduction

Throughout Africa and most of south-western Arabia, the common swallowtail, *Papilio demodocus* Esper, has a bright green larva, adorned with some precise brown markings of variable size. The larva of the Oriental *Papilio demoleus* Linné is very similar. In parts of southern Africa there is a different larval morph, which is much lighter green, with a variegated pattern of broken-up brown spots. No one seeing these two morphs together would suspect that they were larvae of the same butterfly. It is a case of true dimorphism, since the morphs are not linked by intermediates. As far as I can determine it was Clarke, Dickson and Sheppard (1963) who first drew attention to this interesting situation.

In 1979, I found thousands of *P. demodocus* larvae in the Dhofar Province of Oman in southern Arabia which looked very like the South African form (Larsen, 1983; photo in Larsen & Larsen, 1980). Those in Yemen were normal. Thus it is so far only at the two extremes of the range of the species that the variegated larvae have been found; it is stable in the green form in the rest of its enormous range.

Quite frankly, I find it amazing that no research seems to have been done on this interesting topic, and I would like to urge entomologists to research it - there are wonderful evolutionary, ecological, and genetic discoveries lying in wait.

Discussion

This kind of larval dimorphism is not at all common. It must have a genetic background, and it must be related to survival. Since I am working on a book on the Botswanan butterflies. I shall use Botswana as a starting point.

In most of Botswana *Papilio demodocus* is quite common. In the north and in parts of the east it has natural Rutaceous host plants (I have only seen it on *Citropsis*, but others are available). Towards the south, and especially in most of the Kalahari, there are no natural host plants, and they feed on cultivated *Citrus*. Even a few, isolated *Citrus* trees in the inner Kalahari (kang, D'Kar) are usually colonized, since *P. demodocus* is both wide-ranging and actively migratory. The larvae are always of the usual green form.

However, in February, 1991 my wife and I found thousands of the variegated larval form in the Kalahari National Park in Botswana, chiefly around Twee Rivieren and the Nossob Valley south of there. They were feeding on a scraggly Umbellifer, almost without leaves, known as *Pithuranthos burchelli*. Species of *Pithuranthos* are the main host plants for the desert-adapted *Papilio saharae* Oberthür in North Africa, the Sinai, and the Arabian Hejaz - *P. saharae* also has a variegated larva, quite different from the normal banded one of the *P. machaon*-group (Clarke & Larsen, 1986).

Clarke *et al.* (1963) put forward what I think is the only viable hypothesis for the larval dimorphism. In most of its range, *P. demodocus* has broad-leaved Rutaceae host plants, such as *Vepris*, *Clausena*, and *Citrus*. On these, the bright green larva affords good camouflage.

However, on the nearly leafless Umbelliferous host plants in the cape and at Gemsbok (chiefly *Pithuranthos* and the exotic *Ferula communis*), the variegated pattern breaks up the shape of the larva, where a solidly green larva would stand out. In Dhofar the host plant was the low Rutaceous shrub, *Haplophyllum tuberculatum*, also a small-leaved plant. I found hundreds of variegated larvae but no green. However, *Citrus* has been introduced to Dhofar, and though I found no larvae on *Citrus*, my colleague, Tony Pittaway, did so a few years later. Most were of the variegated morph - which 'stuck out a mile' - but about 5 percent were of the usual green morph.

Since *P. demodocus* is highly mobile, 'green larva' genes must reach the 'variegated larvae' populations regularly - and perhaps *vice versa*. But, at least at Gemsbok, any 'green' invasions appear to be swamped by the 'variegated' locals -they presumably have a strong, local survival value.

Research opportunities

The presence in South Africa of two distinct morphs of the larva of *P. demodocus* opens many potential avenues for research. I could see it as the basis for half a dozen MSc theses, and even a couple of doctorates:

- a) Mapping the distribution of the two larval forms and their total host-plant spectrum.
- b) The genetics of the larval morphs have to be worked out much better than by Clarke *et al.* (1963), which should not be difficult.
- c) The development rates of the two forms of larvae on both *Citrus* and *Pithuranthos* under controlled conditions.
- d) Differential survival rates in the wild of both forms of larvae on the 'right' and 'wrong' host plants.
- e) Which are the main selective agents and how would they perceive the two morphs.
- f) Host plant choice experiments with captive females, including tests of whether search-image is also genetically controlled.
- g) There are many other opportunities.

Such research will be aided by the fact that *Papilio demodocus* is a relatively docile laboratory insect. Adults can be hand-paired, and survival rates of the early stages are usually high. And since *P. demodocus* is an actual or potential pest on *Citrus*, research on its genetics and host plants might even attract financial support.

References

- CLARKE, C.A., DICKSON, C.G.C. & SHEPPARD, P.M. 1963. Larval colour pattern in *Papilio demodocus*. *Evolution* 17: 130-137.
- CLARKE, C.A. & LARSEN, T.B. 1986. Speciation problems in the *Papilio machaon*- group of butterflies (Lepidoptera: Papilionidae). *Systematic Entomology* 11: 175- 81.
- LARSEN, T.B. 1983. Insects of Saudi Arabia: Lepidoptera, Rhopalocera (a monograph of the butterflies of Arabia). *Fauna of Saudi Arabia* 5: 333-478.
- LARSEN, T.B. & LARSEN, K. 1980. The butterflies of Oman. Bartholomew, Edinburgh.



Normal *Papilio demodocus* larva with osmeterium extruded

A HUNT IN THE WESTERN CAPE

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It has for some time been cause for concern that *Argyrocupha malagrida maryae* Dickson & Henning, a subspecies which was discovered as recently as 1977, has apparently disappeared from its only known locality at Struis Bay. My wife and I therefore decided that a concerted effort should be made during the latter half of February - the apparent flight period of this insect - in order to locate it in other areas. This was likely to prove a difficult task, so several days were set aside for this purpose. Our starting point was naturally at the locality itself, in order to "get our eye in" on its preferred type of habitat. It was interesting to note that no visible changes had occurred to this locality since 1979, which was the time when I first visited it, and found the species in good numbers. There is a bit of Port Jackson Willow infestation in the area - but this is much as it always was: there was certainly no encroachment on the spots where the insect was flying those many years ago.

As I have come to expect, there was no sign of the insect on its old colony. There are various possible causes that might have led to its eradication at this spot. I consider the two listed below as the most likely.

- a) By repeated overcollecting of specimens by collectors. This cannot be dismissed as a possibility, in view of the fact that this species is extremely localised, and has a very short flight period. It is therefore vulnerable to systematic and sustained collecting by an individual or individuals. (However there is no evidence to support this hypothesis. There are no documented cases of extinctions or even local extirpations of insect populations due to indiscriminate collecting from anywhere in the world [see Pyle *et al.*, 1981. *Ann. Rev. Entomol.* 26: 233-258] - Editor.)*
- b) By attack from relatively invisible predatory invaders, such as the Argentine Ant. This insect is common near human habitation, and could easily wipe out an ant-associated insect such as this one, by destroying the host ants of the breeding colony.

During the next two days, a wide search was made of the Agulhas ridge of mountains, as well as of other suitable low-lying ridges near the coast between Struis Bay and Arniston. This proved fruitless. The weather, too, was uncooperative, with a strong south-easter blowing in clouds every day.

On the next decent day, I decided to test my pet theory, which was that, because the Potberg range of mountains runs parallel to the Agulhas range, and, like the Agulhas range, comes to an end overlooking the sea at Cape Infanta, the area around Infanta was likely to produce the species. Our long drive to Infanta was rewarded by an area that had been totally burnt out by a veld fire, and one which is, in fact, quite different in vegetation and soil-type to that around Struis Bay. So another good hypothesis bit the dust.

After this disaster, I was starting to run out of ideas. However, one must never say die, and we decided, as a last effort, to inspect some low-lying limestone ridges near Bredasdorp, about 50 km from Struis Bay. While making our way to the top of the ridge, the ever-present southerly wind was doing its best to bring in some rain, and we realised that we had very little time left at our disposal. Near the top of the ridge, an orange-red insect flew up and settled with its wings folded together. This caused a bit of hopeful excitement, until I saw that it was only an *Aloeides pierus*. Ten metres further on, another orange-red insect flew up, which I automatically assumed to be another *A. pierus*, until I saw its underside and realised that it was a *maryae*! This caused a great deal of excitement, as you can imagine. In the half an hour available to us before it started raining, two colonies of the insect were quickly found, and the probability exists of others being found in the vicinity. However, the weather and my need to get back to work prevented us from confirming this.

So *maryae* is not extinct after all, and can, in fact, now safely be removed from the endangered species list. To be on the safe side, however, I am taking the precaution of involving the department of Nature Conservation with the protection of its habitat, and, pending further exploration of the density and extent of its colonies, would prefer not to reveal the exact whereabouts of this spot as yet.

* When provocative claims such as this is made it should be accompanied by supporting evidence. As far as can be established, besides the author of this article, only one other person has collected specimens at this spot since its discovery and he is involved in a major scientific research project on the Lycaenidae and is unlikely to have ever collected -- Editor.



Argyrocupha malagrida male showing underside

AEROPETES TULBAGHIA (LINNAEUS) - INTERESTING OBSERVATION

On our way back from Struis Bay, my wife and I called in for a morning's visit to Grootvadersbosch, near Swellendam. There we met the Chief Forester, who is a very interesting man named Chris Martens. Chris is a keen naturalist with a particular interest in Botany, and without any special interest in butterflies. He has for some time noted the preference of *Aeropetes tulbaghia* for the flowers of the Red-Hot Poker, and has been wondering what the pollinator is of *Disa ferruginea* (Thunb.) Sw. which mimics the Red-Hot Poker, but which has no nectar to attract pollinators. Having noted that specimens of *A. tulbaghia* often settled on these Disas in the mistaken belief that they were Red-Hot Pokers, he placed a number of large-holed nets around the Disas, in order to deny access to the plants by the butterflies, but not other potential pollinators. Tests subsequently conducted showed that all these net-covered Disas were sterile, while others in the nearby vicinity, which had not been covered, had all been pollinated. This vital experiment could be the first proof of the existence of a symbiotic relationship between a species of butterfly and species of plant. Nature is indeed a wonderful thing!

BARBERTON*HISTORICAL PERSPECTIVES ON COLLECTING IN THE EARLY TWENTIETH CENTURY*

The article below is an extract from the unpublished memoirs of the late Eric William George Howard, born in 1899. These memoirs are but part of a chapter relating to the natural history in the vicinity of Barberton. His interests extended beyond butterflies and moths, but these have been excluded in this extract of the chapter dealing with natural history. The remainder of the manuscript covers other aspects of the town's development and the De Kaap Valley. The manuscript was first brought to my attention by Mrs Rhona Milstein, and permission to use the extract below granted by his two sons, Peter and Tony Howard.

The astute observations of this pioneer naturalist who chalked up so many original and interesting observations parallel many concepts now being pursued actively in the fields of conservation. His emphasis even then on recording life cycles and foodplants is remarkable. His must have been a really fine collection. We can almost savour the excitement he must constantly have experienced among the rich fauna and flora while he embarked on one voyage of discovery after another as an impressionable youth. He was furthermore a man of great integrity and kindness.

A final lesson, and one for us all to take note of, is that without proper provision and impeccable curation, even such treasured collections will ultimately deteriorate. Adequate and timeous provision for such final bequeathment is essential.

D.M. KROON

EXTRACT: CHAPTER FOURTEEN — HOBBIES AND PASTIMES

Barberton has had an exceptionally interesting and romantic historical past, records of which have been handed down to us by many well-known writers, but it is also one of the prettiest towns of the Transvaal and perhaps of the whole country. Whenever the name crops up, as it frequently does, my mind immediately takes a nostalgic but happy leap backwards, and recollection of life in that charming little town, now so aptly described as the 'Gem of the Lowveld', are vividly recalled.

In South Africa there are many lovely small towns, usually those to be found tucked away in the mountains, of which the inhabitants may be justifiably proud but there are few, if any that can compare with Barberton, nestling so picturesquely at the foot of the Saddleback range of high mountains in the south-east corner of the huge De Kaap Valley.

The De Kaap Valley is more than a valley in the accepted sense of the word and is better described as a huge basin, the bottom of which lies approximately 625 metres above sea-level. It is roughly 48 kilometres across in one direction by 40 in the other; irregularly circular in shape and entirely surrounded by high mountain ranges with many peaks towering 1200 metres and more above the valley. From the south-western end three rivers, the Queens, South Kaap and North Kaap, meander through this basin to come together where, as the Kaap River, they pass through a narrow defile in the east. The only break in that circle of mountains. So completely is this great valley closed in that from wherever one may view the surrounding mountains no break or opening can be seen and one may well be forgiven for

imagining oneself shut away from the rest of the world.

With all this magnificent scenery on my doorstep it is not surprising that in my youth my interests turned to things in the great outdoors. If was here in the De Kaap valley that I developed my great interest in entomology.

As many do, I began by collecting every specimen that came my way but, realizing at an early stage that I would have to restrain my desires in this respect, I decided to concentrate on the Lepidoptera, that is butterflies and moths. This was the branch I favoured most, possibly because of their beauty and the appeal they had when properly displayed in show cases, and while living in Barberton I gradually built up a fine collection of these pretty flyers.

There were not many folk in the town at that time who shared my enthusiasm for this hobby, although several of my older friends had been collectors in their younger days. There was, however, an elderly spinster, Miss Lottie de Beer, who had a fine collection that she had assembled over a number of years before I knew her. This collection was on display in the Carnegie library and later became one of the first exhibits in the Barberton Museum. Alas: it could not be given proper attention with the inevitable result that minute parasites, the bane of all collectors, have since reduced those specimens to dust.

Butterflies, with their day time habits, as opposed to moths which are mostly nocturnal, are naturally the easier to acquire and for these there can be few better hunting grounds than the surroundings of Barberton, where the number and variety of different species to be found is probably unequalled anywhere else in the country. In those surroundings I must include Louw's Creek, only thirty kilometres away, where the varieties that can be found are perhaps more numerous than in the creeks nearer the town. With the exception of those species peculiar to certain well defined localities such as the Karoo, the higher mountains of Lesotho and some of the drier parts of the country, almost every known species of South Africa butterflies could be found somewhere in the De Kaap Valley; either on the plains, in the wooded creeks or up on the mountains; each family keeping strictly to its own chosen habitat.

The largest of all South African butterflies is *Papilio ophidicephalus* Oberthür a splendid creature that attains a wingspan of nearly 102 millimetres with a short spatulate tail projecting from each of the hind wings. It is a high but not particularly fast flyer that seldom comes down to the ground and it can usually be found flying amongst the larger indigenous trees in the ravines, though it is by no means common near the town.

The smallest of the butterflies to be found around Barberton is probably that pretty little skipper, *Spialia seccesus* (Trimen) which only measures 19 millimetres across the wings. It is 'a swift and erratic flyer, usually keeping close to the ground, but it is hard to distinguish from other members of the same family. In between the largest and smallest of South African butterflies there is a wonderful range in size, colour and flight. Over 630 different species have already been classified and it is still possible that hitherto undiscovered varieties may yet be found by some enthusiastic searcher.

But many species are seriously in danger of becoming extinct as virgin lands and indigenous forests, where their natural food plants grow, are being systematically reduced to make room for farms, plantations or imported timber trees and housing projects. Another very real danger to the survival of some of our prettiest butterflies is the ever increasing use of pesticides. There are, of course, certain caterpillars (of moths) that from time to time appear in such vast numbers that they do a tremendous amount of damage to crops, and these are

justifiably rated as pests that must be ruthlessly exterminated. With a few exceptions, no caterpillars are ever found in sufficient numbers to do any real damage to plants but many folk seem to have a strange antipathy to caterpillars and in their ignorance will instantly destroy any they find.

The sight of brightly coloured butterflies fluttering from flower to flower adds great charm to a pretty garden, but most keen gardeners unintentionally deprive themselves of this added pleasure. Butterflies can only exist where their natural food supplies are to be found and as these consist mostly of weeds and wild flowers that are not welcomed in well-kept gardens there is nothing to encourage these pretty flyers to invade suburban areas. The time is fast approaching when certain species will have to be put on the protected list, as has been done in some countries, and steps taken to preserve their food supplies.

One can often see several butterflies of the same kind hovering around certain flowering shrubs and sometimes one can find large clusters massed together drinking on moist sand beside a stream or occasionally just resting together in some nook. Once, in Highland Creek, I came across an amazing gathering of *Papilio nireus lyaeus* Doubleday, one of our loveliest butterflies, massed together on a small patch of moist sand about the size of a dinner plate. There were scores of them packed close together with their wings folded upright above their bodies. So densely were they packed that they appeared to be just one black mass, but when disturbed they made a beautiful animated blue and black picture as they fluttered around in all directions. After a few minutes they all returned to the same patch of sand to resume their drinking. *Papilio nireus lyaeus* is not only one of our loveliest butterflies but, with a wingspan of over 90 millimetres, it is also one of our largest. It is shiny jet-black with a broad band of bright metallic blue across both front and rear wings almost, but not quite parallel with the body, and each of the rear wings is edged with six spots of the same bright metallic blue. The underside, however, is just a dull black with insignificant markings; hence the blackness of that massed cluster while at rest.

Another time I was walking along a dry donga when I came upon a colony of 'winter' butterflies, massed together under an overhanging bank where they were suspended from the roof, all closely packed together. They could not have been either feeding or drinking because that bank was perfectly dry, but there they hung, just a dense mass and when disturbed they swarmed around in their scores, a fluttering cloud of purple and red. This butterfly is only about 62 millimetres from wingtip to wingtip but it is a beautiful creature; the basic colour being purple with red and blue spots inside the outer edges of the wings. Its proper name is *Precis octavia sesamus* Trimen, and it is one of several species that have two distinctly different forms for summer and winter. In shape and size the two forms are identical but there is a considerable difference in colour and markings. The winter variety is by far the prettier of the two different forms; the summer variety being basically dull red and dark brown.

There is one other that I would like to draw attention to and that is the ubiquitous 'painted lady', *Vanessa cardui* (Linnaeus). Though never seen in clusters, this pretty butterfly is so widely distributed that it may be seen happily fluttering from flower to flower in gardens, not only throughout South Africa but also in many different parts of the world.

For me, no better day could be spent than wandering quietly up and down one of the creeks, equipped with a net and other collector's paraphernalia, hunting those attractive flyers.

A bright hot sunny day is what they enjoy best and when they are most in evidence, flying to and fro between the shade of the trees and bright patches of sunlight, constantly seeking nectar from their favourite flowers. Not all butterflies revel in the sunshine, however, for some definitely prefer to loiter in the deep shade, and those are the ones that are usually less brilliantly coloured than those that keep mainly to the warmth of the sun. Should one's fancy for a day's collecting lead one to the mountains, or perhaps to the more level stretches of the valley floor, one could also range contentedly for hours on end and never return empty handed. No quest for butterflies need ever go unrewarded.

The collecting of moths can be equally fascinating but as these are best sought after at night one's outings have, of necessity, to be undertaken under less attractive conditions than when searching for butterflies. But a warm evening spent in a secluded spot deep in the heart of a well-bushed area can be highly interesting and rewarding, always provided one is prepared to submit to the annoying attentions of hordes of small biting and stinging pests that are also attracted to one's lamp. A bright light and a large white sheet are essential parts of the night hunter's equipment and the number of flying creatures of all descriptions attracted to that light can be astounding, and a tremendous variety of specimens can fall victim to one's net, resulting in a wonderful bag for the evening. Precautionary measures and a very watchful eye are absolutely necessary as other nocturnal prowlers may also be lurking in the vicinity. As moths and other night flying insects are attracted by the lamp, many come to rest on the white sheet spread out on the ground. Instinctively frogs, spiders and other predators gather round to participate in such a welcome feast all nicely set out on a tablecloth. These smaller predators in turn become a natural magnet for snakes, also on the alert for a ready to hand meal.

If one includes the numerous almost insignificant ones, there is a far greater variety of moths than butterflies and, although not usually so brightly coloured as most of the butterflies, many of the larger moths are beautiful creatures.

Of the better known moths some are very much larger than any of our butterflies; the latter seldom exceeding 100 millimetres from wingtip to wingtip, whereas moths reach as much as 190 millimetres across and those magnificent creatures make a truly impressive display when properly set out.

The loveliest of all our large moths is *Argema mimosae* (Boisduval). This is indeed a beautiful creature; the basic colour being a soft shade of green with pale lilac markings and a distinctive pale orange coloured 'eye' on each of the four wings. It has a wingspan of 115 millimetres, with the hind wings tapering off into long slightly spatulate tails of approximately 63 millimetres, that have a definite twist at the extremities. The caterpillar feeds on the marula tree (*Sclerocarya caffra*) but it is seldom found. Although known to inhabit the Lowveld of the Transvaal, Swaziland and Natal, it is a rare moth and one of the reasons for its scarcity in the Eastern Transvaal is that the natives there make ornamental anklets with the cocoons which are spun from a strong silk and have a silvery appearance; these cocoons which are about the size of pigeon's eggs, are not so difficult to find. They are collected and after extracting the pupa this is replaced by a few tiny pebbles and the cocoons are then strung together to form anklets which, when the wearers are dancing or walking, produce a rustling rattle.

Some of the collectors I knew had succeeded in adding one or two specimens of this beautiful moth to their collections but none of them, even those who had been collecting for years before I started, had ever seen the caterpillars, which were then also unknown to the Pretoria Museum. [Now The Transvaal Museum, Pretoria].

I once had the unique experience of rearing this moth from the eggs through all the stages to the imago, and my good fortune in this respect was quite fortuitous; the sort of opportunity that comes only once in a lifetime. It was the only time I ever saw those caterpillars and it happened this way. Everyone in the town knew of my interest in insects and I was constantly receiving odd contributions towards my collection, usually in a rather damaged condition due to inexpert handling. One day I was presented with a very battered specimen of *Argema mimosae*, that had been caught the night before. By the time it reached me it was dead but it was a female and in her death throes she had laid a batch of eggs in the box in which she had been confined.

Did I treasure those eggs! This was, for me, the catch of the season and the best stroke of luck that could have come my way. At last I was going to succeed where others had failed.

In due course some twenty or thirty minute caterpillars, not more than 3 millimetres long, hatched out. Feeding presented no problem as there was a young marula tree in our own garden and I watched those tiny caterpillars steadily increasing in size day by day. The bigger they grew the less conspicuous they became amongst the foliage and it was easy to understand how it was that they had not been seen before. They blended perfectly with the leaves and, had they been out on the tree, only the most diligent of searchers could have found them. In all spheres camouflage is nature's finest protective measure, and in this case it was superb. As those caterpillars neared maturity I sent some to the Pretoria Museum where they were welcomed as treasures that had not previously been received. Those I kept for myself duly spun cocoons and later I had the pleasure of seeing several moths appear.

One of the largest of all South African moths is the speckled emperor moth, *Gynanisa maia* (Klug); [illustrated on the cover of this *Metamorphosis*]. Measuring a good 150 millimetres and soft in appearance, it is a real beauty though somewhat sombre in its overall colouring. It is prettily marked and has a large purple 'eye' on each of the hind wings. It is fairly common in the Lowveld but usually keeps within well-defined areas. This moth once gave me a clear demonstration of the extraordinary powers the female has for attracting attention from the males. One evening I caught a badly damaged female -- too spoilt for my collection -- and, wishing to prove this strange power, I placed it in a wire cage on the veranda in the dark. Within an hour I had captured more than a dozen males fluttering around that cage, and yet I knew that the nearest likely place to find those particular moths was more than a kilometre away -- quite a good distance when one thinks of the size. How did all those males know the female was there!

For the purpose of perpetuating the species, some females of both butterflies and moths exude a scent from the tip of the abdomen that can attract males from a great distance. In the case of *Gynanisa maia* this facility is exceptionally well developed and I have read that the scent from the female, given favourable conditions, can be carried to the males for as far as seven miles. To me that seems incredible but that distance was given in an authoritative work and I must accept it. The *Encyclopaedia Britannica* also gives the distance as 'several miles' for some species.

An interesting moth that can be found in most parts of South Africa is *Acherontia atropos* (Linnaeus), more commonly known as the Deaths head hawk moth because of the distinct skull on the thorax. It is not restricted to this country and is well distributed throughout the world. It has a peculiar habit of crawling into beehives to enjoy the honey so laboriously collected by

the busy bees, which apparently do not resent such intrusion. It is also the only member of the Lepidoptera known to make any sound audible to the human ear. At times it will emit a definite squeak, something like the squeak of a very small mouse.

The object of all collectors is, of course to obtain the most perfect specimens of whatever is being collected and for entomologists this can be very difficult as most insects are extremely fragile and inevitably suffer damage when being captured. Butterflies and moths are particularly susceptible to damage and, therefore, the recommended way to ensure the inclusion of perfect specimens in your collection is to hatch these from the chrysalises. This method can also involve one in a most interesting study.

First find the caterpillars; but this is not as easy as it sounds. In the first place, the field is somewhat limited as some caterpillars and chrysalises of the known butterflies and moths have not yet been identified and a great many others, although known to the experts, are extremely difficult for the less experienced to locate. Many have perfected their system of camouflage to an amazing degree and they also vary tremendously in size, colour and form. 'Big fat juicy ones, long thin squiggly ones, and little wiggly ones that squirm'. They are all slow moving creatures incapable of getting out of the way quickly when danger threatens, so they have developed other means of protection from the many predators by which they are constantly menaced. Many depend solely on shape and coloration to make them inconspicuous amongst the foliage on which they are feeding. Some are decorated with harmless spines that give them a fearsome appearance, others carry a protective coat of fine hairs which, in some cases but not all, can cause painful irritations to the skin and care is necessary when handling these. A few have glands on the back from which they can exude offensive smells when disturbed.

Having collected your caterpillars they must be kept in a well-ventilated cage and be given fresh food (leaves from the same plants as those on which they were found) as frequently as possible. Plenty of air and fresh food are essential. Caterpillars are voracious feeders and one can watch them grow bigger day by day until they are ready to change into the chrysalis or pupa stage in which they will remain dormant for periods of varying duration, according to the habits of the different species. It is easy to detect when this change is about to take place as they then become sluggish and are disinclined to feed.

With most butterflies the caterpillars, when this change is about to take place, first attach themselves to convenient twigs and then shed their outer skins, revealing queer shapes and apparently lifeless objects, Although completely motionless they are not dead and a gentle touch will produce a slight quiver. Others will conceal themselves by wrapping tiny leaves or minute twigs round the body, fastened with fine spidery silk.

Caterpillars of moths, on the other hand, almost invariably burrow into the ground just before the chrysalis stage is reached and remain buried until the moth emerges. Some, however, spin cocoons until the creature is completely enclosed in a neat silken container in which it remains until the metamorphosis is complete and the moth breaks its way out.

Most of us as children have kept the common silkworm and are, therefore, familiar with the life cycle from egg to moth. Like the common silkworm, some of the larger moths also spin silk of commercial value and possibly the best known of these is that large and beautiful Indian moth that gives us the strong and durable 'tussore' silk from which shirts and summer suitings are made.

To watch these insects passing through the different stages of development can indeed be fascinating and if you wish to study something different from the common silkworm, one of the easiest to obtain is the caterpillar of *Papilio demodocus* Esper, or orange-tree butterfly; that common but beautiful butterfly, that can be seen almost everywhere in the country. This green caterpillar can be found quite easily, usually resting on the upper side of the leaves of any orange or lemon tree. After the chrysalis has formed, one has only to wait and watch for a few days when a gradual darkening will be observed and shortly before the butterfly is due to emerge, the markings of the wings are vaguely discernible through the now almost transparent protective covering. When time is right, the butterfly will break through with the wings folded round the body and somewhat moist. The wings are then slowly stretched until the full width of approximately 90 millimetres is attained. After 20 or 30 minutes of gently moving the wings up and down these will have dried and this thing of beauty is ready to take to the air.

Throughout the world strange migrations of butterflies take place from time to time and, in the Transvaal, Natal and the Belgian Congo (now Zaire), I have witnessed these extraordinary flights. They are a complete mystery and for whatever reason butterflies may migrate, naturalists do not yet understand what prompts these mass movements.

In Southern Africa the only butterfly known to migrate in large numbers is the pretty little black yellow and white pierid, *Belenois aurota* (Fabricius) and at irregular intervals, swarms composed of thousands upon thousands of these flyers have been observed making their way across the country. No one has yet discovered where they originate or where they eventually settle but they always fly from the south-west towards the north-east. Resting on trees and bushes at night they wing their way steadily from sunrise to sunset and they are known to cover hundreds of kilometres, even crossing long stretches of the ocean. A few years ago a typical swarm of these butterflies passed through St. Michaels-on-sea, on the South Coast of Natal and the direction of their flight took them relentlessly out to sea where countless numbers must have perished.

The most widely known of all migrating butterflies is the Monarch Butterfly of North America (*Danaus plexippus*) but there is nothing mysterious about their migrations which are not just occasional happenings. They are regular annual events that have been studied and recorded since the turn of the century. In autumn millions of these orange gold and black butterflies leave their breeding grounds in Canada and the Northern United States and fly south to spend the winter in Florida, California, Texas and Mexico. In Florida and California, where thousands upon thousands will return to the same trees year after year, they have become a tourist attraction and are now a protected species. In spring they fly north again back to their breeding grounds.

There is a marked resemblance between the Monarch Butterfly of North America and the fairly common *Danaus chrysippus* (Linnaeus) of our own country, but the latter does not migrate and although often seen in our gardens, it is never found in clusters. It is a solitary flyer.

E.W.G. Howard

**STUDYING BUTTERFLIES AT THE PILANESBERG NATIONAL PARK
IN BOPHUTHATSWANA**

By Nonah du Toit

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During the Easter vacation, our family went camping at the Pilanesberg National Park in Bophuthatswana, near Rustenburg. While there, I chatted to a field helper (very helpful lady, Mrs Lyn Scheibe) about studying/capturing butterflies. She spoke to the Warden, Mr Koos Herbst, and he wants me to write a letter to him with the following: who we are (I took the Society's name in vain!), what we want to do, why we want to do it, and a specimen list. I gather Mr Herbst will then give permission for groups to enter the park and stay (probably free of charge, I'll suggest it when I write), for the purpose of compiling a report on the butterflies to be found there. As far as they know, no such study has been done, and they are quite keen on having one made. Said study group would, of course, have to go at different seasons. As the whole area is an extinct volcanic crater, some quite unusual and localized vegetation grows there, and this will naturally affect the insect life.

Mrs Scheibe escorted us round a small dam which is normally closed to tourists. My son Pierre netted a *Physcaeneura panda* (Boisduval) male and a *Eurema brigitta* (Cramer) female and he observed the following:

Cyclus pithous (Linnaeus)
Anthene amarah (Guérin-Méneville)
Azanus jesous (Guérin-Méneville)
Capys sp.
Colotis vesta (Reiche)
Colotis ione (Godart)
Colotis danae annae (Wallengren)
Colotis aurora dissociates (Butler)
Belenois aurota (Fabricius)
Catopsilia florella (Fabricius)
Papilio demodocus Esper
Papilio constantinus Ward
Danaus chrysippus aegyptius (Schreber)
Junonia oenone (Linnaeus)
Junonia hierta cebrene Trimen
Junonia orithya madagascariensis (Guenée)

We saw plenty of tiny Lycaenids on the small plants next to the dam, but they were too quick/we were too slow with our ginormous net.

There are lots of small hills within the crater, which should yield Charaxinae and other koppie-dwellers. These hills are off the normal tourist routes, but with permission from the Warden, and a guide, we would probably be free to explore there. The rivers are all absolutely pure streams originating in the crater. The specimens I saw (e.g. *P. demodocus* and *D. chrysippus*) were certainly very large.

Anyone who is willing to form a team to help, please contact me (Tel. 011-975 6969, evenings), and I'll try to co-ordinate something. There are very well-kept caravan parks and

camping grounds (if you don't mind the odd 5 cm diameter hairy spider, frog and *Colotis* larvae in, and squirrel and wildcat around, your tent). The Park is about 2 1/4 hours by car due west from Kempton Park.



Catopsilia florella female showing underside

RAMBLINGS OF RUTH SOUTHEY IN MOZAMBIQUE 1957
(PART 3)

By Ruth J.G. Southey

P.O.Box 709, George 6530

(continued from *Metamorphosis* 3(1): 28, March 1992)

Again, what joy and bliss it was to come back to camp and drop ourselves into the river after hours of tramping (or lazing) in the sweltering heat. The path to the river was very steep, but made useable by Ken's vast energy. All were totally exhausted after preparing the camp site, the near surroundings, and path to the river, pitching tents, and so on. Those sundowners, so often mentioned, after the heat and excitement (sometimes disappointment) of the day, what bliss they were, and then dinner, somehow contrived by Christina and Gideon and all to the accompaniment of the beat of tom-toms. I tried some Portuguese fire-water - revolting and reminiscent of a mixture of ether and Ken's fermented concoction for his butterfly traps! There were signs of lion, elephant and buffalo, all these being inhabitants of the Amatongas forest, but Ken said he smelt no lion, and so we could sleep in peace! The incessant beat of the tom-toms continued throughout the night.

The next day, 17th August 1957, we started early with coffee, then breakfast, and hard work before the men went out with nets in a radius of about a mile from camp. Ruth and I wandered about with nets and during the course of our meanderings we found what we took to be a tom-tom, or one in the process of being made, but which we later discovered to be a beehive, when we saw others high up in the trees. A tree about 45 cm in diameter, had had just over one metre length of bark removed by having a slit made from top to bottom, cutting it off at both ends and peeling it off the trunk, which certainly meant death to the tree. This cylinder of bark was shaved off at the edges which then overlapped and were pinned together with small wooden pegs; the join was reinforced with three large wooden pegs; inside the ends, supple branches of about finger's thickness were bent into circles to hold the bark in a circular position.

Back in camp there was great excitement as David had netted one *Euthecta cooksoni* Bennett. In the afternoon Ken took us to see a great red mahogany tree - most magnificent; we also saw a huge palm tree about 30 metres high.

On our return Ken branched off, and we were enjoying a glorious bathe when we thought we saw an *E. cooksoni* which meant rapid dressing, fetching nets, and Ken with his extension rod, but sadly it was a false alarm and not *E. cooksoni*, but a somewhat similar butterfly.

Tea, sundowners and dinner were all taken to the accompaniment of the tom-toms; singing, clapping, stamping continued throughout a nightmarish night when no-one could sleep.

On the 18th early coffee was served to the terrible thump of the tom-toms, and this continued throughout the day till nightfall by which time we were all frantic with frustration and exhaustion. Apparently it was some tribal celebration! David who was a master with his camera, went over and was received with great friendliness and courtesy as indeed we have been everywhere; he took some fine photographs of the people and their musical (!) instruments. At breakfast the following morning a gift of unpolished rice was brought to us. Ruth gave a gift in exchange, and later we received gifts of cabbage, chicken, bananas and

pawpaws.

At 09h10 that morning, Ken's beautiful butterfly emerged from its pupa under our eyes - a miracle to see. This pupa was brought from Umkomaas on the 18th of July a caterpillar feeding on naartjie leaves - exactly a four week transformation. All went out with nets, Ruth and I going with Ken to his traps and their old camp site. We took a wrong turn, and pretty well slid the better part of half a kilometre down to the river, and so home via the river - very beautiful with vast trees about it, ferns and probably mambas, which happily we did not see. Nothing of particular note was taken by anyone. Lunch, laze and bathe, all to the devilish accompaniment of the tom-toms throughout the day. Mercifully these fell silent by 18h30 and after wining and dining, we all retired to glorious sleep in the blessed quiet of the night.

19th: All went out their different ways, Ken and David to the one-tree kopje, and Harold and the Vissians to the road area. Ruth stayed in camp and wrote letters and I went out, and happily netted several wanted *Teriomima puellaris* Trimen, and a couple of unwanted specimens that were discarded as being "the commonest in Southern Africa"! Ken and David returned in mid-afternoon, half maddened by stings from, probably, the buffalo bean, bringing out a vicious rash.

20th: We all enjoyed a hilarious breakfast, celebrating the Vissians' wedding anniversary. Ken in great voice provided a strident song before taking off with David for the popular kopje on the Gorongoza road. The others worked within a mile of the camp, while Ruth and I drove to Gondola for supplies. We collected post at the Correios, and shopped in one long street lined with Bauhinias - most impressive sight. The kopje hunters arrived late, half-dead with exhaustion after 5 hours climbing in sweltering heat, but with some satisfaction with their catches. A perfect wedding anniversary dinner was celebrated with great cheer, sparkling wit and fun -good night! Gorongoza tomorrow.

21st: Ken mercilessly roused us at 05h00, and after packing bedding, night things, food and having coffee and porridge, we were on our way by 06h40.

We travelled via Vila Machado on to a sand road until we reached the Pungwe River where part of the south bank was piled high with bales of cotton. We drove over a reed causeway on to the pontoon, a very primitive structure, and punted by natives with four slender bamboo poles. The river was beautiful, looking both upstream and downstream. After the crossing we had to climb an extremely steep bank to reach the road to the Reserve. We arrived at the Park gates soon after 08h00, and were admitted with our authorisation papers. For the 31 kilometres to the Chitengo camp, we travelled mostly through tambuti grass, standing up to 4 metres in height. We saw one elephant, and about 100 buffalo and some waterbuck. At the camp we paid our fees, were allocated a guide, and shown to a rondavel. The camp was composed of brick buildings and rondavels, painted all colours of the rainbow. We were very struck by the design of ours. It was about 8 metres in diameter with a central room from which 3 rooms led off from the one half, the other half being open veranda. The main wall was pink, the cylinder dark red, the rooms and other walls were white and pale green, cream and dark Oxford blue, pale blue, eau-de-nil and red.

We left at 09h00 and excitement began on passing a camp abandoned because of the danger of lions, this being the most heavily infested area, and where these animals were even seen to make use of the huts. As we turned off from this camp, we came to the beginning of a vast plain where green grass was showing. We passed zebra, innumerable waterbuck, all unconcerned at our presence. We drove on and saw hundreds of zebra, waterbuck and wildebeests, numberless cranes, herons, ibis and more. From the plain into lala palm country

with close grass, and again we saw waterbuck, and hundreds of impala, and endless evidence of elephant.

Moving on, we passed into rough tembuti grass country, and here Ruth called out "STOP" - "aren't those two lions under the palm?" Two males lay stretched in the shade, the only sign of life being a blinking eye. Ken drove a little closer and I manoeuvred myself out of the window and took a snap. As I returned to my seat, I looked to my left, and there, not 5 metres away was an enormous lion! We looked our full, and passed on back into palm and grasslands, and then on to the plain. In the distance was a vast mirage. On being neared, it proved to be a river - the Urema River. Here again wildlife abounded. We saw about 300 hippo, in and out of the water, and a short way off, hundreds of zebra and waterbuck.

We travelled further into grassy parklands of palms and fever -moojoolenji-trees. Some of the palms were up to 20 - 25 metres high. Two parties of enormous elephants were seen as we drove back to camp for lunch and rest. In the afternoon we drove four further routes, and were rewarded with single and family groups of elephant, all in magnificent condition. After a near brush with an angry squealing elephant, separated from his companions by the road and us, we left the reserve at 17h00, gate-closing time, after this grand finale to a more than memorable day. We drove on to the Pungwe River district into the setting sun without having to blink our eyes. This great ball of fire, seen through the haze of a forest fire, above the horizon, made a brilliant path of fire across the calm, broad waters of the river. As we crossed onto the pontoon, we saw several dugout canoes being poled across and carrying passengers.

We arrived back at our Amatongas camp soon after 19h00 after a never-to-be forgotten day. May I say that sundowners, Mateus Rose and dinner then bed, made a perfect ending to the 21st day of August 1957.

Here is what we saw on our Gorongoza day - 5 lion, 31 elephant - male, female and children, baboons, mongooses, impala, waterbuck, buffalo, hippos, wildebeests, steenbuck, zebra, bushbuck ('nkonka), warthogs and monkeys - all too numerous to count - moorhens, gallinules, jacanas, divers, ibis, tufted crane, lilac-breasted rollers, guineafowl, bush pheasant, lala palms and fever trees in profusion among others.

To be continued.



**NATAL BUTTERFLY ATLAS
PROGRESS REPORT AND CALL FOR ASSISTANCE**

By Dr Jason Londt

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Following on my announcement that the Natal Museum, Natal Parks Board (NPB) and Durban Natural Science Museum is to produce a Butterfly Atlas for Natal I can report that the NPB registered the Atlas as a project in 1991 and that the first allocation of funds (for 1991/92) has made it possible to proceed with the work. Much of the material housed at the Transvaal Museum has now been processed and other Museums have been asked to collaborate. Now that the project is well and truly underway I can make the first call for participation by all private owners of butterfly collections. For the first phase of this project (the gathering of data from existing specimens housed in museums and private collections) the only assistance that is requested from members of the Lepidopterists' Society is that they provide the project supervisors with details of label data for all specimens collected in Natal. What is required is the following information, *taken directly from specimen labels*, for each *positively identified* species (preferably use names as published in Pennington's Butterflies):

Collecting data	Example
Date (day-month-year)	20-iv-1988
Locality	Pongola Bush Nat. Res.
Coordinates (Lat. & Long.)	27 19'S:30 30'E
Grid Reference	2730AD
Altitude	1580m
Habitat	Montane Podocarpus Forest
Collector	Bloggs JB
Other	Feeding on Lantana

It is important to note that only information actually recorded on the labels should be provided. If some categories of information (as listed above) are not available (as is usually the case) merely exclude this information. For a series of specimens carrying identical labels, only one record is required (no indication of series length is required).

Naturally all participation in this project will be properly acknowledged. Should members like to ask questions before getting to work on their collections they should phone me at the Natal Museum, Pietermaritzburg (0331) 451404 or write to Private Bag 9070, 3200 Pietermaritzburg. Standard forms are in use and a copy of this could be supplied to anyone interested in assisting with information, although the use of this form is not obligatory. Anyone sending details of their Natal holdings should please see that data supplied is as accurately transcribed from labels as possible, and that their full name, address and telephone number is supplied so that proper communication can be established with them.

The success of this project is very heavily dependent on full participation by all members of the Society.

VENDA REVISITED

By Ernie Grei

P.O. Box 43809, Theresa Park 0155

Whereas my previous trip to Venda in April and May 1991, and on which I reported in *Metamorphosis*, Vol. 2, No. 2, was an unqualified success, the same cannot be said for subsequent visits to date. This account is therefore intended to pin-point localities for certain species from areas from which they may hitherto not have been recorded.

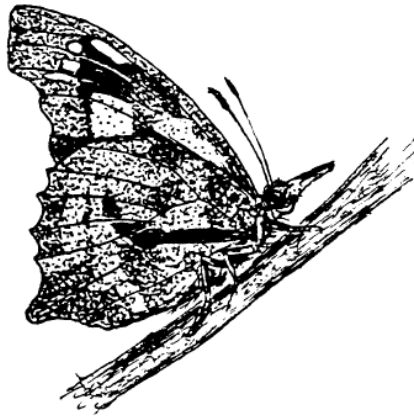
My first trip was once again to the aforementioned Mphaphuli Cycad Reserve in November 1991. Although I had not expected my success to approximate that achieved during my previous visit, I was unprepared for the combined effect of seasonal influences and low rainfall on the butterfly population. Gone were the hosts of Pieridae, Papilionidae and Charaxinae which had high-lighted my first visit, with the exception of a few *Graphium antheus* (Cramer) and a single dilapidated *Charaxes varanes* (Cramer) which deigned to enter one of my traps. To sum up the dreary tale, the only catches worthy of mention were a pair of *Axiocerses tjoane* (Wallengren), one *Leptomyrina hirundo* (Wallengren) (my first for Venda), and a single *Pentila tropicalis* (Boisduval) flying in concert with a diurnal moth (Lymantriidae), which it probably mimics. The next trip, towards the end of April 1992, was to the Nwanedi Reserve, the precise spot being some 25 km south of the border with Zimbabwe. As this area is characterized by Mopane savanna with little indigenous forest, my singularly unimpressive catch came as no surprise. Had it not been for the presence of a flowering *Bauhinia (galpini?)* which attracted several Pieridae including *Colotis regina* (Trimen), *C. eris* (Klug), *C. danae annae* (Wallengren), and several magnificent *Papilio nireus lyaeus* Doubleday and *P. demodocus* Esper, the results of my venture would have been dismal indeed.

On April 28, 1992, I returned to Mphaphuli, where the ravages of the preceding drought were even more manifest, and Dr C.B. Cottrell's contention (pers. comm.) that the state of the ecology is reflected in the butterfly population was fully vindicated. Streams which had been in spate during my first 1991 visit, had either dried up or been reduced to a trickle. The shrub *Hypoestes aristata* to which I referred in my previous report was again in flower, but the blooms were but pale ghosts of their luxuriant predecessors. Despite frequent visits to the glade where the shrub flourishes, the expected butterfly concentrations did not materialize. The few individuals which did pay desultory tribute to the blossoms' charms, consisted in the main of *Nepheronia thalassina* (Boisduval), *P. nireus lyaeus*, *Amauris ochlea* (Boisduval) and *Pseudacraea lucretia tarquinia* (Trimen). During my entire stay of nine days, I saw only four *Papilio dardanus cenea* Stoll, whilst *P. ophidicephalus entabeni* Van Son was nowhere to be seen; both species abounded on my initial visit. Abandoning the glade as a worthwhile collecting ground, I took to patrolling the banks of a nearby stream, where I took, *inter alia*, one *L. hirundo*, one *Abantis paradisea* (Butler), and one *Deudorix dinochares* Grose-Smith; both latter species were also, my first for Venda. Other noteworthy catches were several *Libythea labdacca laius* Trimen taken on moist sand, and a splendid *Charaxes ethalion* f. *swynnertoni* Poulton which I trapped. *Charaxes candiopo* (Godart) was common, and mainly fresh specimens were taken; *C. achaemenes* Felder also frequented the traps and moist sand. A pleasant surprise was a perfect *Junonia orithya madagascariensis* Guenée, since my

only previous specimen from Venda was a barely recognizable one from the same area during my previous visit. Two more *P. tropicalis* were also a welcome supplement to the collection.

Incidentally, the *Acraea natalica* Boisduval aberration, of which I made brief mention in my previous report, was regarded as "a most interesting capture" by Dr C.B. Cottrell, who subsequently borrowed it with a view to publishing his findings relating to the causes for the aberration. I quote verbatim an excerpt from Dr Cottrell's letter: "I have undertaken an analysis of the defects of this specimen and this is proving most helpful in developing a conceptual model of the pattern-formation mechanisms that operate during the ontogenetic development of Lepidoptera. This topic is important in embryological theory".

In conclusion, I would welcome any interested party who might care to view the collection at my home. I have a present only five drawers full of Vandan butterflies here, but have arranged with the Nature Conservation Advisor in Sibasa to bring the remaining eleven drawers to my home at the beginning of the winter school recess. Any assistance in identifying the black *Charaxes* males and lycaenids, such as those belonging to the genus *Leptotes*, would be greatly appreciated. The collection is by no means complete but contains most of the common species as well as several rarities. My home telephone number is (012) 5423316.



Libythea labdaca laius male showing underside.

GETTING TO KNOW MOTHS - LAPPETS, EGGAR MOTHS

By Stephen Henning

5 Alexandra Street, Florida 1709

This large group of moths belongs to the family Lasiocampidae (Superfamily: Bombycoidea). The Lasiocampids vary in size from very small to very large. They are very hairy, stout-bodied moths. The forewings are usually narrow and elongate, while the hindwings are smaller and rounded. The discal cell in both wings is narrow and short, not or hardly reaching to the centre of the wing. There is no frenulum. The forewings are usually grey, brown or reddish-brown with wavy lines, bands and spots, while the hindwings are very often uniformly pale yellow. Many species, show strong sexual dimorphism: the males being smaller with forewing much longer and narrower, and the hindwings smaller and more triangular than the females which are larger with broad wings. In a very few species the female may be more or less wingless. The antennae are strongly pectinate in the males and some females, but in many other females they are merely toothed. The haustellum (proboscis) is usually non-functional, and the labial palpi are porrect, often prominent, giving the face a snouted appearance.

The eggs are laid in clusters on the foodplant, often in a characteristic ring or spiral around a twig. The females of some species cover their eggs with hair from their abdomens. The larvae are always more or less covered with hair. Some species have tufts of longish hairs all over the body, but usually they are covered with short, stiff bristles which can cause severe skin irritation if handled. The larvae of some species have conspicuous or aposematic or warning coloration to deter potential predators. Others, however, are cryptically coloured and the tufts of long lateral hairs are pressed against the substrate to eliminate shadows along the sides. Some of the larvae are gregarious and in the northern temperate zones these colonial ones which live together in a sort of spidery web are called Tent caterpillars. The larvae are provided with well-developed spinning glands, and before pupation they surround themselves with a silken cocoon which may be thin and soft or very dense and hard. Some species spin these strong tough cocoons on twigs of their foodplants, while others form more loose silken structures under dead leaves or stones. In some species the stinging hairs are woven into the cocoon to give extra protection to the pupa inside.

The Lasiocampids are strictly nocturnal and are often attracted to light. The males fly very swiftly. However, due to their very large stout abdomens, the females fly in a very unwieldy way or very little. When at rest they hold their wings folded over the body in a roof-like fashion. Foodplants of the family include various trees and shrubs, indigenous as well as exotic.

There are some 132 species and 50 genera in Southern Africa belonging to five subfamilies.

The Lasiocampinae is the largest subfamily consisting of 30 genera and 94 species. The species vary in size from small to large. They are distinguished from the other subfamilies by the basal cell of the hindwing being small, often much smaller than the discal cell. Members of the genus *Philotherma* Moschler are attractive large or middle-sized moths and have broad wings (see figs 1 to 3). The larvae of *Pachypasa* and related species possess two pouch-like folds between their thoracic segments which contain reddish to purplish urticating hairs that can cause severe rashes. If disturbed, the larvae open these pouches and brush the attacker

with the exposed hairs. These larvae are usually brightly coloured as a warning to predators.

The Chondrosteginae is a small family of only two genera and three species in Southern Africa. The adults are small, with short and broad wings which are rounded off at the outer margin, with long haired bodies. The upperside of the wings are uni-coloured without markings or indistinctly marked. Abdomen short, not or only projecting a little beyond the anal angle of the hindwing. The larvae are provided with small hairy tubercles. The females of the genus *Chondrostega* Lederer are wingless, although females of the other Southern African genus *Chondrostegoides* Aurivillius has wings.

The Malacosomatinae is another small family of 3 genera and 6 species. They differ from the other subfamilies in wing venation. The species are relatively small and some are fairly colourful. The larvae are little known. They are elongate, cylindrical, and uniformly haired, or they only exhibit on each side of the first segment a long porrect hair-pencil. The larvae of some species like *Bombycomorpha pallida* Distant live gregariously in webs. Cocoons are also aggregated. The genus *Chrysopsyche* Butler has solitary larvae with three long hair-pencils, a porrect one on each side of the first abdominal segment, and on the last segment one that is directed backwards. The yellowish-brown pupae, rest in a dense, generally golden-yellow web which is freely fastened on the upper side of leaves.

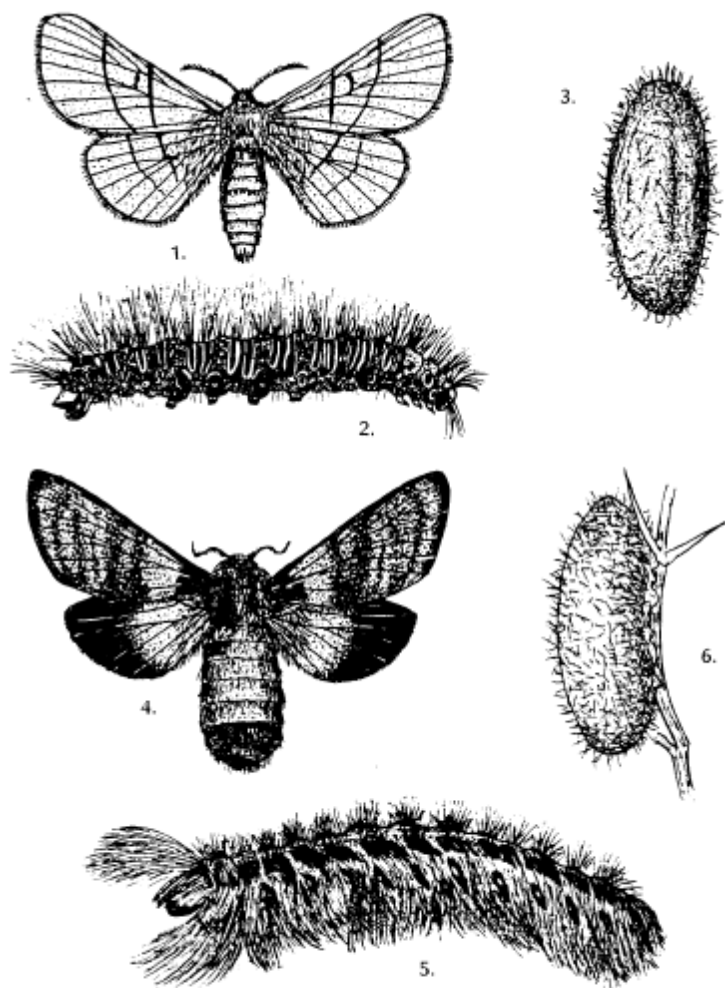
The Gastropachinae is a small family of 2 genera and two species. Both Southern African species are small and differ from the other subfamilies by their wing venation. *Estigina africana* Holland is yellowish to pale reddish-brown with characteristic hyaline spots on the hindwing. The other species, *Stenaphatina marshalli* is pinkish-brown to violet-brown.

The Gonometinae is a fairly large group of 13 genera and 29 species. The species vary in size from small to very large. They are distinguished by the size and formation of the basal cell of the hindwing. It is just as broad as or broader than the distal cell and as long as, or longer than the anterior margin of the distal cell. The genus *Gonometa* is very dimorphic since males are often very small compared to the females and frequently quite different in appearance such as is found in *G. postica* Walker (see fig 4). The larvae of *G. postica* also has irritant setae and warning coloration being black with yellow, orange or white tufts of lateral hair (fig. 5).. The cocoon is regularly elliptical, parchment-like, and everywhere densely clothed with the larval setae and hairs (fig. 6).

There are very few publications on Southern African Lasiocampidae. Pinhey (1975) discussed the more common and interesting species. Vári and Kroon (1986) provide detailed lists of all the known species in Southern Africa.

References

- OBERPRIELER, R.G. 1985. Lepidoptera, Lasiocampidae. In *Insects of Southern Africa*. Edited by C.H. Scholtz & H. Holm. Butterworths, Durban. p. 381-382.
- PINHEY, E.C.G. 1975. *Moths of Southern Africa*. Tafelberg, Cape Town.
- VÁRI, L. & KROON, D.M. 1986. *South African Lepidoptera. A Series of Cross-Referenced indices*. Lepidopterists' Society of Southern Africa & Transvaal Museum.



Lasiocampidae. *Philotherma pallida* (Lasiocampinae). 1. Female. 2. Larva. 3. Cocoon. *Gonometra postica* (Gonometinae). 4. Female. 5. Larva. 6. Cocoon.

PHOTOGRAPHER'S CORNER No.7

By Steve Woodhall

I hope all the photographers in the Society are going through their slides and choosing the best for the photographic competitions at the Conference! Last year saw a welcome increase in the number of entrants. Quite a few were new to the competition, and again this is an encouraging sign. Beginners must not be frightened of exhibiting their work - it is only through exposure to comment and comparison that they can grow as photographers. With today's wider availability of sophisticated macro equipment, it is becoming easier to take life-history shots of professional quality. The Society wants to encourage the recording of our Lepidoptera on film through the medium of the competitions held at the Conference, and we hope to see even more people entering this year!

In 1991 the judges found the best quality slides to be very difficult to rank, as some extremely good work was submitted. The trophy for 'Slide of the Year' was won by a non-PWV member for the first time. Congratulations to Fanie Hendricks of Standerton for his winning shot of *Vanessa cardui* (L). Rob Pare took second prize with an excellent study of *Abantis paradisea* (Butler), and Andrew Upshon was placed third with a well-timed shot of an emerging *Charaxes phaeus* Hewitson.

The scientific category was the subject of some heated argument amongst the judges. The relative importance of subject rarity, technical difficulty and composition was debated strongly. Reinier Terblanche took the honours with an obviously field-taken shot of *Tuxentius melaena griqua* (Trimen). Those acquainted with the nervous nature of this species will appreciate the significance of the shot. Furthermore, Reinier deserves special praise as a photographer for not succumbing to the temptation to collect first, photograph later. My only shots of *griqua* were taken at home in the security of the studio! Andrew Upshon, flying the flag bravely for the junior members, took second place with the same picture of *C. phaeus* that won third prize in the 'Slide of the Year' contest. Rob Paré was third with a beautiful slide of the rare *Abantis zambesiaca* (Westwood).

Special mention must be made of Dave Upshon's stunning close-ups. Taken with a bellows, reversed lenses and a TTL macro flash, they had the kind of depth of field that is normally seen only in electron micrographs, but were in colour. Although not among the prize winners, this was more due to the difficulty of judging them along the same criteria as the other entries than any lack of quality.

The judges are looking forward to an even more knife-edged and argument-ridden choice this year! So come on all of you, pick out your best work and enter it. Remember, you can crop your shots by masking them with metallised 'Scotch' tape to optimise their composition, so the odd errant twig or grass stem can be dealt with.

Send your entries by registered post to:

LepSoc Photographic competition

c/o Steve Woodhall

P O Box 67317

Bryanston 2021

Or you can deliver them to my office at British Industrial Plastics, 34 Plantation Rd, Eastleigh, Edevale. If I am not in, my secretary Lucy will take care of them.

Looking forward to seeing you at Onderstepoort!

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