

Newsletter of the Lepidoptera Study Group of Southern Africa

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Editorial

The law and conservation of Lepidoptera - a personal view

Legislation - the wrong 'target'

Although overcollecting (properly defined) should rightly be frowned upon there is not a single documented case of a butterfly or moth having been extirpated by collectors. On the other hand there are a number of species of Lepidoptera which are extinct as a result of modification or destruction of their natural habitat - for example the xerces blue in California. Legislation dealing with the protection of Lepidoptera in southern Africa has been promulgated by the Cape and Transvaal Provincial Administrations in recent years. This legislation is aimed not at the conservation of habitats but at a restriction of the activities of collectors. It is therefore impractical, as it is aimed at the wrong 'target'.

The collector's rights

Central to the issue of Lepidoptera conservation is the question of property rights. Who owns the butterflies and moths? In the case of privately owned land it must surely be the landowner. The current legislation prohibits any individual collecting a 'protected' species on private property even if the owner does not object to the collector doing so. I submit that this is a clear violation of the property rights of the landowner and a deliberate denial of a legitimate contract between the landowner and collector. In the case of state land, since it is held in trust on behalf of the public, the Lepidoptera are literally owned by the public (you, me and everybody else). In principle every citizen has a right to collect Lepidoptera here (within reason), since it is his taxes which pay for the management of this land. (If it can be proved that a particular species occurring on state-owned land is, in fact, endangered there can be no objection to collecting permits being required). Thus, not only is the enacted legislation impractical, it is also unethical since it violates the rights of collectors as ordinary citizens.

A proposed approach

Since habitat preservation is the *sine qua non* of Lepidoptera conservation it should be the aim of our group to persuade the 'managers' of state land and the owners of private ground to conserve habitats of those species we deem endangered. Alternatively, the monies necessary to purchase the 'habitat' could be raised by means of voluntary donations from private individuals or bodies. I say 'private' because it is, in my view, immoral to use taxpayers money for this purpose.

Furthermore, it is up to us to draw up a code of ethics regarding particularly the collecting of rare and endangered species. These guidelines will, of course, apply only to members of the L.S.G. I have no illusions about the possible difficulties inherent in this approach but I am convinced that it is the only practical and moral way in which to tackle the task of Lepidoptera conservation. Practical because it focusses on the correct target - the habitat. Moral because it does not violate anyones rights and does not resort to coercion.

Election of a standing committee

In the editorial in *Metamorphosis* 1 (1) proposed additions to the regulations regarding a committee were set out. Point 2.1.2 states that nominations may be made by ordinary members. These must be accompanied by the written consent of the nominee and must reach me on or before the 20th February 1984. Late nominations cannot be accepted. May I also draw your attention to point 2.1.6: "Travel and board/lodging expenses incurred by committee members in pursuance of their duties will not be recoverable from the groups' funds." Committee meetings will be held at a place decided on by the committee members themselves.

In early March 1984 a list of the nominees and a ballot paper will be sent to every ordinary member. The six nominees gaining the highest number of votes will form the committee. The person gaining the most votes will become the chairman; the second most votes, secretary and the third most, treasurer.

An appeal to collectors

Ernest Pringle, Huntly Glen, Bedford 5780

We in the eastern Cape have become increasingly perturbed at the way collectors have been exploiting some of the known colonies of the rare *Epamera aphnaeoides*. Some collectors have been coming from up-country in order to collect larvae of this insect. They have then taken larvae of all sizes, together with a limited quantity of foodplant, back up-country with them. The larvae invariably die for two reasons: firstly, our experience of all *Iolaus* larvae has shown that they are very prone to virus diseases - and the *Loranthus* will invariably produce such a virus, if it is not changed every week. Secondly, *Iolaus* (and *Epamera*) larvae are not good travellers, since the conditions generated in a motor car will soon result in virus infections.

I wish to point out that the numbers of known colonies of *aphnaeoides* are small, and that the colonies themselves are not densely populated. The breeding period of *aphnaeoides* too is of short duration, taking place only once a year, while its host *Loranthus* is in flower. Extensive and senseless pruning of larvae can therefore cause irreparable harm to a colony - as has already been the case at Stutterheim, where a well-known colony exists.

I therefore appeal to collectors who are unable to obtain ready supplies of this insect's foodplant not to take larvae of this species away with them. Or if they do find larvae, I ask these collectors rather to let us breed them out, so that these larvae are not senselessly killed. Since we are not commercial collectors, and since we have long ago collected enough *aphnaeoides* for ourselves, collectors need have no fears about receiving their specimens.

There has been much talk about protecting endangered species: so let us do our bit too!

Courtship and mating of butterflies

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Southern African collectors seldom, if ever, bother to observe the behaviour of the butterflies that they catch. The few of those who have done so, have

not always been able to interpret what they have seen. To help encourage the observation of butterflies and the understanding of their behaviour I have written a series of articles which I hope will serve as an introduction to this interesting field of study.

Although various aspects of sexual behaviour of a number of butterflies have been studied overseas, only a surprisingly small number of species have had their entire courtship patterns observed and described. The females of many species tend to remain in the general vicinity of the larval foodplant, and males presumably seek out these areas for courtship. On the other hand, males of the Lycaenidae in particular, but other families too, often gather on nearby rises or hill-tops where they 'stake out' a little territory which they protect, and the females come up to these hill-tops to find a mate. Visual recognition of the female by the male is of great importance in bringing the sexes together, but no one knows much about just how important the visual, tactile, chemical and acoustic stimuli are, relative to each other, in bringing the sexes of one species together. Entire courtships ending in mating are rarely seen at close quarters in nature, and there has been little experimentation in the field or in large cages.

There are two types of mate locating behaviour shown by male butterflies. The first is perching, in which the males sit at characteristic sites and dart out at passing objects in search of females. The second is patrolling in which the males fly almost constantly in search of females.

There is a tremendous diversity of courtship behaviour. In patrolling species, the two sexes may meet during flight or the flying male may meet a female at rest. In perching species, the female flies near the male, who then pursues her. Subsequent events can be divided into aerial events and ground events although in some species identical activities may occur in the air and on the ground or plant. In the aerial phase, which is omitted altogether in some species, the two sexes often merely flutter about each other, or fly in stereotyped patterns, or one or both sexes may perform specialized acts for transferring pheromones. The aerial flight usually results in the female alighting, whereupon the receptive female usually becomes inactive until copulation occurs. Unreceptive females of some species may flap their wings or fly a special pattern (rejection dances), or adopt a special rejection posture. After the female alights, the male may continue to fly about the female, or may land, whereupon both the sexes may still flutter their wings, and the male may perform complicated manoeuvres with his wings, antennae, or legs. Copulation may then occur, or various courtship events may then be repeated.

Pheromones of one or both sexes are important in the courtship of most species although only in the Danaidae have pheromones been chemically identified. In most species, the pheromone is only used when the butterfly is one or two metres from its partner, but not further away. Female pheromone evokes the male pursuing response and causes continued courtship, while the male pheromone may cause the female to land and accept the male.

To initiate copulation the males of almost all butterflies grasp the female from a position slightly behind her while facing the same direction as the female and bending the abdomen right or left 180° to grasp her abdomen. Then the male moves sideways until the partners face in opposite directions.

The pair remain at the mating site, where they may separately or both bask in the sun by opening their wings, or may fly if disturbed. If disturbed, the sex which carries the other is usually fixed within the species and it will fly, carrying the other behind. In species in which only one sex carries the other, the active sex usually positions itself above the other, with its wings outside of those of the other, and is more likely to walk during copulation. The inactive sex remains in a state of immobility known as cateleptis. At the end of copulation in *Precis* the female kicks and turns until the male is broken off; then the male flies away. In other species the male initiates uncoupling. Apparently only in the Danaidae is there a postnuptial flight (the male always carries the female a short distance).

Copulation lasts about a half to three hours depending on the species, and occasionally overnight. Copulation is longer at lower temperatures and if the male has recently mated. Males can mate five times or more, whereas the number of matings per female varies greatly between species from only once to an average of three.

In some species a large structure known as the sphragis is deposited by the male in the copulatory opening of the female preventing further mating. A sphragis is known in Acraeidae and Danaidae (*Amauris*). In all the species with a large sphragis, many similarities exist, including the absence of courtship, powerful odour (pheromones) of adults of both sexes, and strong attraction of males to virgins. The male captures the female without any courtship in the Acraeidae and it appears that the females produce an attracting pheromone. It appears that the large sphragis serves to inhibit the emission of the female pheromone. The male of these species can easily detect whether the female is virgin or mated by physically detecting the sphragis (or because of pheromones) and he can therefore mate immediately without wasting time courting. In other butterflies, determining the receptivity of the female may not be so easy, and one function of courtship is to increase the female's receptivity so that mating can occur.

Females can mate the first day of adult life in almost all species, although they may mate more readily after a day or two. In contrast, males usually mate only after several days. Males often develop distinctive odours (male pheromones) only after a few days. Females of perching species often must fly to the mating site, so may be older than patrolling species at first mating. The difference between the sexes in minimum age of mating is due to three reasons. Males almost always take the active role in mate-locating, so must be capable of stronger flight, so must wait a few days before actively perching or patrolling. Second, it is advantageous to fertilize the females as soon as possible in the usual preoviposition period so that the time for oviposition is not reduced. Finally, males almost always emerge a few days before females.

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Some personal observations

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Lepidochrysops ariadne. I believe that there is another breeding ground of the species about 7 km to the east of the farm 'The Start'. Time, unfortunately, has not permitted me to assess the strength of this colony. This, however, should in no way detract from the project to conserve the species being undertaken by John Handman (*Metamorphosis* 1 (1): 3).

Papilio ophidicephalus (Ober.). Specimens taken in a forest near Vryheid, Natal have small distal spots. The species is fairly prolific within the confines of the forest and has a relatively slow flight when compared with the subspecies *zuluensis* which lives (at nearest point) about 70 km away. Specimens given to the Transvaal Museum prompted the following comment by Dr L. Vári: "I have now compared the specimens with the forms from around Natal and have come to the conclusion that they are closest to *ayresi* (van Son), which is found at Mariepskop, Barberton and Swaziland with small discal spots. However, there is some little variation in the size of the spots, but this occurs in all forms as can be expected of course. It (*zuluensis*) is clearly different, having larger discal spots; the form is apparently restricted to the Eshowe area. It appears that specimens from higher altitudes tend to have smaller spots, I have three specimens from Champagne Castle that are very similar to these ones (from Vryheid) and may also belong to *ayresi*."

Paralethe dendrophilus (Trimen). This species has also been found in the forest near Vryheid. It has been noted that the white markings, which separate clearly the races *indosa* (Natal) and *junodi* (eastern Transvaal), are somewhere in between the sizes of the white markings of the other two. Perhaps this indicates a transitional form and someone may have more information in this regard.

Pennington's Butterflies

Rolf Oberprieler

Pennington's butterflies is now five years old. At the date of its appearance the foodplant and distribution records were already incomplete, and one of the most evident shortcomings of this otherwise outstanding book is the lack of proper distribution maps. Just how much information on only these two aspects has been gathered by lepidopterists in the meantime?

A revised edition of *Pennington's butterflies* is inevitable. It seems that the newly founded Lepidoptera Study Group is a very suitable organization to start collecting and processing foodplant and distribution data on our butterflies right now. A comprehensive species list could be drawn up and sent to the members to record all such data which they might make available. Since these data represent scientific information, members would have to be urged not to include dubious records such as doubtful species identifications and uncertain feeding observations. Also, the exact nature of the locality data and the recording procedure would have to be specified.

But the involvement of all butterfly collectors in such a project will ensure a much higher degree of comprehensiveness in *Pennington's butterflies*.

Waarnemings in die veld

Rudi Mijburgh

Min lepidopteriste het nog nie gesien hoe sierlik die visarend op sy prooi toesak nie, asook die valk wat sy vlerke toevou en aarde toe duik vir sy prooi nie, maar het u al mooi dopgehou hoe sierlik die vaartbelynde swaeltjies digby die grond verby swiep. As kind het ek gedink dat die swaeltjies hierdie spel baie geniet maar later van jare sou en uitvind dat dit geen spel is nie maar dat hulle besig is om insekte te vang. Niemand sou kon beraam hoeveel insekte hulle vang nie, maar dit moet geweldig baie wees.

Op 'n pragtige lentemôre het ek en Izak Coetzer teen 'n hang *Lepidochrysops irvingi* gaan vang. Dit was bewolk maar toe dit vir net 'n halfuur ooptrek het ons altesaam twaalf gevang. Ons moes toe weer wag vir die wolke om oop te trek en toe dit wel gebeur, merk ons die swaeltjies. Hulle swiep digby ons verby en neem al die *irvingi* en ons het nie meer een gevang nie. Die vraag is nou: hoeveel *irvingi* het die swaeltjies daardie dag gevang? Nou was dit vir my interessant om dieselfde storie te verneem van Victor Pringle. Hy sê in verband met *Lepidochrysops pringlei*: "This butterfly is scarce and it is so difficult to reach the top of that high mountain. It is a heart-breaking experience to walk all that way and when you get there to see the swallows and swifts giving the butterflies hell". 'n Mens bejeen die swaeltjies nou met gemengde gevoelens en dit geld ook vir die akkedisse. Die Indiër-hengelaars in Natal sê altyd: "No rocks, no fish!!" As jy in Namakwaland gaan *Poecilmitis* en *Aloeides* vang dan is my paralelle stelling net so waar: Geen akkedisse, - dan geen skoenlappers nie!! U kan dit gerus maar toets as u weer gaan vang. Een middag swaai ek my skoenlapper-net drasties aarde toe om *Poecilmitis dicksoni* te vang en dieselfde tyd skiet 'n akkedis blitssnel op die skoenlapper af en ek vang toe beide sloenlapper en akkedis.

Daar kan maklik gesê word dat versamelaars 'n kolonie skoenlappers kan uitroei maar ek meen tog wat meeste skoenlappers betref is ons baie swak konkurent van die voëls en die akkedisse. Die stelling mag waar wees as die mens die voedselplant (en in sommige gevalle die miere) vernietig of as 'n versamelaar (of sal ek sê 'n sadis) vir veertien dae aaneen 'n klein lokaliteit fynkam.

News Letter – April 1983 (from the D.A. Swanepoel 1978 memoirs) - *Aphnaeus hutchinsonii*

D.A. Swanepoel

My short sojourn of two months in Zululand during 1962 uncovered scintillating angles on the habits of this butterfly, of which a fair amount had already been essayed in my book *Butterflies of South Africa*.

On a certain farm – now a private game reserve – a point of attraction developed in a drying-up river bed at its last water hole whereto a herd of cattle came daily to quench its thirst and most surprising also females of

hutchinsonii. It was an enchanting spectacle to see these gorgeous and elusive creatures flit about there trying to locate a suitable drinking spot on the mud, often on the rim of a hole effected by the hooves of the cattle.

Not far from that remarkable female rendezvous the muddy surroundings of a trough attracted males that nonchalantly flitted about the hooves of drinking and milling cattle. They appeared to be as excited to get a drink from the mud as were the cattle to get it from the trough.

Some invisible matter – perspiration or oil – on the hooves of the animals mixing with water and earth has an irresistible attraction for butterflies; a circumstance noted years ago on the farm Tubex in the Wolkberg where a cattle tract crossed a stream to which swarms of butterflies came daily on warm sunny days. Alas, the disappearance of the water hole and the trough – and cattle crossing at Tubex – no longer make it possible for lovers of butterflies to witness this rare and fascinating spectacle.

A collector once stationed himself on a koppie, not far from the trough and defiantly declared that males of *hutchinsonii* can henceforth come to him instead of he having to go after them through the bush. The number of males that came to play on hot sunny days was simple astounding.

The supreme excitement, perhaps, a lover of butterflies could experience on that farm, whose outstanding feature is its low thorn trees, is the encounters with freshly hatched females of *hutchinsonii* drying their wings while settling on the tips of leaves or twigs of thorn trees. To behold that glory is a sight never to be forgotten.

Not all males of *hutchinsonii* go to play on a koppie. Some will often be met with on the flats or at the foot of hills settling on the tips of leaves; presumably waiting for a playmate to fly past or a female to show up; not an infrequent occurrence.

Collectors will enduringly lament the disappearance of that enthralling breeding spot in Molimo's Location where to the ruthless arm of civilization had advanced. Breeding places like this one are extremely rare and far apart. It is not everyone who meets with one. Fortune does not cantillate its willingness to reveal such places, neither does the author who feels these extraordinary creatures should have some propriety rights of their habitats. Habitats, more often than not, abused nowadays by unscrupulous butterfly collectors.