

Newsletter of the Lepidoptera Study Group of Southern Africa

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Editorial

Since the inception of the Study Group in mid-1983 membership numbers have grown steadily and at present stand at over 125. With this growth the need for better organization has arisen. Provision for a steering committee was made in additions to our Constitution (*Metamorphosis* 1 (1)) and in the last issue of *Metamorphosis* a call was made for nominations to this committee. Sometime in March 1984 ballot papers will be sent to all ordinary members. The duly constituted committee should then be able to meet for the first time towards the end of April.

It will be a prime function of this committee to determine guidelines for the future of the group over and above the task of general administration. Projects which come to mind include: collection and collation of new data for a revised *Pennington's butterflies*, conservation policy and projects, ethical guidelines for members, the possibility of meetings and workshops, permits for members from the authorities etc. etc. I'm sure that you will agree that the next two years or so will see some exciting developments for us as well as continued steady growth of both membership numbers and meetings between members.

Life history and behaviour of *Erikssonia acraeina* Trimen (Lepidoptera: Lycaenidae)

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It was with great anticipation that we accompanied Mr Rudi Mijburgh to his locality for *Erikssonia acraeina* on the 20th December 1983 with the purpose of documenting its life history and habits. Ever since its discovery in South Africa by Mr Dave Edge (*Metamorphosis* 1 (1) - Ed.) lepidopterists have been wondering why it is so confined and so far from its original haunts in Ovamboland and Zambia.

We arrived at the locality at about 10h15. The weather was cloudy and cool. A male was soon discovered and Stephen set about watching it. He observed this specimen for about 45 minutes. Rudi discovered a fresh female about 11h00 and called Stephen over to observe it. Stephen observed this female for 2½ hours and during this time recorded pre- and post-oviposition behaviour, oviposition, determined the foodplant and discovered the host ant. During this time Graham walked widely over the area in an attempt to observe male/male and male/female interactions.

We decided after some deliberation that since the ant and the foodplant was widespread over the area, we should dig up one plant and collect some ants for identification. Graham loosened the soil around the foodplant and gently removed it from the ground. This exposed the brood chamber of the nest and to our amazement and joy, six *E. acraeina* larvae of various instars. Stephen took home the *E. acraeina* larvae, the ant colony and foodplant for further study. He also caught the female he was observing and took her home to see if he could get her to lay in captivity. He housed her with

several of the host ants and some foodplant; after five days she began laying on a piece of cotton wool and eventually laid eleven eggs. This study is still underway and will eventually be reported on in a scientific journal. We would like to request that no more ant nests be disturbed when investigating this species as this could be detrimental to the future of the butterfly in the area.

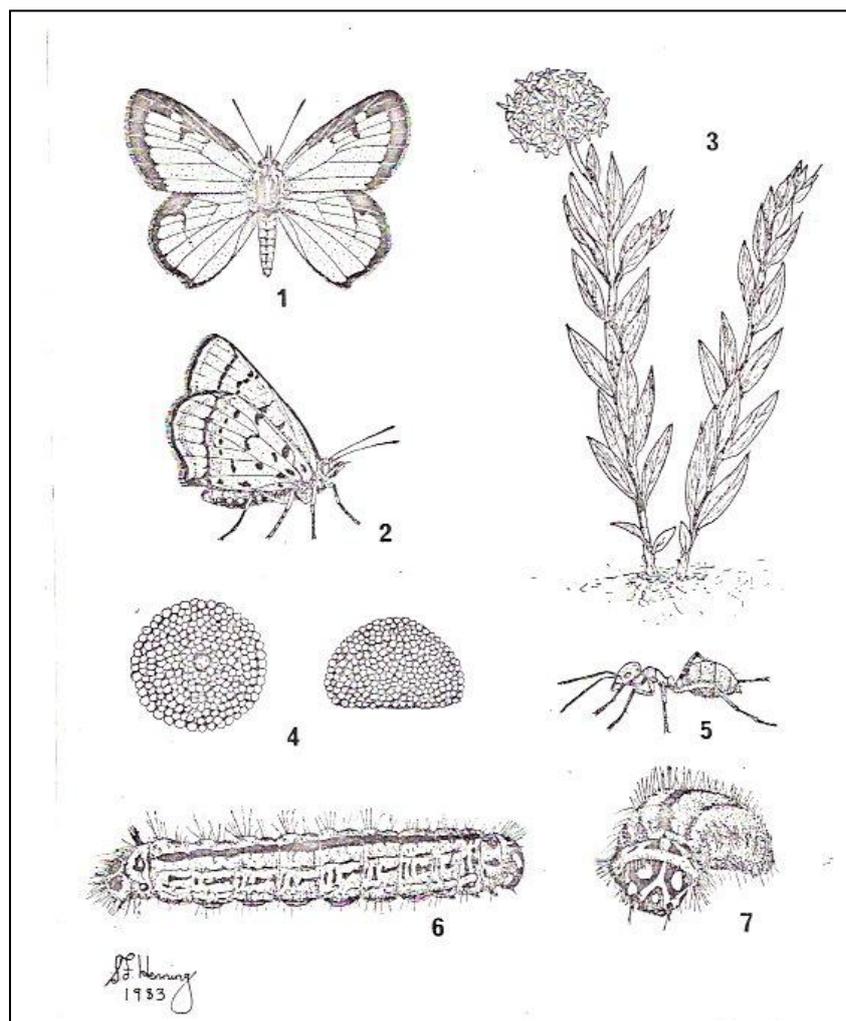
The following is a brief summary of the behaviour and life history of *E. acraeina*:

The foodplant is *Gnidia kraussiana* Meisner (Thymelaeaceae) which is a small, robust shrublet with erect, hairy stems arising from a woody rootstock. The leaves are simple, lanceolate and alternate. The flowers are yellow, tubular, silky-hairy, arranged in a dense, terminal flower-head. It is found over much of the interior of South Africa. It is commonly called 'gifbossie', for it is exceedingly poisonous to domestic stock - a mere handful of leaves is enough to kill a horse or a cow. This suggests that *E. acraeina* is probably unpalatable to potential vertebrate predators as most poisonous insects derive their poisons from their foodplants. The bright orange colour and slow fluttering flight of *E. acraeina* is probably a warning to predators of its unpalatability.

The host ant belongs to the genus *Acantholepis* and specimens have been sent off for more positive identification. It is a small shiny black monomorphic ant only 3 mm long. It nests in the soil and the colonies do not appear to be very large, possibly consisting of only two or three hundred individuals. The eggs, larvae and pupae are usually piled together. The cocoons are pale yellow in colour.

The males of *E. acraeina* are very conspicuous and can be observed patrolling about their territories in ever widening circles and then returning to their favourite perch sites. They have a slow, fluttering flight, usually no more than one metre above the ground. They most frequently settle with their wings closed, near the top of a grass stem or small herbaceous plant. In cool and cloudy weather the males can often be found resting on the sand between the grass tufts. When disturbed or frightened, they dive into the grass and hide in the bases of the grass tufts. When one male encroaches upon the territory of another, the resident male approaches the intruder, and chases the rival rapidly out of the area. The intruder can be chased for up to ten metres before the resident male returns to his perch. Occasionally during the chase the males will rise four metres or more into the air. The males appear to feed early in the morning and seem to favour white flowers. Once they start territorial behaviour they do not appear to feed.

The female of *E. acraeina* rests on the ground or a low plant during the early part of the day and in cloudy weather. During the period of observation it was very cloudy and with the appearance of the sun the female would orientate sideways to it so that the rays would fall directly onto the underside of the folded wings. As observed in the male she did not expand her wings to bask in the sun. Having warmed up she would flutter off and investigate various small herbaceous plants. She would land and investigate the surface of the plant with her antennae. If conditions were unsatisfactory she would fly off once more.



Figures 1-7: The life history of *Erikssonia acraeina*. 1. Male upperside. 2. Female resting on ground. 3. Foodplant - *Gnidia kraussiana* Meisner. 4. Egg, dorsal and lateral views. 5. Host ant - *Acantholepis* sp. 6. Fifth instar larva, lateral view. 7. Fifth instar larva, anterior view showing head.

Upon encountering the foodplant, *Gnidia kraussiana*, she searches with her antennae for traces of the trail pheromones of the host ant. If this is present she makes her way down to the ground at the base of the plant. Once on the ground the female starts to oviposit, curving her abdomen down and dislodging a few coarse soil particles before laying. At one plant the ground was strewn with plant debris and the female sat on the dead leaves and twigs and curved her abdomen around and down to lay the eggs on the ground beneath. In one instance she actually pushed her way beneath a partially curled leaf and oviposited beneath it. The host ants were usually present and on several occasions actually ran about on the female's abdomen. After laying about four eggs at the base of a particular plant the female would fly off a metre or so and rest on the ground in the sun. The female observed for the 2½ hour period did not feed once during this time.

While this particular female was making her way down one of the foodplants, her way was barred by a praying mantis. The praying mantis kept absolutely still waiting for her to approach. If Stephen had not

removed it with his tweezers it would have certainly killed the female *E. acraeina*. The female was completely unaware of her danger and even if she was, she could not have taken to the wing quickly as she was completely boxed in by the leaves of the foodplant and grass stalks. Invertebrate predators are not affected by poisons that affect mammals or birds, so the praying mantis would not be deterred by the possible poisonous nature of the *E. acraeina* female.

The eggs are laid directly onto the ground among coarse soil particles. They are unlike any other lycaenid egg we have ever seen. They are flattened basally with rounded sides raised to the micropyle. The surface consists of irregular raised convolutions except at the micropyle which is large, round and deeply indented. The texture of the chorion is very coarse. When first laid it is yellowish ochre in colour, darkening to grey or greyish brown. It is similar in appearance to a truffle. The eggs take approximately 18 days to hatch.

All the larval instars are rather similar in appearance. The head is dark brown with yellow markings. The broad neck shield and smaller anal shield are dark brown to black in colour with a broad yellow median line. The body is a pinkish grey colour with a maroon longitudinal line down the centre of the dorsal surface, flanked on either side by a bluish green area. Laterally the larvae are marked with regular reddish brown markings. The tubercle casings on the eighth segment are black and bear the characteristic protective spines. The retractile tubercles are white and clearly visible, even to the naked eye. The honey-gland on the seventh segment is well developed.

The first to the third instars feed on the surface of the leaves, leaving patches or short furrows. The fourth instar larvae started to feed on the margins of the leaves. During this period the larvae are constantly attended by the host ant. The larvae shelter during the day in the nest of the host ant.

In the formicarium it was observed that the larvae congregated together with the ant brood and were always attended by the ants. The larvae are much bigger than the ants, which run all over them. The ants often feed at the honey-glands. When the ants become too persistent the larvae respond by extruding their tubercles rapidly in and out causing the ants to depart. Most of the time the *E. acraeina* remain motionless, with the host ants either stroking them slowly with their antennae or just standing on or near them. The droppings of the larvae are removed by the ants to the 'refuse pile'.

The larvae leave the nest at night to feed on the host plant. Often the larvae leave the nest together, following one behind the other. They are always attended by the host ants, while leaving the nest and when feeding on the host plant.

The behaviour of the larvae of *E. acraeina* is very similar to that recorded for *Aloeides dentatis* (Swierstra) and *Aloeides thyra* (Linnaeus). The host ant also appears to belong to the same genus, *Acantholepis*, as that of these two species.

About three days before pupation the larva becomes yellowish and smaller. Just before pupation all the dark markings on the larva disappear except for a faint maroon line down the centre of the back. The pupa is at first bright

yellow with a faint maroon longitudinal line down the centre of the dorsal surface. It darkens to a deep ochre with a brownish dorsal line within 48 hours. As it pupated among the other *E. acraeina* larvae and ant brood and was constantly attended by the ants it appears most likely that it normally pupates in the ant nest. A portion of a hatched pupal case was found within the nest, supporting this hypothesis.

We would like to thank Mr Rudi Mijburgh, Mr Dave Edge and Dr Izak Coetzer for making their observations of *E. acraeina* available to us.

New southern African butterflies

M.C. Williams

In response to the list published in *Metamorphosis* 1 (3) in which 19 new taxa were noted I have received quite a few more from Ernest Pringle, Rudi Mijburgh and Joe Chitty - my thanks to them. They are:

LYCAENIDAE

Aloeides carolynnae Dickson, 1983. *Entomologist's Record and Journal of Variation* 95: 1-6.

Aloeides maluti Pringle, 1983. *Entomologist's Record and Journal of Variation* 95: 173-174.

Capys alphaeus extentus Quickelberge, 1979. *Durban Museum Novitates* 12: 19-26.

Crudaria wykehami Dickson, 1983. *Entomologist's Record and Journal of Variation* 95: 1-6.

Durbania amakosa albescens Quickelberge, 1981. *Durban Museum Novitates* 12: 215-222.

Durbania amakosa flavida Quickelberge, 1981. *Durban Museum Novitates* 12: 215-222.

Lepidochrysope jamesi claassensi Dickson, 1982. *Entomologist's Record and Journal of Variation* 94: 32-35.

Lepidochrysope pringlei Dickson, 1982. *Entomologist's Record and Journal of Variation* 94: 222-224.

Phasis clavum erythema Quickelberge, 1980. *Durban Museum Novitates* 12: 181-186.

Phasis pringlei Dickson, 1977. *Entomologist's Record and Journal of Variation* 89: 317-319.

Poecilmitis lysander hantamsbergae Dickson, 1978. *Entomologist's Record and Journal of Variation* 90: 293-296.

Poecilmitis nigricans zwartbergae Dickson, 1982. *Entomologist's Record and Journal of Variation* 94: 41-43.

Poecilmitis palmus margueritae Dickson, 1982. *Entomologist's Record and Journal of Variation* 94: 43-44.

Poecilmitis stepheni Dickson, 1978. *Entomologist's Record and Journal of Variation* 90: 293-296.

Spindasis junodi D'Abrera, 1980. *Butterflies of the Afrotropical Region*, Melbourne, 593 pp.

SATYRIDAE

Dira clytus eurina Quickelberge, 1978. *Entomologist's Record and Journal of Variation* 90: 25-32.

Pseudonympha camdeboo Dickson, 1981. *Entomologist's Record and Journal of Variation* **93**: 219-221.

Stygionympha scotina Quickelberge, 1977. *Durban Museum Novitates* **11**: 239-245.

Torynesis pringlei Dickson, 1979. *Entomologist's Record and Journal of Variation* **91**: 300-302.

HESPERIIDAE

Kedestes michaeli Gardiner & Hancock, 1982. *Arnoldia, Zimbabwe* **9**: 105-124.

Kedestes monostichus Hancock & Gardiner, 1982. *Arnoldia, Zimbabwe* **9**: 105-124.

CHARAXIDAE

Charaxes chittyi Rydon, *In*: D'Abbrera, 1980. *Butterflies of the Afrotropical Region*, Melbourne, 593 pp.

Check list of Rhopalocera from the Barkly East District (Cape Province)

P.P.E. Oosthuizen, P.O. Box 18, Barkly East 5580

LYCAENIDAE

Lepidochrysops oosthuizeni

Lepidochrysops niobe

Lepidochrysops lerothodi

Lepidochrysops loewensteini

Lepidochrysops ketsi

Lepidochrysops variabilis

Poecilmitis turneri

Poecilmitis chrysaor

Poecilmitis pelion

Aloeides braueri

Aloeides taylora

Aloeides rileyi

Aloeides oreas

Aloeides aranda

Aloeides trimeni

?*Aloeides mcmasteri*

Anthene definita

Cacyreus palemon palemon

Cacyreus palemon f. ecaudata

Harpencyreus tsomo

Durbania amakoza amakoza

Oraidium barberi

Zizeeria knysna

Leptomyrina gorgias

Lycaena clarki

Lampides boeticus

HESPERIIDAE

Metisella syrinx

SATYRIDAE

Pseudonympha trimeni ruthae?

Pseudonympha southeyi southeyi

Pseudonympha gaika

Pseudonympha paludis

Pseudonympha varii

Pseudonympha magoides

Pseudonympha machacha

Pseudonympha penningtoni

Neita durbani

Stygionympha scotina

Torynesis magna

Dingana clarki

Aerpetes tulbaghia

Ypthima asterope

Dira oxylus

ACRAEIDAE

Acraea horta

Acraea anacreon

PAPILIONIDAE

Papilio demodocus

Papilio nireus lyaeus

PIERIDAE

Colias electo

Pieris helice

Metisella aegipan
Metisella malgacha orina
Kedestes lenis
Kedestes barberae bonsa
Gegenes hottentota

NYMPHALIDAE

Eurytela hiarbas
Vanessa cardui
Junonia hierta
Junonia oenone
Hypolimnas misippus

Eurema brigitta
Belenois aurota
Colotis euiippe
Catopsilia florella

DANAIDAE

Danaus chrysippus

Unknown addresses

M.C. Williams

I have been unable to contact the following people who may be interested in joining our group. Should you know their whereabouts please contact them and tell them about the group or send me their address so that I can get in touch with them:

Adams K. (Ken)	Knockaert J. (Jan)
Beetlestone K. (Ken)	Loe I. (Ian)
Beirens P.	Loots J. (Jacques)
Chappell R. (Ronald)	Luhdo H.
Cheyne M.W.	Mattheyse F. (Fred)
Coetzee D. (Deryck)	Nielson R. (Roger)
Coetzer C. (Coen)	Plowes D. (Darrel)
Cooper R. (Richard)	Pockley D.G. (Dudly)
Cottrell C.B.	Rootman G.T.
Cunningham A.B. (Tony)	Rossouw H.C.
Gajek M.	Smith R. (Richard)
Gautier D. (Donald)	Teichert U.
Germishuys H. (Hugo)	Van Niekerk H.L.
Kaplan J. (Jeffrey)	Vissian N.
Kealy M. (Mike)	Von Maltitz E.F.
Kloppers J. (Johan)	Wannenburg J.A.

New publications

M.C. Williams

Please remember to inform me of new publications that you author or know of so that I can inform our members of them. Ernest Pringle has sent me a number of reprints of his publication describing *Aloeides maluti*. If you would like one please write to me – first come – first served.

