

## An illustrated report on the larvae, adults and host associations of 424 African Lepidoptera taxa belonging to the Papilionoidea. A second report of the Caterpillar Rearing Group of LepSoc Africa.

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**Abstract:** The larvae, adults and host associations of 424 African Lepidoptera taxa belonging to the Papilionoidea are reported. The final instar larva and adult are illustrated for each rearing. We record 193 new larval host associations and illustrate the final instar larvae of 206 taxa for the first time.

**Key words:** Larval host plants, butterflies

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### INTRODUCTION

The publication of the first CRG (Caterpillar Rearing Group) article, listing the host associations of 962 African Lepidoptera species, including illustrations of the larvae and adults (Staude *et al.*, 2016), inspired the first author to compile similar lists from the wealth of unpublished information, images and data the authors had gathered over many years of studying African butterfly early stages. The resultant lists are published here and have been incorporated into the main CRG database on host associations of Afrotropical Lepidoptera.

The CRG is an initiative of LepSocAfrica, which aims to record the early stages, the host associations and parasitoids of all Afrotropical Lepidoptera.

Although many workers, over more than a century, have studied the life histories of the Papilionoidea of the Afrotropical Region we are still very far from establishing a comprehensive database of their early stages and larval hosts. Of the 4370 species of Afrotropical butterflies, information about the early stages has been published for only 937 species (21.4% of the total number of species). The situation is not much better as regards published information for larval hosts; this is available for 1403 species (32.1% of the species total) (Williams, 2017) (Table 1). The picture is, unfortunately, even more bleak than it seems since

information on the early stages of a particular species may only include a brief description of the egg. Data on larval hosts is also frequently of low quality; for example a host-plant record may only specify 'grass' or 'Loranthaceae'. The upside to this state of affairs, however, is that there is basic scientific work to be done for generations to come.

In this article we report on our work done over more than half a century. We tabulate 458 rearing records for 424 taxa of Afrotropical butterflies. Some of the records represent rearing information that has been reported in the literature before, but is often from a locality different from those noted previously (Bampton & Congdon, 1998; Congdon & Bampton, 2000; Congdon, Bampton & Collins, 2009). A number of new larval hosts are reported and many of the final instar larvae are illustrated for the first time. Amongst our unpublished notes there remain a lot of, as yet, unpublished host associations and images that we could not readily compile in time for this publication but we intend to make these available in a future publication.

### METHODS AND MATERIALS

Most of the field work was done mainly in Tanzania between 1990 and 2015, with particular attention being paid to certain taxa, for example the speciose genera *Charaxes* and *Iolus*. Field conditions were often difficult and sometimes appalling, with frequent initial failures as a result. Preserved plant material on which females had been observed ovipositing, or on which larvae were reared was identified at a later date, mostly by professional botanists at the herbarium in the Royal Botanical Gardens, Kew, London. Plant names were checked against *Mabberley's Plant-Book* 3<sup>rd</sup> edition, Cambridge University Press (D.J. Mabberley, 2008).

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Table 1 – Afrotropical butterfly taxa early stages and larval host records (data from Williams, 2017)

SUPERFAMILY/ FAMILY	SUBFAMILY	NO. OF SPECIES IN TAXON	EARLY STAGES RECORDED	LARVAL HOST(S) RECORDED
Papilionoidea		4370	937 (21.4%)	1403 (32.1%)
Papilionidae		101	26 (26%)	48 (48%)
Hesperiidae		615	179 (29%)	243 (40%)
Nymphalidae		1619	364 (22%)	535 (33%)
Nymphalidae	Danainae	26	9 (35%)	15 (58%)
Nymphalidae	Libytheinae	5	1 (20%)	1 (20%)
Nymphalidae	Satyrinae	348	57 (16%)	65 (19%)
Nymphalidae	Charaxinae	191	98 (51%)	107 (56%)
Nymphalidae	Nymphalinae	73	24 (33%)	49 (67%)
Nymphalidae	Cyrestinae	1	1 (100%)	1 (100%)
Nymphalidae	Biblidinae	32	7 (22%)	21 (66%)
Nymphalidae	Apaturinae	3	1 (33%)	0 (0%)
Nymphalidae	Heliconiinae	256	78 (30%)	122 (48%)
Nymphalidae	Limenitidinae	684	88 (13%)	154 (23%)
Pieridae		199	52 (26%)	102 (51%)
Riodinidae		15	1 (7%)	1 (7%)
Lycaenidae		1818	315 (17%)	474 (26%)
Lycaenidae	Poritiinae	659	44 (7%)	41 (6%)
Lycaenidae	Miletinae	103	23 (22%)	17 (17%)
Lycaenidae	Aphnaeinae	260	76 (29%)	106 (41%)
Lycaenidae	Polyommatae	496	100 (20%)	182 (37%)
Lycaenidae	Lycaeninae	3	3 (100%)	3 (100%)
Lycaenidae	Theclinae	297	69 (23%)	125 (42%)

Plant nomenclature follows that used by the African Plants Database (<http://www.ville-ge.ch/musinfo/bd/cjb/africa/index.php>).

Butterfly nomenclature follows Williams (2015, 2017).

## RESULTS

The full set of results are presented in seven master lists which are published in this volume and accompany this article under the following headings:

Papilionidae (pp 63–68)

Hesperiidae (pp 69–82)

Nymphalidae 1 (Danainae; Libytheinae; Satyrinae; Charaxinae; Nymphalinae; Cyrestinae; Biblidinae) (pp 83–98)

Nymphalidae 2 (Heliconiinae; Limenitidinae) (pp 99–114)

Pieridae & Riodinidae (pp 115–120)

Lycaenidae 1 (Poritiinae; Miletinae; Aphnaeinae; Polyommatae; Lycaeninae) (pp 121–132)

Lycaenidae 2 (Theclinae) (pp 133–150)

The final “Points” column in the master lists refers to the scoring of each rearing experiment as described in Staude *et al.* (2016).

List of larval host records published for the first time (193 records)

*Uvaria angolensis* for *Graphium poggianus*  
*Toddalia asiatica* for *Papilio aristophontes*

*Vepris glomerata* for *Papilio constantinus*  
*Toddalia asiatica* for *Papilio desmondi*  
*Clausena anisata* for *Papilio fueleborni*  
*Toddalia asiatica* for *Papilio interjectana*  
*Clausena anisata* for *Papilio mackinnoni*  
*Fagaropsis* sp. for *Papilio nireus*  
*Teclea* sp. for *Papilio phorcas*  
*Markhamia* sp. for *Coeliades forestan*  
*Pericopsis angolensis* for *Coeliades forestan*  
*Turraea* sp. for *Coeliades ramamatek*  
*Hypoestes aristata* for *Apallaga biseriata*  
*Hypoestes* sp. for *Apallaga alluaudi*  
*Acanthopale* sp. for *Celaenorrhinus humbloti*  
*Triumfetta setulosa* for *Spialia dromus*  
*Leersia hexandra* for *Ampittia kilombero*  
*Oldeania alpina* for *Zenonia zeno*  
*Cymbopogon* sp. for *Pelopidas mathias*  
*Dracaena steudneri* for *Gamia buchholzi*  
*Celtis philippensis* for *Libythea laius*  
*Setaria palmifolia* for *Gnophodes diversa*  
*Setaria palmifolia* for *Bicyclus campina*  
Grasses for *Bicyclus uzungwensis*  
*Festuca africana* for *Aphysoneura pigmentaria*  
*Oldeania alpina* for *Aphysoneura pigmentaria*  
Grasses for *Neocoenyra fulleborni*  
Grasses for *Neocoenyra heckmanni*  
Grasses for *Neocoenyra petersi*  
Grasses for *Neocoenyra pinheyi*  
Grasses for *Physcaeneura jacksoni*  
Grasses for *Neita orbipalus*  
*Brachystegia boehmii* for *Charaxes chintechi*  
*Albizia gummifera* for *Charaxes chunguensis*  
*Dalbergia boehmii* for *Charaxes diversiforma*

- Brachystegia microphylla* for *Charaxes ethalion*  
*Cryptosepalum emarginatum* for *Charaxes variata*  
*Albizia gummifera* for *Charaxes mccleryi*  
*Bersama rosea* for *Charaxes ansorgei*  
*Syzygium masukuense* for *Charaxes druceanus*  
*Drypetes gerrardi* for *Charaxes smaragdalis*  
*Urera sansibarica* for *Hypolimnas antevorta*  
*Urera* sp. for *Hypolimnas dinarcha*  
*Blepharis edulis* for *Hypolimnas misippus*  
*Phaulopsis* sp. for *Junonia artaxia*  
*Asystasia glandulosa* for *Junonia oenone*  
*Mellera lobulata* for *Protogoniomorpha temora*  
*Ficus aspersifolia* for *Cyrestis camillus*  
*Maclura africana* for *Cyrestis camillus*  
*Tragia impedita* for *Ariadne enotrea*  
*Maprouna africana* for *Sevenia amulia*  
*Kiggelaria africana* for *Acraea insignis*  
 Tuneraceae for *Acraea ranavalona*  
*Rinorea ilicifolia* for *Acraea satis*  
*Adenia stolzii* for *Acraea scalivittata*  
*Caloncoba* sp. for *Acraea bergeriana*  
*Adenia goetzei* for *Acraea omrora*  
*Oncoba tettensis* for *Acraea petraea*  
*Adenia goetzei* for *Acraea rhodesiana*  
*Hybanthus enneaspermus* for *Pardopsis punctatissima*  
*Urera sansibarica* for *Telchinia parrhasia*  
*Urera hypselodendron* for *Telchinia acuta*  
*Triumfetta rhomboidea* for *Telchinia alicia*  
*Urera hypselodendron* for *Telchinia baxteri*  
*Boehmeria* sp. for *Telchinia johnstoni*  
*Triumfetta rhomboidea* for *Telchinia sotikensis*  
*Terminalia catappa* for *Aterica rabena*  
*Hyphaene* sp. for *Bebearia orientis*  
*Rawsonia* sp. for *Cymothoe alcimeda*  
*Dasylepis integra* for *Cymothoe amanuensis*  
*Rinorea ilicifolia* for *Cymothoe egesta*  
*Dasylepis integra* for *Cymothoe magambae*  
*Rawsonia lucida* for *Cymothoe melanjae*  
*Rawsonia burtt-davyi* for *Cymothoe melanjae*  
*Rinorea ilicifolia* for *Cymothoe sangaris*  
*Dasylepis integra* for *Cymothoe teita*  
*Lecaniodiscus* sp. for *Euphaedra paradoxa*  
*Deinbollia fulvotomentella* for *Euphaedra phosphor*  
*Deinbollia* sp. for *Euphaedra rex*  
*Chrysophyllum gorongosum* for *Euptera kinugnana*  
*Phyllocosmus lemaireanus* for *Euryphura concordia*  
*Albizia gummifera* for *Neptis alta*  
*Macaranga capensis* var. *kilimandscharica* for *Neptis aurivillii*  
*Urera hypselodendron* for *Neptis aurivillii*  
*Dalbergia lactea* for *Neptis goochii*  
*Dalbergia lactea* for *Neptis laeta*  
*Rourea thomsonii* for *Neptis laeta*  
*Paullinia pinnata* for *Neptis larseni*  
*Acacia pentagona* for *Neptis nina*  
*Acalypha ornata* for *Neptis saclava*  
*Entada abyssinica* for *Neptis serena*  
*Urera trinervis* for *Neptis swynnertoni*  
*Ochna holstii* for *Neptis swynnertoni*  
*Chrysophyllum* sp. for *Pseudacraea apaturoides*  
*Chrysophyllum gorongosum* for *Pseudacraea deludens*  
*Englerophytum natalense* for *Pseudacraea simulator*  
*Astragalus atropilosulus* for *Colias electo*  
*Cadaba farinosa* for *Colotis annae*  
*Maerua triphylla* for *Colotis aurigineus*  
*Maerua* sp. for *Colotis danae*  
*Cadaba farinosa* for *Colotis ione*  
 Capparaceae for *Gideona lucasi*  
*Persicaria lapathifolia* for *Mylothris bernice*  
*Phragmanthera usuiensis* for *Mylothris crawshayi*  
*Erianthemum* sp. for *Mylothris jacksoni*  
*Oncella curviramea* for *Mylothris kilimensis*  
*Oncella gracilis* for *Mylothris leonora*  
*Globimetula pachyclada* for *Mylothris rueppellii*  
*Englerina* for *Mylothris sagala*  
*Agelanthus* sp. for *Mylothris yulei*  
*Boscia salicifolia* for *Teracolus eris*  
*Boscia salicifolia* for *Teracolus subfasciatus*  
*Maesa lanceolata* for *Afriodinia delicate*  
 Cyanobacteria on termite mounds for *Alaena aurantiaca*  
 Cyanobacteria on rocks for *Alaena bicolora*  
 Cyanobacteria on rocks for *Alaena bjornstadi*  
 Cyanobacteria on rocks for *Alaena dodomaensis*  
 Cyanobacteria on rocks for *Alaena madibirensis*  
 Cyanobacteria and lichen on rocks for *Alaena nyassa*  
 Cyanobacteria on rocks for *Alaena picata*  
 Cyanobacteria and lichen on rocks for *Alaena reticulata*  
 Cyanobacteria and lichen on trees for *Cerautola crippsi*  
 Cyanobacteria and lichen on trees for *Cerautola crowleyi*  
 Cyanobacteria and lichen on trees for *Cerautola fisheri*  
 Cyanobacteria and lichen on trees for *Cerautola miranda*  
 Cyanobacteria on trees for *Cephetola viridana*  
 Cyanobacteria on trees for *Euthecta cooksoni*  
 Cyanobacteria and lichen on trees for *Mimacraea fulvaria*  
 Cyanobacteria on trees for *Pentila rondo*  
 Detritus in ant nests? for *Euliphyra leucyania*  
*Blighia unijugata* for *Aphnaeus orcas*  
*Paullinia pinnata* for *Aphnaeus orcas*  
*Uncaria africana* ssp. *lacus-victoriae* for *Aphnaeus orcas*  
*Allophylus melliodorus* for *Axiocerses kiellandi*  
*Senna singueana* for *Axiocerses punicea*  
*Senna petersiana* for *Axiocerses punicea*  
*Ximenia americana* for *Axiocerses tjoane*  
*Julbernardia globiflora* for *Axiocerses tjoane*  
*Acacia zanzibarica* for *Chloroselas azurea*  
*Smilax anceps* for *Cigaritis apelles*  
*Ximenia americana* for *Cigaritis ella*  
*Acacia zanzibarica* for *Cigaritis ella*  
*Acacia zanzibarica* for *Cigaritis nyassae*  
*Ximenia americana* for *Cigaritis phanes*  
*Acacia zanzibarica* for *Anthene amarah*  
*Parkia* sp. for *Anthene larydas*  
*Acacia brevispica* for *Anthene larydas*  
*Acacia pseudofistula* for *Azanus moriqua*  
*Acacia pseudofistula* for *Chilades kedonga*  
*Alchemilla cryptantha* for *Harpencyreus marungensis*  
*Alchemilla ellenbeckii* for *Harpencyreus marungensis*  
*Dissotis rotundifolia* for *Thermoniphys colorata*

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<i>Ziziphus abyssinica</i> for <i>Tuxentius calice</i>	<i>Bicyclus uzungwensis</i>
<i>Choristylis rhamnoides</i> for <i>Uranothauma confusa</i>	<i>Aphysoneura pigmentaria</i>
<i>Morella</i> sp. for <i>Uranothauma cuneatum</i>	<i>Neocoenyra fulleborni</i>
<i>Choristylis rhamnoides</i> for <i>Uranothauma lukwangule</i>	<i>Neocoenyra heckmanni</i>
<i>Choristylis rhamnoides</i> for <i>Uranothauma nguru</i>	<i>Neocoenyra petersi</i>
<i>Choristylis rhamnoides</i> for <i>Uranothauma usambarae</i>	<i>Neocoenyra pinheyi</i>
<i>Dolichos kilimandscharicus</i> for <i>Deudorix antalus</i>	<i>Physcaeneura jacksoni</i>
<i>Cryptosepalum exfoliatum</i> for <i>Deudorix antalus</i>	<i>Neita orbipalus</i>
<i>Acacia pseudofistula</i> for <i>Deudorix ecaudata</i>	<i>Charaxes nichetes</i>
<i>Galiniera saxifraga</i> for <i>Deudorix vansomereni</i>	<i>Charaxes aubyni</i>
<i>Olex</i> sp. for <i>Hemiolaus cobaltina</i>	<i>Charaxes chintechi</i>
<i>Tarrena pavettoides</i> for <i>Hypolycaena buxtoni</i>	<i>Charaxes chunguensis</i>
<i>Tricalysia pallens</i> for <i>Hypolycaena buxtoni</i>	<i>Charaxes congdoni</i>
<i>Vitex ferruginea</i> for <i>Hypolycaena liara</i>	<i>Charaxes dilutus</i>
<i>Talinum portulacifolium</i> for <i>Hypolycaena pachalica</i>	<i>Charaxes diversiforma</i>
<i>Scutia myrtina</i> for <i>Hypolycaena philippus</i>	<i>Charaxes fionae</i>
<i>Gymnosporia gracilipes</i> for <i>Hypolycaena philippus</i>	<i>Charaxes howarthi</i>
<i>Erianthemum taborense</i> for <i>Iolaus australis</i>	<i>Charaxes usambarae</i>
<i>Tapinanthus dependens</i> for <i>Iolaus bakeri</i>	<i>Charaxes macleeryi</i>
<i>Globimetula anguliflora</i> for <i>Iolaus coelestis</i>	<i>Charaxes smaragdalis</i>
<i>Agelanthus subulatus</i> for <i>Iolaus congdoni</i>	<i>Hypolimnias antevorta</i>
<i>Phragmanthera usuiensis</i> for <i>Iolaus congdoni</i>	<i>Hypolimnias dinarcha</i>
<i>Agelanthus heteromorphus</i> for <i>Iolaus diametra</i>	<i>Hypolimnias monteironis</i>
<i>Oncella ambigua</i> for <i>Iolaus diametra</i>	<i>Junonia artaxia</i>
<i>Oedina gacilis</i> for <i>Iolaus dubiosa</i>	<i>Junonia touhilimasa</i>
<i>Phragmanthera brieyi</i> for <i>Iolaus hemicyanus</i>	<i>Protogoniomorpha temora</i>
<i>Oncella schliebeniana</i> for <i>Iolaus mermis</i>	<i>Ariadne enotrea</i>
<i>Spragueanella rhamnifolia</i> for <i>Iolaus mermis</i>	<i>Sevenia amulia</i>
<i>Agelanthus igneus</i> for <i>Iolaus mermis</i>	<i>Sevenia morantii</i>
<i>Englerina kagehensis</i> for <i>Iolaus nasissii</i>	<i>Acraea insignis</i>
<i>Agelanthus atrocronatus</i> for <i>Iolaus nasissii</i>	<i>Acraea ranavalona</i>
<i>Agelanthus subulatus</i> for <i>Iolaus nolaensis</i>	<i>Acraea satis</i>
<i>Agelanthus atrocronatus</i> for <i>Iolaus sidus</i>	<i>Acraea quadricolor</i>
<i>Phragmanthera polycrypta</i> ssp. <i>subglabrifolia</i> for <i>Iolaus parasilanus</i>	<i>Acraea scalivittata</i>
<i>Phragmanthera polycrypta</i> ssp. <i>subglabrifolia</i> for <i>Iolaus poecilaon</i>	<i>Acraea bergeriana</i>
<i>Agelanthus scassellatii</i> for <i>Iolaus poultoni</i>	<i>Acraea omrora</i>
<i>Oncella ambigua</i> for <i>Iolaus poultoni</i>	<i>Acraea rhodesiana</i>
<i>Phragmanthera polycrypta</i> ssp. <i>subglabrifolia</i> for <i>Iolaus timon</i>	<i>Issoria baumanni</i>
<i>Backerella</i> sp. for <i>Iolaus argentarius</i>	<i>Lachnoptera anticlia</i>
<i>Backerella</i> sp. for <i>Iolaus mermeros</i>	<i>Telchinia acuta</i>
<i>Helixanthera kirkii</i> sp. for <i>Stugeta carpenter</i>	<i>Telchinia amacitiae</i>

List of final instar larval images published for the first time (206 taxa)

<i>Papilio aristophontes</i>	<i>Cymothoe amaniensis</i>
<i>Papilio desmondi</i>	<i>Cymothoe aurivillii</i>
<i>Papilio fuelleborni</i>	<i>Cymothoe coranus</i>
<i>Papilio jacksoni</i>	<i>Cymothoe cottrelli</i>
<i>Papilio mackinnoni</i>	<i>Cymothoe herminia</i>
<i>Papilio pelodurus</i>	<i>Cymothoe lurida</i>
<i>Papilio phorcas</i>	<i>Cymothoe magambae</i>
<i>Papilio thurau</i>	<i>Cymothoe melanjae</i>
<i>Coeliades ramamatek</i>	<i>Cymothoe teita</i>
<i>Apallaga alluaudi</i>	<i>Euphaedra harpalyce</i>
<i>Artitropa comus</i>	<i>Euphaedra paradoxa</i>
<i>Platylesches panga</i>	<i>Euphaedra rex</i>
<i>Amauris crawshayi</i>	<i>Neptis alta</i>
<i>Amauris niavius</i>	<i>Neptis aurivillii</i>
<i>Bicyclus campina</i>	<i>Neptis goochii</i>
<i>Bicyclus simulacris</i>	<i>Neptis jordani</i>
	<i>Neptis kiriakoffi</i>

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<i>Neptis larseni</i>	<i>Oboronia gussfeldti</i>
<i>Neptis nina</i>	<i>Thermoniphys colorata</i>
<i>Neptis ochracea</i>	<i>Tuxentius ertli</i>
<i>Neptis serena</i>	<i>Uranothauma confusa</i>
<i>Neptis swynnertoni</i>	<i>Uranothauma crawshayi</i>
<i>Pseudacraea apaturoides</i>	<i>Uranothauma cuneatum</i>
<i>Pseudacraea deludens</i>	<i>Uranothauma falkensteini</i>
<i>Pseudacraea dolomena</i>	<i>Uranothauma heritsia</i>
<i>Pseudacraea poggei</i>	<i>Uranothauma lukwangule</i>
<i>Pseudacraea semire</i>	<i>Uranothauma nguru</i>
<i>Pseudacraea simulator</i>	<i>Uranothauma usambarae</i>
<i>Pseudathyma jacksoni</i>	<i>Capys connexiva</i>
<i>Eurema senegalensis</i>	<i>Deudorix caliginosa</i>
<i>Appias sylvia</i>	<i>Deudorix ecaudata</i>
<i>Belenois margaritacea</i>	<i>Deudorix lorisona</i>
<i>Belenois rubrosignatus</i>	<i>Deudorix vansomereni</i>
<i>Colotis aurigineus</i>	<i>Hemiolaus cobaltina</i>
<i>Colotis danae</i>	<i>Hypolycaena buxtoni</i>
<i>Gideona lucasi</i>	<i>Hypolycaena liara</i>
<i>Mylothris asphodelus</i>	<i>Hypolycaena pachalica</i>
<i>Mylothris crawshayi</i>	<i>Iolaus lalos</i>
<i>Mylothris jacksoni</i>	<i>Iolaus silarus</i>
<i>Mylothris kilimensis</i>	<i>Iolaus apatosa</i>
<i>Mylothris leonora</i>	<i>Iolaus aurivillii</i>
<i>Mylothris sagala</i>	<i>Iolaus australis</i>
<i>Mylothris yulei</i>	<i>Iolaus bakeri</i>
<i>Afriodinia delicate</i>	<i>Iolaus bamptoni</i>
<i>Afriodinea neavei</i>	<i>Iolaus coelestis</i>
<i>Alaena aurantiaca</i>	<i>Iolaus congdoni</i>
<i>Alaena bicolora</i>	<i>Iolaus dubiosa</i>
<i>Alaena bjornstadi</i>	<i>Iolaus farquharsoni</i>
<i>Alaena dodomaensis</i>	<i>Iolaus hemicyanus</i>
<i>Alaena madibirensis</i>	<i>Iolaus jacksoni</i>
<i>Alaena nyassa</i>	<i>Iolaus mermis</i>
<i>Alaena picata</i>	<i>Iolaus neavei</i>
<i>Alaena reticulate</i>	<i>Iolaus nolaensis</i>
<i>Cerautola crippsi</i>	<i>Iolaus penningtoni</i>
<i>Cerautola miranda</i>	<i>Iolaus pseudopollux</i>
<i>Cephetola viridana</i>	<i>Iolaus sibella</i>
<i>Euthecta cooksoni</i>	<i>Iolaus stenogrammica</i>
<i>Mimacraea fulvaria</i>	<i>Iolaus tajoraca</i>
<i>Pentila rondo</i>	<i>Iolaus violacea</i>
<i>Aslauga orientalis</i>	<i>Iolaus yalae</i>
<i>Aphnaeus orcas</i>	<i>Iolaus gabunica</i>
<i>Axiocerses amanga</i>	<i>Iolaus iulus</i>
<i>Axiocerses coalescens</i>	<i>Iolaus jamesoni</i>
<i>Axiocerses kiellandi</i>	<i>Iolaus bolissus</i>
<i>Axiocerses punicea</i>	<i>Iolaus aequatorialis</i>
<i>Chloroselas azurea</i>	<i>Iolaus alcibiades</i>
<i>Cigaritis apelles</i>	<i>Iolaus dianae</i>
<i>Cigaritis nyassae</i>	<i>Iolaus maritimus</i>
<i>Lipaphnaeus loxura</i>	<i>Iolaus montana</i>
<i>Anthene bamptoni</i>	<i>Iolaus ndolae</i>
<i>Anthene benadirensis</i>	<i>Iolaus pamae</i>
<i>Anthene indefinita</i>	<i>Iolaus parasilanus</i>
<i>Anthene liodes</i>	<i>Iolaus stewarti</i>
<i>Anthene lunulata</i>	<i>Iolaus poultoni</i>
<i>Anthene montana</i>	<i>Iolaus timon</i>
<i>Anthene rubrimaculata</i>	<i>Iolaus argentarius</i>
<i>Anthene uzungwae</i>	<i>Iolaus mermeros</i>
<i>Chilades kedonga</i>	<i>Leptomyrina phidias</i>
<i>Euchrysops subpallida</i>	<i>Stugeta carpenteri</i>
<i>Harpencyreus marungensis</i>	<i>Stugeta mimetica</i>

## DISCUSSION

As noted in the Introduction, much work remains to be done. There is no time to lose. Butterflies do not become extinct through over-collecting, but through environmental degradation and destruction. Unfortunately this continues apace. Where conservation efforts by Governments preserve habitats, this is welcome. However, over-zealous legislative measures can hamper genuine research efforts aimed at optimally conserving and managing habitats both in protected areas and on privately held land. Such research is funded and conducted by private individuals and NGOs.

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