Composition and origin of the Lepidoptera faunas of southern Africa, Madagascar and Réunion (Insecta: Lepidoptera)

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The Lepidoptera faunas of southern Africa, Madagascar and Réunion, numbering 8968, 4589 and 483 described species respectively (as at the end of 2005), are compared on different systematic levels to elucidate the composition and origin of the two island faunas.

Based on recently compiled checklists for the three study areas, taxa were initially grouped into eight broad categories for ease of comparison (Primitive Lepidoptera, Gelechioidea, Other Microlepidoptera, Pyraloidea and Whalleyanoidea, Geometroidea, Hesperioidea and Papilionoidea, Other Macrolepidoptera, and Noctuoidea), and subsequently compared on various systematic and taxonomic levels.

The data suggest a common origin of these faunas, which show a similar macrocomposition, with approximately 23% of genera and 2.8% of species shared between southern Africa and Madagascar. The island faunas are characterized by an increasing loss of systematic diversity with increasing isolation from Africa: whereas 32 superfamilies have been recorded from southern Africa, this number drops to 30 for Madagascar and 18 for Réunion. Some marked disparities exist in the representation of some groups. In comparison with southern Africa, Primitive Lepidoptera and Gelechioidea are under-represented on Madagascar and Réunion, partly resulting in Noctuoidea accounting for a larger share of the total in the island faunas. The representation of the other six categories is approximately similar, but taxa with strong dispersal capabilities are overrepresented in the island faunas; this is especially the case with Pyraloidea in the fauna of Réunion. The relative representation of the various families and subfamilies in the eight categories is detailed and discussed. Species/genus ratios for taxonomically important selected groups in southern Africa and Madagascar were calculated to identify comparatively good and poor dispersers as the latter will tend to have higher species/genus ratios, i.e., to show more local speciation. Five appendices list the respective numbers of species per superfamily, the number of genera and species per family, genera and species shared between southern Africa and Madagascar, and provide a checklist of the Lepidoptera of Réunion.

Given the recent volcanic origin of Réunion, and contrasting the long age of separation between Madagascar and Africa with the comparatively recent mesozoic origin of Lepidoptera, vicariance is likely to have played only a very small role in the origin of the island faunas, leaving dispersal, with varying degrees of subsequent speciation, as the presumed main mechanism. This is further supported by the observation that endemism within the island faunas is largely limited to the genus and species levels, although the Malagasy fauna has recently been shown to be more biodiverse than previously thought, including one endemic superfamily and subfamily each, as well as two endemic tribes. Based on the overall similarity of the faunas, southern Africa rather than East Africa appears to be the most likely main source area for the colonization of Madagascar. This is consistent with the assumption that most colonization events occurred after Madagascar assumed its present position in the Early Cretaceous, after seafloor spreading had ceased. Madagascar in turn probably served as the source area for a later colonization of Réunion, although there also is evidence for a colonization of the African continent from Madagascar by some taxa.

Keywords: Lepidoptera, Faunal Comparison, Species/Genus Ratios, Dispersalist *versus* Vicariant Origin of Island Faunas, Southern Africa, Madagascar, Réunion.

INTRODUCTION

Both southern Africa (here defined in the traditional sense as the area south of the Kunene and Zambezi rivers, and comprising South Africa, Namibia, Botswana, Zimbabwe, Lesotho, Swaziland, and the southern part of Mozambique), and the adjacent island of Madagascar have a rich and diverse lepidopteran fauna. The small volcanic island of Réunion, situated some 800 km due east of Madagascar, although having a much smaller fauna, is of biogeographical interest as an apparent natural extension of the former two areas (McDougall, 1971).

Although the fauna of Madagascar generally is

renowned for its high rate of species-level endemism, estimated at 85% overall (Goodman and Benstead, 2003), its Lepidoptera fauna has been known for some time to be broadly similar in suprageneric composition to that of southern and eastern Africa, although earlier contributions, mostly based on studies of butterflies and groups of moths with a wide tropical Old World distribution, were more equivocal about potential similarities with the Oriental Region (e.g., Pagenstecher, 1909). A direct and detailed comparison, hindered until recently by the fact that the respective faunas were documented in the form of numerous isolated contributions, has now become possible as a result of the compilation of checklists for both southern Africa and Madagascar (Viette, 1990; Vári *et al.,* 2002). The fauna of Réunion has been documented by Viette (1957, 1988), Viette and Guillermet (1996), Herbulot (1957), Diakonoff (1957, 1974, 1977) and Guillermet and Guillermet (1986).

Such a comparison is of interest since Africa and Madagascar share a distant geological past as parts of the former supercontinent of Gondwanaland, although their biota have evolved to a large part in isolation since the end of the Mesozoic. Most authors agree on a date of separation of Madagascar and India from Africa at or before 100 Ma, with estimates going back as far as 145 Ma (Scotese, 1991; Wilford and Brown, 1994). The Mozambique Channel had formed by 80 Ma, and the Indian subcontinent is estimated to have separated from Madagascar 80–90 Ma ago. For taxa capable of dispersal, an exchange between Africa and Madagascar would not have presented a serious obstacle during the initial period of separation, but by 85 Ma Madagascar, which was still connected to India, had moved sufficiently away from Africa to make faunal exchanges increasingly unlikely (Besse and Courtillot, 1988; Masters *et al.,* 2006). The elements of which the modern faunas are comprised therefore result from both vicariant and dispersalist speciation, with either mode playing a greater or lesser role in different groups according, *inter alia,* to the phylogenetic age and powers of dispersal of the taxon in question. This paper aims to shed some light on the origin of the lepidopteran faunas of Madagascar and Réunion by comparing them with those of the adjacent African mainland.

MATERIALS AND METHODS

Raw data for this study are contained in the recently compiled Lepidoptera checklists for Madagascar (Viette, 1990) and southern Africa (Vári *et al.,* 2002) and analyses of the higher-level classification of the Malagasy Lepidoptera fauna as a whole (Lees and Minet, 2003) and of the butterfly fauna in particular (Lees *et al.,* 2003). A provisional checklist of the Lepidoptera fauna of Réunion was compiled by the author from the literature (Viette (1957), Herbulot (1957), Diakonoff (1957, 1974, 1977) and Guillermet and Guillermet (1986)). After harmonization, the taxonomic and systematic information contained therein was used to compare the three faunas at different levels of resolution.

Taxa were first grouped into eight broad categories (Primitive Lepidoptera, Other Microlepidoptera, Gelechioidea, Pyraloidea & Whalleyanoidea, Geometroidea, Other Macrolepidoptera, and Noctuoidea) as defined below to illustrate the macrocomposition of the faunas. These categories were subsequently broken down further to family or subfamily level, where applicable.

Detailed taxonomic and systematic information is presented in several appendices as follows: systematic comparison at superfamily level (Appendix 1), number of genera and total number of species per family (Appendix 2), genera shared between southern Africa and Madagascar (Appendix 3), species shared between southern Africa and Madagascar (Appendix 4), and an annotated checklist of the Lepidoptera fauna of Réunion (Appendix 5). A caveat needs to be mentioned here with regard to the comparison of faunas on genus level. Existing classifications as reflected in the checklists on which this study is based to some extent represent accounts of the taxonomic histories of the study areas rather than provide an accurate reflection of the relationships of the species in a global context, a point also made by Lees and Minet (2003: 749); even so, it is hoped that such a comparison nevertheless will provide a useful starting point and frame of reference for later revisionary work.

Lastly, species/genus ratios for taxonomically important selected groups in southern Africa and Madagascar were calculated to identify comparatively good and poor dispersers.

RESULTS

Composition of faunas (Figs 1–13, Appendices 1–4)

To date, 4589 and 8968 species of Lepidoptera have been recorded from Madagascar and southern Africa, respectively (Viette, 1990; Lees and Minet, 2003; Vári *et al.,* 2002), whereas only 483 are known to occur on Réunion. The macrocomposition of these faunas over eight broad categories at or above the level of superfamily is shown in Figs 1–3; Figs 4–13 provide a more detailed breakdown of the same categories.

1. *Primitive Lepidoptera* (Figs 1–3)

Defined as the non-Ditrysian groups (Micropterigoidea to Tischerioidea), account for less than

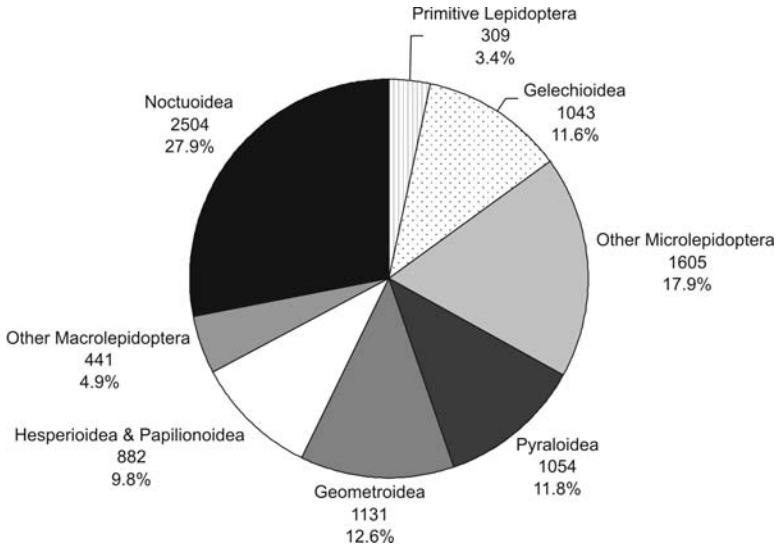

Fig. 1

Distribution of southern African Lepidoptera fauna over eight main categories.

4% of the southern African Lepidoptera fauna, but are virtually unrecorded from Madagascar (see below) and absent on Réunion. Although seemingly low, the figure for southern Africa in fact exceeds the global representation of these taxa.

Three hundred and nine species belonging to these groups have been recorded from southern Africa, but only eleven from Madagascar and none from Réunion, suggesting that Madagascar at least remains undersampled. Micropterigidae, for example, were only recently recorded from Madagascar (Davis *et al.,* in prep.). However, this discrepancy is unlikely to be entirely artificial, as not all primitive Lepidoptera are rare or require specialized sampling techniques as in the case of leaf miners. In particular, the absence of Hepialoidea from Madagascar is enigmatic as these moths are of considerable size and readily attracted to light. Within this assemblage, Nepticuloidea (139 species) are the largest group in southern Africa, followed by Hepialoidea and Incurvarioidea (both 77) and Tischerioidea (7). Only one species of Nepticu-

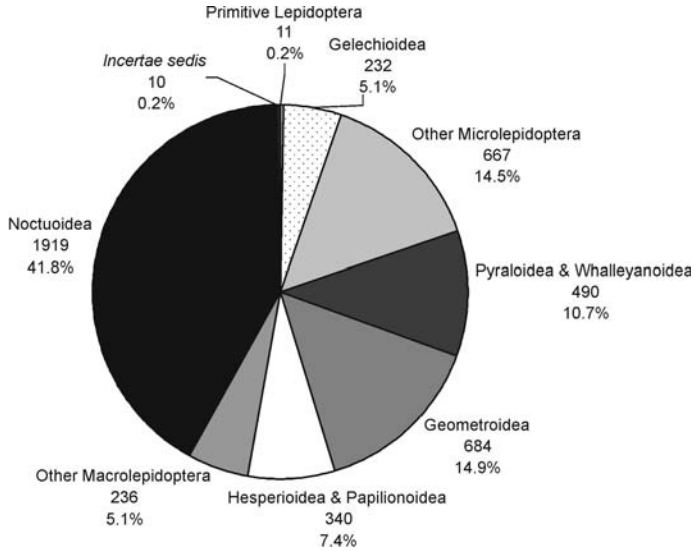

Fig. 2

Distribution of Madagascan Lepidoptera fauna over eight main categories.

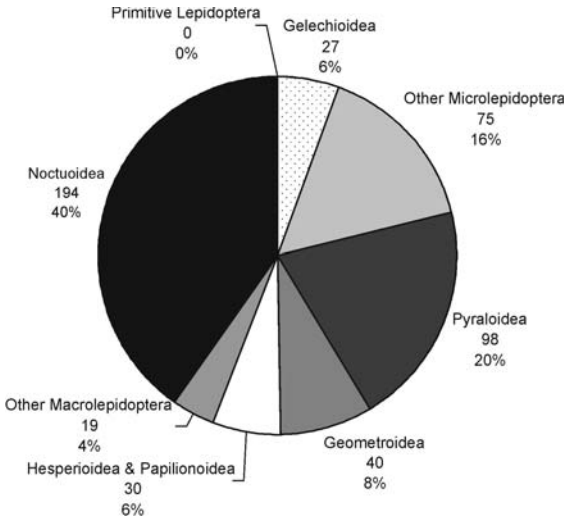

Fig. 3
Distribution of Lepidoptera fauna of Réunion over eight main categories.

loidea, and five species each of Incurvarioidea and Micropterigoidea (the latter still undescribed) are known from Madagascar to date; however, recent studies have revealed the presence on the island of numerous taxa from these groups, including the first Malagasy tischerioid (D. C. Lees, pers. comm.). Powers of dispersal are generally low among members of this group, and any Lepidoptera taxa present on Madagascar due to original vicariance would be expected to fall into this category.

2. *Other Microlepidoptera* (Figs 1–4)

A paraphyletic assemblage excluding Gelechioidea for practical purposes, accounts for a similar portion of the three faunas (southern Africa: 17.9%; Madagascar: 14.5%; Réunion: 16%) (Figs 1–3). This category includes no fewer than 16 superfamilies (Tineoidea, Gracillarioidea, Yponomeutoidea, Galacticoidea, Cossoidea, Tortricoidea, Sesioidea, Choreutoidea, Zygaenoidea, Immoidea, Copromorphoidea, Epermenioidea, Alucitoidea,

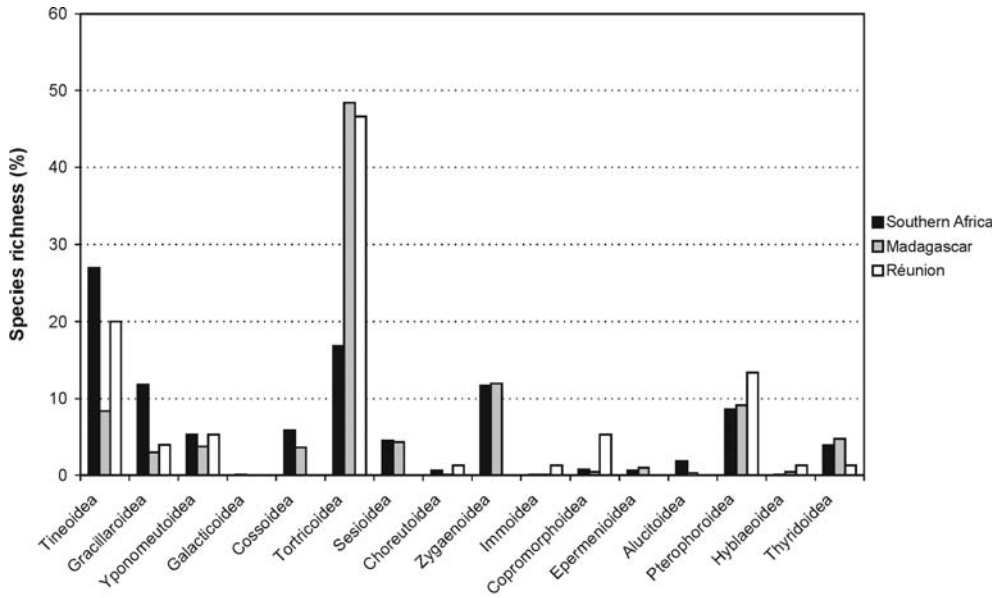

Fig. 4
Comparison of species richness between southern Africa, Madagascar and Réunion for category 2 (Other Microlepidoptera).

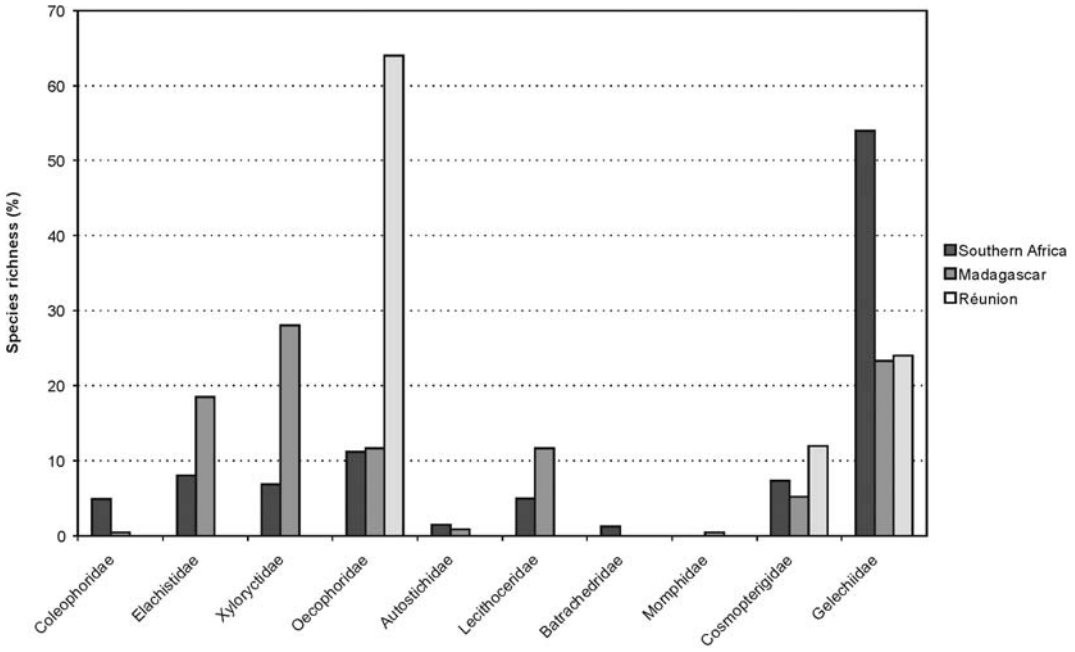

Fig. 5

Comparison of species richness between southern Africa, Madagascar and Réunion for category 3 (Gelechioidea).

Pterophoroidea, Hyblaeoidea, and Thyridoidea). Whereas all of these have been recorded from Madagascar, six superfamilies (Galacticoidea, Cossoidea, Sesioidea, Zygaenoidea, Epermenioidea, and Alucitoidea) appear to be absent from Réunion.

Probably the most outstanding trend is the strong representation of Tortricoidea in the island faunas (48.4 and 46.7%, respectively, compared with 16.8% for southern Africa). The seemingly greater diversity of Gracillarioidea in southern Africa (11.8% *vs* 3 and 4%) is probably an artifact, at least as far as Madagascar is concerned, as this group has been extensively studied only in the former study area (Vári, 1961). Conversely, Tineoidea to some extent present a different case. Their markedly better representation in southern Africa compared with Madagascar (26.9 *vs* 8.4%) is probably real as adults are readily attracted to lights; however, there are numerous undescribed Malagasy species (D. C. Lees, pers. comm.), whereas the Afrotropical fauna, although still incompletely known, was at least revised once (Gozmány and Vári, 1973). In southern Africa the group as a whole, although occurring in a wide range of habitats, shows a preference for dry areas: if the present-day climatic zonation with increasing aridification from the east to the west pertained during earlier periods shortly after the formation of the Mozambique Channel, Tineoidea would have been at a disadvantage as colonizers simply because of the greater distance occupied by unfavourable habitat they would have had to traverse. Interestingly, although many Tineoidea, especially Tineidae are synanthropic, the tineoid fauna of Réunion consists mostly of endemic species, demonstrating that the relatively short period of approximately 2 Ma was sufficient for multiple speciation following one or several successful colonization event(s).

Because of the diversity of this group, no general observations can be made regarding the powers of dispersal or habitat associations of its members, except to say that it does not contain known migrants. Owing to their diversity and large number of species, the Gelechioidea are considered separately below.

3. *Gelechioidea* (Figs 1–3, 5)

Within the study area, the greatest number of species of this large superfamily has been recorded from southern Africa, where it accounts for 11.6% of the Lepidoptera fauna, compared to 5.1% for Madagascar and 6% on Réunion (Figs 1–3). Although the Madagascan fauna is known to be undersampled (Lecithoceridae appear to be particularly well represented), Gelechioidea genuinely appear to be more dominant in southern Africa, where they reach their greatest diversity in the savanna and semiarid biomes, a habitat which is not well represented on either Madagascar or Réunion. It appears worth pointing out in this context

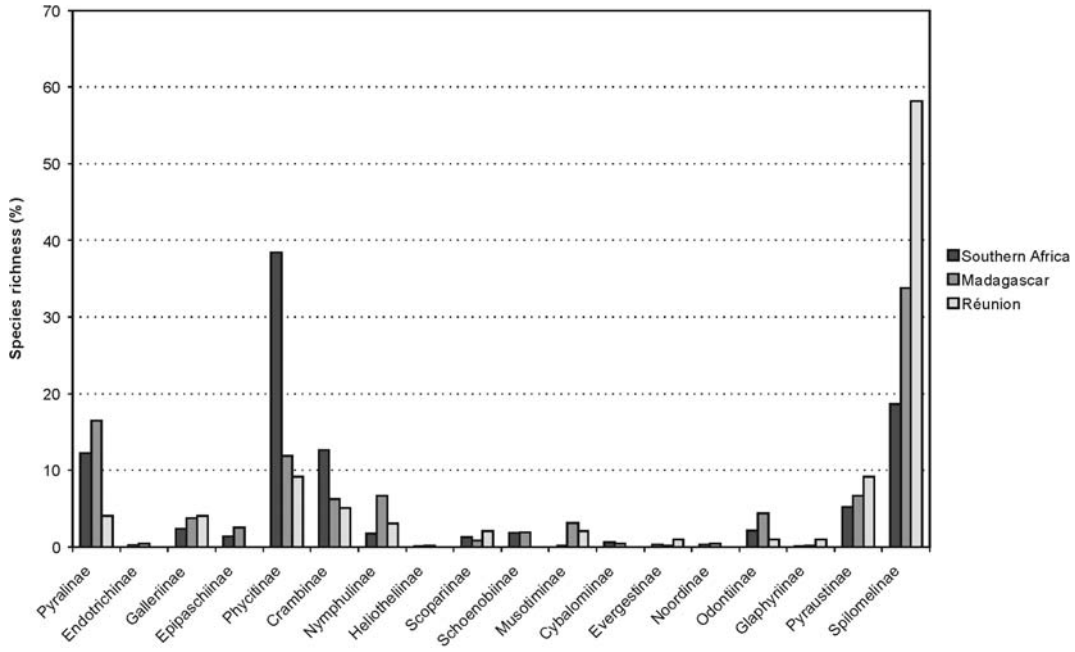

Fig. 6

Comparison of species richness between southern Africa, Madagascar and Réunion for category 4 (Pyraloidea).

that Gelechioidea, especially the families Oecophoridae, Cosmopterigidae, and Gelechiidae, have radiated extensively in Australia and New Zealand (Dugdale, 1988; Nielsen *et al.,* 1996).

Of the ten gelechioid families recognized here, only Momphidae have not been recorded from southern Africa, and only Batrachedridae appear to be absent from Madagascar, whereas only three (Oecophoridae, Cosmopterigidae, and Gelechiidae) are known from Réunion. Here, the Oecophoridae: Metachandini are remarkable in that they have most strongly radiated on Réunion (10 endemic species and one endemic subspecies, compared with five species on Madagascar and four in southern Africa).

The family Gelechiidae accounts for more than half the species of Gelechioidea in southern Africa (54%), with Oecophoridae (11.2%) being the next most diverse. Representation of the other eight families varies between 0% and 8% (Fig. 5). By contrast, species richness in the Malagasy fauna is more balanced, with Xyloryctidae (28%) and Gelechiidae (23.3%) being approximately equally diverse, followed by Elachistidae (18.4%) and Oecophoridae (11.6%).

4. *Pyraloidea & Whalleyanoidea* (Figs 1–3, 6)

As already mentioned, the only recently recognized small superfamily Whalleyanoidea, comprising two species in the sole constituent family Whalleyanidae, is the highest-ranking lepidopteran taxon endemic to Madagascar (Lees and Minet, 2003). By contrast, the highly diverse Pyraloidea, comprising Pyralidae and Crambidae, enjoy approximately equal representation in southern Africa (11.8%) and Madagascar (10.7%), but almost twice as much on Réunion (20%) (Figs 1–3). The group contains numerous taxa with strong dispersal capabilities, particularly in the Spilomelinae (see Appendixes 3 and 4). I have followed K. Maes (*in litt.*) in treating both Pyraustinae and Spilomelinae as distinct subfamilies, rather than to include Spilomelinae (as Spilomelini) in Pyraustinae as proposed by Munroe and Solis (1999). In many cases this necessitated reallocation of the genera placed in Pyraustinae by Viette (1990). Of the 18 pyralid and crambid subfamilies present in the study area, all are represented in southern Africa and Madagascar, whereas six (Endotrichinae, Epipaschiinae, Heliotheliinae, Schoenobiinae, Cybalomiinae, and Noordinae) have not to date been recorded on Réunion.

With a few notable exceptions the macrodistribution of species over these 18 subfamilies is broadly similar for the two large areas (Fig. 6). However, Phycitinae (including the concept of Peoriinae) and Crambinae are markedly more diverse in southern Africa than on Madagascar (Phycitinae: 38.4% *vs* 11.9%; Crambinae: 12.7% *vs* 6.3%), whereas Spilomelinae (33% *vs* 18.7%), Nymphulinae

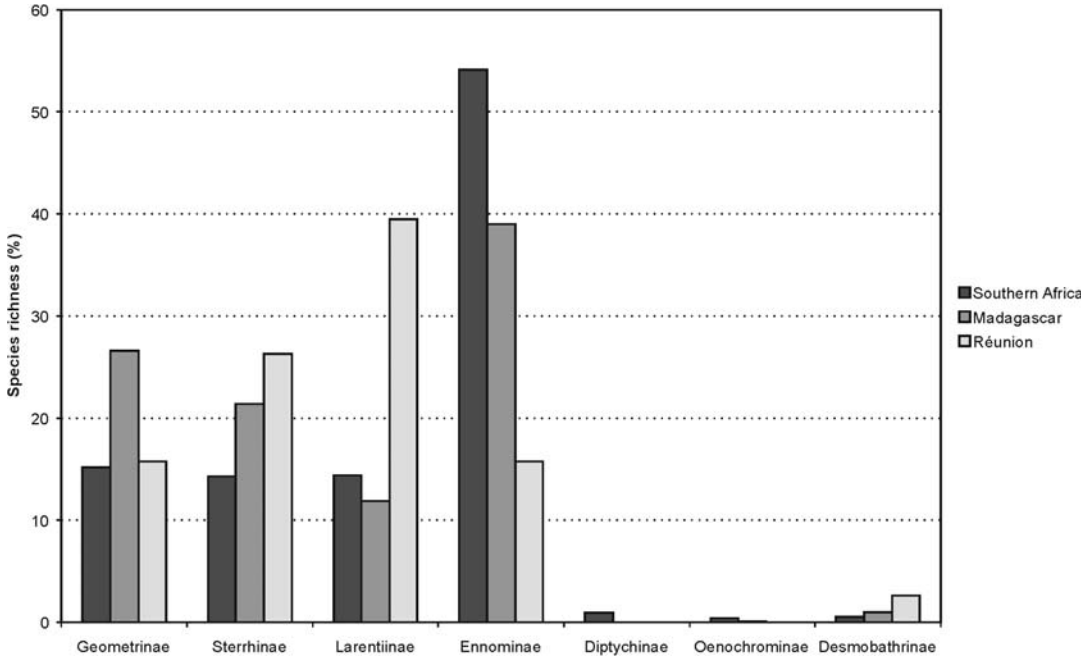

Fig. 7

Comparison of species richness between southern Africa, Madagascar and Réunion for category 5 (Geometroidea).

(6.7% *vs* 1.8%), and Odontiinae (4.4% *vs* 2.1%) are represented by more species on Madagascar. On Réunion, Spilomelinae account for more than half of the species total (58.2%), followed by Phycitinae and Pyralinae (both 9.2%).

In southern Africa, Phycitinae are most diverse in the savanna and semiarid biomes such as Nama Karoo, whereas Crambinae are predominantly inhabitants of grassland, frequently at high altitudes. Both vegetation types are considered not to have been not well represented on Madagascar historically and/or result from human impact (Lowry *et al.,* 1997; Du Puy and Moat, 1996), although there exists a natural or semi-natural upper montane grassland zone. The Malagasy semiarid zone is considered to have been more extensive in the past, although it is not known how this would have been reflected in its associated Lepidoptera fauna.

5. *Geometroidea* (Figs 1–3, 7)

The Geometroidea, with the sole constituent family Geometridae, are approximately equally well represented in the three study areas, although slightly less so on Réunion (southern Africa: 12.6%; Madagascar: 14.9%, Réunion: 8%) (Figs 1–3). The four major subfamilies Geometrinae, Sterrhinae, Larentiinae, and Ennominae are present in all three study areas, as is the small subfamily Desmobathrinae, but Oenochrominae are absent from Madagascar and Diptychinae are absent from both island faunas (Fig. 7).

In comparison with southern Africa, Geometrinae and Sterrhinae are more diverse on Madagascar (Geometridae: 26.6% *vs* 15.2%; Sterrhinae: 21.4% *vs* 14.3%). Geometrinae in particular have undergone a spectacular radiation, resulting in numerous endemic genera and species (see Appendix 2). On Réunion, Larentiinae are most diverse (39.5%, compared with 11.9% for Madagascar and 14.4% for southern Africa), possibly a reflection of the known preference of this group for mountainous habitats, which are well represented on the volcanic island, whereas Ennominae are relatively poorly represented there (15.8% compared with 39% for Madagascar and 54.1% for southern Africa (see Appendix 5). With exception of the well-known example of the migratoty *Rhodometra sacraria* (L.), dispersal capabilities of Sterrhinae appear to be underrated, probably as a result of their small size and inconspicuous habitus: it should be noted that this group accounts for more than a quarter of the geometrid fauna of Réunion, with a low level of endemicity.

6. *Hesperioidea & Papilionoidea* (Figs 1–3, 8, 9)

Overall, the representation of true butterflies and skippers shows a small decline from the mainland to the island faunas (southern Africa: 9.8%, Mada-

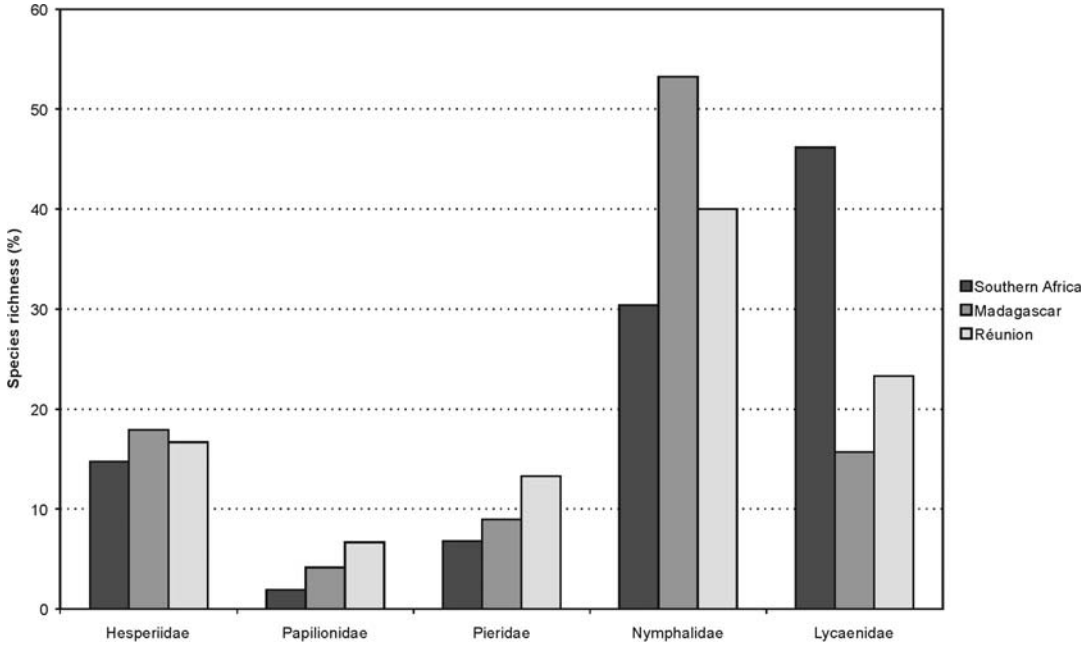

Fig. 8

Comparison of species richness between southern Africa, Madagascar and Réunion for category 6 (Hesperioidea & Papilionoidea).

gascar: 7.4%, Réunion: 6%). The five families, all of which are present throughout the study area, show marked differences in their occurrence.

Hesperioidea, with the sole constituent family Hesperiidae, are very evenly distributed, with percentages of between 14.7% (southern Africa) and 18% (Madagascar). Papilionidae and Pieridae both show an almost linear increase from the mainland to

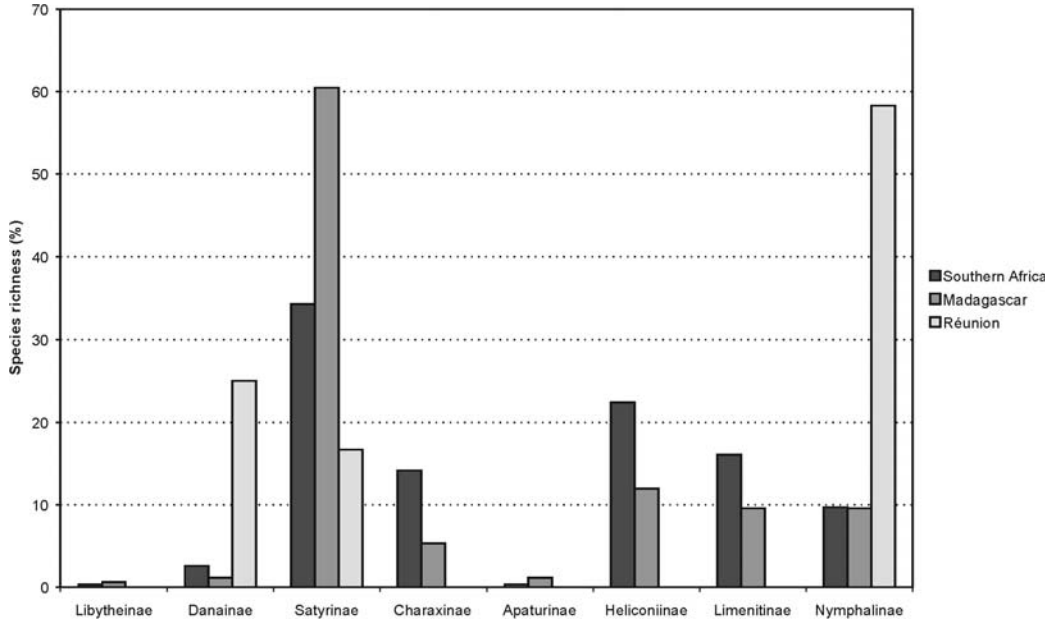

Fig. 9

Comparison of species richness between southern Africa, Madagascar and Réunion for subfamilies of Nymphalidae.

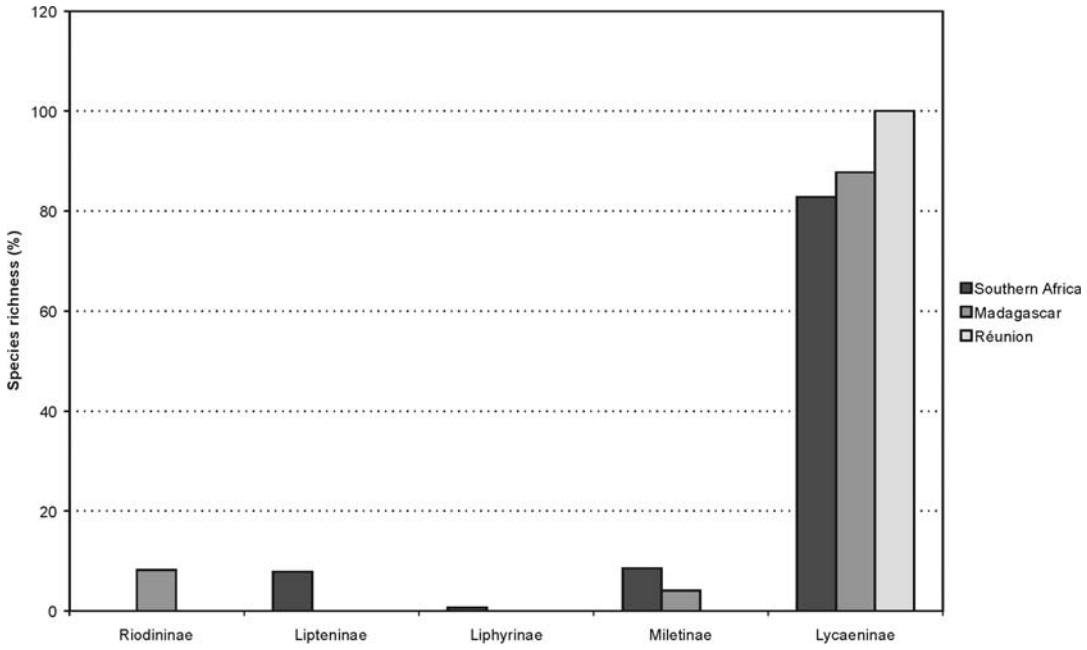

Fig. 10

Comparison of species richness between southern Africa, Madagascar and Réunion for subfamilies of Lycaenidae.

Madagascar, reaching their strongest representation on Réunion, where they account for 6.7 and 13.3% of this category, respectively. In biogeographical terms the swallowtails are remarkable in that they present both an example of colonization with subsequent speciation of the African mainland from Madagascar (Zakharov *et al.,* 2004) and in that Madagascar marks the westernmost extension of the range of the tribe Troidini (*Pharmacophagus antenor*), an otherwise Australian and Oriental group. Nymphalidae, too, are more strongly represented in the island faunas (southern Africa: 30.4%, Madagascar: 53.2%, Réunion: 40%), but the reverse is true for Lycaenidae (southern Africa: 46.2%, Madagascar: 15.7%, Réunion: 23.3%).

On the subfamily level, all eight nymphalid subfamilies under consideration are represented in the two large areas, whereas only Danainae, Satyrinae and Nymphalinae have been recorded from Réunion, which is home to a very limited fauna of 12 species only. Charaxinae, Limenitinae and Heliconiinae are more strongly represented in southern Africa than on Madagascar; conversely, Elymniini and Satyrini (Nymphalidae: Satyrinae) of Madagascar probably provide the best-known example of an island radiation by butterflies; their diversity was most recently summarized by Lees *et al.* (2003) and mostly accounts for the dominance of Satyrinae within the nymphalid fauna (60.5%, compared with 34.3% for southern Africa and 16.7% for Réunion). (Although a recent molecular study (Peña *et al.,* 2006) suggests that Elymniini are not a natural group, the name is retained here to facilitate access to the relevant literature.)

With regard to Lycaenidae, four of the five subfamilies are poorly represented, with between 82.8 and 100% of the fauna belonging to the diverse Lycaeninae. Of the smaller subfamilies, the largely Neotropical Riodininae are limited to Madagascar, whereas Lipteninae and Liphyrinae do not form part of either of the island faunas; lastly, Miletinae have been recorded from both southern Africa and Madagascar, where they account for 8.6% and 4.1% (or two species) of the lycaenid fauna, respectively.

The species-rich Lycaeninae (used here in a broad sense to include the former subfamily Polyommatinae (as Polyommatini)) show marked differences in the distribution of the three tribes Lycaenini, Theclini, and Polyommatini over the three study areas. The small tribe Lycaenini, which has a predominantly Holarctic distribution, is poorly represented in southern Africa and absent from the island faunas. Theclini are present in all three areas, but poorly represented in Madagascar (12 species) and Réunion (1 species); this in stark contrast to southern Africa, from which area 185 species have been recorded. Most of these belong to the tribe Aphnaeini, some genera of which (e.g., *Aloeides* Hübner and *Chrysoritis* Butler) have speciated strongly in the southwestern part of the subconti-

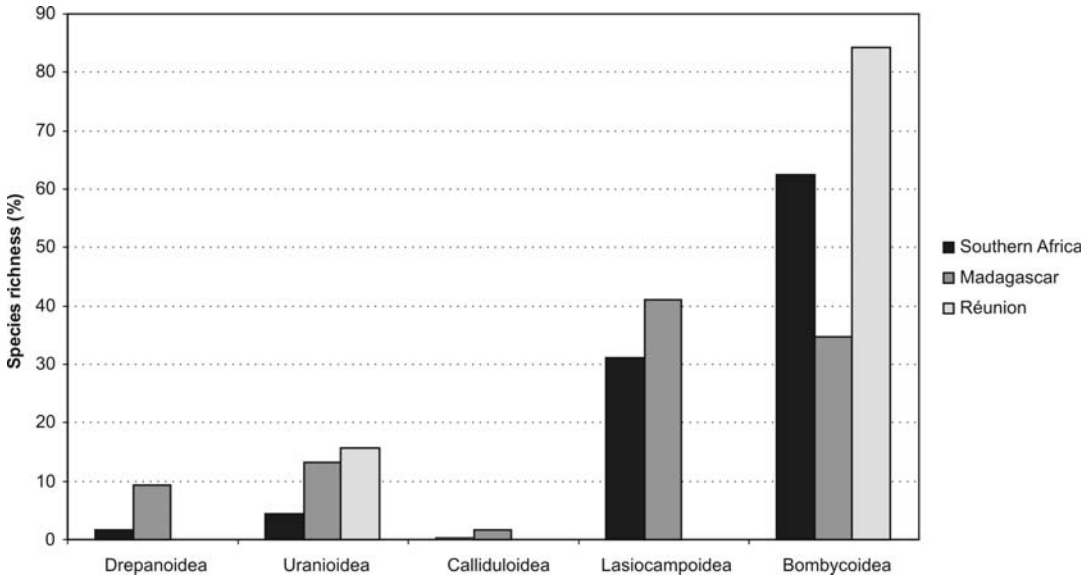

Fig. 11
Comparison of species richness between southern Africa, Madagascar and Réunion for category 7 (Other Macrolepidoptera).

nent. Polyommatini are well represented in all three areas; in southern Africa this is mostly as a result of the numerous species of the large Afrotropical genus *Lepidochrysops* Hedicke, which is also represented on Madagascar. Many of the smaller Polyommatini have a wide distribution, and five out of the six species present on Réunion occur throughout the study area and beyond.

7. *Other Macrolepidoptera (Drepanoidea, Uranioidea, Calliduloidea, Lasiocampoidea, and Bombycoidea)* (Figs 1–3, 11, 12)

All of the five largely unrelated superfamilies grouped together under this heading have been recorded from southern Africa and Madagascar, whereas only Uranioidea and Bombycoidea are known from Réunion. Drepanoidea, Uranioidea, and Calliduloidea are generally small taxa; all three superfamilies show a better representation on Madagascar compared with southern Africa (Drepanoidea: 9.3% *vs* 1.7%; Uranioidea: 13.1% *vs* 4.4%), and Drepanidae here include the endemic tribe Nidarini.

Calliduloidea, with only 60 species worldwide (Minet, 1999), are poorly represented in both regions (southern Africa: 0.25%, Madagascar: 1.7%) (Fig. 11); however, in addition to Pterothysaninae, they include the endemic suprageneric clade Griveaudiinae.

Lasiocampoidea, comprising only Lasiocampidae, are better represented on Madagascar (41.1%) than in southern Africa (31.2%) as a result of a marked radiation leading to numerous endemic taxa on the island; the opposite is the case for Bombycoidea (with six constituent families) as a whole, accounting for 62.4%, 34.7%, and 84.2% of this category in southern Africa and on Madagascar and Réunion, respectively (Fig. 11).

Species richness and distribution of the six constituent bombycoid families is highly variable (Fig. 12). Whereas all six families are represented in southern Africa, Lemoniidae and Brahmaeidae have not been recorded from Madagascar, and only Sphingidae are known from Réunion. With regard to dispersal capability, the latter family, all members of which are strong flyers and which contains numerous migrants, stands in sharp contrast to the remaining groups, which as a rule are sedentary as adults, especially females. Sphingidae thus show an increase in representation with growing distance from the mainland (southern Africa: 41.3%, Madagascar: 72%, Réunion: 100%).

Despite their low dispersal capabilities, Saturniidae have speciated to some extent on Madagascar, although not as successfully as Lasiocampidae, and account for 25.6% of the bombycoid fauna, only slightly less than the representation of this family in southern Africa (29.9%). By contrast, Eupterotidae account for 25.2% of the bombycoid fauna of southern Africa, but only 1.2% (or one species) on Madagascar. This marked bias may perhaps in part be accounted for by the fact that

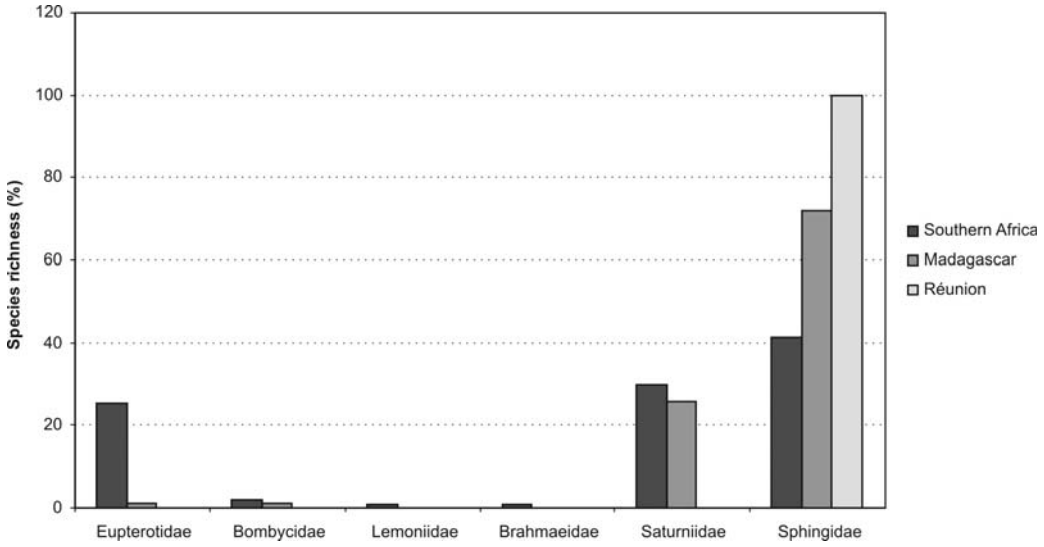

Fig. 12

Comparison of species richness between southern Africa, Madagascar and Réunion for families of Bombycoidea.

most eupterotids in southern Africa are associated with the grassland and savanna biomes and that these habitats were absent or poorly represented on Madagascar. The sole Malagasy species *Jana palliatella* Viette, 1955 is a rainforest specialist (D. C. Lees, pers. comm.) and so may be more closely related to the West African members of the genus (Gaede, 1927).

7. *Noctuoidea* (Figs 1–3, 13–15)

The Noctuoidea are the largest lepidopteran superfamily, with Noctuidae in turn being the most species-rich family within this assemblage. Proportionally, the group is most strongly represented on Madagascar (41.8%), followed by Réunion (40%) and southern Africa (27.9%) (Figs 1–3). It should be noted that this apparent underrepresentation in southern Africa is largely an artifact caused by the increasing loss of diversity of other groups in the island faunas on the one hand, and of the exhaustive treatment of the Malagasy fauna by Viette (1962, 1965, 1967) and others.

Representation of the six families grouped together here is broadly similar for southern Africa and Madagascar, although Thyretidae are absent from the island (Fig. 13); only three families (Arctiidae, Nolidae, and Noctuidae) are present on Réunion. Two groups have speciated extensively on Madagascar, leading to the evolution of numerous endemic taxa, namely the Lymantriidae and the subfamily Lithosiinae of the Arctiidae. The latter have evolved one of the few suprageneric taxa endemic to Madagascar, the tribe Phryganopterygini (Bendib and Minet, [2000]).

Breakdown of nolid and noctuid subfamilies for southern Africa and Madagascar (Figs 14, 15)

Six of the seven nolid subfamilies known from the study area have been recorded from both southern Africa and Madagascar, with only Eligminae not being known from the large island, but only four (Nolinae, Chloephorinae, Eariadinae, and Bleninae) occurring on Réunion. Representation over these subfamilies is uneven, but again it needs to be borne in mind that this is in part an artifact caused by small sample sizes (e.g., in Earidinae). However, Nolinae genuinely have speciated more strongly on Madagascar than in southern Africa.

Of the 18 subfamilies of Noctuidae considered here, only Pantheinae have not been recorded from southern Africa, whereas two (Amphipyrinae, Bryophilinae) appear to be absent from Madagascar and five (Pantheinae, Amphipyrinae, Agaristinae, Bryophilinae, Cuculliinae) do not form part of the fauna of Réunion. Catocalinae (*sensu lato*), Acontiinae and Noctuinae (including Hadeninae) emerge as the most species rich taxa, and overall, the distribution of species across subfamilies is broadly similar, although the strong representation of Catocalinae in the island faunas is notable. Many of the genera in question have a wide Old World tropical distribution and strong powers of dispersal.

Note. The classification used here departs in several instances from the recent system adopted in Kristensen (1999), such as in the recognition of Uranioidea as separate from Geometroidea, the treatment of Gelechioidea, or, within Pyraloidea, the treatment of both Spilomelinae and Pyraustinae as separate subfamilies, rather than inclusion of the

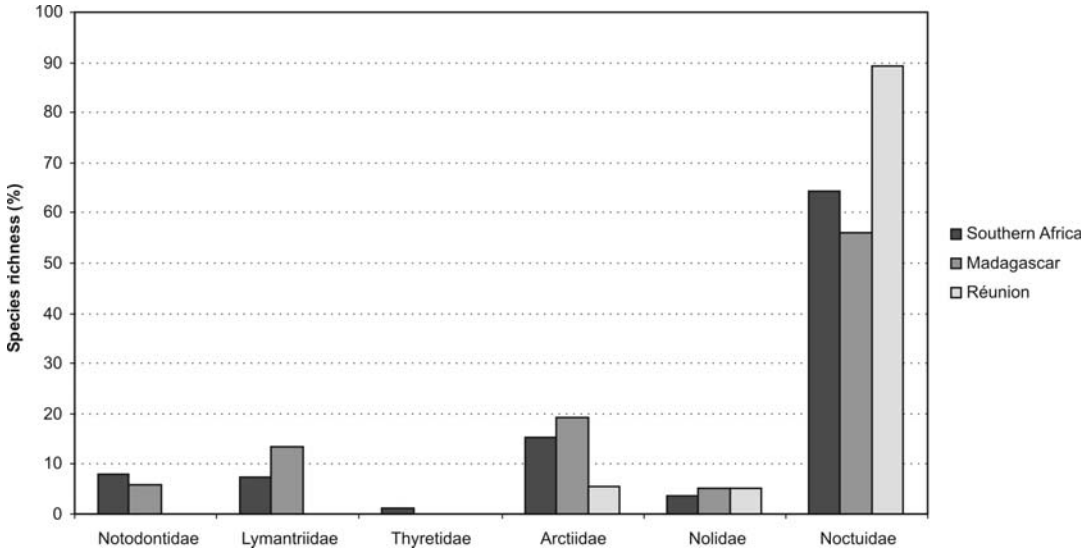

Fig. 13
Comparison of species richness between southern Africa, Madagascar and Réunion for families of Noctuoidea.

former as a tribe within Pyraustinae. A further example is presented by the treatment of Thyretidae as of family rank, rather than a subfamily within Arctiidae. Although regrettable in the sense that some taxonomic resolution may have been lost, this step was necessary to ensure compatibility between the checklists for Madagascar and southern Africa. (See also reclassification of Nolidae proposed by Speidel *et al.* (1996) and Holloway (1998), and general classification adopted in Lees and Minet (2003).)

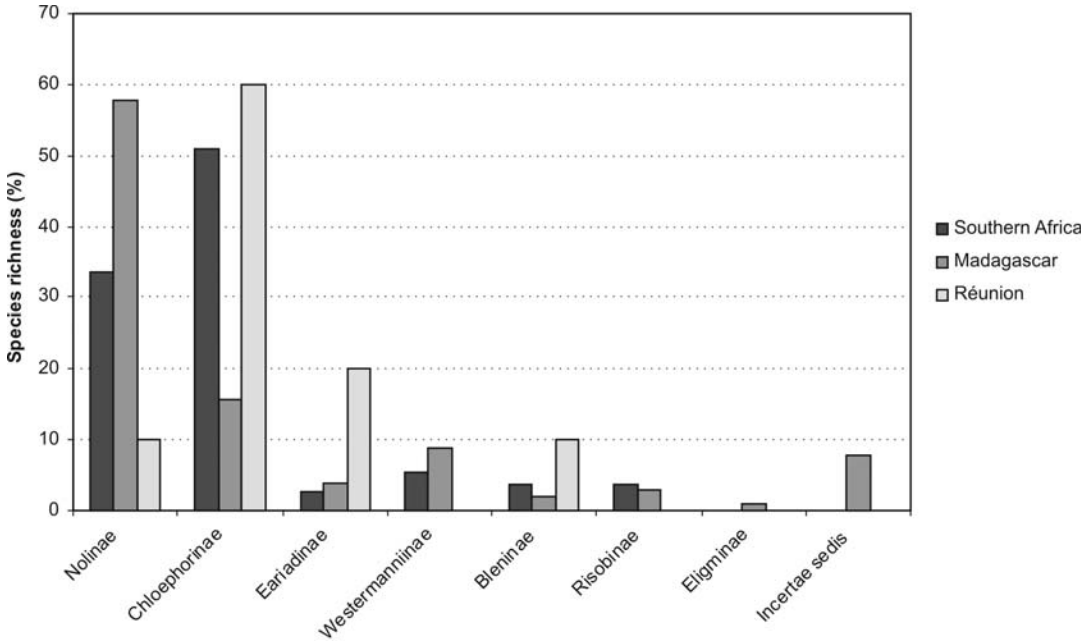

Fig. 14
Comparison of species richness between southern Africa, Madagascar and Réunion for subfamilies of Nolidae.

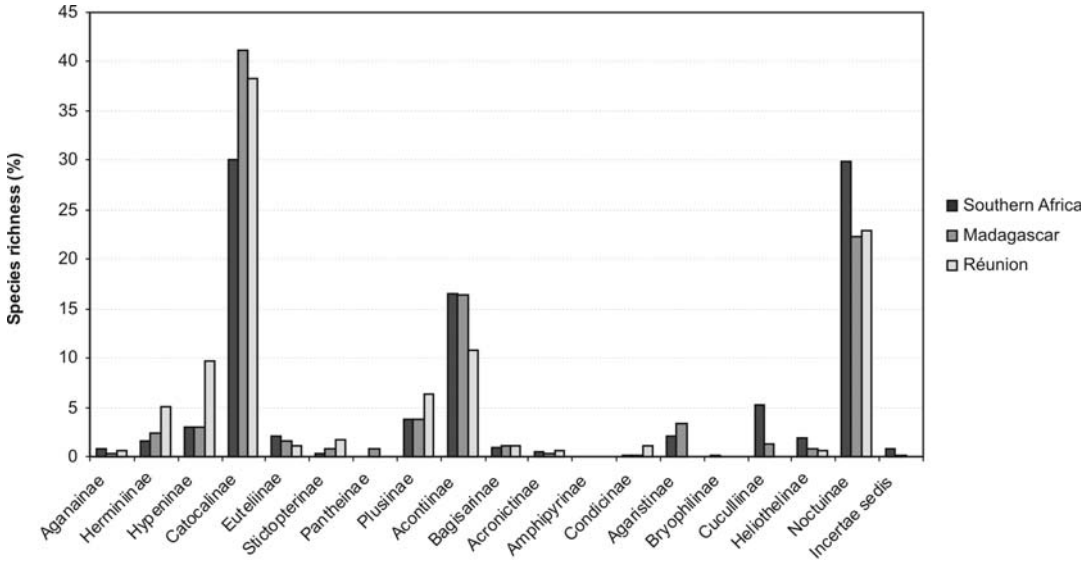

Fig. 15

Comparison of species richness between southern Africa, Madagascar and Réunion for subfamilies of Noctuidae.

DISCUSSION

Similarity and geographical origin of faunas

Table 1 summarizes the combined species totals for southern Africa and Madagascar, percentage of species shared between the two regions, as well as percentage of endemism in the Madagascan fauna and species/genus ratios for selected groups.

Slightly in excess of twenty per cent (23%) of genera are shared between these two regions (Appendix 3). Although the proportion of shared taxa drops to 2.8% at the species level (Appendix 4), the general composition of the three faunas and the age of the separation of Madagascar from the mainland suggest a common ancestry with subsequent development in isolation for most groups incapable of efficient dispersal. The fauna of Réunion shows clear affinities to those of Madagascar and southern Africa: of the 483 recorded taxa, 166 are endemic species or subspecies, 179 are shared with both Madagascar and southern Africa, 88 are shared with Madagascar only, and 13 are known from Réunion and southern Africa, but not from Madagascar. Approximately 10% (31 species) are shared between Réunion and Mauritius, bringing the total to 301. Fewer than 10 species are common to Réunion and other island groups, the Oriental Region or East Africa. Although I have no doubt that the above comparisons based on published taxonomic information accurately reflects major trends in faunal composition, it must always be borne in mind that the degree of reliability (i.e., completeness) of such lists will be a direct reflection of in how much detail a given group has been studied and thus inevitably be biased in favour of over-subscribed taxa such as butterflies, at the expense of severely neglected groups such as many 'microlepidoptera'.

Respective contribution of vicariance and dispersal to island faunas

Vicariance

Considerable progress has been made in recent years towards resolving the higher-level classification of Lepidoptera (Kristensen, 1999). Despite the paucity of Lepidopteran fossils in general and of those from the Mesozoic in particular (Kristensen and Skalski, 1999; Grimaldi and Engel, 2005), the fossil record still indicates that the order largely diversified in the Cretaceous and early Tertiary together with the flowering plants, i.e., later than any of the other major insect orders. The oldest lepidopteran fossil presently known dates to 190 Ma (Grimaldi and Engel, 2005). During this period fragmentation of Gondwanaland was already nearing completion: the rifting of Gondwana began at approximately 180 Ma, starting with that between eastern Gondwana (Africa, India, Madagascar) and western Gondwana (all other southern landmasses), and by 120 Ma Madagascar had become clearly separated from the African mainland, although it remained firmly connected to India (Wilford and Brown, 1994; Masters *et al.,* 2006). It is unfortunate in this context that no checklist of the Lepidoptera fauna of India is available as this would have

Table 1
Combined species totals, percentage of shared species and of endemism* on Madagascar, and species/genus ratios for selected groups in the southern African (SA) and Madagascan faunas. Note that entries have been ranked according to increasing percentage of shared species.

Taxon	Total no. species SA+Mad	% Shared species	% Mad endemics	Species/genus ratio SA:Mad
Coleophoridae	52	0.00	100	6.38:1
Oecophoridae	144	0.00	100	1.98:1.93
Cosmopterigidae	89	0.00	100	2.96:1.71
Ethmiidae	31	0.00	100	14: 17
Saturniidae	97	0.00	100	2.62:4.20
Lasiocampidae	224	0.00	100	2.54:3.59
Lymantriidae	441	0.23	99.61	3.64: 5
Lithosiinae	319	0.31	99.56	2.28:9.16
Gelechiidae	617	0.32	96.30	3.98:3.6
Notodontidae	307	0.33	99.08	2.12:2.54
Limacodidae	187	0.54	98.53	2.03:2.61
Arctiidae	594	0.67	98.92	2.7:7.14
Elachistidae	126	0.80	99.77	3.5:5.4
Syntominae	123	0.81	98.08	3.71:6.53
Satyrinae	191	1.05	98.02	3.83:12.63
Ennominae	838	1.55	94.56	6.44:6.13
Tineidae	303	1.65	86.84	3.07:1.81
Pyralinae	201	1.99	94.94	3.94:2.72
Hesperiidae	182	2.20	92.86	3.42:3.5
Tortricidae	579	2.42	95.67	6.43:2.96
Pterophoridae	147	2.72	93.44	4.74:1.91
Geometrinae	326	2.76	94.48	2.92:4.41
Phycitinae	439	2.96	77.19	3.11:1.54
Arctiinae	134	2.98	90.00	2.8:4
Pyralidae	707	3.25	87.04	3.18:2.05
Geometridae	1688	3.32	90.86	5.07:5.52
Nolidae	205	3.41	93.14	3.33:4.86
Caradr. ass./Inc. sed.	441	4.08	88.96	3.45:2.88
Lycaenidae	438	4.11	63.26	6.34:1.96
Acontiinae	416	4.81	88.30	5.07:5.34
Hadenini	123	4.88	84.21	4.14:3.17
Noctuinae	677	5.02	85.34	3.71:2.97
Larentiinae	224	5.36	83.56	4.66:3.84
Nymphalidae	410	5.85	85.54	4.47:5.19
Chloephorinae	68	5.88	75.00	2.8:2.29
Pyraustinae	81	6.17	84.37	3.18:2.46
Noctuidae	2488	6.23	85.10	3.54:3.15
Papilionidae	28	7.14	84.61	8.5:4.33
Sterrhinae	273	7.33	84.73	8.1:10.92
Crambinae	149	7.38	63.30	4.33:1.88
Catocalinae	847	7.56	85.08	3.11:2.77
Hypeninae	74	8.10	80.64	4.45:4.43
Nymphulinae	46	8.70	87.50	3:3.56
Noctuini	103	8.74	66.70	4.72:3.86
Galleriinae	38	10.53	77.78	2.4:2.25
Crambidae	699	11.30	74.68	2.77:2.52
Sphingidae	147	11.56	71.19	2.19:2.19
Plusiinae	85	17.65	62.50	6:5.71
Spilomelinae	300	18.00	66.70	2.43:2.57
Pieridae	74	18.92	50.00	4.29:2.55

*Percentage rates of endemism were calculated only between the southern African and Madagascan faunas, and do not take species shared between Madagascar and Réunion or other islands such as Mauritius or the Comoros into account. See also distributional information in Appendix 5.

allowed for a comparison of the faunas of the two Gondwanan fragments that were last to separate.

The presence of any group of Lepidoptera on Madagascar due to vicariance is therefore feasible only for the most primitive lineages, and not possible at all on Réunion. The most likely group are Micropterigoidea, the most primitive extant Lepidoptera, whose fossil record dates back to the Lower Cretaceous (Whalley, 1986) and who are likely to have a Pangaean rather than a Gondwanan origin as suggested by the presence of fossils in the northern hemisphere. Micropterigidae have only recently been discovered on Madagascar (Davis *et al.*, in prep.). Further, less probable candidates

include three of the other superfamilies grouped under Primitive Lepidoptera, namely Nepticuloidea, Incurvarioidea, and Tischerioidea. Hepialoidea are probably truly absent from Madagascar, although there is no convincing explanation for this phenomenon, in particular given the comparatively strong representation of this group in southern Africa. In the case of Tischerioidea and especially Nepticuloidea, which also have not been recorded from Madagascar to date, a specialized search for these leaf miners recently has in fact led to their discovery, as was the case with Micropterigoidea, although these findings have not been published yet; the nepticulid fauna in particular appears to be very rich (D. C. Lees, pers. comm.). The Ditrysia, which account for approximately 98.5% of lepidopteran species, are known only from Cenozoic fossils, and most of these taxa can be readily placed in extant families. The overwhelming majority of Madagascan endemics, which with few exceptions (Whalleyanoidea; Callidulidae: Griveaudiinae; Drepanidae: Nidarini; Arctiidae: Lithosiinae: Phryganopterygini) almost exclusively exist at the species and genus levels, are descended from species that dispersed from the African mainland rather than from originally vicariant taxa. It should be noted here that Madagascar served at least occasionally as source area for the colonization of the African mainland; a recently documented example concerns swallowtail butterflies (Zakharov *et al.*, 2004), and Fletcher (1967) postulated a Malagasy origin to account for the presence of the ennomine geometrid *Cleora quadrimaculata* Janse in Natal; other likely examples include species of *Urapteritra* Viette and *Chrysiridia* Hübner in the Uraniidae (see also Lees and Smith, 1991, and Endnote 55).

Dispersal and subsequent speciation

The widely used island biogeography model proposed by MacArthur and Wilson (1967) predicts that species richness of island faunas will be determined by an ongoing dynamic process of colonization and extinction, leading (in theory) to a state of equilibrium. This model has been mostly applied to the study of faunas of limited geographical areas and time spans. Heaney (2000) presented a case for the inclusion of phylogenesis as a third operative factor in a dynamic disequilibrium. Based on a biogeographical and cladistic study of the rodents of the Philippines, he proposed a conceptual model for rate curves for colonization and phylogenesis on a series of islands of varying size and distance from a species-rich source (see Fig. 5 and explanation in Heaney, *loc. cit.*: 68–69). The equilibrium model of island biogeography predicts a sharp drop in the colonization rate beyond a certain point of isolation of the island from the source of colonization, which Madagascar must have reached a long time ago. In the model proposed by Heaney, phylogenesis begins to influence species richness once a point of isolation of the island has been reached where gene flow rates are no longer so high as to swamp out any genetic change that occurs. The extent of phylogenesis that can take place subsequently will be mostly determined by three factors, the size and physiogeographical complexity of the island, its degree of isolation, and time. This model, applied to the faunal comparison with which this paper is concerned, allows some pertinent observations to be made.

In cases such as the one under consideration here, where dispersal is assumed to have been the main means of lineage origination, less dispersive groups will tend to show greater subsequent *in situ* speciation following a successful colonization event, whereas more dispersive groups are likely to fill the ecological niche of the group through repeated colonization. To obtain some idea of which taxa may be characterized as good and poor dispersers, respectively, species/genus ratios were calculated for selected groups (Table 1). This ratio would be expected to be relatively higher in those groups with poor dispersal capabilities. Taxa for which results supporting this hypothesis were obtained include, *inter alia,* the Saturniidae, Lasiocampidae, Lymantriidae, Arctiidae (entire family, but especially Lithosiinae and Ctenuchinae) and the Geometridae: Geometrinae. All of these groups have undergone extensive speciation on Madagascar, and the rate of endemism for these taxa varies between 94.5% and 100%. However, not all cases of *in situ* speciation on Madagascar can be readily detected by a skewed species/genus ratio. Prominent examples in addition to those mentioned above include the Oecophoridae, Tortricidae, Notodontidae and Geometridae: Ennominae in the case of Madagascar, and the Oecophoridae: Metachandini and Tortricidae in the case of Réunion. These taxa show relatively balanced species/genus ratios (in the sense of values for southern Africa and Madagascar being roughly equal) as they have undergone extensive speciation in southern Africa as well, although rates of endemism for the Madagascan fauna vary between 95.09 and 100%.

Conversely, species/genus ratios biased towards southern Africa were found, e.g., for the Tineidae, Gelechiidae, Tortricidae, Pyralidae: Phycitinae, Pterophoridae and Crambidae: Crambinae, which are mostly highly diverse in the subregion, with high levels of endemism, but with exception of the Tortricidae and Pterophoridae are adapted to habitats not or only poorly represented on Madagascar.

Widely distributed taxa with strong powers of

dispersal and synoecious species or pests that have spread through human activities were found to have comparatively low and balanced (*i.e.,* similar) species/genus ratios, such as in the Noctuidae: Catocalinae (3.11:2.77), Crambidae: Galleriinae (2.40:2.25), Crambidae: Spilomelinae (2.43:2.57) and Sphingidae (2.19: 2.19). As would be expected, these groups provide the bulk of taxa shared between the three study areas (species recorded from Réunion are marked 'R' in Appendix 3).

Extent of cladogenesis on Madagascar and Réunion

As an extension of the conceptual model for colonization and phylogenesis, Heaney (2000) proposed a second model showing the development of species richness on large islands experiencing varying rates of colonization due to varying degrees of isolation (see Fig. 6 and explanation in Heaney, *loc. cit.*: 70–71). According to the model, colonization on islands near a source will be so frequent as to obliterate any genetic changes, with the result that all resident species will be non-endemic. With increasing distance, a point will be reached where colonizers from the source will reach the island less often than once per generation on average, some populations will undergo differentiation from an ancestor not accompanied by dichotomous speciation, and endemic taxa will begin to be present. At still lower rates of colonization from the source area, phylogenesis will increasingly contribute towards species richness.

Following from this, the fauna of old, stable islands (or archipelagoes) such as Madagascar would be expected to comprise (i) a few non-endemic species (recent invaders from the source area), (ii) a set of endemic species whose sister taxa are present in the source area; (iii) a few species whose sister taxa are other endemic species within the island, i.e., small endemic clades, and (iv) members of larger and older endemic clades. The non-endemic species, i.e., species shared with the source area, are listed in Appendix 4. An instance of Madagascan endemics whose sister taxa occur in the eastern part of southern Africa is provided, for example, by macariine geometrids of the genera *Isturgia* Hübner and *Chiasmia* Hübner (Krüger, 2001). Owing to the size and longstanding isolation of Madagascar of at least 80 Ma (the oldest Philippine islands studied by Heaney (2000) had been isolated for 35 Ma) and greater distance involved, phylogenesis has progressed to a stage where total endemicity at the species level exceeds 96%, and there are numerous putative endemic clades. However, these exist mostly at the genus level, introducing an element of subjectivity. A significant amount of alpha-taxonomic work is still required to determine how many endemic Madagascan genera are in fact justified. Conversely, suprageneric endemicity was underestimated until recently, and includes one superfamily, one subfamily and two tribes (Lees and Minet, 2003).

Being of much smaller size and younger geological age, Réunion would be expected under the model to reach saturation from colonization more quickly, and to offer fewer opportunities for phylogenesis. Although this is confirmed by the low number of species recorded (483 *vs* 4589), a rate of endemicity of only [approximately] 36%, it should be noted that the 2.5 Ma that Réunion is thought to have been in existence have been sufficient for some speciation to take place, such as in the Oecophoridae: Metachandini and Tortricidae.

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Appendix 1

Comparison of lepidopterous faunas at superfamily level (*group requires specialized sampling techniques and is thus more likely to have been undersampled). Numbers in superscript refer to the endnotes.

SOUTHERN AFRICA	No. sp.	%	MADAGASCAR	No. spp.	%	RÉUNION	No. spp.	%
1. PRIMITIVE LEPIDOPTERA								
Micropterigoidea*	9[1]	0.10	Micropterigoidea*[2]	5	0.11	Micropterigoidea	0	–
Hepialoidea	77	0.86	Hepialoidea	0	–	Hepialoidea	0	–
Nepticuloidea*	139[3]	1.55	Nepticuloidea*	1	0.02	Nepticuloidea	0	–
Incurvarioidea*	77	0.86	Incurvarioidea*	5	0.11	Incurvarioidea	0	–
Tischerioidea*	7[4]	0.08	Tischerioidea*	0	–	Tischerioidea	0	–
	309	3.45		11	0.24		0	–
2. GELECHIOIDEA								
Gelechioidea	1043[5]	11.64	Gelechioidea	232	5.06	Gelechioidea	27	5.59
3. OTHER MICROLEPIDOPTERA								
Tineoidea	432[6]	4.82	Tineoidea	56	1.22	Tineoidea	15	3.11
Gracillarioidea*	190[7]	2.12	Gracillarioidea*	20	0.44	Gracillarioidea	3	0.62
Yponomeutoidea	85	0.95	Yponomeutoidea	25	0.55	Yponomeutoidea	4	0.83
Galacticoidea	3[8]	0.03	Galacticoidea[8]	1	0.02	Galacticoidea	0	–
Cossoidea	94[9]	1.05	Cossoidea	24	0.52	Cossoidea	0	–
Tortricoidea	270[10]	3.01	Tortricoidea	323	7.04	Tortricoidea	35	7.25
Sesioidea*	73[11]	0.81	Sesioidea*	29	0.63	Sesioidea	0	–
Choreutoidea	11	0.12	Choreutoidea	1	0.02	Choreutoidea	1	0.21
Zygaenoidea	187[12]	2.09	Zygaenoidea	80	1.74	Zygaenoidea	0	–
Immoidea	3	0.03	Immoidea	1	0.02	Immoidea	1	0.21
Copromorphoidea	13	0.15	Copromorphoidea	3	0.07	Copromorphoidea	4	0.83
Epermenioidea	10[13]	0.11	Epermenioidea	7	0.15	Epermenioidea	0	–
Alucitoidea	30	0.33	Alucitoidea	2	0.04	Alucitoidea	0	–
Pterophoroidea	138[14]	1.54	Pterophoroidea	61	1.33	Pterophoroidea	10	2.07
Hyblaeoidea	3	0.03	Hyblaeoidea	3	0.07	Hyblaeoidea	1	0.21
Thyridoidea	63[15]	0.70	Thyridoidea	32	0.70	Thyridoidea	1	0.21
	1605	17.89		667	14.54		75	15.55
4. PYRALOIDEA & WHALLEYANOIDEA								
Pyraloidea	1054[16]	11.76	Pyraloidea	488	10.62	Pyraloidea	98	20.29
Whalleyanoidea	0	–	Whalleyanoidea	2	0.04	Whalleyanoidea	0	–
	1054	11.76		490	10.66		98	20.29
5. GEOMETROIDEA								
Geometroidea	1131[17]	12.60	Geometroidea	684	14.91	Geometroidea	40	8.28
6. HESPERIOIDEA & PAPILIONOIDEA								
Hesperioidea	130	1.45	Hesperioidea	58	1.26	Hesperioidea	5	1.03
Papilionoidea	752	8.38	Papilionoidea	282	6.14	Papilionoidea	25	5.18
	882	9.83		340	7.40		30	6.21
7. OTHER MACROLEPIDOPTERA								
Drepanoidea	7	0.08	Drepanoidea	22	0.48	Drepanoidea	0	–
Uranioidea	18	0.20	Uranioidea	31	0.68	Uranioidea	3	0.62
Calliduloidea	1	0.01	Calliduloidea	4	0.09	Calliduloidea	0	–
Lasiocampoidea	160[18]	1.78	Lasiocampoidea	97	2.11	Lasiocampoidea	0	–
Bombycoidea	254[19]	2.83	Bombycoidea	82	1.79	Bombycoidea	16	3.31
	440	4.91		236	5.15		19	3.93
8. NOCTUOIDEA								
Noctuoidea	2504[20]	27.92	Noctuoidea	1919[21]	41.82	Noctuoidea	194	40.16
INCERTAE SEDIS	0	–	***INCERTAE SEDIS***	10	0.22	***INCERTAE SEDIS***	0	–
TOTAL	**8968**	**100**	**TOTAL**	**4589**	**100**	**TOTAL**	**483**	**100**

Appendix 2

Summary of the number of genera and total number of described[22] species (in brackets) per family (or subfamily, where indicated) across the biogeographical regions under discussion.

Taxon	southern Africa	Madagascar	Réunion
MICROPTERIGOIDEA			
Micropterigidae	1 (3)	1(5)[22]	not recorded
HEPIALOIDEA			
Prototheoridae	1 (11)	not recorded	not recorded
Hepialidae	6 (66)	not recorded	not recorded
NEPTICULOIDEA			
Nepticulidae	8 (124)	1 (1)	not recorded
Opostegidae	2 (15)	not recorded	not recorded
INCURVARIOIDEA			
Heliozelidae	1 (2)	1 (1)	not recorded
Adelidae	[3 (68)	1 (4)	not recorded]
Nematopogoninae	1 (63)	not recorded	not recorded
Adelinae	2 (5)	1 (4)	not recorded
Incurvariidae	1 (1)	not recorded	not recorded
Cecidosidae	1 (4)	not recorded	not recorded
Prodoxidae	2 (2)	not recorded	not recorded
TISCHERIOIDEA			
Tischeriidae	2 (7)	not recorded	not recorded
TINEOIDEA			
Psychidae	[44 (133)	7 (17)	not recorded]
Psychinae	27 (71)	not recorded	not recorded
Oiketicinae	13 (19)	5 (10)	not recorded
Typhoniinae[23]	1 (34)	1 (5)	not recorded
Taleporiinae[24]	2 (4)	not recorded	not recorded
Naryciinae	1 (5)	1 (2)	not recorded
Eriocottidae	[2 (30)	1(1)	not recorded]
Eriocottinae	1 (1)	1 (1)	not recorded
Compsocteninae	1 (29)	not recorded	not recorded
Tineidae[25]	[88 (270)	21 (38)	5 (15)]
Dryadaulinae	1 (1)	not recorded	not recorded
Erechthiinae	1 (1)	not recorded	1 (1)
Hapsiferinae	8 (21)	4 (4)	2(3)
Hieroxestinae	5 (48)	2 (8)	2 (11)
Meessiinae	1 (1)	not recorded	not recorded
Myrmecozelinae	12 (39)	3 (3)	not recorded
Harmacloninae	1 (1)	1 (3)	not recorded
Nemapogoninae	2 (2)	not recorded	not recorded
Perissomasticinae	8 (46)	1 (3)	not recorded
Scardiinae	2 (2)	1 (1)	not recorded
Setomorphinae	2 (2)	1 (1)	not recorded
Siloscinae	2 (2)	not recorded	not recorded
Tineinae	20 (62)	2 (2)	not reorded
Incertae sedis	23 (42)	6 (13)	–
GRACILLARIOIDEA			
Bucculatricidae	2 (23)	not recorded	not recorded
Gracillariidae	[43 (167)	9 (20)	2 (3)]
Gracillariinae	38 (143)	7 (17)	1 (2)
Lithocolletinae	2 (17)	1 (2)	not recorded
Phyllocnistinae	3 (6)	1 (1)	1 (1)
YPONOMEUTOIDEA			
Yponomeutidae	[21 (32)[26]	7 (17)	1 (1)]
Yponomeutinae	5 (11)	4 (5)	not recorded
Attevinae	1 (1)	not recorded	not recorded
Argyresthiinae	1 (3)	1 (9)	not recorded
Praydinae	1 (2)	1 (2)	1 (1)
Incertae sedis[26]	13 (15)	1 (1)	–

Appendix 2 (*continued*)

Taxon	southern Africa	Madagascar	Réunion
Ypsolophidae	1 (2)	not recorded	not recorded
Plutellidae[27]	3 (4)	1 (1)	1 (1)
Acrolepiidae[28]	2 (6)	2 (4)	not recorded
Glyphipterigidae	4 (18)	2(2)	1 (1)
Lyonetiidae	[9 (22)	1 (1)	1 (1)]
Lyonetiinae	6 (10)	1 (1)	not recorded
Cemiostominae	2 (10)	not recorded	1 (1)
Bedelliinae	1 (2)	not recorded	not recorded
GALACTICOIDEA			
Galacticidae	3 (3)	not recorded	not recorded
GELECHIOIDEA			
Coleophoridae[29]	[8 (51)	1 (1)	not recorded]
Coleophorinae	2 (38)	1 (1)	not recorded
Pterolonchinae[30]	2 (2)	not recorded	not recorded
Blastobasinae[31]	4 (11)	not recorded	not recorded
Elachistidae	[24 (84)	8 (43)	not recorded]
Elachistinae	8 (17)	1 (1)	not recorded
Stenomatinae[32]	2 (6)	2 (18)	not recorded
Agonoxeninae[33]	7 (15)	1 (1)	1 (1)
Ethmiinae	1 (14)	1 (17)	1 (1)
Depressariinae[34]	4 (17)	1 (1)	not recorded
Cryptolechiinae[35]	2 (15)	2 (5)	not recorded
Xyloryctidae *sensu auctt.*[36]	[11 (72)	18 (65)	not recorded]
Xyloryctinae	8 (13)	15 (62)	not recorded
Scythridinae	3 (59)	3 (3)	not recorded
Oecophoridae	[59 (117)	14 (27)	7 (16)]
Oecophorinae[37]	54 (95)	12 (23)	5 (14)
Stathmopodinae[38]	5 (22)	2 (4)	1 (1)
Incertae sedis	–	–	1 (1)
Autostichidae[39]	[7 (16)	2 (2)	not recorded]
Autostichinae	4 (10)	2 (2)	not recorded
Symmocinae	2 (3)	not recorded	not recorded
Holcopogoninae	1 (3)	not recorded	not recorded
Lecithoceridae	13 (52)	3 (27)	not recorded
Batrachedridae			
Batrachedrinae	3 (13)	not recorded	not recorded
Momphidae	not recorded[40]	1 (1)	not recorded
Cosmopterigidae[41]	[26 (77)	7 (12)	3 (3)]
Cosmopteriginae[42,43]	17 (52)	7 (12)	3 (3)
Chrysopeleiinae	4 (14)	not recorded	not recorded
Antequerinae	5 (11)	not recorded	not recorded
Gelechiidae[44]	[142 (565)	15 (54)	5 (6)]
Gelechiinae	14 (181)	9 (12)	2 (2)
Dichomeridinae	2 (39)	2 (14)	1 (1)
Pexicopiinae	3 (4)	1 (1)	not recorded
Incertae sedis	124 (292)	3 (27)	2 (3)
COSSOIDEA			
Cossidae	[28 (93)	6 (24)	not recorded]
Cossinae	7 (15)	2 (10)	not recorded
Metarbelinae[45]	10 (37)	1 (2)	not recorded
Zeuzerinae	9 (29)	3 (12)	not recorded
Incertae sedis	2 (12)	–	–
Dudgeoneidae	1 (1)	1 (1)	not recorded
TORTRICOIDEA			
Tortricidae	[42 (270)	109 (323)	16 (35)]
Tortricinae	[21 (92)	38 (161)	4 (15)]
Tortricini	7 (37)	4 (5)	not recorded
Cochylini	3 (19)	3 (3)	not recorded

Appendix 2 (*continued*)

Taxon	southern Africa	Madagascar	Réunion
Archipini	9 (19)	20 (139)	4 (15)
Cnephasiini	not recorded	6 (8)	not recorded
Phricanthini	not recorded	1 (1)	not recorded
Tribe(s) indet.	2 (17)	4 (5)	not recorded
Chlidanotinae	[1 (1)	2 (2)	1 (1)]
Chlidanotini	1 (1)	1 (1)	1 (1)
Hilarographini	not recorded	1 (1)	not recorded
Olethreutinae	[20 (176)	69 (160)	11 (19)]
Bactrini	1 (23)	1 (10)	1 (1)
Olethreutini	3 (47)	27 (47)	3 (4)
Eucosmini	6 (55)	30 (79)	2 (2)
Grapholitini	3 (40)	11 (24)	4 (11)
Enarmodiini	1 (5)	not recorded	1 (1)
Tribe(s) indet.	6 (6)	–	–
CHOREUTOIDEA			
Choreutidae[46]	3 (11)	1 (1)	1 (1)
SESIOIDEA			
Brachodidae	[4 (11)	2 (4)	not recorded]
Brachodinae	2 (6)	not recorded	not recorded
Phycodinae	2 (5)	1 (2)	not recorded
Pseudocossinae[47]	not recorded	1 (2)	not recorded
Sesiidae	18 (62)	10 (25)	not recorded
ZYGAENOIDEA			
Somabrachyidae	2 (6)	1 (1)	not recorded
Himantopteridae	3 (11)	not recorded	not recorded
Anomoeotidae	3 (4)	not recorded	not recorded
Zygaenidae	[14 (35)	4 (8)	not recorded]
Procridinae	7 (14)	4 (8)	not recorded
Phaudinae	2 (3)	not recorded	not recorded
Zygaeninae	5 (18)	not recorded	not recorded
Lacturidae	1 (10)	not recorded	not recorded
Limacodidae[48]	[59 (120)	26 (68)	not recorded]
Limacodinae	55 (105)	25 (67)	not recorded
Chrysopolominae	3 (14)	1 (1)	not recorded
Ectropinae	1 (1)	not recorded	not recorded
Epipyropidae	1 (1)	1 (3)	not recorded
IMMOIDEA			
Immidae	1 (3)	1 (1)	1 (1)
COPROMORPHOIDEA			
Copromorphidae	2 (2)	1 (1)	1 (1)
Carposinidae	1 (11)	1 (2)	2 (3)
EPERMENIOIDEA			
Epermeniidae[49]	[3 (7)	3 (7)	not recorded]
Epermeniinae	2 (6)	2 (6)	not recorded
Ochromolopinae	1 (2)	1 (1)	not recorded
ALUCITOIDEA			
Alucitidae	2 (29)	1 (2)	not recorded
Oxychirotidae	1 (1)	not recorded	not recorded
PTEROPHOROIDEA			
Pterophoridae	[19 (90)	32 (61)	10 (10)]
Macropiratinae	not recorded[50]	1 (1)	not recorded
Ochyroticinae	not recorded	1 (1)	1 (1)
Deuterocopinae	not recorded	1 (1)	not recorded
Pterophorinae	18 (69)	28 (56)	9 (9)
Agdistinae	1 (21)	1 (2)	not recorded
HYBLAEOIDEA			
Hyblaeidae	1 (3)	1 (3)	1 (1)

Appendix 2 (*continued*)

Taxon	southern Africa	Madagascar	Réunion
THYRIDOIDEA			
Thyrididae	[22 (63)	9 (32)	1 (1)]
Strigliininae	1 (4)	2 (3)	1 (1)
Thyridinae[51]	1 (15)	not recorded	not recorded
Siculodinae[52]	14 (32)	7 (29)	not recorded
Charideinae	6 (12)	not recorded	not recorded
PYRALOIDEA			
Pyralidae	[177 (562)	82 (168)	14 (17)]
Pyralinae	32 (126)	29 (79)	3 (4)
Endotrichinae	1 (3)	1 (2)	not recorded
Galleriinae	10 (24)	8 (18)	4 (4)
Epipaschiinae	7 (14)	7 (12)	not recorded
Phycitinae[53]	127 (395)	37 (57)	7 (9)
Crambidae	[168 (466)	124 (312)	59 (81)]
Crambinae	30 (130)	16 (30)	5 (5)
Nymphulinae	6 (18)	9 (32)	2 (3)
Heliothelinae	1 (1)	1 (1)	not recorded
Scopariinae	6 (13)	6 (4)	1 (2)
Schoenobiinae	8 (19)	4 (9)	not recorded
Musotiminae	1 (2)	3 (15)	2 (2)
Cybalomiinae	5 (6)	1 (2)	not recorded
Evergestinae	3 (4)	1 (1)	1 (1)
Noordiinae	3 (4)	1 (2)	not recorded
Odontiinae	8 (22)	5 (21)	1 (1)
Glaphyriinae	1 (1)	1 (1)	1 (1)
Pyraustinae	17 (54)	13 (32)	5 (9)
Spilomelinae	79 (192)	63 (162)	41 (57)
WHALLEYANOIDEA			
Whalleyanidae	not recorded	1 (2)	not recorded
GEOMETROIDEA			
Sematuridae[54]			
Apoprogoninae	1 (1)	not recorded	not recorded
Geometridae	[223 (1131)	111 (613)	27 (38)]
Geometrinae	59 (172)	37 (163)	5 (6)
Sterrhinae	20 (162)	12 (131)	6 (10)
Larentiinae	35 (163)	19 (73)	9 (15)
Ennominae	95 (612)	39 (239)	6 (6)
Diptychinae	6 (11)	not recorded	not recorded
Oenochrominae	5 (5)	1 (1)	not recorded
Desmobathrinae	3 (6)	3 (6)	1 (1)
DREPANOIDEA			
Drepanidae	[5 (7)	7 (22)	not recorded]
Drepaninae	3 (4)	7 (22)	not recorded
Thyatirinae	2 (3)	not recorded	not recorded
URANIOIDEA			
Uraniidae	[9 (18)	6 (31)	2 (3)]
Uraniinae	not recorded	2 (9)	not recorded
Microniinae[55]	2 (3)	1 (3)	not recorded
Epipleminae	7 (15)	3 (19)	2 (3)
CALLIDULOIDEA			
Callidulidae			
Pterothysaninae	1 (1)	1 (1)	not recorded
Griveaudiinae	not recorded	1 (3)	not recorded
HESPERIOIDEA			
Hesperiidae	[38 (130)	16 (56)	4 (5)]
Coeliadinae	1 (7)	1 (6)	1 (2)
Pyrginae	13 (46)	3 (6)	1 (1)
Hesperiinae	22 (66)	11 (39)	2 (2)
Heteropterinae[56]	2 (11)	1 (5)	not recorded

Appendix 2 (*continued*)

Taxon	southern Africa	Madagascar	Réunion
PAPILIONOIDEA			
Papilionidae	[2 (17)	3 (13)	1 (2)]
Papilioninae			
Leptocircini	1 (10)	1 (3)	not recorded
Papilionini	1 (7)	1 (9)	1 (2)
Troidini	not recorded	1 (1)	not recorded
Pieridae	[14 (60)	11 (28)	2 (4)]
Coliadinae	3 (8)	2 (6)	2 (4)
Pierinae	11 (52)	9 (22)	not recorded
Nymphalidae	[60 (268)	32 (167)	11 (12)]
Libytheinae	1 (1)	1 (1)	not recorded
Danainae	3 (7)	2 (2)	2 (3)
Satyrinae	[24 (92)	8 (101)	2 (2)]
Melanitini	2 (3)	2 (2)	1 (1)
Elymniini	5 (13)	5 (57)	1 (1)
Satyrini	17 (76)	1 (42)	not recorded
Charaxinae	2 (38)	2 (9)	not recorded
Apaturinae	1 (1)	1 (2)	not recorded
Heliconiinae	[5 (60)	4 (20)	not recorded]
Pardopsini	1 (1)	1 (1)	not recorded
Acraeini	1 (55)	1 (16)	not recorded
Heliconiini	3 (4)	2 (3)	1 (1)
Limenitinae	[17 (43)	10 (16)	not recorded]
Biblini	5 (16)	4 (7)	not recorded
Limenitini	11 (26)	5 (8)	not recorded
Cyrestini	1 (1)	1 (1)	not recorded
Nymphalinae	[7 (26)	5 (16)	5(5]
Nymphalini	2 (4)	2 (2)	2 (2)
Kallimini	5 (22)	3 (14)	3 (3)
Lycaenidae	[64 (407)	25 (49)	7 (7)]
Riodininae	not recorded	1 (4)	not recorded
Lipteninae	13 (32)	not recorded	not recorded
Liphyrinae	1 (3)	not recorded	not recorded
Miletinae	3 (35)	2 (2)	not recorded
Lycaeninae[57]	[47 (337)	22 (43)	7 (7)]
Lycaenini	1 (2)	not recorded	not recorded
Theclini	20 (185)	5 (12)	1 (1)
Polyommatini	26 (150)	17 (31)	6 (6)
LASIOCAMPOIDEA[58]			
Lasiocampidae	[50 (127)	27 (97)	not recorded]
Chondrosteginae	2 (3)	not recorded	not recorded
Lasiocampinae	48 (124)	27 (97)	not recorded
BOMBYCOIDEA			
Eupterotidae	[22 (64)	1 (1)	not recorded]
Tissanginae	1 (1)	not recorded	not recorded
Hibrildinae[59]	1 (2)	not recorded	not recorded
Janinae	7 (18)	1 (1)	not recorded
Eupterotinae	13 (43)	not recorded	not recorded
Bombycidae			
Bombycinae	2 (5)	1 (1)	not recorded
Lemoniidae	1 (2)	not recorded	not recorded
Brahmaeidae	2 (2)	not recorded	not recorded
Saturniidae	[29 (76)	5 (21)	not recorded]
Ludiinae[60]	7 (25)	not recorded	not recorded
Saturniinae	22 (51)	5 (21)	not recorded
Sphingidae	[48 (105)	27 (59)	11 (16)]
Smerinthinae[61]	19 (28)	5 (11)	not recorded
Sphinginae	11 (17)	6 (9)	3 (4)
Macroglossinae	18 (60)	16 (39)	8 (12)

Appendix 2 (*continued*)

Taxon	southern Africa	Madagascar	Réunion
NOCTUOIDEA			
Notodontidae	[94 (199)	43 (109)	not recorded]
Notodontinae	89 (193)	37 (78)	not recorded
Thaumetopoeinae	5 (6)	6 (31)	not recorded
Lymantriidae	50 (182)	52 (260)	not recorded
Thyretidae	4 (33)	not recorded	not recorded
Arctiidae	[84 (227)	52 (371)	4 (11)]
Lithosiinae	[40 (91)	25 (229)	1 (2)]
Phryganopterygini	not recorded	1 (20)	not recorded
Other tribes[61a]	40 (91)	24 (209)	1 (2)
Syntominae	7 (26)	15 (98)	not recorded
Phaegopterinae[62]	1 (10)	1 (2)	not recorded
Ctenuchinae[63]	1 (2)	1 (2)	not recorded
Arctiinae	35 (98)	10 (40)	3 (9)
Nolidae	[33 (110)	21 (102)	9 (10)]
Nolinae	7 (37)	2 (59)	1 (1)
Chloephorinae			
Chloephorini	9 (30)	4 (11)	3 (3)
Sarrothripini	11 (26)	3 (5)	3 (3)
Eariadinae	1 (3)	1 (4)	1 (2)
Westermanniinae	2 (6)	4 (9)	not recorded
Blenininae	1 (4)	1 (2)	1 (1)
Risobinae	2 (4)	2 (3)	not recorded
Eligminae	not recorded	1 (1)	not recorded
Incertae sedis	–	3 (8)	–
Noctuidae	[453 (1603)	330 (1040)	93 (175)]
Aganainae	4 (12)	2 (4)	1 (1)
Herminiinae	9 (25)	8 (25)	6 (9)
Hypeninae	11 (49)	7 (31)	5 (17)
Catocalinae[64]	155 (482)	155 (429)	36 (67)
Euteliinae	7 (34)	4 (17)	2 (2)
Stictopterinae	3 (6)	3 (8)	2 (3)
Pantheinae[65]	not recorded	4 (8)	not recorded
Plusiinae	10 (60)	7 (40)	4 (11)
Acontiinae	52 (265)	32 (171)	12 (19)
Bagisarinae	7 (16)	7 (11)	2 (2)
Acronictinae	4 (7)	2 (3)	1 (1)
Amphipyrinae	1 (1)[66]	not recorded	not recorded
Condicinae	1 (3)	1 (2)	1 (2)
Agaristinae	19 (33)	10 (35)	not recorded
Bryophilinae	1 (3)	not recorded	not recorded
Cuculliinae[67]	19 (85)	4 (13)	not recorded
Heliothinae	7 (30)	4 (9)	1 (1)
Noctuinae	[129 (479)	78 (232)	20 (40)]
Noctuini	18 (85)	7 (27)	4 (11)
Glottulini	4 (7)	3 (4)	1 (1)
Hadenini	22 (91)	12 (38)	4 (13)
Caradrinine assemblage *Incertae sedis*	85 (296)[68]	56 (163)	11 (15)
ex Arctiidae[69]	6 (12)	1 (1)	–
ex Amphipyrinae/Acronictinae auctt.	1 (1)	1 (1)	–

Appendix 3. Shared genera.

Numerals in brackets refer to the number of genera in southern Africa and Madagascar, respectively. Thus, Nepticulidae (8/1) means that this family is represented by eight genera in southern Africa and one on Madagascar. '(R)': also recorded from Réunion. M: migrant.

NEPTICULOIDEA	
Nepticulidae (8/1)	*Ectoedemia*
INCURVARIOIDEA	
Heliozelidae (1/1)	*Antispila*
Adelidae (3/1)	
Adelinae	*Adela*
TINEOIDEA	
Psychidae (44/7)	
Oiketicinae	*Acanthopsyche*
Typhoniinae	*Typhonia* [as *Melasina*]
Naryciinae[70]	*Narycia*
Tineidae (88/21)	
Hapsiferinae	*Hapsifera*
	Cimitra [as *Scalidomia*]
Hieroxestinae	*Oinophila* (R)
	Opogona (R)
Myrmecozelinae	*Scalmatica*
Harmacloninae	*Harmaclona*
Perissomasticinae	*Perissomastix*
Scardiinae	*Morophaga*
Setomorphinae	*Setomorpha*
Tineinae	*Ceratophaga*
	Tinea
	Tineola
GRACILLARIOIDEA	
Gracillariidae (43/9)	
Gracillariinae	*Acrocercops* (R)
	Aristaea
	Callicercops
	Caloptilia
	Macarostola
	Stomphastis
Lithocolletinae	*Phyllonorycter*
Phyllocnistinae	*Phyllocnistis*
YPONOMEUTOIDEA	
Yponomeutidae (21/7)	
Yponomeutinae	*Yponomeuta*
Argyresthiinae	*Argyresthia*
Praydinae	*Prays* (R)
Plutellidae (5/1)	*Plutella* M
Acrolepiidae (2/2)	*Acrolepia*
Lyonetiidae (9/1)	
Lyonetiinae	*Lyonetia*
GELECHIOIDEA	
Coleophoridae (8/1)	
Coleophorinae	*Coleophora*
Elachistidae (20/6)	
Agonoxeninae	*Pauroptila*
Ethmiinae	*Ethmia* (R)
Depressariinae	*Agonopterix*[71]
	Eutorna[71]
Xyloryctidae	
Xyloryctinae (8/15)	*Eporycta*
	Xylorycta
Scythridinae (4/3)	*Eretmocera*
	Scythris
Oecophoridae (60/12)	
Oecophorinae	*Diocosma*
	Lasiomactra
	Metachanda (R)
	Orophia
	Orygocera[72]
	Plesiosticha
	Tanyzancla
Lecithoceridae (13/3)	*Epimactis*[73]
	Idiopteryx
	Lecithocera
	Odites
Autostichidae (6/2)	
Autostichinae	*Pachnistis*[74]
Cosmopterigidae (24/8)	
Antequerinae	*Macrobathra*
Cosmopteriginae	*Cosmopterix*
	Anatrachyntis
	[*Pyroderces*][75]
	Hyalochna
	Stagmatophora (R)
Gelechiidae (142/15)	
Gelechiinae	*Anarsia* (R)
	Hypatima
	Phthorimaea
	Polyhymno
	Stomopteryx
Dichomeridinae	*Brachmia*
	Dichomeris (R)
Pexicopiinae	*Pectinophora*
Incertae sedis	*Eporgastis*
	Pycnoditis
	Syncopacma
COSSOIDEA	
Cossidae (28/6)	
Cossinae	*Cossus*
Zeuzerinae	*Azygophleps*
	Phragmataecia
Dudgeoneidae (1/1)	*Dudgeonea*
TORTRICOIDEA	
Tortricidae (39/109)	
Tortricinae	
Archipini	*Epichoristodes*
Tortricini	*Apotoforma*
	Acleris
Incertae sedis	*Metamesia*
Olethreutinae	
Bactrini	*Bactra* (R)
Olethreutini	*Eccopsis* (R)
	Lobesia (R)
	Olethreutes
Grapholitini	*Cryptophlebia* (R)
	Cydia (R)
Eucosmini	*Epinotia*
	Spilonota
Incertae sedis	*Cosmorrhyncha*

Appendix 3 (*continued*)

CHOREUTOIDEA	
Choreutidae (3/1)	*Tebenna* (R)
SESIOIDEA	
Brachodidae (4/2)	
Phycodinae	*Nigilgia*
Sesiidae (18/10)	*Melittia*
	Sura
	Tipulamima
ZYGAENOIDEA	
Limacodidae (58/26)	
Limacodinae	*Crothaema*
	Latoia
Epipyropidae (1/1)	*Epipyrops*
IMMOIDEA	
Immidae (1/1)	*Imma*
COPROMORPHOIDEA	
Copromorphidae (2/1)	*Sisyroxena*
EPERMENIOIDEA	
Epermeniidae (3/3)	
Epermeniinae	*Epermenia*
Ochromolopinae	*Ochromolopis*
ALUCITOIDEA	
Alucitidae (2/1)	*Alucita*
PTEROPHOROIDEA	
Pterophoridae (19/32)	
Pterophorinae	*Pterophorus*[76]
	Marasmarcha
	Pselnophorus
	Exelastis (R)
	Lantanophaga
	Platyptilia (R)
	Sphenarches
	Stenoptilia
Agdistinae	*Agdistis*
HYBLAEOIDEA	
Hyblaeidae (1/1)	*Hyblaea*
THYRIDOIDEA	
Thyrididae (22/9)	
Striglininae	*Banisia* (R)
Siculodinae	*Chrysotypus*
	Cornuterus
	Hapana
	Rhodoneura
PYRALOIDEA	
Pyralidae (177/82)	
Pyralinae (32/29)	*Calomacalla*
	Essina
	Herculia
	Hypsopygia (R)
	Loryma
	Lorymodes
	Paractenia
	Aglossa [*Philotis*[77]]
	Prosaris
	Sacada
	Sindris
	Tegulifera
Endotrichinae[78] (1/1)	*Endotricha*
Galleriinae (10/8)	*Corcyra* (R)
	Eldana
	Galleria
	Lamoria
	Paroxyptera
Epipaschiinae (7/7)	*Neopaschia*
Phycitinae (127/37)	*Anagastra*
	Ectomyelois
	Ephestia[79]
	Epicrocis[80]
	Etiella (R)
	Euzophera
	Gaana
	Metoecis
	Mussidia (R)
	Pempelia
	Plodia
	Faveria [*Oligochroa*[81]]
	Spatulipalpia
	Thylacoptila
[Peoriinae]	*Ematheudes*
	Biafra [*Maliarpha*[82]]
	Polyocha
	Saluria
Crambidae (167/124)	
Crambinae (30/16)	*Ancylolomia*
	Bleszynskia (R)
	Calamotropha
	Charltona
	Chilo (R)
	Crambus
	Culladia
	Euchromius
	Haimbachia
	Pediasia
	Pseudocatharylla
	Sebrus
Nymphulinae (6/9)	*Cataclysta* (R)
	Elophila
	Hymenoptychis
	Parapoynx
	Parthenodes [*Panotima*[83]]
Musotiminae (1/3)	*Ambia* (R)
Cybalomiinae (5/1)	*Goniophysetis*
Heliothelinae (1/1)	*Heliothela*
Scopariinae (6/6)	*Scoparia* (R)
Schoenobiinae (8/4)	*Adelpherupa*
	Patissa
	Schoenobius
	Scirpophaga
Evergestinae (3/1)	*Crocidolomia*
Odontiinae (8/5)	*Autocharis*
	Tegostoma
Glaphyriinae (1/1)	*Hellula* (R)
Pyraustinae (17/13)	*Hyalobathra*
	Loxostege
	Pyrausta (R)
	Uresiphita (R) M
Spilomelinae (79/63)	*Achyra*
	Aethaloessa

Appendix 3 (*continued*)

Agathodes (R)
Agrotera
Analyta
Bradina
Bocchoris (R)
Botyodes
Calamochrous
Cirrhochrista
Cnaphalocrocis
Crocidophora
Diaphania (R)
Diasemia
Diasemiopsis
Dichocrocis
Duponchelia
Epipagis
Euclasta
Eurrhyparodes
Filodes (R)
Ghesquierellana (R)
Glyphodes (R)
Haritalodes (R)
Herpetogramma[84] (R)
Hydriris [*Antiercta*[85]] (R)
Hymenia (R)
Hymenoptychis
Ischnurges
Lamprosema
Leucinodes
Lygropia
Marasmia (R)
Maruca (R)
Metoeca
Nausinoe (R)
Nomophila (R) M
Notarcha (R)
Obtusipalpis
Omiodes [*Hedylepta*[86]] R
Orphanostigma (R)
Pagyda
Palpita (R)
Pardomima
Parotis
Paschiodes
Phostria
Pilocrocis
Pleuroptya [*Syllepte*[87]]
Polygrammodes
Polythlipta
Prophantis
Psara (R)
Pycnarmon
Sameodes (R)
Spoladea (R)
Stemorrhages (R)
Synclera (R)
Syngamia
Terastia
Thliptoceras
Udea (R)
Ulopeza
Zebronia (R)

GEOMETROIDEA

Geometridae (223/111)

Geometrinae (59/37)
Acidaliastis
Archichlora
Chlorissa
Comibaena
Comostolopsis (R)
Eucrostes
Hemistola
Heterorachis
Lophrorrhachia
Lophostola
Metallochlora
Mimandria (R)
Mixocera
Neromia
Omphax
Phaiogramma
Pingasa (R)
Prasinocyma (R)
Rhodesia
Syncollesis
Thalassodes (R)

Sterrhinae (20/12)
Antitrygodes
Chrysocraspeda
Idaea
Cyclophora [*Pisoraca*[88]]
Problepsis
Rhodometra
Scopula (R)
Somatina (R)
Traminda (R)

Larentiinae (35/19)
Asthenotricha (R)
Chloroclystis (R)
Collix (R)
Disclisioprocta
Eois
Eupithecia (R)
Gymnoscelis (R)
Haplolabida
Horisme
Lobidiopteryx
Mesocolpia
Mimoclystia
Orthonama (R)
Parortholitha
Piercia
Polystroma
Protosteira
Pseudolarentia
Xanthorhoe (R)

Ennominae (95/39)
Aphilopota
Ascotis (R)
Cabera
Chiasmia
Cleora (R)

Appendix 3 (*continued*)

	Colocleora
	Drepanogynis[89]
	Ectropis
	Epigynopteryx
	Erastria (R)
	Isturgia
	Lomographa
	[*Luxiaria*]
	Melinoessa
	Milocera
	Idiodes [*Nopia*[90]]
	Ochroplutodes
	Orbamia
	Erastria [*Petrodava*[91]]
	Psilocerea
	Racotis (R)
	Rhodophthitus
	Xenimpia
	Xenostega
	Xylopteryx
	Zamarada
Oenochrominae (4/1)	*Afrophyla*
Desmobathrinae (3/3)	*Conolophia* (R)
DREPANOIDEA	
Drepanidae (5/7)	
Drepaninae	*Epicampoptera*
	Gonoreta
URANIOIDEA	
Uraniidae (9/6)	
Microniinae	*Acropteris*
	Urapteritra
Epipleminae	*Dirades* (R)
	Epiplema (R)
HESPERIOIDEA	
Hesperiidae (38/16)	
Coeliadinae	*Coeliades*
Pyrginae	*Celaenorrhinus*
	Eagris
	Tagiades
Hesperiinae	*Acleros*
	Artitropa
	Borbo
	Parnara
	Pelopidas
PAPILIONOIDEA	
Papilionidae (2/3)	
Papilioninae	
Leptocircini	*Graphium* (*Arisbe*)
Papilionini	*Papilio* (*Princeps*)
Pieridae (14/10)	
Coliadinae	*Catopsilia* M
	Eurema (*Eurema*)
	Eurema (*Terias*)
Pierinae	*Appias* (*Glutophrissa*)
	Belenois M
	Colotis (*Colotis*) M
	Dixeia
	Leptosia
	Mylothris
	Nepheronia
	Pinacopteryx
Nymphalidae (60/29)	
Libytheinae	*Libythea* M
Danainae	*Amauris* (*Amaura*)
	Danaus (*Danaus*) M
	Danaus (*Anosia*) M
Charaxinae	*Charaxes*
	Euxanthe
Apaturinae	*Apaturopsis*
Satyrinae	
Melanitini	*Gnophodes*
	Melanitis
Heliconiinae	*Acraea* (*Acraea*)
	Acraea (*Actinote*)
	Pardopsis
	Phalanta
Nymphalinae	*Antanartia*
	Cynthia M
	Hypolimnas
	Junonia (*Junonia*)
	Junonia (*Precis*)
	Salamis
Limenitinae	*Aterica*
	Byblia
	Cymothoe
	Cyrestis
	Eunica
	Euptera
	Eurytela
	Neptidopsis
	Neptis
	Pseudacraea
Lycaenidae (64/25)	
Miletinae	*Lachnocnema*
	Spalgis
Lycaeninae	
Theclini	*Deudorix* (*Virachola*)
	Hypolycaena
	Iolaus
	Leptomyrina
Polyommatini	*Actizera*
	Anthene
	Azanus
	Cacyreus
	Chilades
	Cupidopsis
	Eicochrysops
	Euchrysops
	Lampides M
	Lepidochrysops
	Leptotes
	Pseudonacaduba
	Uranothauma
	Zizeeria
	Zizina
	Zizula

Appendix 3 (*continued*)

LASIOCAMPOIDEA
Lasiocampidae (50/27)
- Lasiocampinae
  - *Odontocheilopteryx*
  - *Napta*

BOMBYCOIDEA
Eupterotidae (21/1)
- Janinae
  - *Jana*

Bombycidae (2/1)
- Bombycinae
  - *Ocinara*

Sphingidae (48/27)
- Smerinthinae
  - *Batocnema*
  - *Pseudoclanis*
- Sphinginae
  - *Acherontia* (R) M
  - *Agrius* (R) M
  - *Coelonia* (R)
  - *Xanthopan*
- Macroglossinae
  - *Antinephele*
  - *Atemnora*
  - *Basiothia* (R)
  - *Cephonodes* (R)
  - *Daphnis* (R) M
  - *Euchloron* (R)
  - *Hippotion* (R) M
  - *Hyles* (R) M
  - *Macroglossum* (R) M
  - *Nephele* (R)
  - *Sphingonaepiopsis*
  - *Temnora*
  - *Theretra*

Saturniidae (29/5)
- Saturniinae
  - *Argema*
  - *Bunaea*

NOCTUOIDEA
Notodontidae (94/43)
- Notodontinae (89/37)
  - *Antheua*
  - *Atrasana*
  - *Desmeocraera*
  - *Elaphrodes*
  - *Galona*
  - *Iridoplitis*
  - *Platystaura*
  - *Rasemia*
  - *Rhenea*
  - *Scrancia*
- Thaumetopoeinae (5/6)
  - *Anaphe*

Lymantriidae (50/52)
- *Euproctis*
- *Homoeomeria*
- *Leucoma*
- *Naroma*
- *Ogoa*
- *Olapa*
- *Pirgulina*
- *Porthesaroa*
- *Psalis*

Arctiidae (84/56)
- Lithosiinae (40/25)
  - *Eilema* (R)
  - *Ilemodes*
  - *Ochrota*
  - *Paraona*
  - *Siccia*
  - *Thumatha*
- Phaegopterinae (1/1)
  - *Amerila*
- Ctenuchinae (1/1)
  - *Euchromia*
- Arctiinae (35/14)
  - *Amphicallia*
  - *Amsacta*
  - *Argina* (R)
  - *Creatonotos*
  - *Galtara*
  - *Nyctemera* (R)
  - *Spilosoma*
  - *Utetheisa* (R) M

Nolidae (35/21)
- Nolinae (7/2)
  - *Meganola*
  - *Nola* (R)
- Chloephorinae
  - Chloephorini (9/4)
    - *Acripia*
    - *Chlorozada*
    - *Lophocrama*
    - *Maurilia*
  - Sarrothripini (11/3)
    - *Bryophilopsis*
    - *Nycteola*
    - *Pardasena*
- Eariadinae (1/1)
  - *Earias* (R)
- Westermanniinae (2/4)
  - *Negeta*
  - *Paraxestis*
- Blenininae (1/1)
  - *Blenina* (R)
- Risobinae (2/2)
  - *Risoba*
  - *Gigantoceras*

Noctuidae [453/331]
- Aganainae (4/2)
  - *Asota* (R)
  - *Digama*
- Herminiinae (9/8)
  - *Naarda*
  - *Nodaria* (R)
  - *Progonia* (R)
  - *Simplicia* (R)
- Hypeninae (11/7)
  - *Dichromia*[92] (R)
  - *Hydrillodes* (R)
  - *Hypena* (R)
  - *Rhynchina*
  - *Rhynchodontodes*
  - *Sarmatia*
- Catocalinae[64] (155/154)
  - *Achaea* (R) M
  - *Pericyma* [*Alamis*[93]] (R)
  - *Ophiusa* [*Ophiusa, Anua*[94]]
  - *Attatha*
  - *Audea*[95]
  - *Dysgonia* [*Caranilla*[96]] (R)
  - *Cerocala*
  - *Chalciope* (R)
  - *Cyligramma*
  - *Dermaleipa* (R)
  - *Entomogramma*
  - *Ercheia*
  - *Erebus* [*Eupatula*[97]] (R)
  - *Grammodes* [*Prodotis*[98]](R)
  - *Heliophisma*
  - *Heteropalpia*
  - *Hypopyra*

Appendix 3 (*continued*)

	Miniodes
	Mocis[99] (R) M
	Ophisma
	Ophiusa (R)
	Tachosa
	Taveta
	Tolna (R)
	Trigonodes (R)
	Ulotrichopus
'Ophiderinae'	*Acantholipes*
	Amblyprora
	Anoba
	Anomis (R) M
	Phytometra [*Antarchaea*[100]]
	Anticarsia (R)
	Antiophlebia
	Athyrma
	Bamra
	Baniana
	Bareia
	Brevipecten
	Calesia
	Catephia (R)
	Deinopa
	Ecpatia
	Episparis[101]
	Ericeia (R)
	Eudocima [*Elygea, Othreis*[102]] (R)
	Euippodes
	Fodina
	Gesonia
	Gracilodes (R)
	Hemiceratoides
	Herpeperas
	Hondryches
	Hypocala
	Lacera (R)
	Lophotavia
	Melipotis [*Lyncestis*[103]]
	Rhesala [*Magulaba*[104]] (R)
	Marca
	Marcipa
	Maxera [*Parathermes*[105]] (R)
	Melanephia
	Mepantadrea
	Nagia
	Oedebasis
	Oglasa
	Ogovia
	Oraesia (R)
	Pangrapta
	Pandesma [*Thria*[106]]
	Parafodina
	Paralephana
	Phytometra
	Plecoptera
	Plusiodonta [*Tinnodoa*[107]](R)
	Polydesma (R)
	Radara
	Raparna
	Rhesala
	Rivula (R)
	Serrodes (R)
	Sphingomorpha
	Tavia
	Taviodes
	Ugia
Euteliinae (7/4)	*Caligatus*
	Eutelia [*Eut., Phlegetonia*[108]](R)
Stictopterinae (3/3)	*Lophoptera*
	Stictoptera (R)
Plusiinae (10/7)	*Agrapha* [*Ctenoplusia*[109]] (R)
	Argyrogramma
	Chrysodeixis (R) M
	Plusiopalpa
	Stigmoplusia
	Trichoplusia (R) M
Acontiinae (52/32)	*Acontia*
	Amyna [*Amyna, Ilattia*[110]] (R) M
	Autoba (R)
	Cerynea [*Busmadis*[111]]
	Corgatha [*Sophta*[112]]
	Enispa [*Micraeschus*[113]]
	Eublemma (R)
	Eublemmoides
	Eulocastra
	Eustrotia (R)
	Lithacodia
	Lophoruza
	Metapioplasta
	Oruza
	Ozarba
	Xanthomera
	Zalaca
Bagisarinae (7/7)	*Leocyma*
	Pardoxia (R)
	Xanthodes (R)
Acronictinae (4/2)	*Amphia*
Condicinae (1/1)	*Condica* [*Platysenta*[114]] (R) M
Agaristinae (19/10)	*Rothia*
Cuculliinae (19/4)	*Cucullia* [*Empusada*[115]]
Heliothinae (7/4)	*Adisura*
	Helicoverpa (R) M
	Masalia
	Timora
Noctuinae	
Noctuini (18/7)	*Agrotis* (R) M
	Amazonides
	Axylia
	Callopistria (R) M
	Mentaxya (R)
	Ochropleura (R)
Glottulini (4/3)	*Brithys* (R)
	Diaphone

Appendix 3 (*continued*)

Hadenini (22/12)	*Aletia* (R)		*Elyptron*
	Apospasta (R)		*Ethiopica*
	Dicerogastra		*Ethioterpia*
	Leucania [*Mythimna*] (R) M		*Eutamsia*
	Nyodes		*Iambia*
	Odontestra		*Janseodes*
	Omphalestra		*Lepidodelta*
	Saalmuellerana		*Leumicamia*
	Vietteania		*Matopo*
'Caradrinine			*Neostichtis* (R)
assemblage' (83/57)	*Acrapex*		*Paracroria*
	Androlymnia		*Procrateria*
	Anedhella		*Sciomesa*
	Athetis (R)		*Selenistis*
	Callixena (R)		*Sesamia* (R)
	Callyna		*Spodoptera* (R) M
	Centrartha[67]		*Stenopterygia*
	Cetola		*Tanocryx*
	Chasmina		*Tathorhynchus*
	Cirrodes		*Tracheplexia*
	Conservula [*Appana*[116]] (R)	*Incertae sedis*	*Axiopoeniella*

Appendix 4

Species shared between southern Africa and Madagascar; '(R)': also recorded from Réunion. P = pest species; M = migrant.

TINEIDAE

Hapsiferinae

Cimitra horridella (Walker)

Hieroxestinae

Opogona omoscopa (Meyrick) (R)
Opogona sacchari (Bojer) (R)

Setomorphinae

Setomorpha rutella Zeller

Tineinae

Ceratophaga vastella (Zeller)

GRACILLARIIDAE

Gracillariinae

Stomphastis conflua (Meyrick)
Stomphastis dodonaea Vári
Stomphastis eugrapta Vári
Stomphastis thraustica (Meyrick)

YPONOMEUTIDAE

Yponomeutinae

Yponomeuta strigillata Zeller

PLUTELLIDAE

Plutella xylostella (Linnaeus) M, P

ELACHISTIDAE

Depressariinae

Eutorna diluvialis Meyrick

XYLORYCTIDAE

Scythridinae

Eretmocera laetissima (Zeller)

LECITHOCERIDAE

Odites metaclista Meyrick

GELECHIIDAE

Gelechiinae

Phthorimaea operculella (Zeller) P

Pexicopiinae

Pectinophora gossypiella (Saunders) P

TORTRICIDAE

Tortricinae

Archipini

Epichoristodes (*Tubula*) *acerbella* (Walker)

Olethreutinae

Bactrini

Bactra (*B.*) *graminivora* Meyrick
Bactra (*B.*) *pythonia* Meyrick
Bactra (*Chiloides*) *punctistrigana* Mabille
Bactra (*Chiloides*) *stagnicolana* Zeller
Bactra (*Chiloides*) *triceps* Diakonoff

Olethreutini

Eccopsis praecedens Walsingham (R)
Eccopsis wahlbergiana Zeller
Lobesia (*Harmosma*) *harmonia* (Meyrick)

Grapholitini

Cryptophlebia batrachopa (Meyrick)
Cryptophlebia leucotreta (Meyrick) (R) P
Cryptophlebia peltastica (Meyrick) P

Eucosmini

Spilonota rothia Meyrick

Incertae sedis

Cosmorrhyncha ocellata (Mabille)

CHOREUTIDAE

Tebenna micalis dialecta Diakonoff[117] (R)

LIMACODIDAE

Limacodinae

Crothaema sericea Butler

COPROMORPHIDAE

Sisyroxena syncentra Meyrick

PTEROPHORIDAE

Pterophorinae

Crombrugghia wahlbergi (Zeller)[118]
Lantanophaga pusillidactyla (Walker) introd. delib.
Platyptilia molopias Meyrick
Sphenarches anisodactylus (Walker)

HYBLAEIDAE

Hyblaea puera (Cramer)[119]

THYRIDIDAE

Striglinae

Banisia myrsusalis elaralis (Walker)

PYRALIDAE

Pyralinae

Hypsopygia mauritialis (de Boisduval) (R)
Loryma athalialis (Walker)
Sindris sganzini de Boisduval
Tegulifera rubicundalis Saalmüller

Endotrichinae

Endotricha consobrinalis Zeller[120]
Endotricha erythralis Mabille

Galleriinae

Corcyra cephalonica (Stainton) (R) P
Eldana saccharina Walker P
Galleria mellonella (Linnaeus) P
Paroxyptera filiella (Saalmüller)

Phycitinae

Anagasta kuehniella (Zeller) P
Ectomyelois ceratoniae (Zeller)
Biafra separatella Ragonot
Ematheudes straminella (Snellen)
Ephestia elutella (Hübner) P
Etiella zinckenella (Treitschke) (R)
Euzophera villora (F. & R.)
Metoecis carnifex (Coquerel) P?
Mussidia melanoneura Ragonot P?
Mussidia nigrivenella Ragonot P?
Pempelia morosalis (Saalmüller)
Plodia interpunctella (Hübner) P
Polyocha sanguinariella (Zeller)

CRAMBIDAE

Crambinae

Ancylolomia capensis Zeller

Appendix 4 (*continued*)

Ancylolomia perfasciata Hampson
Bleszynskia malacella hapalisca (Zeller)[121] (R)
Calamotropha paludella (Hübner)
Chilo orichalcociliellum (Strand)
Chilo partellum (Swinhoe) P
Culladia achroella (Mabille)
Euchromius klimeschi Bleszynski
Euchromius mythus Bleszynski
Euchromius ocelleus (Haworth)
Pediasia ematheudella (de Joannis)

Nymphulinae

Elophila circealis (Walker)[122]
Parapoynx fluctuosalis (Zeller)
Parapoynx stagnalis (Zeller)
Parthenodes angularis (Hampson)

Heliothelinae

Heliothela ophiderasana (Walker)

Schoenobiinae

Patissa virginea (Zeller)
Schoenobius rufalis Hampson

Evergestinae

Crocidolomia pavonana (Fabricius)[123] P

Glaphyriinae

Hellula undalis (Fabricius) (R)

Pyraustinae

Hyalobathra retinalis (Saalmüller)
Loxostege lacunalis (Zeller)
Pyrausta incoloralis (Guenée) (R)
Pyrausta phoenicealis Hübner[124]
Uresiphita polygonalis ([D. & S.]) (R) M

Spilomelinae

Aethaloessa floridalis (Zeller)
Agathodes musivalis Guenée (R)
Analyta c. calligrammalis Mabille
Bocchoris inspersalis (Zeller) (R)
Botyodes asialis Guenée
Cnaphalocrocis medinalis (Guenée)
Diaphania indica (Saunders) (R)
Diasemia monostigma Hampson
Diasemiopsis ramburialis Duponchel
Duponchelia fovealis Zeller
Eurrhyparodes bracteolalis (Zeller)
Eurrhyparodes tricoloralis (Zeller)
Filodes costivitralis Guenée (R)
Ghesquierellana hirsutalis (Walker) (R)
Glyphodes onychinalis (Guenée)
Glyphodes shafferorum Viette
Glyphodes stolalis Guenée (R)
Haritalodes derogata (Fabricius)[125] (R)
Hydriris ornatalis (Duponchel)[126] (R)
Hymenia perspectalis (Hübner) (R)
Hymenoptychis sordida Zeller[127]
Ischnurges lancinalis (Guenée)[128]
Marasmia poeyalis (de Boisduval) (R)
Marasmia trapezalis (Guenée) (R)
Maruca vitrata (Fabricius)[129] (R)
Metoeca foedalis (Guenée)
Nausinoe capensis (Walker)
Nausinoe geometralis (Guenée) (R)
Nomophila noctuella ([D. & S.]) (R) M
Notarcha quaternalis (Zeller)
Omiodes indicata (Fabricius)[130] (R)
Orphanostigma abruptalis (Walker)[131] (R)
Orphanostigma latimarginalis (Walker)[132]
Palpita testalis (Fabricius)[133]
Palpita unionalis (Hübner)[134] (R)
Pardomima zanclophora Martin
Piletocera hemiphaealis Hampson
Pleuroptya balteata (Fabricius)
Pleuroptya ovialis (Walker)
Polygrammodes phyllophila (Butler)[135]
Polythlipta annulifera (Walker)[136]
Prophantis octoguttalis (F. & R.)
Psara aprepia (Hampson)
Psara dorcalis (Guenée)[137] (R)
Pycnarmon cribratum (Fabricius)
Pycnarmon meritale (Walker)
Sameodes cancellalis (Zeller) (R)
Spoladea recurvalis (Fabricius) (R)
Stemorrhages sericea (Drury) (R)
Synclera traducalis (Zeller) (R)
Terastia subjectalis Lederer
Udea ablactalis (Walker)[138]
Udea ferrugalis (Hübner)[139] (R)
Zebronia phenice (Stoll) (R)

GEOMETRIDAE

Geometrinae

Comostolopsis stillata (F. & R.)[140]
Eucrostes disparata Walker
Lophorrhachia rubricorpus (Warren)
Lophostola atridisca (Warren)
Mixocera parvulata (Walker)
Phaiogramma stibolepida (Butler)[141]
Pingasa rhadamaria (Guenée)[142]
Rhodesia alboviridata (Saalmüller)
Thalassodes quadraria Guenée (R)

Sterrhinae

'Cyclophora' inaequalis Warren[143]
Idaea prosartema (Herbulot)
Idaea pulveraria (Snellen)[144]
Rhodometra sacraria (Linnaeus) M
Scopula caesaria (Walker) (R)
Scopula donovani (Distant)
Scopula f. fimbrilineata (Warren)
Scopula internataria (Walker)[145]
Scopula lactaria (Walker) (R)
Scopula m. minorata (de Boisduval) (R)
Scopula opicata (Fabricius)
Scopula sanguinisecta (Warren)[146]
Scopula serena Prout (R)
Somatina figurata Warren[147]
Somatina sedata Prout
Somatina vestalis (Butler)
Somatina virginalis Prout
Traminda neptunaria (Guenée)[148]
Traminda obversata (Walker)[149] (R)
Traminda vividaria (Walker)

Larentiinae

'Chloroclystis' consocer Prout
Collix foraminata Guenée
Disclisioprocta natalata (Walker)

Appendix 4 (*continued*)

Eois grataria (Walker)
Eupithecia festiva Prout
Eupithecia rigida sporadica Prout
Eupithecia semipallida Janse
Gymnoscelis olsoufieffae Prout
Horisme minuata (Walker)
Mesocolpia nanula (Mabille) (R)
Polystroma subspissata Warren
Protosteira spectabilis (Warren)

Ennominae

Ascotis reciprocaria (Walker)[150]
Chiasmia rectilinea (Warren)[151]
Chiasmia streniata (Guenée)[152]
Chiamia normata (Walker) M
Chiasmia umbrata (Warren)[153]
Chiasmia simplicilinea (Warren)[154]
Cleora quadrimaculata (Janse)
Cleora rothkirchi (Strand)[155]
Erastria madecassaria (de Boisduval)[156] (R)
Isturgia deerraria (Walker)
Racotis squalida (Butler)[157]
Xenimpia trizonata (Saalmüller)
Zamarada excavata (Bethune-Baker)[158]

Oenochrominae

Afrophyla vethi (Snellen)[159]

Desmobathrinae

Conolophia conscitaria (Walker)[160]

URANIIDAE

Microniinae

Acropteris illiturata (Warren)
Urapteroides falcifera (Weymer)[161]

Epipleminae

Dirades theclata (Guenée) (R)

HESPERIIDAE

Coeliadinae

Coeliades forestan (Stoll) (R) (*introd. delib.*)

Pyrginae

Eagris nottoana (Wallengren)

Hesperiinae

Borbo b. borbonica (Boisduval) (R)
Pelopidas mathias (Fabricius)

PAPILIONIDAE

Papilioninae

Papilio (*Princeps*) *d. demodocus* Esper (R)
Papilio (*Princeps*) *dardanus* Brown

PIERIDAE

Coliadinae

Catopsilia florella (Fabricius) M (R)
Eurema (*E.*) *brigitta* (Stoll) (R)
Eurema (*E.*) *desjardinsii* (Boisduval)
Eurema (*Terias*) *hapale* (Mabille)

Pierinae

Appias (*Glutophrissa*) *epaphia* (Cramer)
Appias (*Glutophrissa*) *sabina* (Felder & Felder)
Belenois (*B.*) *a. aurota* (Fabricius)
Belenois (*B.*) *creona* (Cramer)
Colotis amata (Fabricius)
Dixeia charina (Boisduval)
Leptosia alcesta (Stoll)
Leptosia nupta (Butler)
Nepheronia buquetii (Boisduval)
Pinacopteryx eriphia (Godart)

NYMPHALIDAE

Danainae

Danaus (*Anosia*) *chrysippus aegyptius* (Schreber) (R)

Satyrinae

Gnophodes betsimena (Boisduval)
Melanitis leda helena (Westwood) (R)

Heliconiinae

Pardopsis punctatissima (Boisduval)
Acraea (*Actinote*) *e. encedon* (Linnaeus)
Acraea (*Actinote*) *eponina* (Cramer)
Acraea (*Actinote*) *obeira* Hewitson
Phalanta phalantha aethiopica (Rothschild & Jordan)

Nymphalinae

Antanartia hippomene (Hübner)
Cynthia cardui (Linnaeus) (R)
Hypolimnas anthedon (Doubleday)
Hypolimnas deceptor (Trimen)
Hypolimnas misippus (Linnaeus) (R)
Junonia (*Precis*) *hierta* (Fabricius)
Junonia (*Precis*) *oenone* (Linnaeus)
Junonia (*Precis*) *orithya madagascariensis* Guenée
Salamis anacardii (Linnaeus)

Limenitinae

Neptidopsis fulgurata (Boisduval)
Byblia anvatara (Boisduval)
Eurytela dryope (Cramer)
Neptis saclava Boisduval
Pseudacraea lucretia (Cramer)
Euptera kinugnana (Grose-Smith)
Cyrestis camillus (Fabricius)

LYCAENIDAE

Miletinae

Lachnocnema bibulus (Fabricius)

Lycaeninae

Theclini

Deudorix (*Virachola*) *antalus* (Hopffer) (R)
Deudorix (*Virachola*) *dinochares* Grose-Smith
Hypolycaena philippus (Fabricius)

Polyommatini

Actizera lucida (Trimen)
Anthene princeps (Butler)
Chilades trochylus (Freyer)
Cupidopsis cissus (Godart)
Cupidopsis j. jobates (Hopffer)
Eicochrysops hippocrates (Fabricius)
Euchrysops malathana (Boisduval)
Euchrysops osiris (Hopffer)
Lampides boeticus (Linnaeus) M (R)
Leptotes pirithous (Linnaeus) (R)
Pseudonacaduba sichela (Wallengren)
Zizeeria knysna (Trimen) (R)
Zizina antanossa (Mabille) (R)
Zizula hylax (Fabricius) (R)

Appendix 4 (*continued*)

SPHINGIDAE

Sphinginae

Acherontia atropos (Linnaeus) (R) M
Agrius convolvuli (Linnaeus) (R) M
Coelonia mauritii (Butler) (R) M?
Xanthopan morganii (Walker)[162]

Macroglossinae

Antinephele lunulata R. & J.[163]
Atemnora westermanni (de Boisduval)
Basothia medea (Fabricius) (R)
Cephonodes hylas virescens (Wallengren) (R)
Daphnis nerii (Linnaeus) (R) M
Euchloron megaera (Linnaeus)[164] (R)
Hippotion balsaminae (Walker)
Hippotion celerio (Linnaeus) (R) M
Hippotion eson (Cramer) (R)
Hippotion osiris (Dalman) M
Hyles livornica (Esper) M
Nephele comma Hopffer
Theretra orpheus (Herrich-Schäffer)[165]

NOTODONTIDAE

Galona serena Karsch

LYMANTRIIDAE

Pirgulina jordani Hering[166]

ARCTIIDAE

Lithosiinae

Thumatha fuscescens Walker

Ctenuchinae

Euchromia formosa de Boisduval

Arctiinae

Amerila vitrea (Plötz)[167]
Argina amanda (de Boisduval) (R)
Argina astrea (Drury) (R)
Utetheisa pulchella (Linnaeus) (R) M

NOLIDAE

Chloephorinae

Chloephorini

Maurilia arcuata Walker

Sarrothripini

Bryophilopsis tarachoides Mabille
Pardasena atripuncta Hampson
Pardasena virgulana (Mabille)

Eariadinae

Earias biplaga Walker (R) P
Earias insulana (de Boisduval) (R) P

Westermanniinae

Negeta luminosa (Walker)[168]

NOCTUIDAE

Herminiinae

Nodaria nodosalis (Herrich-Schäffer)
Simplicia extinctalis (Zeller) (R)
Simplicia inflexalis Guenée (R)

Hypeninae

Hydrillodes uliginosalis Guenée (R)
Hypena conscitalis Walker
Hypena fusculalis Saalmüller[169]
Hypena polycyma Hampson
[*Rhynchina obliqualis* Kollar][170]
Rhynchina revolutalis (Zeller)[171]

Catocalinae

Achaea catella Guenée (R) M
Achaea echo (Walker)
Achaea finita (Guenée) (R)
Achaea infinita (Guenée) (R)
Achaea lienardi (de Boisduval) (R) M
Achaea praestans Guenée
Achaea trapezoides (Guenée) (R)
Cerocala vermiculosa (Herrich-Schäffer)[172]
Chalciope delta (de Boisduval) (R)
Cyligramma fluctuosa (Drury)
Cyligramma latona (Cramer)
Cyligramma magus (Guérin-Méneville)
Dysgonia angularis (de Boisduval) (R)
Dysgonia derogans (Walker)
Dysgonia torrida (Guenée) (R)
Entomogramma pardus Guenée[173]
Erebus walkeri (Butler)[174]
Grammodes bifasciata (Petagna) (R)
Grammodes exclusiva Pagenstecher
Grammodes stolida (Fabricius) (R)
Heliophisma klugii (de Boisduval)[175]
Hypopyra allardi (Oberthür)[176]
Hypopyra capensis Herrich-Schäffer
Miniodes discolor Guenée
Mocis conveniens (Walker) (R)
Mocis frugalis (Fabricius) (R)
Mocis mayeri (de Boisduval) (R)
Mocis mutuaria (Walker)[177]
Ophiusa tirhaca (Cramer)
Taveta eucosmia Hampson
Tolna complicata (Butler)
Tolna sypnoides (Butler) (R)
Trigonodes hyppasia anfractuosa (de Boisduval) (R)

'Ophiderinae'

Acantholipes trimeni F. & R.
Anomis flava (Fabricius) M
Anomis leona (Schaus & Clements) M
Anomis simulatrix (Walker)[178] M
Anticarsia irrorata (Fabricius)
Bareia incidens Walker
Catephia squamosa (Wallengren)[179]
Ecpatia dulcistriga (Walker)
Ericeia albangula (Saalmüller) (R)
Ericeia congregata (Walker) (R)
Ericeia congressa (Walker) (R)
Eudocima fullonia (Clerck)[180] (R)
Eudocima materna (Linnaeus)[181]
Gracilodes nysa Guenée (R)
Hemiceratoides hieroglyphica (Saalmüller)
Lacera alope (Cramer) (R)
Mapantadrea simia (Saalmüller)[182]
Marca proclinata Saalmüller
Maxera marchalii (de Boisduval)[183] (R)
Nagia linteola Guenée[184]
Oraesia emarginata (Fabricius)
Oraesia provocans Walker[185]
Paralephana poliotis Hampson
Phytometra subflavalis (Walker)[186]

Appendix 4 (*continued*)

Polydesma umbricola de Boisduval (R)
Radara vacillans Walker[187]
Rhesala moestalis (Walker)[188] (R)
Serrodes partita (Fabricius) (R)
Serrodes trispila (Mabille) (R)
Sphingomorpha chlorea monteironis Butler
Tavia nycterina (de Boisduval)

Euteliinae

Eutelia amatrix Walker[189]
Eutelia blandiatrix (Guenée) (R)
Eutelia histrio (Saalmüller)
Eutelia ocularis (Saalmüller)

Stictopterinae

Lophoptera litigiosa (de Boisduval)
Stictoptera antemarginata (Saalmüller)

Plusiinae

Agrapha accentifera (Lefèbvre)[190]
Agrapha limbirena (Guenée)[191] (R)
Argyrogramma signata (Fabricius)
Chrysodeixis acuta (Walker) M, P
Chrysodeixis chalcites (Esper) (R) M
Stigmoplusia chalcoides (Dufay)
Trichoplusia arachnoides (Distant)
Trichoplusia cupreomicans (Hampson)
Trichoplusia exquisita (F. & R.)
Trichoplusia gorilla (Holland)
Trichoplusia indicator (Walker) (R)
Trichoplusia molybdina (Dufay)
Trichoplusia ni (Hübner) (R) M
Trichoplusia orichalcea (Fabricius) (R) M
Trichoplusia vittata (Wallengren) (R)

Acontiinae

Amyna punctum (Fabricius)
Amyna octo (Guenée) (R)
Autoba costimacula (Saalmüller) (R)
Autoba olivacea (Walker)[192]
Cerynea ignealis Hampson
Cerynea thermesialis (Walker)[193]
Eublemma acarodes Swinhoe
Eublemma apicipunctum (Saalmüller)
Eublemma cochylioides (Guenée) (R)
Eublemma exigua (Walker)
Eublemma mesophaea Hampson
Eublemmoides apicimacula (Mabille)
Lithacodia blandula (Guenée) (R)
Metapioplasta insocia (Walker)
Ozarba corniculans (Wallengren)
Ozarba hemimelaena Hampson
Ozarba nyanza (F. & R.)
Ozarba perplexa Saalmüller
Xanthomera leucoglene (Mabille)
Zalaca snelleni (Wallengren)

Bagisarinae

Xanthodes graellsi (Feisthamel)[194] (P)

Condicinae

Condica conducta (Walker)[195] (R) M
Condica pauperata (Walker)[195] (R) M

Agaristinae

Rothia rhaeo (Druce)

Heliothinae

Helicoverpa armigera (Hübner)[196] (R) M
Helicoverpa flavimargo flavigera (Hampson)[197] M
Helicoverpa toddi (Hardwick)[198] M

Noctuinae

Noctuini

Agrotis biconica Kollar[199] M
Agrotis ipsilon (Hufnagel) (R) M
Agrotis longidentifera (Hampson)[200] (R) M
Axylia annularis Saalmüller[201]
Callopistria latreillei (Duponchel)[202]
Callopistria maillardi (Guenée)[203] (R)
Callopistria rectilinea Saalmüller
Callopistria yerburii Butler
Ochropleura leucogaster (Freyer) (R)

Glottulini

Brithys crini (Fabricius)[204] (R) P

Hadenini

Aletia operosa (Saalmüller)
Aletia pyrausta (Hampson) (R)
Aletia umbrigera (Saalmüller)
Leucania phaea Hampson
Vietteania pinna (Saalmüller)[205]
Vietteania torrentium (Guenée)

'Caradrinine assemblage'

Athetis ignava (Guenée) (R)
Sesamia calamistis Hampson (R)
Spodoptera apertura (Walker)
Spodoptera cilium cycloides (Guenée) (R) M, P
Spodoptera exempta (Walker) M, P
Spodoptera exigua (Hübner) (R) M
Spodoptera littoralis (de Boisduval) (R) M, P
Stenopterygia monostigma (Saalmüller)

***Incertae sedis* (ex Amphipyrinae auctt.)**

Callixena versicolora Saalmüller (R)
Callixena viettei (Berio)
Callyna figurans Walker
Conservula cinisigna (de Joannis)[206] (R)
Eutamsia africana (Schaus & Clements)
Eutamsia tulipifera (Saalmüller)
Janseodes melanospila (Guenée)[207]
Lepidodelta stolifera (Saalmüller)
Leumicamia graminicolens (Butler)
Tathorhynchus homogyna Hampson[208]

Appendix 5

Annotated checklist of the Heterocera of Réunion (compiled from Viette (1957), Herbulot (1957), Diakonoff (1957, 1974, 1977), Guillermet and Guillermet (1986) and Viette and Guillermet (1996); taxonomy and classification harmonized, where applicable, with Vári *et al.* (2002). SA: also in southern Africa; M: also on Madagascar. Viette and Guillermet (1996) provide further information about species distribution outside the study area; this is indicated, in abridged form and paranthetical notation, by Afr = Afrotropical region north of southern Africa, Nea, Neo, Pal, Or, Aus: Nearctic, Neotropical, Palaearctic, Oriental and Australian regions; within the Indian Ocean, the following abbreviations are used:, Ald = Aldabra, Com = Comoros, Mau = Mauritius, Sey = Seychelles, Rod = Rodriguez, Masc = other Mascarene islands). Information on the major zoogeographical regions is separated by a semicolon from that pertaining to the Indian Ocean islands.

TINEOIDEA	
Tineidae	
Hieroxestinae (11)	
1. *Oinophila aromaticella* Viette, 1957	R (endemic)
2. *Oinophila maillardella* Viette, 1957	R (endemic)
3. *Oinophila paroditella* Viette, 1957	R (endemic)
4. *Oinophila syntricha* Meyrick, 1910	SA, R (Mau)
5. *Opogona etiennella* Viette, 1988	R (endemic)
6. *Opogona heroicella* Viette, 1957	R (endemic)
7. *Opogona incorrectella* Viette, 1957	R (endemic)
8. *Opogona omoscopa* (Meyrick, 1893) (*Hieroxestis*)	SA, M, R (Mau, Rod; pantropical)
9. *Opogona phaeochalca* Meyrick, 1908	SA, R (Mau, Sey)
10. *Opogona sacchari* (Bojer, 1856) (*Alucita*)	SA, M, R (Sey, Mau, Rod; migrant)
11. *Opogona sycastella* Viette, 1957	R (endemic)
Erechthiinae (1)	
12. *Erechthias richardella* Viette, 1957	R (endemic)
Hapsiferinae (3)	
13. *Protaphreutis borboniella* (de Boisduval, 1833) (*Tinea*)	M, R (Mau, Sey)
14. *Tiquadra etiennei* Viette, 1988	R (endemic)
15. *Tiquadra guillermeti* Viette, 1988	R (endemic)
GRACILLARIOIDEA	
Gracillariidae	
Gracillariinae (2)	
16. *Acrocercops caerulea* (Meyrick, 1912) (*Cyphosticha*)	R (Afr, Or, Aus; Mau)
17. *Acrocercops coffeifoliella* (Motschulsky, 1859) (*Gracillaria*)	R (Or; *introd. accid.*)
Phyllocnistinae (1)	
18. *Phyllocnistis citrella* Stainton, 1856	R (Or; *introd. accid.*)
YPONOMEUTOIDEA	
Yponomeutidae	
Praydinae (1)	
19. *Prays sublevatella* Viette, 1957	R (endemic)
Lyonetiidae	
Cemiostominae (1)	
20. *Leucoptera meyricki* Ghesquière, 1940	R (Afr)
Plutellidae (1)	
21. *Plutella xylostella* (Linnaeus, 1758) (*Phalaena Tinea*)	SA, M, R (near-cosmopolitan)
Glyphipterigidae (1)	
22. *Chrysocentris costella* Viette, 1957	R (endemic)
GELECHIOIDEA	
Elachistidae	
Agonoxeninae (1)	
23. *Chrysoclista hygrophilella* Viette, 1957	R (endemic)
Ethmiinae (1)	
24. *Ethmia nigroapicella* (Saalmüller, 1880) (*Psecadia*)	M, R (Sey; pantropical)
Oecophoridae	
Oecophorinae (14)	
25. *Ancylometis paulianella* Viette, 1957	R (endemic)

26. *Ancylometis ribesae* Viette, 1996	R (endemic)
27. *Ancylometis scaeocosma* Meyrick, 1887	R (endemic)
28. *Endrosis sarcitrella* (Linnaeus, 1758) (*Phalaena Tinea*)	SA, M, R (near-cosmopolitan)
29. *Metachanda anomalella* Viette, 1957	R (endemic)
30. *Metachanda borbonicella* Viette, 1957	R (endemic)
31. *Metachanda cafrerella* Viette, 1957	R (endemic)
32. *Metachanda eucyrtella* Viette, 1957	R (endemic)
33. *Metachanda hamonella* Viette, 1954	R (endemic)
34. *Metachanda hugotella* Viette, 1957	R (endemic)
35. *Metachanda nigromaculella* Viette, 1957	R (endemic)
36. *Metachanda reunionella* Viette, 1957	R (endemic)
37. *Semnocosma gibeauxella* Viette, 1995	R (endemic)
38. *Taragmarcha laqueata borbonensis* Viette, 1957	R (endemic ssp.)
Stathmopodinae (1)	
39. *Stathmopoda mergabim* Viette, 1995	R (endemic)
Incertae sedis (1)	
40. *Metantithyra silvestrella* Viette, 1957	R (endemic)
Cosmopterigidae	
Cosmopteriginae (2)	
41. *Pyroderces hemizopha* (Meyrick, 1916) (*Anatrachyntis*)	R (Afr)
42. *Stagmatophora vinsonella abcedella* Viette, 1957	R (endemic ssp.)
Antequerinae (1)	
43. *Macrobathra cineralella* Viette, 1957	R (endemic)
Gelechiidae	
Gelechiinae (2)	
44. *Anarsia vinsonella* Viette, 1957	R (endemic)
45. *Phthorimaea operculella* (Zeller, 1873)	SA, M, R (Migrant, near-cosmopolitan)
Dichomeridinae (1)	
46. *Dichomeris ianthes* (Meyrick, 1887) (*Hypsolophus*)	SA, R (Afr, Or; Sey)
Incertae sedis (3)	
47. *Leuronoma fauvella* Viette, 1957	R (endemic)
48. *Orygocera amphitricha reunionensis* Viette, 1988	R (endemic ssp.)
49. *Orygocera anderesi* Viette, 1991	R (endemic)
TORTRICOIDEA	
Tortricidae	
Tortricinae (15)	
Archipini	
50. *Adoxophyes microptycha* Diakonoff, 1957	R (endemic)
51. *Borboniella allomorpha* (Meyrick, 1922) (*Panaphelix*)	R (endemic)
52. *Borboniella chrysorrhoea* Diakonoff, 1957	R (endemic)
53. *Borboniella conflatilis* Diakonoff, 1977	R (endemic)
54. *Borboniella cubophora* Diakonoff, 1957	R (endemic)
55. *Borboniella leucaspis* Diakonoff, 1957	R (endemic)
56. *Borboniella marmaromorpha* Diakonoff, 1957	R (endemic)
57. *Borboniella montana* Diakonoff, 1957	R (endemic)
58. *Borboniella octops* Diakonoff, 1957	R (endemic)
59. *Borboniella pelecys* Diakonoff, 1957	R (endemic)
60. *Borboniella spudaea* Diakonoff, 1957	R (endemic)
61. *Borboniella viettei* Diakonoff, 1957	R (endemic)
62. *Borboniella vulpicolor* Diakonoff, 1957	R (endemic)
63. *Clepsis* (*Clepsodes*) *tetraplegma* Diakonoff, 1957	R (endemic)
64. *Pandemis electrochroa* (Diakonoff, 1977) (*Parapandemis*)	R (endemic)
Olethreutinae (19)	
Bactrini	
65. *Bactra* (*B.*) *crithopa* Diakonoff, 1957	R (endemic)
Eucosmini	
66. *Cosmetra anthophaga* Diakonoff, 1977	R (endemic)
67. *Spilonota penechra* Diakonoff, 1989	M, R

Grapholitini

68. *Cryptophlebia ecnomia* Diakonoff, 1974 — R (endemic)
69. *Cryptophlebia etiennei* Diakonoff, 1974 — R (endemic)
70. *Cryptophlebia eutacta* Diakonoff, 1988 — R (endemic)
71. *Cryptophlebia leucotreta* (Meyrick, 1913) (*Argyroploce*) — SA, M, R
72. *Cryptophlebia peltastica* (Meyrick, 1921) (*Argyroploce*) — SA, M, R (Afr, Aus; Sey, Mau)
73. *Cryptophlebia semilunana* (Saalmüller, 1880) (*Carpocapsa*) — SA, M, R (Afr; Mau)
74. *Cydia lygistis* (Diakonoff, 1977) (*Laspeyresia*) — R (endemic)
75. *Cydia ptychora* (Meyrick, 1907) (*Laspeyseria*) — R (Or; Mau)
76. *Cydia undosa* (Diakonoff, 1957) (*Dichrorampha*) — R (endemic)
77. *Dichrorampha undosa* Diakonoff, 1957 — R (endemic)
78. *Grapholita siderocosma* Diakonoff, 1978 — R (endemic)

Olethreutini

79. *Eccopsis praecedens* Walsingham, 1897 — SA, M, R (Afr)
80. *Episimoides erythraea* Diakonoff, 1957 — R (endemic)
81. *Lobesia* (*L.*) *rapta* Diakonoff, 1957 — R (endemic)
82. *Lobesia* (*L.*) *vanillana* (de Joannis, 1900) (*Conchylis*) — R (endemic)

Enarmoniini

83. *Tetramoera schistaceana* (Snellen, 1890) (*Grapholitha*) — M, R (Or, Aus; Mau)

Chlidanotinae (1)

84. *Trymalitis scalifera* Meyrick, 1912 — SA, M, R (Afr)

IMMOIDEA

Immidae (1)

85. *Imma infima borbonensis* Viette, 1988 — R (endemic ssp.)

COPROMORPHOIDEA

Copromorphidae (1)

86. *Copromorpha mesobractis* Meyrick, 1930 — R (Com)

Carposinidae (3)

87. *Peritrichocera bipectinata* Diakonoff, 1961 — R (endemic)
88. *Peritrichocera tsilaosa* Viette, 1995 — R (endemic)
89. *Scopalostoma melanopareum* Diakonoff, 1957 — R (endemic)

CHOREUTOIDEA

Choreutidae (1)

90. *Tebenna micalis dialecta* Diakonoff, 1985 — SA, M, R (Pal, Or, Aus; Mau)

PTEROPHOROIDEA

Pterophoridae (10)

Ochyroticinae (1)

91. *Ochyrotica rufa* Arenberger, 1987 — M, R (Com, Mau)

Pterophorinae (9)

92. *Bipunctiphorus etiennei* Gibeaux, 1994 — R (endemic)
93. *Exelastis phlyctaenias* (Meyrick, 1911) (*Marasmarcha*) — M, R (Afr, Or; Com)
94. *Hepalastis pumilio* (Zeller, 1873) (*Mimescoptilus*) — M, R (Afr; pantropical)
95. *Lantanophaga pusillidactyla* (Walker, 1864) (*Oxyptilus*) — SA, M, R (near-pantropical)
96. *Megalorrhipida leptomeres* (Meyrick, 1886) (*Trichoptilus*) — R (Afr; Sey)
97. *Oidematophorus borbonicus* (Gibeaux, 1991) (*Leioptilus*) — R (endemic)
98. *Pterophorus albidus* Zeller, 1852 — SA, M, R (Afr, Or)
99. *Stenodacma wahlbergi* (Zeller, 1852) (*Pterophorus*) — SA, ?M, R (pantropical)
100. *Vietteilus borbonicus* (Viette, 1957) (*Platyptilia*) — R (endemic)

THYRIDOIDEA

Thyrididae

Strigliniinae (1)

101. *Banisia clathrula* Guenée, 1877[209] — R (Mau)

PYRALOIDEA

Pyralidae

Pyralinae (4)

102. *Hypsopygia mauritialis* (de Boisduval, 1833) (*Asopia*) — SA, M, R (Afr, Or, Aus; Mau)

103. *Imerina saramitoi* Guillermet, 1996	R (endemic)
104. *Pyralis manihotalis* Guenée, 1854	SA, R (Afr, Neo, Or)
105. *Pyralis preciosalis* Guillermet, 1996	R (endemic)
Galleriinae (4)	
106. *Achroia grisella* (Fabricius, 1794) (*Tinea*)	SA, M, R (cosmopolitan)
107. *Corcyra cephalonica* (Stainton, 1866) (*Melissoblaptes*)	SA, M, R (cosmopolitan)
108. *Galleria mellonella* (Linnaeus, 1758) (*Tinea*)	SA, M, R (cosmopolitan)
109. *Lamoria clathrella* (Ragonot, 1888) (*Tugela*)	M, R (Mau)
Phycitinae (9)	
110. *Cactoblastis cactorum* (Berg, 1855) (*Zophodia*)	SA, R (*introd. delib.*)
111. *Cadra cautella* (Walker, 1863) (*Pempelia*)	SA, M, R (cosmopolitan)
112. *Etiella zinckenella* (Treitschke, 1832) (*Phycis*)	SA, M, R (near-cosmopolitan)
113. *Maliarpha separatella* Ragonot, 1888	SA, M, R (Afr, Pal, Or)
114. *Mussidia irisella* (Guenée, 1862) (*Phycis*)	R (endemic)
115. *Mussidia semipectinella* (Guenée, 1862) (*Phycis*)	R (endemic)
116. *Pempelia morosalis* (Saalmüller, 1880) (*Myelois*)	SA, M, R (Or)
117. *Pempelia strophocomma* (de Joannis, 1932) (*Salebria*)	R (Mau)
118. *Spatulipalpia pectinatella* de Joannis, 1915	R (Mau)
Crambidae	
Crambinae (5)	
119. *Bleszynskia malacella hapalisca* (Zeller, 1852) (*Crambus*)	SA, M, R (Afr; Mau)
120. *Chilo s. sacchariphagum* (Bojer, 1856) (*Proceras*)	M, R (*introd. acc.*) (Or; Mau)
121. *Conocramboides seychellellus emmerezellus* (de Joannis, 1915) (*Crambus*)	R (Mau)
122. *Culladia achroella* (Mabille, 1900) (*Crambidion*)	SA, M, R (Afr; Mau)
123. *Microcrambion paphiellum* (Guenée, 1863) (*Crambus*)	R (Mau)
Scopariinae (2)	
124. *Scoparia benigna* Meyrick, 1910	M, R (Mau)
125. *Scoparia resinodes* de Joannis, 1932	R (endemic)
Evergestinae (1)	
126. *Crocidolomia pavonana* (Fabricius, 1794) (*Pyralis*)	SA, M, R (pantropical)
Musotiminae (2)	
127. *Ambia gueneealis* Viette, 1957	R (endemic)
128. *Cilaus longinasus* de Joannis, 1932	R (endemic)
Nymphulinae (3)	
129. *Cymoriza upupalis* Guenée, 1863	R (endemic)
130. *Theila guillermetorum* Viette, 1988	R (endemic)
131. *Theila reunionalis* Viette, 1988	R (endemic)
Odontiinae (1)	
132. *Autocharis marginata* Guillermet, 1996	R (endemic)
Glaphyriinae (1)	
133. *Hellula undalis* (Fabricius, 1781) (*Phalaena*)	SA, M, R (Afr, Pal, Or, Aus; Sey, Com, Mau, Migrant)
Pyraustinae (9)	
134. *Achyra coelatalis* (Walker, 1859) (*Dosara*)	SA, ?M, R (Afr, Or, Aus)
135. *Euclasta whalleyi* Popescu-Gorj & Constantinescu, 1973	M, R
136. *Pyrausta incoloralis* (Guenée, 1854) (*Botys*)[210]	SA, M, R (palaeotropical)
137. *Pyrausta dorcalis* (Guenée, 1862) (*Botys*)	M, R
138. *Pyrausta phoenicealis* (Hübner, 1818) (*Haematia*)	SA, M, R (palaeotropical)
139. *Pyrausta zyphalis* Viette, 1958	M, R
140. *Thliptoceras longicornalis* (Mabille, 1874) (*Botys*)[211]	M, R
141. *Thliptoceras elegans* Guillermet, 1996	R (endemic)
142. *Uresiphita polygonalis* ([D. & S.], 1775) (*Pyralis*)[211]	SA, M, R (Afr, Pal, Or. Migrant)
Spilomelinae (57)	
143. *Agathodes musivalis* Guenée, 1854	SA, M, R (Afr; Com, Mau)
144. *Bocchoris borboniensis* Guillermet, 1996	R (endemic)
145. *Bocchoris inspersalis* (Zeller, 1852) (*Botys*)	SA, M, R (palaeotropical)
146. *Botyodes asialis* Guenée, 1846	SA, M, R (palaeotropical)

147. *Cadarena sinuata* (Fabricius, 1781) (*Phalaena*)	SA, M, R (Afr, Or; Sey, Com)
148. *Cirrhochrista etiennei* (Viette, 1976) (*Ancalidia*)	R (endemic)
149. *Diaphania indica* (Saunders, 1851) (*Eudioptis*)	SA, M, R (Afr, Or; Aus; Sey, Com, Mau)
150. *Diaphania mascarenalis* de Joannis, 1906	R (Com)
151. *Diasemia monostigma* Hampson, 1913	SA, M, R
152. *Diasemiopsis ramburialis* (Duponchel, [1834]) (*Hydrocampa*)	SA, ?M, R (near-cosmopolitan)
153. *Duponchelia f. fovealis* Zeller, 1847	SA, M, R (Pal, Afr, Or)
154. *Eurrhyparodes tricoloralis* (Zeller, 1852) (*Botys*)	SA, M, R (Afr, Or, Aus; Sey)
155. *Filodes costivitralis* Guenée, 1862	SA, M, R
156. *Ghesquierellana hirtusalis borbonica* Viette, 1976	R (endemic ssp.)
157. *Glyphodes cadeti* Guillermet, 1996	R (endemic)
158. *Glyphodes shafferorum* Viette, 1987[212]	SA, M, R (Com)
159. *Glyphodes mascarenalis* de Joannis, 1906	R (Com, Mau)
160. *Haritalodes derogata* (Fabricius, 1775) (*Phalaena*)	SA, M, R (palaeotropical)
161. *Herpetogramma phaeopteralis* (Guenée, 1854) (*Botys*)[213]	SA, R (pantropical)
162. *Hyalobathra veroniqueae* Guillermet, 1996	R (endemic)
163. *Hydriris ornatalis* (Duponchel, 1832) (*Asopia*)	SA, M, R (cosmopolitan)
164. *Hymenia perspectalis* (Hübner, 1796) (*Pyralis*)	SA, M, R (near-cosmopolitan)
165. *Ischnurges lancinalis* (Guenée, 1852) (*Rhodaria*)	SA, M, R (Com, Mau)
166. *Marasmia grucheti* Viette, 1976	R (endemic)
167. *Marasmia poeyalis* (de Boisduval, 1833) (*Botys*)	SA, M, R (palaeotropical)
168. *Marasmia trapezalis* (Guenée, 1854) (*Salbia*)	SA, M, R (pantropical; Sey, Mau)
169. *Marasmia trebiusalis* (Walker, 1859) (*Botys*)	M, R (Afr, Or, Aus; Sey)
170. *Maruca vitrata* (Fabricius, 1787) (*Phalaena*)	SA, M, R (pantropical)
171. *Nausinoe geometralis* (Guenée, 1854) (*Lepyrodes*)	SA, M, R (Afr, Or, Aus; Mau)
172. *Nomophila noctuella* ([D. & S.], 1775) (*Tinea*)	SA, M, R (Afr, Pal, Or, Aus; Sey, Com, Mau)
173. *Notarcha quaternalis* (Zeller, 1852) (*Botys*)	SA, M, R (Afr, Or; Com)
174. *Omiodes dnopheralis* (Mabille, 1900) (*Nacoleia*)	M, R (Sey)
175. *Omiodes indicata* (Fabricius, 1775) (*Phalaena*)	SA, M, R (Afr, Nea, Or; Sey, Com, Mau)
176. *Orphanostigma abruptalis* (Walker, 1859) (*Asopia*)	SA, M, R (Afr, Or, Aus; Sey, Mau)
177. *Pagyda trivirgalis* de Joannis, 1932	M, R (Mau)
178. *Palpita unionalis* (Hübner, 1796) (*Pyralis*)	SA, M, R (palaeotropical)
179. *Piletocera reunionalis* Viette, 1957	R (endemic)
180. *Piletocera viperalis* (Guenée, 1863) (*Stenia*)	R (endemic)
181. *Pleuroptya balteata* (Fabricius, 1798) (*Phalaena*)	SA, ?M, R (palaeotropical)
182. *Prophantis octoguttalis* (F. & R., 1875) (*Botys*)	SA, M, R (Or; Mau)
183. *Psara basalis* (Walker, 1866) (*Botys*)	SA, ?M, R (palaeotropical)
184. *Psara bipunctalis* (Fabricius, 1794) (*Phalaena*)	SA, M, R (pantropical; Sey)
185. *Psara dorcalis* (Guenée, 1863) (*Botys*)	SA, M, R
186. *Psara minoralis* (Warren, 1892) (*Acharana*)	M, R (Afr; Sey, Mau)
187. *Psara pastrinalis* (Guenée, 1863) (*Botys*)	R (endemic)
188. *Sameodes cancellalis* (Zeller, 1852) (*Botys*)	SA, M, R (Afr, Or, Aus; Sey, Com)
189. *Sceliodes laisalis* (Walker, 1859) (*Megaphysa*)	SA, ?M, R (Afr, Pal)
190. *Spoladea recurvalis* (Fabricius, 1775) (*Phalaena*)	SA, M, R (Afr, Pal. Or, Aus, Nea)
191. *Stemorrhages sericea* (Drury, 1773) (*Phalaena*)	SA, M, R (Afr; Sey, Com, Mau)
192. *Syllepte albopunctum* Guillermet, 1996	R (endemic)
193. *Syllepte argillosa* Guillermet, 1996	R (endemic)
194. *Syllepte christophalis* Viette, 1988	R (endemic)
195. *Syllepte violacealis* Guillermet, 1996	R (endemic)
196. *Synclera traducalis* (Zeller, 1852) (*Eudioptis*)	SA, M, R (pantropical)
197. *Terastia subjectalis* Lederer, 1863	SA, ?M, R (palaeotropical)
198. *Udea ferrugalis* (Hübner, 1796) (*Pyralis*)	SA, M, R (Afr, Pal, Or; Sey, Com, Mau)
199. *Zebronia phenice* (Cramer, 1780) (*Phalaena Pyralis*)	SA, M, R (Afr.; Com, Mau)
HYBLAEOIDEA	
Hyblaeidae (1)	
200. *Hyblaea apricans* (de Boisduval, 1833) (*Heliothis*)	M, R
URANIOIDEA	
Uraniidae	
Epipleminae (3)	
201. *Dirades etiennei* Boudinot, 1982	R (endemic)
202. *Dirades theclata* (Guenée, [1858]) (*Erosia*)	SA, M, R (Afr, Or; Sey, Com, Mau)
203. *Epiplema dadanti* Viette, 1975	R (endemic)

GEOMETROIDEA

Geometridae

Geometrinae (6)

204. *Comostolopsis leuconeura* Prout, 1930	R (endemic)
205. *Mimandria diospyrata* (de Boisduval, 1833) (*Geometra*)	R (Mau) (doubtful species, type lost)
206. *Pingasa h. hypoleucaria* (Guenée, 1863) (*Hypochroma*)	R (endemic ssp.)
207. *Prasinocyma cellularia* (Guenée, 1862) (*Thalassodes*)	R (endemic) (doubtful species, type lost)
208. *Thalassodes hyraria* Guenée, [1858]	R (endemic) (doubtful species, type lost)
209. *Thalassodes quadraria* Guenée, [1858]	SA, M, R (Afr; Com, Mau, Rod)

Sterrhinae (10)

210. *Dithecodes purpuraria* de Joannis, 1932	R (Mau)
211. *Pisoraca lyciscaria* (Guenée, 1857) (*Ephyra*)	SA, M, R (Afr)
212. *Rhodometra sacraria* (Linnaeus, 1767) (*Phalaena*)	SA, M, R (Afr, Pal, Or, Aus; Com)
213. *Scopula caesaria* (Walker, 1861) (*Acidalia*)	SA, M, R (Afr, Or, Aus; Com, Mau)
214. *Scopula internaria punctistriata* (Mabille, 1880) (*Acidalia*)	M, R (Com) (endemic ssp.)
215. *Scopula lactaria* (Walker, 1861) (*Acidalia*)	SA, M, R (Afr; Com)
216. *Scopula minorata* (de Boisduval, 1833) (*Geometra*)	SA, M, R (Afr; Sey, Mau, Rod)
217. *Scopula serena* Prout, 1920	SA, M, R (Afr; Sey)
218. *Somatina lia* Prout, 1915	M, R (Com)
219. *Traminda obversata atroviridata* Saalm., 1880 (*Timandra*)	M, R (Com)

Desmobathrinae (1)

220. *Conolophia conscitaria pontias* Prout, 1929	M, R (endemic ssp.)

Larentiinae (15)

221. *Asthenotricha l. lophopterata* (Guenée, [1858]) (*Acidalia*)	M, R (endemic ssp.)
222. *Asthenotricha tripogonias* Prout, 1926	R (endemic)
223. *Chloroclystis androgyna* Herbulot, 1957	R (endemic)
224. *Chloroclystis angelica* Herbulot, 1968	R (endemic)
225. *Chloroclystis costicavata* de Joannis, 1932	R (Mau)
226. *Chloroclystis derasata* (Bastelberger, 1905) (*Gullaca*)	SA, M, R (Afr)
227. *Chloroclystis exilipicta* de Joannis, 1906	R (Mau)
228. *Chloroclystis latifasciata* de Joannis, 1932	M, R (Mau)
229. *Chloroclystis nigella* (de Joannis, 1906) (*Gymnoscelis*)	R (Mau, Masc)
230. *Collix inaequata* Guenée, 1863	R (Mau)
231. *Eois suarezensis* Prout, 1923	M, R
232. *Eupithecia graphiticata* de Joannis, 1932	R (endemic)
233. *Gymnoscelis rubricata* (de Joannis, 1932) (*Chloroclystis*)	R (Mau)
234. *Mesocolpia nanula* (Mabille, 1900) (*Cidaria*)	SA, M, R
235. *Orthonama quadrisecta* Herbulot, 1954	M, R (Mau, Com)
236. *Xanthorhoe borbonicata* (Guenée, [1858]) *Cidaria*	R (endemic)
237. *Xanthorhoe magnata* Herbulot, 1957	R (endemic)

Ennominae (6)

238. *Ascotis t. terebraria* (Guenée, 1863) (*Hypopalpis*)	R (endemic ssp.)
239. *Cleora acaciaria* (de Boisduval, 1833) (*Boarmia*)	R (endemic)
240. *Darisodes o. orygaria* (Guenée, 1863) (*Boarmia*)	R (endemic ssp.)
241. *Ectropis distinctaria* (de Joannis, 1915) (*Synopsia*)	R (Mau)
242. *Erastria madecassaria* (de Boisduval, 1833) (*Geometra*)	SA, M, R (Afr; Sey, Com, Mau)
243. *Racotis incompletaria* (Guenée, 1863) (*Boarmia*)	R (endemic)

HESPERIOIDEA

Hesperiidae

Coeliadinae (2)

244. *Coeliades ernesti* (Grandidier, 1867) (*Hesperia*)	M, R (Mau)
245. *Coeliades forestan* (Stoll, [1782]) (*Papilio*)	SA, M, R (*introd. delib.* on R) (Afr; Com, Sey)

Pyrginae (1)

246. *Eagris s. sabadius* (Gray, [1832]) (*Hesperia*)	R (Mau) (endemic ssp.)

Hesperiinae (2)

247. *Borbo b. borbonica* (de Boisduval, 1833) (*Hesperia*)	SA, M, R (Afr; Mau, Rod)
248. *Parnara naso bigutta* Evans, 1937	R (endemic ssp.)

PAPILIONOIDEA

Papilionidae

Papilioninae (2)

249. *Papilio* (*Princeps*) *demodocus* Esper, 1798	SA, M, R (Mau, *introd. delib.* on R) (Afr)
250. *Papilio* (*Princeps*) *phorbanta* Linnaeus, 1771	R (endemic ssp.)

Pieridae

Coliadinae (4)

251. *Catopsilia florella* (Fabricius, 1775) (*Papilio*)	SA, M, R (Afr, Pal; Mau, Com, Ald)
252. *Catopsilia thauruma* (Reakirt, 1866) (*Callidryas*)	M, R (Mau)
253. *Eurema brigitta pulchella* (de Bsd., 1833) (*Xanthidia*)	M, R (Mau, Com, Ald) (endemic ssp.)
254. *Eurema floricola ceres* (Butler, 1886) (*Terias*)	R (Mau) (endemic ssp.)

Nymphalidae

Danainae (2)

255. *Danaus* (*Anosia*) *chrysippus aegyptius* (Schreber, 1759) (*Papilio*)	SA, M, R (Afr; Com, Sey)
256. *Danaus* (*D.*) *p. plexippus* (Linnaeus, 1758) (*Papilio*)	M, R (Extralimital; migrant)
257. *Euploea euphon goudotii* de Boisduval, 1833	R (endemic ssp.)

Satyrinae (2)

Melanitini

258. *Melanitis leda helena* (Westwood, [1851]) (*Cyllo*)	SA, M, R (Afr; Sey, Com, Mau, Ald, Rod)

Elymniini

259. *Henotesia narcissus* (Fabricius, 1798) (*Papilio*)	R (Mau) (endemic)

Heliconiinae (1)

260. *Phalanta phalantha aethiopica* (R. & J., 1903) (*Atella*)	SA, M, R (Afr; Sey, Com, Masc)

Nymphalinae (5)

261. *Antanartia b. borbonica* (Oberthür, 1880) (*Vanessa*)	M, R
262. *Cynthia cardui* (Linnaeus, 1758) (*Papilio*)	SA, M, R (near-cosmopolitan)
263. *Hypolimnas misippus* (Linnaeus, 1764) (*Papilio*)	SA, M, R (Afr, Or; Mau, Rod, Com, Sey, Masc)
264. *Junonia rhadama* (de Boisduval, 1833) (*Vanessa*)	M, R (Mau, Rod, Com, Masc)
265. *Salamis augustina* de Boisduval, 1833	M, R (Mau)

Limenitinae (1)

266. *Neptis dumetorum* (de Boisduval, 1833) (*Limenitis*)	R (endemic)

Lycaenidae

Lycaeninae

Theclini (1)

267. *Deudorix* (*Virachola*) *antalus* (Hopffer, 1855) (*Dipsas*)	SA, M, R (Afr; Mau, Com)

Polyommatini (6)

268. *Cacyreus darius* (Mabille, 1877) (*Lycaena*)	M, R (Mau, Com)
269. *Lampides boeticus* (Linnaeus, 1767) (*Papilio*)	SA, M, R (Afr, Pal, Or, Aus)
270. *Leptotes pirithous* (Linnaeus, 1767) (*Papilio*)	SA, M, R (Afr, Pal, Or)
271. *Zizeeria knysna* (Trimen, 1862) (*Lycaena*)	SA, M, R (Afr, Pal; Sey)
272. *Zizina antanossa* (Mabille, 1877) (*Lycaena*)	SA, M, R (Afr; Com, Mau)
273. *Zizula hylax* (Fabricius, 1775) (*Papilio*)	SA, M, R (pantropical; Mau)

BOMBYCOIDEA

Sphingidae

Sphinginae (4)

274. *Acherontia atropos* (Linnaeus, 1758) (*Sphinx*)	SA, M, R (Afr, Pal; Sey, Com, Mau, Rod. Migrant)
275. *Agrius convolvuli* (Linnaeus, 1758) (*Sphinx*)	SA, M, R (Afr, Pal, Or, Aus; Sey, Com, Mau, Rod. Migrant)
276. *Coelonia mauritii* (Butler, 1877) (*Protoparce*)	SA, M, R (Afr; Com, Mau)
277. *Coelonia s. solani* (de Boisduval, 1833) (*Sphinx*)	M, R (? Mau)

Macroglossinae (12)

278. *Basothia medea* (Fabricius, 1781) (*Sphinx*)	SA, M, R (Afr; Com, Mau. Migrant)
279. *Cephonodes apus* (de Boisduval, 1833) (*Macroglossum*)[214]	R (endemic)
280. *Cephonodes hylas virescens* Wallengren, 1865	SA, M, R
281. *Daphnis nerii* (Linnaeus, 1758) (*Sphinx*)	SA, M, R (Pal, Afr, Or; Sey, Com, Mau)

282. *Euchloron megaera lacordairei* (de Boisduval, 1833) (*Deilephila*)	M, R (Com, Mau) (endemic ssp.)
283. *Hippotion celerio* (Linnaeus, 1758) (*Sphinx*)	SA, M, R (Pal, Afr; Sey, Com, Mau)
284. *Hippotion eson* (Cramer, 1779) (*Sphinx*)	SA, M, R (Afr; Sey, Com, Mau)
285. *Hyles biguttata* (Walker, 1856) (*Deilephila*)	M, R
286. *Macroglossum a. aesalon* Mabille, 1879 (as *Macroglossa*)	M, R (Mau)
287. *Macroglossum milvus* de Boisduval, 1833 (as *Macroglossa*)	M, R
288. *Nephele densoi* (Keferstein, 1870) (*Zonilia*)	(*Zonilia*)M, R (Com)
289. *Nephele o. oenopion* (Hübner, [1824]) (*Orneus*)	M, R (Mau) (endemic ssp.)
NOCTUOIDEA	
Arctiidae	
Lithosiinae (2)	
290. *Eilema squalidum* (Guenée, 1863) (*Lithosia*)	R (endemic)
291. *Thumatha fuscescens* Walker, 1866	SA, M, R (palaeotropical)
Arctiidae	
Arctiinae (9)	
292. *Argina amanda* (de Boisduval, 1847) (*Euchelia*)	SA, M, R (Afr)
293. *Argina astrea* (Drury, 1773) (*Phalaena*)	SA, M, R (palaeotropical)
294. *Nyctemera insularis* (de Boisduval, 1833) (*Leptosoma*)	M, R (Mau, Com)
295. *Nyctemera virgo* (Strand, 1909) (*Deilemera*)	M, R
296. *Utetheisa diva* (Mabille, 1880) (*Deiopeia*)	R (endemic)
297. *Utetheisa e. elata* (Fabricius, 1798) (*Bombyx*)	M, R (Mau, Com, Rod)
298. *Utetheisa lotrix lepida* (Rambur, 1866) (*Deiopeia*)	M, R (Afr, Pal)
299. *Utetheisa pulchella* (Linnaeus, 1758) (*Phalaena Tinea*)	SA, M, R (Pal, Afr, Or)
300. *Utetheisa p. pulchelloides* Hampson, 1907	R (small islands in W. and SW. Indian Ocean)
Nolidae	
Nolinae (1)	
301. *Nola herbuloti* de Toulgoet, 1982 [1983]	R (endemic)
Chloephorinae (4)	
Chloephorini	
302. *Maurilia arcuata* (Walker, [1858]) (*Xanthodes*?)	SA, M, R (Afr)
Sarrothripini	
303. *Garella basalis* Berio, 1966	M, R
304. *Nycteola mauritia* (de Joannis, 1906) (*Sarrothripa*)	R (Mau, Mahé)
305. *Pardasena virgulana* (Mabille, 1880) (*Sarrothripa*)	SA, M, R (Afr)
Eariadinae (2)	
306. *Earias biplaga* Walker, 1866	SA, M, R (Afr; Sey, Com, Mau, Socotra)
307. *Earias insulana* (de Boisduval, 1833) (*Tortrix*)	SA, M, R (Pal, Afr, Or; Com, Mau, Rod)
Blenininae (1)	
308. *Blenina richardi* Viette, 1958	R (endemic)
Noctuidae	
Aganainae (1)	
309. *Asota borbonica* (de Boisduval, 1833) (*Aganais*)	M, R (Com, Mau)
Herminiinae (9)	
310. *Bleptinodes borbonica* de Joannis, 1932	R (endemic)
311. *Hydrillodes aviculalis* Guenée, 1862	R (endemic)
312. *Hydrillodes uliginosalis* Guenée, 1854	SA, M, R (Afr)
313. *Nodaria cornicalis* (Fabricius, 1794) (*Phalaena*)[215]	M, R (Or, Aus)
314. *Physula synnaralis* Guenée, 1862	R (endemic)
315. *Progonia oileusalis* (Walker, [1859]) (*Herminia*)	M, R (Sey, Mau)
316. *Simplicia extinctalis* (Zeller, 1852) (*Herminia*)	SA, M, R (Afr; Sey, Mau)
317. *Simplicia inflexalis* Guenée, 1854	SA, M, R (Afr; Mau)
318. *Simplicia pannalis* Guenée, 1863	R (endemic)
Hypeninae (17)	
319. *Catada obscura* de Joannis, 1906	R (Mau)
320. *Dichromia* (*Ametropalpis*) *nasuta* (Mabille, 1884) (*Ametropalpis*)	M, R
321. *Dichromia* (*Camphypena*) *legrosi* (Guillermet, 1992) (*Hypena*)	R (endemic)
322. *Hypena* (*Conscitalypena*) *conscitalis* Walker, [1866]	SA, M, R (Afr, Or, Aus; Sey, Mau)

323. *Hypena* (*Hypena*) *frappieralis* Guenée, 1862	R (endemic)
324. *Hypena* (*Hypena*) *obacerralis* Walker, [1859]	M, R (Afr, Pal, Or; Sey, Com, Mau)
325. *Hypena* (*Hypena*) *ophiusinalis* Mabille, 1879	M, R (Com)
326. *Hypena* (*Hypena*) *varialis* Walker, [1866]	SA, M, R (Afr, Or, ?Aus; Sey, Com, Mau)
327. *Hypena* (*Hypena*) *vulgatalis* Walker, [1859]	SA, ?R
328. *Hypena* (*Jussalypena*) *laceratalis* Walker, [1859]	SA, M, R (Afr, Or, Aus; Mau)
329. *Hypena* (*Jussalypena*) *nasutalis* Guenée, 1862	M?, R
Taxa removed from *Hypena* but *incertae sedis* within Hypeninae	
330. '*Hypena' anderesi* Guillermet, 1992	R (endemic)
331. '*Hypena' etiennei* Guillermet, 1992	R (endemic)
332. '*Hypena' inextensalis* Guenée, 1862	R (endemic)
333. *'Hypena' viettei* Guillermet, 1992	R (endemic)
334. *Proluta deflexa* Saalmüller, 1891	M, R
335. *Rhynchodontodes revolutalis* (Zeller, 1852) (*Hypena*)	SA, M, R (Afr)
Catocalinae s.l. (67)	
336. *Achaea catella* Guenée, 1852	SA, M, R (Afr; Sey, Com, Mau, Rod)
337. *Achaea euryplaga* (Hampson, 1913) (*Heliophisma*)	M, R
338. *Achaea finita* (Guenée, 1852) (*Ophisma*)	SA, M, R (Afr; Mau, Rod)
339. *Achaea infinita* (Guenée, 1852) (*Ophisma*)	SA, M, R (Afr; Mau)
340. *Achaea leucopasa* (Walker, 1858) (*Ophisma*)	M, R
341. *Achaea lienardi* (de Boisduval, 1833) (*Ophiusa*)	SA, M, R (Afr; Com, Mau)
342. *Achaea oedipodina* Mabille, 1879	M, R
343. *Achaea trapezoides* (Guenée, 1863) (*Ophisma*)	SA, M, R (Afr; Mau, Rod)
344. *Achaea violaceofascia richardi* Viette, 1975	R (endemic ssp.)
345. *Anomis alluaudi* Viette, 1965	M, R
346. *Anomis campanalis* (Mabille, 1880) (*Herminia*)	M, R
347. *Anomis flava* (Fabricius, 1775) (*Noctua*)	SA, M, R (palaeotropical; Sey, Com, Mau, Rod)
348. *Anomis lophognatha* Hampson, 1926	M, R (Mau)
349. *Anticarsia irrorata* (Fabricius, 1781) (*Noctua*)	SA, M, R (Afr, Or, Aus; Sey, Com, Mau)
350. *Argyrolopha costibarbata* Hampson, 1914	R (Mau)
351. *Arsina silenalis* Guenée, 1862	M, R (Ald)
352. *Catephia trispilosa* (Saalmüller, 1880) (*Anophia*)	M, R
353. *Chalciope delta* (de Boisduval, 1833) (*Ophiusa*)	SA, M, R (Afr; Com, Mau)
354. *Cyligramma fluctuosa* (Drury, 1773) (*Phalaena*)	SA, M, R (Afr; Com, Mau)
355. *Dermaleipa rubricata* (Holland, 1894) (*Lagoptera*)	SA, R (Afr)
356. *Dysgonia angularis* (de Boisduval, 1833) (*Ophiusa*)	SA, M, R (Afr; Sey, Com, Mau)
357. *Dysgonia derogans* (Walker, 1858) (*Ophiusa*)	SA, M, R (Afr)
358. *Dysgonia masama* (Griveaud, 1981) (*Caranilla*)	M, R
359. *Dysgonia torrida* (Guenée, 1852) (*Ophiusa*)	SA. M, R (Afr, Or; Sey, Com, Mau, Rod)
360. *Erebus macrops* (Linnaeus, 1768) (*Phalaena Attacus*)	SA, M, R
361. *Erebus walkeri* (Butler, 1875) (*Patula*)	SA, M, R (Afr; Sey, Com, Mau)
362. *Ericeia albangula dodo* Viette, [1976] 1975	R (endemic ssp.)
363. *Ericeia congregata* (Walker, 1858) (*Remigia*)	SA, M, R (Afr; Com, Rod)
364. *Ericeia congressa* (Walker, 1858) (*Remigia*)	SA, M, R (Afr; Rod)
365. *Ericeia inangulata* (Guenée, 1852) (*Hulodes*)	SA, M, R
366. *Ericeia lituraria* (Saalmüller, 1880) (*Alamis*)	M, R (Afr; Com)
367. *Eudocima fullonia* (Clerck, [1764]) (*Phalaena*)	SA, M, R (Afr, Or, Aus; Com. Migrant)
368. *Eudocima imperator* (de Boisduval, 1833) (*Ophideres*)	M, R
369. *Gesonia obeditalis* Walker, [1859]	M, R (Afr, Or; Sey, Mau)
370. *Gesonia stictigramma* Hampson, 1926	SA, R (Afr)
371. *Gracilodes angulalis* Guillermet, 1992	R (endemic)
372. *Gracilodes nysa* Guenée, 1852	SA, M, R (Sey, Com, Mau)
373. *Grammodes bifasciata* (Petagna, 1787) (*Noctua*)	SA, M, R (Pal, Afr; Sey, Com, Mau)
374. *Grammodes stolida* (Fabricius, 1775) (*Noctua*)	SA, M, R (Pal, Afr, Or; Com)
375. *Heliophisma klugii* (de Boisduval, 1833) (*Ophiusa*)	SA, M, R
376. *Hypospila thermesina* Guenée, 1862	R (Or, Aus; Sey, Andaman Isl.)
377. *Hypocala florens* Mabille, 1880	M, R
378. *Lacera alope* (Cramer, 1780) (*Phalaena Bombyx*)	SA, M, R (Afr, Or)
379. *Lygephila salax* (Guenée, 1852) (*Toxocampa*)	SA, R
380. *Maxera marchalii* (de Boisduval, 1833) (*Ophiusa*)	SA, M, R(Afr; Com, Mau)
381. *Mocis conveniens* (Walker, 1858) (*Remigia*)[216]	SA, M, R (Afr; Sey, Com, Mau, Rod)
382. *Mocis frugalis* (Fabricius, 1775) (*Noctua*)	SA, M, R (Paleotr., Sey, Com, Mau)

383. *Mocis mayeri* (de Boisduval, 1833) (*Ophiusa*)	SA. M, R (Sey, Com, Mau, Rod)
384. *Ophiusa legendrei* Viette, 1967	M, R (Com)
385. *Ophiusa waterloti* Viette, 1892	M, R
386. *Oraesia pierronii* (Mabille, 1880) (*Odontina*)	M, R
387. *Ozopteryx basalis* Saalmüller, 1891	M, R
388. *Pericyma mendax* (Walker, 1857) (*Alamis*)	SA, M, R (Afr; Mau)
389. *Pericyma vinsonii* (Guenée, 1862) (*Homoptera*)	M, R (Mau, Rod)
390. *Pleuronodes apicalis* Guillermet, 1992	R (endemic)
391. *Plusiodonta excavata* (Guenée, 1863) (*Odontina*)	R (endemic)
392. *Plusiodonta gueneei* (Viette, 1968) (*Odontina*)	M, R
393. *Polydesma umbricola* de Boisduval, 1833	SA, M, R (Afr; Sey, Com, Mau)
394. *Prominea porrecta* (Saalmüller, 1880) (*Capnodes*)	M, R (Mau)
395. *Rhesala moestalis* (Walker, [1866]) (*Magulaba*)	SA, M, R (Afr; Sey, Com, Mau)
396. *Serrodes partita* (Fabricius, 1775) (*Noctua*)[217]	SA, M, R
397. *Serrodes trispila* (Mabille, 1890 (*Athyrma*)	SA, M, R (Mau)
398. *Tolna sypnoides* (Butler, 1878) (*Achaea*)	SA, M, R (Afr; Com, Mau)
399. *Trigonodes hyppasia anfractuosa* (de Boisduval, 1833) (*Ophiusa*)	SA, M, R (Afr; Sey, Com, Mau, Rod)
400. *Trigonodes exportata* Guenée, 1852	R (Afr; Sey)
401. *Rivula dimorpha* Fryer, 1912	R (Sey)
402. *Rivula dispar* de Joannis, 1915	R (Mau)
Euteliinae (2)	
403. *Chlumetia borbonica* Guillermet, 1992	R (endemic)
404. *Eutelia blandiatrix* Guenée, 1852	SA, M, R (Pal, Afr; Mau)
Stictopterinae (3)	
405. *Gyrtona polymorpha* Hampson, 1905	R (Mau)
406. *Stictoptera antemarginata* (Saalm., 1880) (*Lophoptera*)	SA, M, R (Afr; Sey)
407. *Stictoptera poecilosoma* Saalmüller, 1880	M, R
Plusiinae (11)	
408. *Agrapha etiennei* (Dufay, 1975) (*Ctenoplusia*)	R (endemic)
409. *Agrapha limbirena* (Guenée, 1852) (*Plusia*)	SA, M, R (Pal, Afr, Or; Sey, Com, Mau)
410. *Agrapha orbifera* (Guenée, 1865) (*Plusia*)	R (endemic)
411. *Argyrogramma signata* (Fabricius, 1775) (*Noctua*)	SA, M, R (Afr, Or, Aus; Sey, Com, Mau)
412. *Chrysodeixis chalcites* (Esper, 1789) (*Noctua*)	SA, M, R (Afr, Pal, Or, Aus; Sey, Com, Mau, Rod)
413. *Ctenoplusia rhodochrysa* (de Joannis, 1906) (*Plusia*)	R (Mau)
414. *Trichoplusia florina* (Guenée, 1852) (*Plusia*)	M, R
415. *Trichoplusia indicator* (Walker, [1858]) (*Plusia*)	SA, M, R (Afr; Com, Mau)
416. *Trichoplusia ni* (Hübner, [1803]) (*Noctua*)	SA, M, R (cosmopolitan, migrant)
417. *Trichoplusia orichalcea* (F., 1775) (*Noctua*)	SA, M, R (pantropical)
418. *Trichoplusia vittata* (Wallengren, 1856) (*Plusia*)	SA, M, R (Afr, Pal; Mau)
Acontiinae (19)	
419. *Acontia gratiosa* Saalmüller, 1891[218]	R
420. *Amyna axis* Guenée, 1852[219]	SA, M, R
421. *Amyna incertalis* Guillermet, 1992 (as *Ilattia*)	R (endemic)
422. *Autoba costimacula mascarensis* Viette, 1975	R (Mau) (endemic ssp.)
423. *Corgatha terracotta* de Joannis, 1910	R (Mau)
424. *Eublemma anachoresis* (Wallengren, 1863) (*Xanthoptera*)	SA, R (Afr, Or, Aus)
425. *Eublemma augusta* (Guenée, 1863) (*Anthophila*)	R (endemic)
426. *Eublemma baccalix* (Swinhoe, 1886) (*Mestleta*)	SA, R (Afr, Pal)
427. *Eublemma cochylioides* (Guenée, 1852) (*Micra*)	SA, M, R (Afr, Or, Aus; Mau)
428. *Eublemma pyrosticta* de Joannis, 1910	R (endemic)
429. *Eublemma viettei* (Berio, 1954) (*Porphyrinia*)	M, R
430. *Eublemmoides apicimacula* (Mabille, 1880) (*Erastria*)	SA, M, R(Afr; Sey, Com, Mau, Rod)
431. *Eustrotia bernica* Viette, 1957	R (endemic)
432. *Holocryptis interrogationis* Viette, 1957	R (endemic)
433. *Lithacodia bernica* (Viette, 1957) (*Eustrotia*)	R (endemic)
434. *Lithacodia blandula* (Guenée, 1863) (*Erastria*)	SA, M, R (Afr)
435. *Lophoruza mascarena* de Joannis, 1910	R (Mau)
436. *Microplexia costimaculalis* Guillermet, 1992	R (endemic)
437. *Oruza divisa* (Walker, 1862) (*Selenis*)	M, R (Afr, Pal, Or, Aus; Mau)

Bagisarinae (2)

438. *Pardoxia graellsii* (Feisthamel, 1837) (*Acontia*) — SA, M, R (Pal, Afr, Or; Com, Mau)
439. *Xanthodes albago* (Fabricius, 1794) (*Noctua*) — SA, M, R (Pal, Afr, Or, Aus)

Acronictinae (1)

440. *Megalonycta mediovitta* (Rothschild, 1924) (*Acronycta*) — M, R (Com)

Condicinae (2)

441. *Condica conducta* (Walker, 1856) (*Caradrina*) — SA, M, R (Afr; Com, Sey)
442. *Condica pauperata* (Walker, 1858) (*Hadena*) — SA, M, R (Afr; Com, Sey, Mau, Rod)

Heliothinae (1)

443. *Helicoverpa armigera* (Hübner, [1809]) (*Noctua*)[220] — SA, M, R (Pal, Afr, Or; Sey, Com, Mau, Rod)

Noctuinae

Noctuini (11)

444. *Agrotis alluaudi* Viette, 1958 — R (endemic)
445. *Agrotis ipsilon* (Hufnagel, 1766) (*Phalaena*) — SA, M, R (near-cosmopolitan)
446. *Agrotis longidentifera ranavalo* Viette, 1958 — M, R (Com) (endemic ssp.)
447. *Callopistria bernei* Viette, 1985 — R (endemic)
448. *Callopistria cariei* (de Joannis, 1915) (*Eriopus*) — R (Mau)
449. *Callopistria latreillei rakoto* Viette, 1965 — M, R (endemic ssp.)
450. *Callopistria yerburii* Butler, 1884 — SA, M, R (Afr, Pal; Sey)
451. *Callopistria m. maillardi* (Guenée, 1863) (*Eriopus*) — R (Mau, Rod) (endemic ssp.)
452. *Mentaxya palmistarum* (de Joannis, 1932) (*Lycophotia*) — R (endemic)
453. *Ochropleura leucogaster* (Freyer, [1831]) (*Noctua*) — SA, M, R (Pal) (*introd. acc.*)
454. *Ochropleura megaplecta* (de Joannis, 1932) (*Agrotis*) — R (endemic)

Glottulini (1)

455. *Brithys crini* (Fabricius, 1775) (*Bombyx*) — SA, M, R (Mau, Com)

Hadenini (13)

456. *Aletia infrargyrea* (Saalmüller, 1891) (*Leucania*) — M, R (Mau)
457. *Aletia madensis* (Berio, 1956) (*Mythimna*) — M, R
458. *Aletia pyrausta* (Hampson, 1913) (*Cirphis*) — M, R, (Afr; Mau)
459. *Apospasta rubiana* (Guenée, 1863) (*Mamestra*) — R (endemic)
460. *Leucania insulicola* Guenée, 1852 — M, R (Com, Mau, Rod)
461. *Leucania phaea* Hampson, 1902 — SA, M, R (Mau)
462. *Leucania pseudoloreyi* Rungs, 1953 — M, R
463. *Mythimna borbonensis* Guillermet, 1996 — R (endemic)
464. *Mythimna decaryi* (Boursin & Rungs, 1952) (*Leucania*) — M, R
465. *Mythimna hypocapna* (de Joannis, 1932) (*Cirphis*) — R (endemic)
466. *Mythimna infrargyrea* (Saalmüller, 1891) (*Leucania*) — M, R (Com, Mau)
467. *Mythimna operosa* (Saalmüller, 1891) (*Leucania*) — M, R
468. *Mythimna pyrausta* (Hampson, 1913) (*Cirphis* (as *Cyrphis*)) — SA, M, R (Afr; Com, Mau)

Caradrinine assemblage (15)

469. *Apamea desegaulxi* Viette, 1982 — R (endemic)
470. *Athetis ignava* (Guenée, 1852) (*Caradrina*) — SA, M, R (Afr; Com, Mau, Rod)
471. *Athetis pigra* (Guenée, 1852) (*Caradrina*)[221] — SA, R
472. *Callixena versicolora* Saalmüller, 1891 — SA, M, R (Com)
473. *Conservula cinisigna* de Joannis, 1906 — SA, M, R (Afr; Com, Mau)
474. *Euplexia borbonica* Viette, 1957 — R (endemic)
475. *Eutamsia tenera* Viette, 1963 — M, R
476. *Janseodes melanospila pallescens* (Saalm., 1880) (*Euperia*) — M, R (Mau; pantropical)
477. *Matarum etiennei* Viette, [1975] 1976 — R (endemic)
478. *Neostichtis ignorata* Viette, 1958 — M, R (Mau)
479. *Sesamia calamistis* Hampson, 1910 — SA, M, R (Afr; Com, Mau)
480. *Spodoptera cilium cycloides* Guenée, 1852 (*Laphygma*) — SA, M, R (Afr, Pal)
481. *Spodoptera exigua* (Hübner, [1808]) (*Noctua*) — SA, M, R (near-cosmopolitan)
482. *Spodoptera littoralis* (de Boisduval, 1833) (*Hadena*) — SA, M, R (Afr, Pal; Sey, Com, Mau, Rod)
483. *Spodoptera m. mauritia* (de Boisduval, 1833) (*Hadena*) — M, R (Afr; Sey, Com, Mau)

Endnotes

[1]In addition to the species listed in Vári *et al.* (2002), the figure includes six as yet undescribed species of *Agrionympha* Meyrick (Gibbs, unpubl.).

[2]Five thus far undescribed species of Micropterigidae belonging to a new genus have only recently been discovered on Madagascar (Davis *et al.,* in prep.).

[3]For taxa described after 2002 see Mey (2004*a*).

[4]For taxa described after 2002 see Puplesis and Diskus (2003).

[5]For taxa described or recorded after 2002 see Baldizzone and van der Wolf (2004), Sinev (2004) and Kun (2004).

[6]For taxa described after 2002 see Gozmány (2004).

[7]For taxa described after 2002 see Mey (2004*b*) and Triberti (2004).

[8]Galacticoidea were not included as occurring in southern Africa by Vári *et al.* (2002). For the first records of this group from the subregion and from Madagascar see Mey (2004*c*).

[9]For taxa described after 2002 see Mey (2005).

[10]For taxa described after 2002 see Aarvik (2004).

[11]For taxa described after 2002 see Kallies (2004).

[12]For taxa described after 2002 see Krüger (2004*a*).

[13]For taxa described after 2002 see Gaedike and Krüger (2002) and Gaedike (2004).

[14]In addition to seven species described, or recorded for the first time as occurring in southern Africa, by Arenberger (2001*a,b*) that were omitted in Vári *et al.* (2002) or described subsequently (Arenberger, 2004), revisionary work in progress so far revealed the existence of 45 as yet undescribed species (Grebennikov and Ustyuzhenin, unpubl.).

[15]For taxa described after 2002 see Thiele (2004).

[16]For new records or taxa described after 2002 see Nuß (2003), Maes (2004*a,b*) and Bassi (2004). The figure further includes one new record for southern Africa (Agassiz, unpubl.) and 26 manuscript names of Crambidae: Crambinae by G. Bassi (label data on returned material).

[17]For taxa described after 2002 see Krüger (2003, 2004*b*, 2005*c*).

[18]Resulting from revisionary work currently in preparation, the figure includes 33 as yet undescribed southern African species of the genus *Bombycopsis* Felder (Joannou and Krüger, in prep.).

[19]For taxa described after 2002 see Bouyer (2004).

[20]For taxa described or first recorded after 2002 see Dall'Asta (2004), Kühne (2004, 2005), Hacker (2004) and Krüger (2005*a,b*). In addition, the figure includes 156 as yet undescribed species of Lithosiinae (Krüger, unpubl.).

[21]For taxa described after 2002 see Kühne (2005).

[22]It should be noted that in Appendix 1 species figures for southern Africa include undescribed species identified in the course of revisions currently in progress (see also notes 14, 16 and 18). By contrast, the figures in Appendix 2 include, in addition to taxa listed in the checklists, only those validly described up to the end of 2005.

[23]Included as Lypusinae in Vári *et al.* (2002).

[24]*Narycia* Stephens, placed in Taleporiinae in Vári *et al.* (2002), has been transferred to Naryciinae following Davis and Robinson (1999). *Amydria* Clemens has been provisionally retained but its single species is almost certainly misplaced as the genus has an exclusively New World distribution as far as is known.

[25]Harmacloninae, accorded family rank by Viette (1990) (as Arrhenophanidae), are here included in the Tineidae: Myrmecozelinae. Arrhenophanidae are probably limited in their distribution to the New World. The placement of *Protaphreutis borboniella* in Hapsiferinae is tentative.

[26]Included are 13 genera (with 15 southern African species) removed from Yponomeutinae by Gershenson and Ulenberg (1998), for which no alternative taxonomic placement was indicated. Argyresthiinae were treated as a distinct family by Vári *et al.* (2002).

[27]Treated as a subfamily of Yponomeutidae in Viette (1990) and as a subfamily of Plutellidae in Vári *et al.* (2002).

[28]Treated as a subfamily of Yponomeutidae in Viette (1990) and as a subfamily of Plutellidae in Vári *et al.* (2002).

[29]Of the eight genera listed under Coleophoridae in Vári *et al.* (2002), Sinev (2004) retained only *Augasma* Herrich-Schäffer and *Coleophora* Hübner.

[30]Pterolonchinae were treated as a subfamily of Coleophoridae by Hodges *et al.* (1999), the treatment here followed.

[31]Blastobasinae were accorded family rank by Vári *et al.* (2002) and Sinev (2004).

[32]Stenomatinae were treated as a subfamily of Oecophoridae in Vári *et al.* (2002); Sinev (2004) included the taxon as Stenominae.

[33]Agonoxeninae were not listed in Vári *et al.* (2002); they include the concept of Blastodacnidae. Sinev (2004) transferred a range of taxa to this group (as Agonoxenidae).

[34]*Agonopterix* Hübner and *Eutorna* Meyrick were included in Oecophoridae by Viette (1990) and in Depressariidae by Vári *et al.* (2002). Sinev (2004) accorded the taxon family rank.

[35]Lees and Minet (2003), following Minet (1990), placed Cryptolechiinae (including *Orophia* and *Eutorna*) in Elachistidae, whereas Hodges (1999) considered Cryptolechiinae (as Cryptolechiidae) to be synonymous with Elachistidae: Depressariinae.

[36]Xyloryctidae were given family rank by Viette (1990) and Sinev (2004) but treated as a subfamily of Oecophoridae in Vári *et al.* (2002), following Hodges (1999). Scythrididae were included as a distinct family in Vári *et al.* (2002).

[37]Including the concept of Metachandidae, which were included as a tribe in Oecophoridae by Lees and Minet (2003, footnote 17). Metachandini have speciated strongly on Réunion.

[38]Accorded family rank by Sinev (2004).

[39]Sinev (2004) accorded the three constituent subfamilies family rank.

[40]The two species listed in Vári *et al.* (2002) were transferred to Chrysopeleiidae by Sinev (2004).

[41]Hodges (1999) proposed a subdivision of Cosmopterigidae into Chrysopeleiinae, Antequerinae and Cosmopteriginae, considering Scaeosophidae Meyrick, 1922 to be synonymous with Cosmopteriginae. By contrast, Sinev (2004) treated Scaeosophinae as a distinct subfamily and elevated Chrysopeleiinae to family rank.

[42]*Stagmatophora* Herrich-Schäffer, included in Momphidae by Viette (1990), is here placed in Cosmopterigidae: Cosmopteriginae following Edwards and Nielsen *in* Nielsen *et al.* (1996).

[43]Including *Hyalochna* Meyrick.

[44]*Hyalochna allevata* Meyrick is here transferred back to Cosmopterigidae: Cosmopteriginae.

[45]Accorded family rank by Vári *et al.* (2002).

[46]Choreutidae were included in Sesioidea by Vári *et al.* (2002).

[47]Pseudocossinae *sensu* Heppner are considered polyphyletic (Edwards *et al.,* 1999), and *Pseudocossus* is here tentatively placed in Brachodidae.

[48]Including Chrysopolomidae (as Chrysopolominae), which were accorded family rank by Viette (1990).

[49]The current subdivision of Epermeniidae into Epermeniinae and Ochromolopinae was not followed by Dugdale *et al.* (1999). For taxa described after 2002 see Gaedike (2004).

[50]Macropiratinae were not recorded as occurring in southern Africa by Vári *et al.* (2002). A single, as yet undescribed species has since been discovered in South Africa (Grebennikov and Ustyazhenin, unpubl.)

[51]Thyridinae were listed as Pachythyrinae in Vári *et al.* (2002). For taxa described after 2002 see Thiele (2004).

[52]Siculodinae here include Argyrotypinae (as Argyrotypini).

[53]Including the concept of Peoriinae.

[54]Minet and Scoble (1999) adopted a subdivision of Sematuridae into the almost exclusively neotropical Sematurinae and the monotypic afrotropical Apoprogoninae.

[55]Viette (1990) placed *Urapteritra* Viette, 1972 (with eight species, including *falcifera* (Weymer, 1892)) in Uraniinae. Vári *et al.* (2002) include *falcifera* in *Urapteroides* Moore, 1888 (Microniinae).

[56]*Metisella* Hemming and *Tsitana* Evans were included in Hesperiinae in Vári *et al.* (2002).

[57]Lycaeninae, Theclinae, and Polyommatinae, all of which were treated as subfamilies in Vári *et al.* (2002), are here included as tribes under a broadened concept of Lycaeninae.

[58]Included in Bombycoidea in Vári *et al.* (2002), Lasiocampoidea are here treated separately following Lemaire and Minet (1999).

[59]Hibrildinae were included as a separate family in Vári *et al.* (2002).

[60]Ludiinae were included as Ludiini in Vári *et al.* (2002) as that list did not attempt a subdivision of Saturniidae into subfamilies.

[61]Smerinthinae were included in Sphinginae in Vári *et al.* (2002).

[61a]See note 69 in Lees and Minet (2003). The tribal classification of southern African Lithosiinae remains similarly unresolved.

62 Placement of *Amerila* Walker in Phaegopterinae follows Lees and Minet (2003).

[63]*Euchromia* Hübner was placed in Ctenuchinae: Euchromiini in Vári *et al.* (2002); Lees and Minet (2003) placed the genus in a distinct subfamily Euchromiinae.

[64]Including the concept of 'Ophiderinae' and Rivulinae following Lees and Minet (2003). Kitching and Rawlins (1999) included Rivulinae in Hypeninae.

[65]See footnote 86 in Lees and Minet (2003).

[66]Amphipyrinae were first recorded from southern Africa by Hacker (2004).

[67]The 28 described southern African species of *Centrartha* Hampson, 1908 are here provisionally transferred from 'Amphipyrinae' to Cuculliinae *sensu lato.* Although this action has yet to be formalized nomenclaturally, it appears highly likely that *Centrartha* is a subjective junior synonym of *Ectochela* Hampson, 1902.

[68]See footnote 98 in Lees and Minet (2003).

[69]Taxa transferred from Arctiidae: Arctiinae to Noctuidae by Goodger and Watson (1995) without indication of subfamilial placement.

[70]Listed as Solenobiinae in Viette (1990).

[71]Included in Oecophoridae in Viette (1990).

[72]Included in Gelechiidae in Viette (1990).

[73]Included in Xyloryctidae in Viette (1990), placed in Lecithoceridae in Vári *et al.* (2002).

[74]Included in Gelechiidae in Viette (1990).

[75]Sinev (2004) reinstated *Anatrachyntis* Meyrick, 1915 from the synonymy of *Pyroderces* Herrich-Schäffer, 1853 and included in *Anatrachyntis* the two species placed in *Pyroderces* by Vári *et al.* (2002), *i.e., rileyi* (Walsingham) and *tripola* (Meyrick). The single Malagasy representative of *Pyroderces* listed by Viette (1990), *ocreella* Viette, 1955, is here tentatively placed in *Anatrachyntis* as well.

[76]Viette (1990) listed *Aciptilia* Hübner, [1825] as a valid genus. It is here considered a junior subjective synonym of *Pterophorus* Schäffer following Shaffer and Nielsen *in* Nielsen *et al.* (1996).

[77]Viette (1990) listed *Philotis* Ragonot, 1891 as a valid genus. It is here considered a junior subjective synonym of *Aglossa* Latreille, [1796] in accordance with the classification adopted in Vári *et al.* (2002).

[78]Endotrichinae were included in Pyralinae by Lees and Minet (2003).

[79]Viette (1990) listed *Hyphantidium* Scott, 1859 as a valid genus. It is here considered a junior subjective synonym of *Ephestia* Guenée, 1845 following Shaffer, Nielsen and Horak *in* Nielsen *et al.* (1996).

[80]Viette (1990) listed *Canthelea* Walker, 1866 as a valid genus. It is here considered a junior subjective synonym of *Epicrocis* Zeller, 1848 following Shaffer, Nielsen and Horak *in* Nielsen *et al.* (1996).

[81]Viette (1990) listed *Oligochroa* Ragonot, 1888 as a valid genus. It is here considered a junior subjective synonym of *Faveria* Walker, 1859 following Shaffer, Nielsen and Horak *in* Nielsen *et al.* (1996).

[82]Viette (1990) listed *Maliarpha* Ragonot, 1888 as a valid genus. It is here considered a junior subjective synonym of *Biafra* Ragonot, 1888 in accordance with the classification adopted in Vári *et al.* (2002).

[83]*Parthenodes angularis* Hampson, 1897 was placed in the genus *Panotima* Meyrick, 1934 by Viette (1990).

[84]Viette (1990) listed *Pachyzancla* Meyrick, 1884 as a valid genus. It is here considered a junior subjective synonym of *Herpetogramma* Lederer, 1863 following Maes *in* Vári *et al.* (2002).

[85]Viette (1990) placed *Asopia ornatalis* Duponchel, 1834 in the nymphuline genus *Parapoynx* Hübner, [1825]. This species is here placed in *Hydriris* Meyrick, 1885 (Spilomelinae), following Maes *in* Vári *et al.* (2002).

[86]Viette (1990) placed *Phalaena indicata* Fabricius, 1775 in the genus *Hedylepta* Lederer, 1863. *Hedylepta* is here considered a junior subjective synonym of *Omiodes* Guenée, 1854 following Maes *in* Vári *et al.* (2002).

[87]Viette (1990) placed *Phalaena balteata* Fabricius, 1798 and *Phalaena derogata* Fabricius, 1775 in the genus *Syllepte* Hübner, 1823. These taxa are here placed in *Pleuroptya* Meyrick, 1890 and *Haritalodes* Warren, 1890, respectively, following Maes *in* Vári *et al.* (2002).

[88]Viette (1990) listed *Pisoraca* Walker, 1862 as a valid genus. *Pisoraca* is here considered a junior subjective synonym of *Cyclophora* Hübner, 1822. However, the two shared species *Pisoraca inaequalis* Warren, 1902 and *Ephyra lyciscaria* Guenée, [1858] are placed in *'Cyclophora'* by Scoble (1999), indicating their uncertain classification.

[89]The genus *Drepanogynis* Guenée, [1858] was recently revised by Krüger (2002). Probably none of the Madagascan species currently placed in this genus (Viette, 1990; Scoble, 1999) belong there.

[90]Viette (1990) listed *Nopia* Walker, 1861 as a valid species. *Nopia* is presently regarded as a junior subjective synonym of *Idiodes* Guenée, [1858].

[91]Viette (1990) listed *Petrodava* Walker, [1863] as a valid species. *Petrodava* is here regarded as a junior subjective synonym of *Erastria* Hübner, [1813].

[92]*Ametropalpis* Mabille, 1884, considered a valid genus in Viette (1990), is here included as a subgenus of *Dichromia* Guenée, 1854.

[93]*Alamis* Guenée, 1852 and *Dugaria* Walker, [1858] were treated as valid genera in Viette (1990), but are here included as junior subjective synonyms of *Pericyma* Herrich-Schäffer, [1851].

[94]*Anua* Walker, 1858 and *Stenopis* Mabille, 1880 appear as valid genera in Viette (1990), but are here included as junior subjective synonyms of *Ophiusa* Ochsenheimer, 1816.

[95]*Davea* Berio, 1959 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Audea* Walker, [1858]. Kühne (2005) revised the catocaline genera *Audea* Walker, *Crypsotidia* Rothschild, *Hypotacha* Hampson, *Tachosa* Walker and *Ulotrichopus* Wallengren, resulting *inter alia* in the description of a new species from Madagascar.

[96]*Caranilla* Moore, [1885] is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Dysgonia* Hübner, [1823] following Poole (1989). The scope of these taxa is about to be radically redefined (Holloway and Miller, in press, and J. D. Holloway, pers. comm.).

[97]*Eupatula* Ragonot, 1894 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Erebus* Latreille, 1810.

[98]*Prodotis* John, 1910 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Grammodes* Guenée, 1852.

[99]*Remigia* Guenée, 1852 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Mocis* Hübner, [1823].

[100]*Antarchaea* Hübner, [1821] is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Phytometra* Haworth, 1809.

[101]*Episparina* Berio, 1964 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Episparis* Walker, [1857].

[102]*Elygea* Billberg, 1820 and *Othreis* Hübner, [1823] appear as valid genera in Viette (1990), but are here included as junior subjective synonyms of *Eudocima* Billberg, 1820.

[103]*Lyncestis* Walker, 1857 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Melipotis* Hübner, 1818.

[104]*Magulaba* Walker, [1866] is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Rhesala* Walker, 1858.

[105]*Parathermes* Hampson, 1902 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Maxera* Walker, 1865.

[106]*Thria* Walker, [1858] is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Pandesma* Guenée, 1852.

[107]*Tinnodoa* Nye, 1975 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Plusiodonta* Guenée, 1852.

[108]*Phlegetonia* Guenée, 1852 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Eutelia* Hübner, [1823].

[109]*Ctenoplusia* Dufay, 1970 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Agrapha* Hübner, [1821].

[110]*Ilattia* Walker, [1859] is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Amyna* Guenée, 1852.

[111]*Busmadis* Walker, 1866 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Cerynea* Walker, 1859.

[112]*Sophta* Walker, [1863] is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Corgatha* Walker, [1859].

[113]*Micraeschus* Butler, 1878 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Enispa* Walker, [1866].

[114]*Platysenta* Grote, 1874 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Condica* Walker, 1856.

[115]*Empusada* Hampson, 1906 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Cucullia* Schrank, 1802 following Poole (1989).

[116]*Appana* Moore, 1881 is listed as a valid genus in Viette (1990), but is here included as a junior subjective synonym of *Conservula* Grote, 1874.

[117]*Tebenna micalis dialecta* Diakonoff, 1985 is the southern African subspecies, with *bjerkandrella* auct. being cited as a junior subjective synonym. Viette (1990) listed *T. bjerkandrella* (Thunberg, 1784) as the only Malagasy representative of this genus. It appears likely that two different species are involved.

[118]Placed in *Buckleria* Tutt, 1905 in Viette (1990).

[119]Listed in Viette (1990) as *apricans* (de Boisduval, 1833), a junior subjective synonym.

[120]Represented in southern Africa by the nominotypical subspecies, and on Madagascar by ssp. *meloui* Whalley, 1963.

[121]Viette (1990) listed *Bleszynskia hapalisca* (as *hapaliscus*) as a distinct species. The taxon is here treated as a subspecies of *B. malacella* (Zeller).

[122]Placed in *Parapoynx* Hübner, [1825] in Viette (1990).

[123]Listed in Viette (1990) as *binotalis* Zeller, 1852, a junior subjective synonym.

[124]Listed in Viette (1990) as *panopealis* (Walker, 1859), a junior subjective synonym.

[125]Placed in *Syllepte* Hübner, 1823 in Viette (1990).

[126]Placed in *Antiercta* Amsel, 1956 in Viette (1990); *Antiercta* is presently considered a junior subjective synonym of *Hydriris* Meyrick.

[127]Included in Nymphulinae in Viette (1990).

[128]Represented on Madagascar by ssp. *paulianalis* Marion, 1954.

[129]Listed in Viette (1990) as *testulalis* (Geyer, 1832), a junior subjective synonym.

[130]Placed in *Hedylepta* Lederer, 1863 in Viette (1990).

[131]Placed in *Syngamia* Guenée, 1854 in Viette (1990).

[132]Placed in *Syngamia* Guenée, 1854 in Viette (1990).

[133]Placed in *Pyrausta* Schrank, 1802 in Viette (1990).

[134]Represented on Madagascar by ssp. *quinquepunctalis* (de Boisduval, 1833).

[135]Placed in *Pyrausta* Schrank, 1802 in Viette (1990).

[136]Represented on Madagascar by spp. *malgassalis* Viette, 1958.

[137]Placed in *Pyrausta* Schrank, 1802 in Viette (1990).

[138]Placed in *Pyrausta* Schrank, 1802 in Viette (1990).

[139]Listed in Viette (1990) as *martialis* (Guenée), a junior subjective synonym.

[140]Represented on Madagascar by ssp. *rufocellata* (Mabille, 1990).

[141]Placed in *Chlorissa* Stephens in Viette (1990).

[142]Represented in southern Africa by ssp. *alterata* (Walker, 1860), and on Madagascar by both the nominotypical subspecies and ssp. *signifrontaria* (Mabille, 1893).

[143]Placed in *Pisoraca* Walker in Viette (1990).

[144]Represented in southern Africa by ssp. *subculta* (Prout, 1916) and on Madagascar by ssp. *agrammaria* (Mabille, 1900).

[145]Represented by the nominotypical subspecies in southern Africa, and by ssp. *punctistriata* (Mabille, 1880) on Madagascar.

[146]Represented by the nominotypical subspecies in southern Africa, and by ssp. *subcatenata* Prout, 1932 on Madagascar.

[147]Represented by the nominotypical subspecies in southern Africa, and by ssp. *transfigurata* Prout, 1922 on Madagascar.

[148]Listed as *neptunaria viridipennaria* (Guenée) in Viette (1990); *viridipennaria* is treated as a junior subjective synonym by Scoble (1999).

[149]Represented by the nominotypical subspecies in southern Africa, and by ssp. *atroviridata* (Saalmüller, 1880) on Madagascar.

[150]According to Viette (1990) represented on Madagascar by ssp. *eugrapha* Herbulot, 1985. This name is not listed in Scoble (1999).

[151]Represented by the nominotypical subspecies in southern Africa, and by ssp. *conjugata* (Herbulot, 1966) on Madagascar.

[152]Represented by the nominotypical subspecies in southern Africa, and by ssp. *arata* (Saalmüller, 1891) on Madagascar.

[153]Represented by the nominotypical subspecies in southern Africa, and by ssp. *juvenilis* (Herbulot, 1965) on Madagascar.

[154]Represented by the nominotypical subspecies in southern Africa, and by ssp. *pagenstecheri* (Herbulot, 1979) on Madagascar.

[155]Represented by the nominotypical subspecies in southern Africa, and by ssp. *insularum* Fletcher, 1967 on Madagascar.

[156]Represented by ssp. *natalensis* (Warren, 1897) in southern Africa and the nominotypical subspecies on Madagascar.

[157]Represented by ssp. *uhligi* (Strand, 1909) in southern Africa, and ssp. *voeltzkowii* Pagenstecher, 1907 on Madagascar.

[158]Represented by the nominotypical subspecies in southern Africa, and by ssp. *acis* Fletcher, 1974 on Madagascar.

[159]Represented by the nominotypical subspecies in southern Africa, and by ssp. *meloui* Prout, 1929 on Madagascar.

[160]Represented by the nominotypical subspecies in southern Africa, and by ssp. *pontias* Prout, 1929 on Madagascar.

[161]Placed in *Urapteritra* Viette, 1972 in Viette (1990).

[162]Represented by the nominotypical subspecies in southern Africa, and by ssp. *praedicta* Rothschild and Jordan, 1903 on Madagascar.

[163]Represented by the nominotypical subspecies in southern Africa, and by ssp. *turlini* Darge, 1973 on Madagascar.

[164]Represented by the nominotypical subspecies in southern Africa, and by ssp. *lacordairei* (de Boisduval, 1833) on Madagascar.

[165]Represented by the nominotypical subspecies in southern Africa, and by ssp. *malgassica* Clark, 1933 on Madagascar.

[166]Placed in *Pirgula* Tessmann, 1921 in Viette (1990).

[167]Represented by the nominotypical subspecies in southern Africa, and by ssp. *saalmuelleri* (Rothschild, 1911) on Madagascar.

[168]Listed in Viette (1990) as *N. lacteola* (Mabille, 1880), a junior subjective synonym (Poole, 1989).

[169]Listed in Viette (1990) as *H. fuscomaculalis* Saalmüller, 1880, citing *fusculalis* Saalmüller as an unnecessary replacement name.

[170]Included in *Hypena* Schrank, 1802 in Viette (1990); the species was listed by Vári and Kroon (1986) but has since been removed from the southern African list as extralimital.

[171]Included in *Rhynchodontodes* Warren, 1913 in Viette (1990).

[172]Represented by the nominotypical subspecies in southern Africa, and by spp. *insulicola* Karsch, 1907 on Madagascar.

[173]Listed in Viette (1990) as *E. syngrammata* (Mabille, 1880), a junior subjective synonym (Poole, 1989).

[174]Placed in *Eupatula* Ragonot, 1894 in Viette (1990).

[175]Included in *Achaea* Hübner, [1823] in Viette (1990).

[176]Listed in Viette (1990) as *H. leucochiton* (Mabille, 1884), a junior subjective synonym (Poole, 1989).

[177]Listed in Viette (1990) as *M. nigrimacula* (Mabille, 1879), a junior subjective synonym (but citing the year of publication as 1880).

[178]Listed in Viette (1990) as *A. olivacea* Saalmüller, 1891, a junior subjective synonym (Poole, 1989).

[179]Listed in Viette (1990) as *C. trispilosa* (Saalmüller, 1880), a junior subjective synonym (Poole, 1989).

[180]Placed in *Othreis* Hübner, [1823] in Viette (1990).

[181]Placed in *Elygea* Billberg, 1820 in Viette (1990).

[182]*Mepantadrea simia* (Saalmüller, 1891) is treated as a junior subjective synonym of *M. reuti* (Saalmüller, 1881) in Viette (1990). It has not been possible to verify this synonymy; however, there is no taxon *reuti* Saalmüller listed in the World catalogue by Poole (1989).

[183]Placed in *Parathermes* Hampson, 1902 in Viette (1990).

[184]Represented by the nominotypical subspecies in southern Africa, and by spp. *leucocelis* (Mabille, 1880) on Madagascar.

[185]Listed in Viette (1990) as *C. cuprea* Saalmüller, 1891, a junior subjective synonym (Poole, 1989).

[186]Placed in *Antarchaea* Hübner, [1821] in Viette (1990) and cited as *A. terminalis* (Mabille, 1880), a junior subjective synonym (Poole, 1989).

[187]Listed in Viette (1990) as *R. transmissa* (Heyden, 1891), a junior subjective synonym (Poole, 1989).

[188]Placed in *Magulaba* Walker, [1866] in Viette (1990).

[189]Represented by the nominotypical subspecies in southern Africa, and by spp. *exquisita* (Saalmüller, 1891) on Madagascar.

[190]Placed in *Ctenoplusia* Dufay, 1970 in Viette (1990).

[191]Placed in *Ctenoplusia* Dufay, 1970 in Viette (1990).

[192]Represented by the nominotypical subspecies in southern Africa, and by spp. *subolivalis* (Mabille, 1893) on Madagascar.

[193]Listed in Viette (1990) as *C. rhodotrichia* Hampson, 1910 (but spelled *rhodotrochia*), a junior subjective synonym (Poole, 1989).

[194]Placed in *Pardoxia* Vives Moreno and Gonzalez, 1981 in Viette (1990).

[195]Placed in *Platysenta* Grote, 1874 in Viette (1990).

[196]Listed as *Helicoverpa a. armigera* (Hübner, [1808]) in Viette (1990); a second subspecies, *H. a. commoni* Hardwick, 1965, has been described from Canton Island.

[197]Represented by the nominotypical subspecies in southern Africa, and by subspecies *insularis* Viette, 1967 on Madagascar.

[198]Placed in *Heliothis* Ochsenheimer, 1816 in Viette (1990).

[199]Listed in Viette (1990) as *A. spinifera spiculifera* Guenée, 1852. The name *Agrotis spiculifera* Guenée is preoccupied; it is replaced by *A. biconica* Kollar, 1844. The species is represented by the nominotypical subspecies in southern Africa.

[200]Represented by the nominotypical subspecies in southern Africa, and by subspecies *ranavalo* Viette, 1958 on Madagascar.

[201]Represented by the nominotypical subspecies on Madagascar, and by subspecies *transjecta* (Distant, 1898) in southern Africa.

[202]The type locality of *Noctua latreillei* Duponchel, 1827 is France. On Madagascar the taxon is represented by subspecies *rakoto* Viette, 1965.

[203]The type locality of *Callopistria maillardii* (Guenée, 1862) is Réunion. A further subspecies *pseudintermissa* Viette, 1965 was described from Madagascar.

[204]The respective status of *Brithys crini* (Fabricius, 1775) and *B. pancratii* (Cyrillo, 1787) has been the subject of a longstanding debate. Viette (1990) treated the Madagascan populations as belonging to *B. crini pancratii,* whereas Poole (1989) considered both *crini* and *pancratii* as separate species, with all southern African (including Madagascan) material being referable to *B. crini.*

[205]Placed in *Leucania* Ochsenheimer, 1816 in Viette (1990).

[206]Placed in *Appana* Moore, 1881 in Viette (1990).

[207]Represented by the nominotypical subspecies in southern Africa, and by subspecies *pallescens* (Saalmüller, 1880) on Madagascar.

[208]Represented by the nominotypical subspecies in southern Africa, and by subspecies *malagasy* Viette, 1967 on Madagascar.

[209]The species was omitted from the list of Viette and Guillermet (1996).

[210]Listed by Viette and Guillermet (1996) as *Pyrausta testalis* (Fabricius).

[211]Listed by Viette and Guillermet (1996) under Spilomelinae.

[212]Listed by Guillermet and Guillermet (1986) as *Diaphana stolalis* (Guenée)

[213]Placed by Viette and Guillermet (1996) in *Psara* Snellen.

[214]The original description would seem to suggest that this species occurs on Mauritius as well, but the latter reference likely refers to *C. trochilus* (see Viette and Guillermet, 1996: 45).

[215]Viette and Guillermet (1996) erroneously include southern Africa in the distribution of this species.

[216]This species has been repeatedly referred to as *M. repanda* (Fabricius, 1794) in the literature, but is now known not to occur in the Afrotropical region.

[217]The species was omitted from the list of Viette and Guillermet (1996).

[218]This species appears in the list of Viette and Guillermet (1996) as *luteola* Saalmüller, 1891. Although considered a junior subjective synonym of *Acontia gratiosa* Wallengren, 1856 by Vári *et al.* (2002), following Poole (1989), it may prove to be a distinct species (A. Legrain, pers. comm.).

[219]Both *Amyna axis* and *A. octo* were described by Guenée (1852) from Tahiti. The taxonomic position of the populations from the study area remains uncertain.

[220]See also the comment on subspecies of this taxon in Viette and Guillermet, 1996: 47.

[221]Listed by Viette and Guillermet (1996) as being endemic to Réunion. As I have not examined any type material of *pigra,* the question of whether the southern African records refer to this species remains open.