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New Erebidae from the Mascarene islands and about some Madagascar Lepidoptera (Lepidoptera: Erebidae).

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Summary: 53 species of Erebidae (Lepidoptera) are illustrated from Madagascar, La Réunion and Mauritius of which 3 species are described as new to science. 8 species are reported for the first time from La Réunion and 10 species were recorded new to the fauna of Mauritius. Supplementary collection data for species occurring in the Mascarene islands of La Réunion and Mauritius as well as from Madagascar are presented. Data on the hostplants are mentioned for 16 species and the larvae of 7 species are illustrated as well as 51 genitalia preparations.

Keywords: Lepidoptera, Erebidae, Madagascar, Mascarene islands, La Réunion, Mauritius

Introduction

Many species of Lepidoptera from the Malagasy subregion had never been illustrated in modern times and therefore remain difficult to identify. Distributional records are rare, often limited to the localities of the capture of their types or to the first records in the respective countries. This is particularly true for the island of Mauritius from where only a few species have been reported during the last 60 years and mostly only in publications containing few or no illustrations, or concerning a limited number of selected species of agricultural importance.

This also applies to Madagascar. Although many species of Erebidae had been described or reported from Madagascar between the 1950s and 1980s, many have never been illustrated at all, others only by their genitalia figures or black and white images, sometimes published in a low resolution. Also many species described in the 19th century were not subsequently illustrated; often the only illustrations, if any, are their historic drawings in catalogs from the 19th or early 20th century.

This makes their identification in the field rather difficult, even for the more recognizable species. Also only few data on their regional distribution or biology have been added in recent times. Many of the species recorded from Madagascar are also only known from one locality, which is rather surprising for a country that is larger in size than metropolitan France and nearly 2½ times as large as Great Britain.

I would therefore like to illustrate some of these species and to communicate

to the amateurs and scientific community my collection data and photographs of some selected species of Erebidae that were collected on the islands of La Réunion, Mauritius and Madagascar during the last 5 years. Some additional data were provided by other researchers who are indicated in the text. Three of these species are described as new to science.

Methods

Most of the specimens were collected at light. In addition, some of the species were also raised from larvae found in the field on their respective food-plants. These are indicated in the text.
Holotypes: deposited in the collections of the Natural History Museum, London (NHMUK).

Collection sites

Réunion (RE-)
Most specimen were collected in La Réunion, La Possession, Ravine à Malheur at an altitude of 400 meters. Geographical coordinates: 20°55'37''S/55°21'45''E. Other localities are indicated in the text.

Madagascar (MG-)
- Andasibe, 18°56'51"S/48°25'4"E, alt. 945 m between 24.xi.-03.xii.2016
- Mahamasina, Diana, from 24-26.iv.2013.

Mauritius (Mru-)
5 stations were visited in Mauritius in vi.2016 and one station in vii.2017. One single species was recorded at an additional site in Souillac, near the river bridge.
- Blackriver (Vanilla House), alt. 20 m, 20°22'5"S/57°22'47"E, 06-10.vi.2016.
- Blackriver (station2), alt. 55 m, 20°21'31"S/57°24'27"E, 12.vi.2016.
- Bambous, alt. 230 m, 20°16'14"S/57°25'39"E, 11.vi.2016.
- Flic-en-Flac (Ave.Colombes&Aigrettes), alt.10 m , 20°16'57"S/ 57°22'16"E, 10-13.vi.2016.
-Mahébourg(GardenoftheNationalHistoryMuseum),alt.20m,20°24'59"S/57°42'12"E, 13.vii.2016.
- Mahébourg (Tyvabro, Rue Marianne), alt. 15 m, 21°31´6"S/57°42`16"E, 24.iv.2017.

Erebidae – Anobinae

Plecoptera fletcherana Viette, 1966 Figs. 1-3 (adults & male genitalia)
Distribution: Madagascar
Forewing lengths: 13-14 mm
4 specimens were collected in Andasibe, Madagascar, between 24.xi.-03.xii.2016.
One male dissected, gen.prep.MG-605 (Fig. 1;3).

Note: I could not obtain the original description of this species and my specimens were identified by their imago.
Plecoptera punctilineata Hampson, 1910 – Figs. 4-6 (adults & male genitalia)
Distribution: continental Africa, recorded new for Mauritius.
Forewing lengths: 10.5 mm, wingspan 25 mm.
One worn male specimen was collected in Mauritius, Mahébourg (Tyvabro, Rue Marianne), alt.15 m on 24.iv.2017, gen.prep. Mru-136 (Fig. 6).
Hostplant: In Kenya recorded on *Millettia dura* Dunn (Fabaceae) by J.C.M.Gardner (De Prins & de Prins, 2018). This plant is present in Mauritius and was recently recorded at Plaisance Airport (Pyne, 2012), near Mahébourg, the site of collection of my specimen.

Pleuronodes arida Hampson, 1902 – Figs.05-07 (adults & male genitalia)
Distribution: Congo, Madagascar, Mozambique, Kenya, Tanzania, Swaziland, South Africa, Uganda, Zimbabwe. (de Prins & de Prins, 2017), recorded new for the fauna of Mauritius and La Réunion.
Forewing length: 12 mm
This is a common species in Réunion and I found also one specimen in Mauritius, Blackriver (Vanilla House), alt. 20 m.
Specimens recorded:
La Réunion, La Possession, alt. 400 m on: 22.iii.2013, 29.v.2013, 02.ix.2014, 09.vii.2015, 03.xii.2015, 09.ii.2016, 14.iv.2016, 21./25.ix.2016, 08.x.2016, 14.xi.2016, 31.xii.2017, 01,10,17&21.i.2018, 05.ii.2018,
Mauritius: Blackriver (Vanilla House), alt.20 m on 08.vi.2016.
Recorded flight period: recorded all months except August.
Note: One specimen from Reunion was added to the collections of the BMNH, London in 2015, a second specimen to the collection of MHN, Saint-Denis, Réunion in August 2017.

Erebidae - Calpinae

Athyrma saalmulleri Mabille, 1881 - Fig. 10 (adult)
Distribution: Madagascar
Wingspan: 50 mm
One male specimen (Fig. 10) collected in Madagascar, Andasibe, 30.xi.2016.

Maxera marchalii (Boisduval, 1833) - Fig. 11 (adult)
Distribution: widespread throughout continental Africa, also known from Comoros, Madagascar, Mauritius and Réunion.
Forewing length: 19-20 mm.
6 specimens were collected in Mauritius between 06.-12.vi.2016 at the stations in Blackriver (Vanilla House and stat.2; alt.20m and 55 m), as well as in Flic-en-Flac, alt.10 ms. One female from Blackriver, alt. 20 m was dissected, gen.prep. Mru-052.
This species appears to me more frequent in Mauritius than in Réunion where I find it only occasionally, maybe once or twice per year.

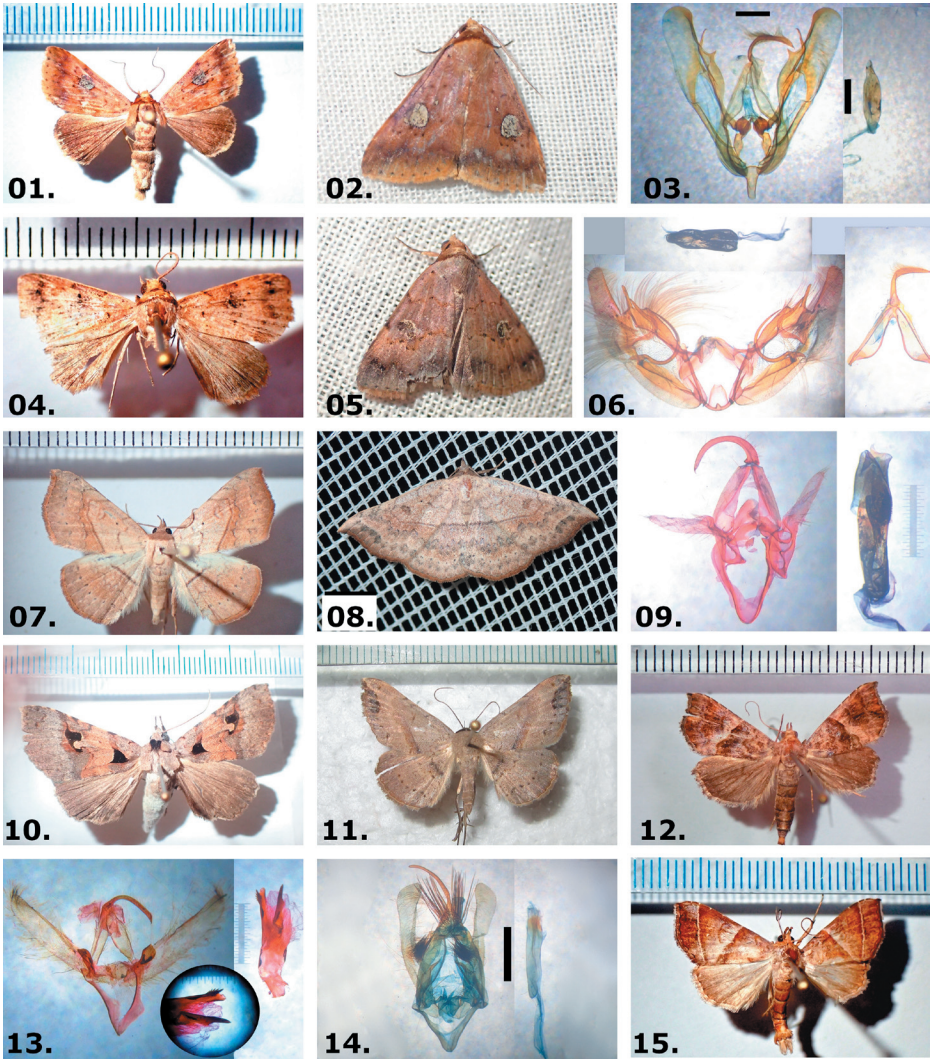

Plate 1. Scale bars = 1 mm. Fig. 1 - *Plecoptera fletcherana*, Madagascar; Fig. 2 - *Plecoptera fletcherana*, adult; Fig. 3 - P*lecoptera fletcherana*, male genitalia; Fig. 4 - *Plecoptera punctilineata*, Mauritius; Fig. 5 - *Plecotpera punctilineata*, Mauritius; Fig. 6 - *Plecoptera punctilineata*, male genitalia; Fig. 7 - *Pleuronodes arida*, Réunion; Fig. 8 - *Pleuronodes arida*, Réunion; Fig. 9 - *Pleuronodes arida*, male genitalia; Fig. 10 - *Athyrma saalmulleri*; Fig. 11 - *Maxera marchalii*; Fig. 12 - *Radara subcupralis*, adult; Fig. 13 - *Radara subcupralis*, male genitalia (inner circle: tip of aedeagus); Fig. 14 - *Radara vacillans*, male genitalia; Fig. 15 - *Radara vacillans*, adult

Radara subcupralis (Walker, 1866) – Figs. 12-13 (adult & male genitalia)
Distribution: throughout tropical Africa, including Comoros, Madagascar and Réunion, Indian subregion and Australia.
Forewing lengths: 12-13 mm
I had reported this species earlier from Réunion from specimens collected on 11.ii.2014, 08.iii.2014, 09.iii.2014 and 25.viii.2014 (Bippus, 2014). Additional specimens were now collected at the same site in Réunion, La Possession, alt.400m on 14.x.2016 and 19.x.2017.
Recorded flight period: months of: ii, iii, viii, x.

Radara vacillans Walker, 1862– Figs. 14-16 (adult & male genitalia)
Distribution: southern and eastern Africa, including Madagascar.
Forewing length: 14 mm
Two specimens were collected in Madagascar, Andasibe, 25.xi. and 02.xii.2016., one male dissected, gen.prep. MG-615 (Fig. 14).

Rhesala moestalis (Walker, 1866) – Fig. 17-18 (adult & male genitalia)
Distribution: throughout continental Africa and also known from the Oriental region (Malaysia, New Guinea, Singapore, Sri Lanka). Regionally known from Comoros, Madagascar, Mauritius, Réunion and the Seychelles.
Wingspan: 14-15 mm
Rhezala moestalis was found to be the most common Erebidae occurring in Blackriver, Mauritius (one male dissected, gen.prep.MRU-061, Fig. 17) where I also found three of its caterpillars on one of its hostplants, *Albizia lebbeck* (L.) Benth. (Fabaceae) that grows abundantly in this site. This plant seems to be its principal hostplant in the Mascarenes, also in Réunion its larvae can be found frequently on the same plant. More rarely it also feeds on *Albizia saman* (Jacq.) F. Muell. on which I have so far found only two larvae. In contrast to *A. lebbeck*, only few trees of *Albizia saman* show eaten leaves. Therefore I believe that this species feeds only exceptionally on this plant.
Hostplants: Fabaceae: *Albizia lebbeck* (L.) Benth. and *Albizia saman* (Jacq.) F. Muell. In Kenya also recorded on *Acacia mellifera* (Vahl) Benth. and *Acacia tortilis* (Forssk.) Hayne (Agassiz & Harper, 2009).

Zethes sagittula v.Heyden, 1891 – Figs. 19-21 (adults & female genitalia)
Distribution: Madagascar
Winglength: 17-18 mm; Wingspan: 40-42 mm
Three females were collected in Madagascar, Andasibe between 24.xi.-03.xii.2016.
This is a rather recognizable species with a beautiful, violet coloration and seems to be a common species in Andasibe. Unfortunately the bright violet coloration of its wings turn somewhat brownish at the dead specimens.
This species was described by specimens from the Lübeck museum, Germany. Unfortunately the types seem to be lost. The Director of the Museum of Lübeck, Dr. Susanne Füting informed me that their collection and types were destroyed during World War II in 1942 (pers.comm., v.2017).

Plate 2. Scale bars = 1 mm. Fig. 16 - *Radara vacillans*, in-situ, Madagascar; Fig. 17 - *Rhesala moestalis*, male genitalia, Mauritius; Fig. 18 - *Rhesala moestalis*, Blackriver, Mauritius; Fig. 19 - *Zethes sagittula*, female, Madagascar, in-situ; Fig. 20 - *Zethes sagittula*, female, Madagascar, Andasibe; Fig. 21 - *Zethes sagittula*, female genitalia; Fig. 22 - *Audea agrotidea*, male, Madagascar; Fig. 23 - *Achaea cuprizonea*, Madagascar, Andasibe; Fig. 24 - *Achaea cuprizonea*, Madagascar, Andasibe; Fig. 25 - *Audea agrotidea*, male genitalia; Fig. 26 - *Achaea echo*, Réunion, in-situ; Fig. 27 - *Achaea echo*, Réunion; Fig. 28 - *Achaea trapezoides*, mature larvae, Réunion; Fig. 29 - *Achaea trapezoides*, e.l. *Ficus* sp., Réunion; Fig. 30 - *Achaea trapezoides*, e.l. *Ficus* sp., Réunion

The only existing illustration of this species appears to be the drawing from the original publication from 1891 (Saalmüller & von Heyden, 1891), no additional records are available and it had never been illustrated again.

Erebidae – Erebinae

***Audea agrotidea* (Mabille, 1880)**– Fig. 22 (adult); Fig. 25 (male genitalia)
Distribution: Madagascar
Wingspan: 50 mm.
One male, gen.prep. MG-617 (Fig. 25) was collected in Andasibe, 25.xi.-03.xii.2016.

Achaea cuprizonea (Hampson, 1913) – Figs. 23-24 (adult); Fig. 34 (female genitalia)
Distribution: Madagascar
Forewing lengths 21 mm, wingspan approx. 47-48 mm
1 female was collected in Andasibe, Madagascar on 03.xii.2016.

Achaea echo (Walker, 1858) Figs. 26-27 (adults); Figs. 32-33 (male and female genitalia)
Distribution: tropical Africa, including Madagascar. Recorded new for Réunion.
Forewing length: 28-30 mm, wingspan: 62-66 mm
3 females were collected at light in Réunion, La Possession, 400 m on 18. and 20.x.2017 (gen.prep. RE-3396, winglength 30 mm) and on 12.xii.2018; furthermore one male on 20.i.18, gen.prep. RE-3485, winglength 28 mm. Additional specimens were recorded at the same locality on 13.iii.2018, 19.iv.2018 and 24.iv.2018.
Hostplant: In South Africa this species was recorded feeding on *Searsia incisa* (L.f.) F. A. Barkley, *Searsia pendulina* (Jacq.) Moffett (Anacardiaceae) and *Quercus robur* L. (Fagaceae) (Staude *et al*., 2016).
Its hostplant in Réunion remains unknown. *Quercus* species are absent in Réunion but there is an introduced species of African *Searsia* widely found in the place of collection: *Searsia longipes* (Engl.) Moffett, locally better known in its former genus as *Rhus longipes* or Faux Poivrier blanc. The local distribution of this plant is limited to the north-western part of the island of Réunion, between La Possession and Saint-Denis and occurrence in Réunion of *Achaea echo* is possibly restricted to these localities.
Recorded flight period: months of: i, iii, iv, x, xii.

Achaea trapezoides (Guenée, 1862) – Figs. 28-31 (larvae, adults, male genitalia)
Distribution: widespread in Africa, including Madagascar, Mauritius, Reunion and Rodrigues.
Forewing length: 25 mm.
This is the most common species of the genus *Achaea* Hübner, 1823 in Réunion.
Biology: One final instar larvae was found on *Ficus* sp. (*Ficus reflexa* or *Ficus rubra*) (Moraceae). The adult moth (male, gen.prep. RE-3541) eclosed on 24.iv.2018 after a pupal stage of 16 days.
Martiré & Rochat (2008) had previously reported this species from Réunion on *Rosa* sp. (Rosaceae), They indicated a pupal stage of 28 days for their specimens.

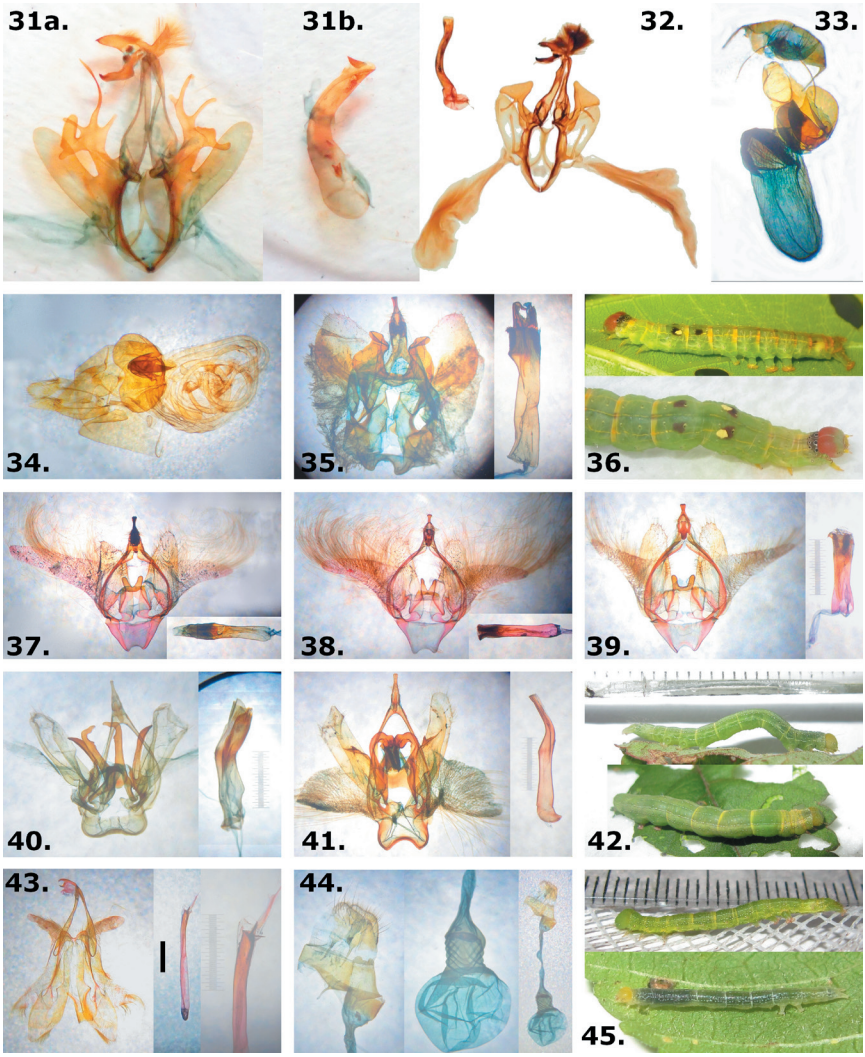

Plate 3. Scale bars = 1 mm. Fig. 31 - *Achaea trapezoides*, male genitalia, Réunion; 31b.aedeagus; Fig. 32 - *Achaea echo*, male genitalia, Réunion; Fig. 33 - *Achaea echo*, female genitalia, Réunion; Fig. 34 - *Achaea cuprizonea*, female genitalia, Madagascar; Fig. 35 - *Anomis alluaudi*, male genitalia, Réunion; Fig. 36 - *Anomis campanalis*, larvae; Fig. 37 - *Anomis campanalis*, male genitalia, Réunion; Fig. 38 - *Anomis lophognatha*, male genitalia, Réunion; Fig. 39 - *Anomis mandraka*, male genitalia, Madagascar; Fig. 40 - *Cosmophila auragoides*, male genitalia; Fig. 41 - *Cosmophila flava*, male genitalia; Fig. 42 - *Cosmophila flav*a, larvae; Fig. 43 - *Gonitis sabulifera*, male genitalia, Réunion; Fig. 44 - *Gonitis sabulifera*, female genitalia, Réunion; Fig. 45 - *Cosmophila auragoides*, larvae

Mamet & Williams (1993) reported it on *Acalypha grandis Benth.* and *Ricinus comunis* L.(Euphorbiaceae) from Mauritius and in South Africa it was also recorded on *Bridelia micrantha* (Hochst.) Baill. (Phyllanthaceae) G.aiston (Staude *et al*., 2016). This plant is also present on the Mascarene islands.
Hostplants: *Ficus sp.* (Moraceae), *Rosa* sp. (Rosaceae), *Acalypha grandis* Benth., *Ricinus comunis* L.(Euphorbiaceae) and *Bridelia micrantha* (Hochst.) Baill. (Phyllanthaceae).
Recorded flight period: months of: i, iv, v, vi, vii, viii, ix, x, xi
3 specimens from Reunion were added to the collections of the BMNH in 2014.

Achaea violaceofasciata Saalmüller, 1891; ssp. *seychellarum* Holland, 1895
Distribution: widespread in Africa, including Comoros (Mayotte), Madagascar, Mauritius, Reunion and Seychelles.
J. Roger (pers. comm. 2018) has found this species also in Mayotte, Koungou on 31.iii.2018 (new record). His specimen corresponds to the subspecies *seychellarum* Holland, 1895 described from Aldabra. This subspecies was illustrated in an earlier publication from the granitic islands of the Seychelles (Bippus, 2016).

Anomis alluaudi Viette, 1965 – Fig. 35 (male genitalia); Figs. 46-47 (adults)
Distribution: Comoros, Madagascar, Réunion
This species is rather rare in Réunion and I only recorded it twice on 21.xi.2015 and 05.i.2018 (male, dissected, Fig. 35), both in La Possession, alt.400 m.

Anomis campanalis (Mabille 1880) – Fig. 36 (larvae); Fig. 37 (male genitalia); Figs. 49-50 (adults)
Distribution: Comoros (Mayotte), La Réunion and Madagascar
Winglength: 18 mm
Anomis campanalis is rather similar in wing coloration and size to *A. lophognata* Hampson, 1926 (see below) but they can be easily distinguished by the shape of their forewings. The termen of the forewings is somewhat rounded in *A. campanalis* (Figs. 49-50) and angled in *A. lophognata* (Figs. 52-53). The male genitalia of these 2 species are very similar in structure and differ only in small details in the uncus, the length and width of the valvae, juxta and aedeagus. Also *A. mandraka* has the same structure in the male genitalia but its forewings are marked quite differently (Fig. 51).
Hostplant and Biology: The larvae of *A.campanalis* is frequently found on *Dombeya ciliata* Cordem. (Malvaceae). It seems to be the main defoliator of this Malvaceae and most plants of this species show similar foliage damage.
Larvae were collected on this plant in Réunion, La Montagne, alt. estimated 800-900 m and St.Paul, Maido, alt. 1665 m in the months of ii, iii, v and xii. Pupal stage: 12 days.
One specimen was also taken at light in La Possession, alt.400m on 14.iv.2015 were *Dombeya ciliata* appears to be absent.

Anomis lavaudeni Viette, 1968 - Fig. 48 (adult)
Distribution: Madagascar
One specimen was found in Madagascar, Mahamasina (Diana) on 25.iv.2013.

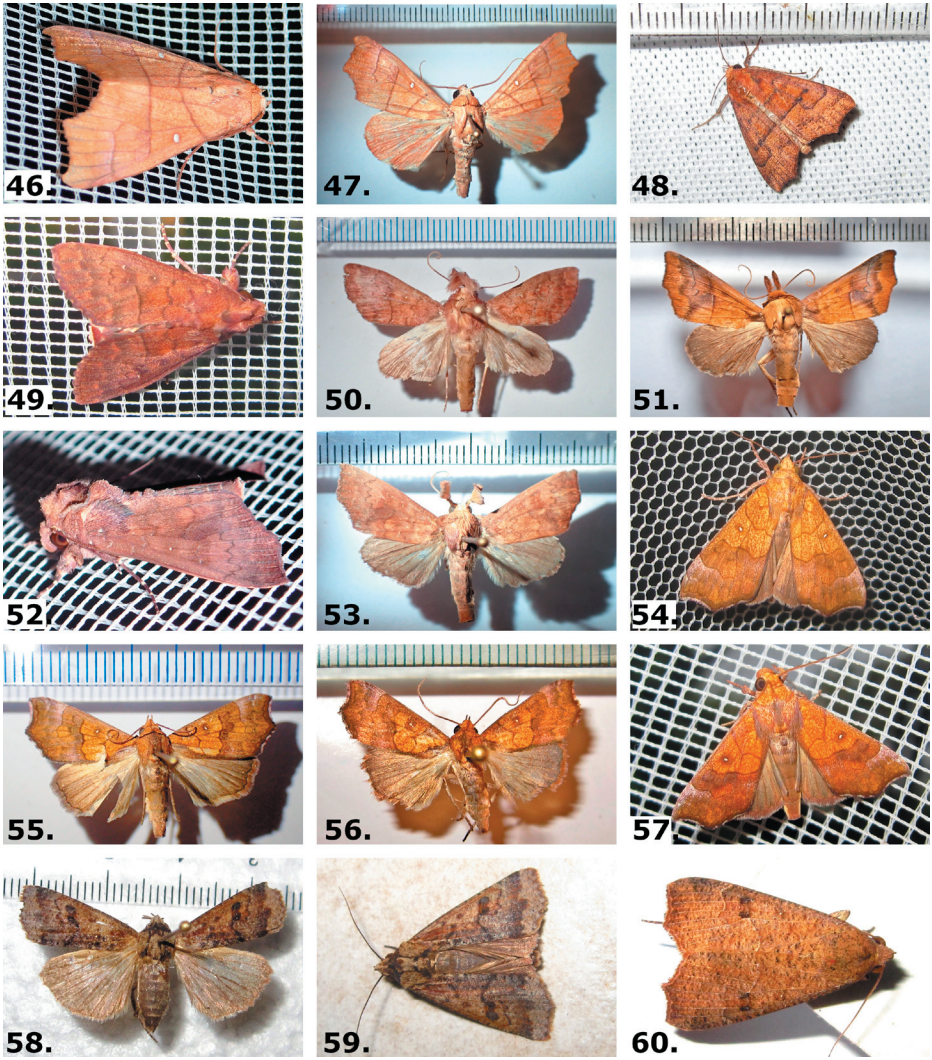

Plate 4. Scale bars = 1 mm. Fig. 46 - *Anomis alluaudi*, Réunion; Fig. 47 - *Anomis alluaudi*, Réunion; Fig. 48 - *Anomis lavaudeni*, Madagascar; Fig. 49 - *Anomis campanalis*, Réunion; Fig. 50 - *Anomis campanalis*, Réunion; Fig. 51 - *Anomis mandraka*, Madagascar; Fig. 52 - *Anomis lophognatha*, Réunion; Fig. 53 - *Anomis lophognatha*, Réunion; Fig. 54 - *Cosmophila auragoides*, Réunion, e.l. *Abutilon indicum*; Fig. 55 - *Cosmophila auragoides*, Réunion, e.l. *Abutilon indicum*; Fig. 56 - Cosmophila flava, Réunion, e.l. *Sida rhombifolia*; Fig. 57 - *Cosmophila flava*, Réunion, e.l. *Sida rhombifolia*; Fig. 58 - *Gonitis sabulifera*, male, Reunion; Fig. 59 - *Gonitis sabulifera*, male, Réunion; Fig. 60 - *Gonitis sabulifera*, female, Réunion

Anomis lophognatha Hampson, 1926 – Fig. 38 (male genitalia); Fig. 52-53 (adults)
Distribution: Madagascar, Mauritius and Réunion
Winglengths: 16-17 mm, Wingspan: 36-37 mm
This species can be found more frequently than *Anomis campanalis.*
In Réunion I recorded this species in the months of : i, ii, vi, vii, viii, ix, x, xi, xii , in La Possession, alt. 400 m, Sainte-Suzanne, alt. 700 m, Salazie (Hellbourg), alt. 1100 m and Plaine d'Affouches, alt. 900 m.
4 specimens were also collected in Andasibe, Madagascar between 26.xi. and 03.xii.2016.

Anomis mandraka Viette, 1965 – Fig. 39 (male genitalia); Fig. 51 (adult)
Distribution: Madagascar
Forewing length 16 mm.
1 male and 1 female were collected in Madagascar, Andasibe, 28.xi. and 01.xii.2016.
Gen.prep. MG-570 (male) and MG-047 (female).

Cosmophila auragoides Guenée, 1852 –Fig. 40 (male genitalia), Fig. 45 (larvae); Figs. 54-55 (adult)
Distribution: Afrotropical, including Madagascar and Réunion
Winglength: 12-13 mm.
Hostplant: Several specimens of *Anomis auragoides* were raised from larvae (Fig. 45) found on *Abutilon indicum* (L.) Sweet. (Malvaceae) in the months of iii, iv, vii and viii. All of them were collected in Reunion, La Possession in different sites between 350 and 450 m altitude.

Cosmophila flava (Fabricius, 1775) – Fig. 56-57 (adult), Fig. 41 (male genitalia), Fig. 42 (larvae)
Distribution: Palaeotropical, including Africa, Austral-Asia, Pacific region and Americas.
Regional distribution: Madagascar, Mauritius, Réunion, Rodrigues, Seychelles
Winglength: 12-13 mm.
Biology: The main hostplant of *Cosmophila flava* in Réunion is *Sida rhombifolia* L. (Malvaceae). Adults were raised from this plant in the months of iii/x/xi/xii.2015, all of them were collected in La Possession in altitudes between 200 m and 500 m. Pupal stage: 16 days.
One female was also found and raised to adult on *Hibiscus rosa-sinensis* L. (21.viii.2018, La Possession) and two additional early instar larvae were found on the same plant in ix.2018 that had not yet pupated at the time of submission of this publication.
I collected an identical caterpillar on *Sida rhombifolia* also in Madagascar (Andasibe, 25.xi.2016) but the length of my stay in Madagascar did not allow me to raise the adult moth, though I still believe that it was of the same species and that *Cosmophila flava* also feeds on *Sida rhombifolia* in Madagascar. In Mauritius *C .flava* was recorded on *Gossypium* sp. by Mamet & Williams (1993).
Hostplants: Malvaceae: *Sida rhombifolia*, *Hibiscus rosa-sinensis*, *Gossypium* sp..

Parasites: One larvae collected in Réunion, La Possession, road to Dos d'Ane, altitude approx. 900 m, was parasitised by an Ichneumonidae: *Enicospilus dolosus* (Tosquinet, 1896) (identification Pascal Rousse, France, in: Rousse & van Noort, 2014).

Gonitis sabulifera Guenée, 1852 – Figs. 43-44 (male & female genitalia); Figs. 58-60 (adults)
Distribution: Paleotropical, Eastern & Southern Africa as well as Southern Asia.
Regionally: Chagos (Barnett & Emms, 1998) and Réunion (new record).
Wingspan: 31 mm (female) to 36 mm (male).
This species seems to be rare in La Réunion. One male was collected on 08.iv.2014 (gen.prep. RE-1250), wingspan 36mm and one female that is a little smaller in size and less marked on 25.i.2015 (31 mm wingspan, gen.prep. RE-1525).
The female corresponds to the unidentified species that was earlier illustrated by Martiré & Rochat (2008) as "*Anomis sp*. (nr. *editrix*)" that was found in Le Guillaume, Saint-Paul.
Material examined: One male, gen.prep. RE-1250, 08.iv.2014, wingspan 36 mm and one female, 25.i.2015, gen.prep. RE-1525, wingspan 31 mm. Both specimens were collected in Réunion, La Possession, alt. 400 m.
Biology: Sheikh (2012) described the life-cycle of this species from India from where it was recorded on *Corchorus olitorius* L. and *Corchorus capsularis* L. (Malvaceae).
C.olitorius is present in the Mascarenes and it is probable that this lepidopteran feeds on the same plant in Réunion. *C.olitorius* is considered being an introduced plant to the Mascarene islands (Anon., 2016; website idao.cirad.fr)

Ophiusa reducta (Mabille, 1880) – Figs. 61-62 (adult & male genitalia)
Distribution: known only from Madagascar.
Wingspan approx. 57-58 mm.
1 male was collected in Madagascar, Andasibe, between 27.xi. and 03.xii.2016. Gen. prep. MG-042.
Note: Dr. A. Legrain informed me that this species will need to be transferred back to *Stenopis* Mabille, 1880 and its original combination. Apparently a revision of that genus is under work and provisionally I leave it in the genus *Ophiusa* in which it is presently known.

Ophiusa tirhaca (Cramer, 1777) – Figs. 63-67 (adults; male & female genitalia)
Distribution: Australasia, Palearctic, Afrotropical, including Madagascar, Mauritius and Réunion.
Forewing length: 28 mm
In Réunion this species had been confused in recent records (Guillermet & Guillermet, (1986); Guillermet, (2005); Martiré & Rochat (2008)) with *Ophiusa legendrei* Viette, 1966 that appears to be absent.
It is one of the more frequently found Erebidae and I recorded this species flying in the months of i, ii, v, vi, vii, viii, ix, x, xi, xii but it is particularly abundant from November to February.

Plate 5: Scale bars = 1 mm. Fig. 61 - *Ophiusa reducta*, male, Madagascar; Fig. 62 - *Ophiusa reducta*, male genitalia, Madagascar; Fig. 63 - *Ophiusa tirhaca*, female genitalia, Réunion; Fig. 64 - *Ophiusa tirhaca*, female, Réunion; Fig. 65 - *Ophiusa tirhaca,* male, Réunion; Fig. 66 - *Ophiusa tirhaca*, male genitalia, Réunion; Fig. 67 - *Ophiusa tirhaca*, male genitalia, unfolded, Réunion; Fig. 68 - *Pandesma muricolor*, Réunion; Fig. 69 - *Pandesma muricolor*, male genitalia, Réunion; Fig. 70 - *Cerynea aviakala*, Réunion, Holotype, female; Fig. 71 - *Cerynea aviakala*, Réunion, Holotyp, female, in-situ; Fig. 72 - *Cerynea aviakala*, Réunion, Holotype, underside

21 specimens from Reunion were added to the collections of the BMNH, London in 2015.
Hostplant: Martiré & Rochat (2008) reported this species from La Réunion on *Schinus terebinthifolius* (Anacardiaceae). I only found once one of its caterpillars in 2013 on this tree.
From Mauritius it was reported on *Syzygium cumini* (Myrtaceae) by Mamet & Williams (1993). In Madagascar (Imerimandroso, Alaotra-Mangoro) this species was also raised on *Sclerocarya birrea* (A. Rich.) Hochst. (Anacardiaceae) by Laurent Seret (pers.comm. 2016).

Pandesma muricolor Berio, 1966 – Figs. 68-69 (male genitalia & adult)
Distribution: widespread in western, eastern and southern Africa, regionally found in La Réunion.
Winglenth: 18-20 mm
In Réunion this species was previously misidentified as *Ophiusa waterloti* Viette, 1982 (Guillermet &Guillermet, 1986), a species that appears to be absent in Reunion. This misidentification had been already noted by Orhant (2006) who corrected the former record and illustrated both species. The misidentification seems to persist on the local level and I would like to mention and illustrate this species once again as the publication of Orhant is difficult to obtain and is not available locally.
Specimens were collected (all of them in La Possession, alt.400 m) on:
31.x.2013, 16.xi.2013, 07.ii.2015, 19.ii.2017 (male, gen.prep. RE-3045) and 13.xi.2017 (female, winglenths: 17 mm),
The specimen collected on 31.x.2013 was added to the collections of the BMNH, London in 2015.

Erebidae - Boletobiinae

Araeopteron legraini spec.nov. - Figs. 75-79 (adults, male & female genitalia)
Description:

Antennae filiform, a little above ½ of the forewing length., light grey, at base cream-beige.

Palpi greyish-brown, terminal joint tipped cream-white with brownish base.

Head, vertex and shoulders cream-whitish, abdomen: first two and last segment of the abdomen are cream-whitish, remaining brownish mostly mottled with some blackish cells, underside of all segments cream-beige.

Forelegs beige, speckled with some brownish, tarsus with 3 creamish-white rings, pretarsus in the same colour. The remaining pairs of legs cream-beige, femur and tibia speckled brownish-grey. Tibual spurs are present.

Forewing length 5.2-5.4 mm wingspan 11-12 mm.

Ground coloration of the forewings is whitish with some greyish fields. One smaller near base, a greyish, crenulated crossline from dorsum not reaching costa at 1/5th, a blackish cellspot, mostly reniform at 2/5th bordered by a larger greyish fasciae up to a little above middle. A light-greyish submarginal, crenulated line at 3/5th bordered at costa by a smaller brownish field and at termen by a greyish

fasciae. A darker greyish field near apex that is bordered by 6-7 dark brown lunula bordered by light brownish from apex along outer margin.

Hindwings of the same whitish ground colouration with a darker brownish fascia (mostly reniform) in cell, bordered externally by some lighter brownish fields reaching inner margin. Apex and outer margin scattered with light-brown.

Underside greyish, cell spot visible on forewings. A little clearer grey in hindwings.

Cilia in both wings beige-whitish, scattered with some brown-greyish cells.

Male genitalia (Fig. 77):

Uncus long ,slender, smoothly curved, moderately sclerotised. Sacculus U-shaped, moderately sclerotised. Valvae moderately sclerotised with a moderately broadend and bilobed apex.

Aedeagus massive, straight and pointed, with an assemblage of minute spines in its tip, approx. of the same lengths as the valvae.

Female genitalia (Fig. 75):

Short posterior and anterior apophyses of the same length, short ductus bursae (¼ lengths of bursae copulatrix), not sclerotized and a knop-like signum with spines as common for this genus in the bursae copulatrix.

Holotype: NHM UK 010896430; female, 30.x.2016, not dissected

Paratypes: 22 specimens, males and females, both sex dissected.

Dates: 12.i.2013, 09.v.2013, 05.xi.2013, 04.v.2014, 23.vi.2014, 19.x.2014, 26.xi.2014, 10.xii.2015 (female, gen.prep. RE-2294), 19./29.xii.2015, 21.i.2016 (male, gen.prep. RE-2371), 02.ii.2016 (male, gen.prep.RE-2389), 21./30.x.2016, 17.xi.2016, 12./14. xii.2016, 13.ii.2017, 27.x.2017, 07.xii.2017 (male), 08.xii.2017, 25.xii.2017.

Recorded flight period (months): i, ii, v, vi, x, xi, xii.

Distribution: Holotype and all collected paratypes provide from La Réunion, La Possession, alt. 400 m, 20°55’37’’S/55°21’45’’E.

One adult specimen was observed at daytime in the same locality, alt. 700 m on *Syzygium jambos* (L.) Alston (not collected) and another specimen in Sainte-Suzanne, alt. 700m on 18.xi.2014 (also not collected).

There is also one specimen from Ethiopia in the collection of R.& S. Fiebig/D. Stadie labelled: BC1078, Ethiopia, Reg. of South.Nations, Bonga Guesthouse, 7°15’4.33”/36°15’15.51”, 1750m ü.NN, LF 20.-23.05.2015, leg. R.& S. Fiebig/D.Stadie that appears to belong to the same species, but could not be examined physically.

Biology: unknown.

One specimen was observed at daytime sitting on a leaf of *Syzygium jambos* (L.) Alston (Myrtaceae). This plant is also very common at the locality of collection of the holo- and paratypes but no larvae were found. Nevertheless it might be an indication as to its possible hostplant but confirmation would require additional studies.

Etymology: named in honor of Dr. Albert Legrain, Belgium, expert and tireless collector of African Erebidae and Noctuidae. He never tired of giving me a helping hand and advice for the determination of African Lepdidoptera and also helped me often to obtain documentations. I owe him a lot.

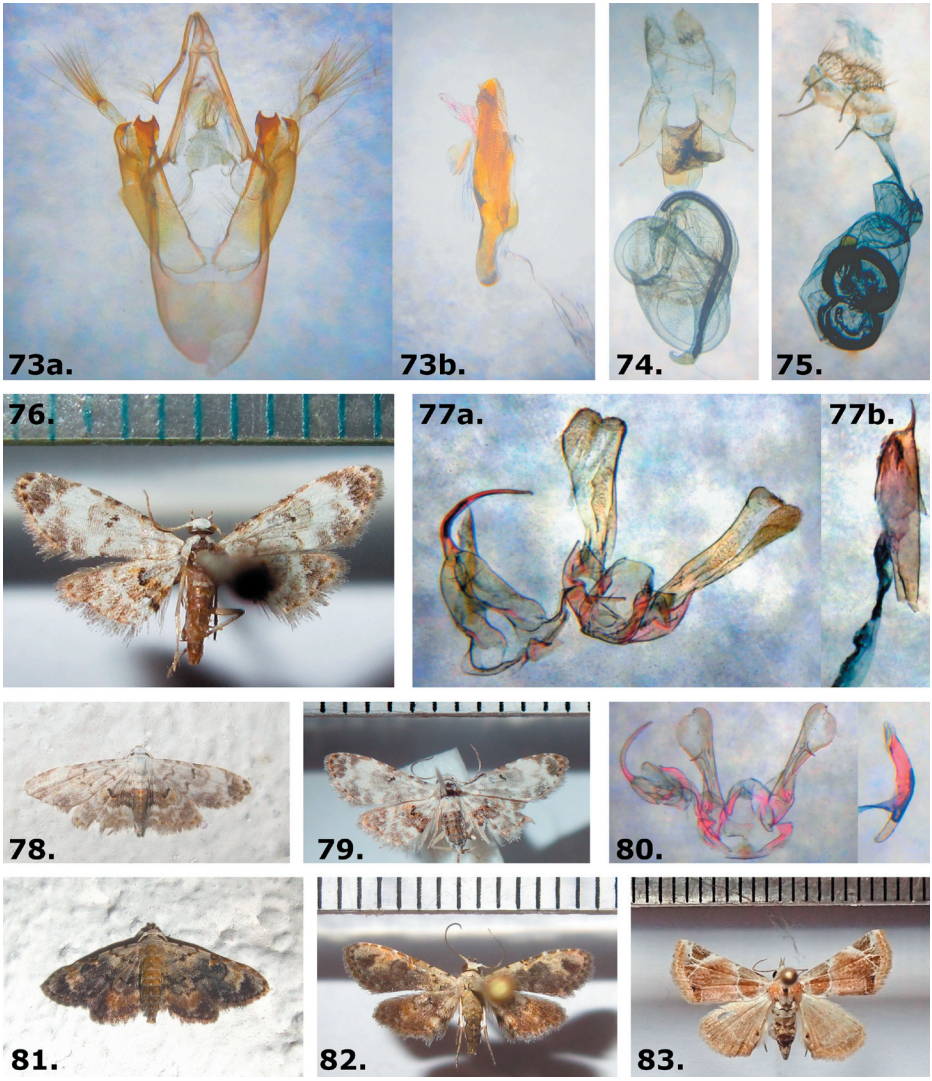

Plate 6. Scale bars = 1 mm. Fig. 73 - *Cerynea aviakala*, Réunion, gen.prep.RE-2485, male; Fig. 73b: aedeagus; Fig. 74 - *Cerynea aviakala*, Réunion, gen.prep. RE-3353, female, Holotype; Fig. 75 - *Araeopteron legraini*, female genitalia; Fig. 76 - *Araeopteron legraini*, Réunion; Fig. 77 - *Araeopteron legraini*, Réunion, male genitalia; 77b – aedagus; Fig. 78 - *Araeopteron legraini*, Réunion, in-situ; Fig. 79 - *Araeopteron legraini,* Réunion; Fig. 80 - *Araeopteron obliquifascia*, Réunion, male genitalia; Fig. 81 - *Araeopteron obliquifascia*, Réunion, in-situ; Fig. 82 - *Araeopteron obliquifascia*, Réunion; Fig. 83 - *Autoba costimacula*, Réunion

Araeopteron obliquifascia (de Joannis, 1910) – Figs. 80-82 (adults & male genitalia)
Distribution: La Réunion and Mauritius.
Wingspan: 10-11 mm
Described from Mauritius, his species is rather common also in La Réunion.
The male genitalia (Fig. 80) of *Araeopteron obliquifascia* is similar to *Araeopteron legraini* but showing a pointed appendix on its valvae and a curved aedeagus.
Recorded on: 25.v.2012, 26./27.vi.2012, 08.viii.2012, 27.xii.2012, 12./13./14./16.i.2013, 08./10.v.2013, 18.vi.2013, 02./15./30.vii.2013, 16./23.iii.2014, 12./15./30.v.2014, 16.iii.2015, 06./21.iv.2015, 07./12.v.2015, 12.vii.2015, 28.xi.2015, 17.ii.2016, 14./22.vii.2017 (all specimens: Réunion, La Possession, alt. 400 m)
Recorded flight period (months): i, ii, iii, iv, v, vi, vii, viii, xi, xii.
2 specimens from 16.iii.2015 and 06.iv.2015 were added to the collections of the BMNH, London in mid-2015.

Araeopteron papaziani Guillermet, 2009 – Figs. 84-87 (adults, male & female genitalia)
Distribution: La Réunion (type locality), recorded new to Madagascar, Mauritius and Mayotte.
Wingspan: 9.5-10.5 mm
Antennae filiform, greyish, ½ of forewing length or little above.
Wingspan 10.5 mm, dirty greyish with some darker-greyish crenulated crosslines, sometimes tinged a little yellowish-brown. A blackish cellspot, in some specimen very fade.
Hindwings dirty greyish with an irregular, large darker grey-brownish fasciae at the middle of the inner margin.
Palpi, head, abdomen and legs are dirty-grey, sometimes spottled with some brownish-blackish cells.
This is the most frequent species of the genus *Araeopteron* in La Réunion. I find it frequently in La Possession, alt. 400 m and recorded specimens in every month of the year.
I also found this lepidopteran in Mauritius (Flic-en-Flac and Mahébourg, 10./13.vi.2016) and in northern Madagascar (Mahamasina, Diana, 25.iv.2013). Images of this species were also taken on the islands of Mayotte by J.Rochat on 16.i.2010 and from Grande Glorieuse by G..Cazenove on 17.iv.2011 (pers.comm. J.Rochat, 2017). I could not examine physically the specimens from Mayotte and Grande Glorieuse.
I believe that this species might have a much larger distribution than presently known.
The imago of this species is near *Araeopteron canescens* (Walker, [1866]) that was described from Queensland, Australia but had been recorded also in New Caledonia (Holloway, 1979; Anon., 2017. www.endemia.nc) as well as from Nigeria, Sierra Leone and Indonesia by Hampson (1910). These species appear to be different in their genitalia and for geographical reason I believe that it is more likely that the African records may belong to *A. papaziani* and not to *A .canescens.*

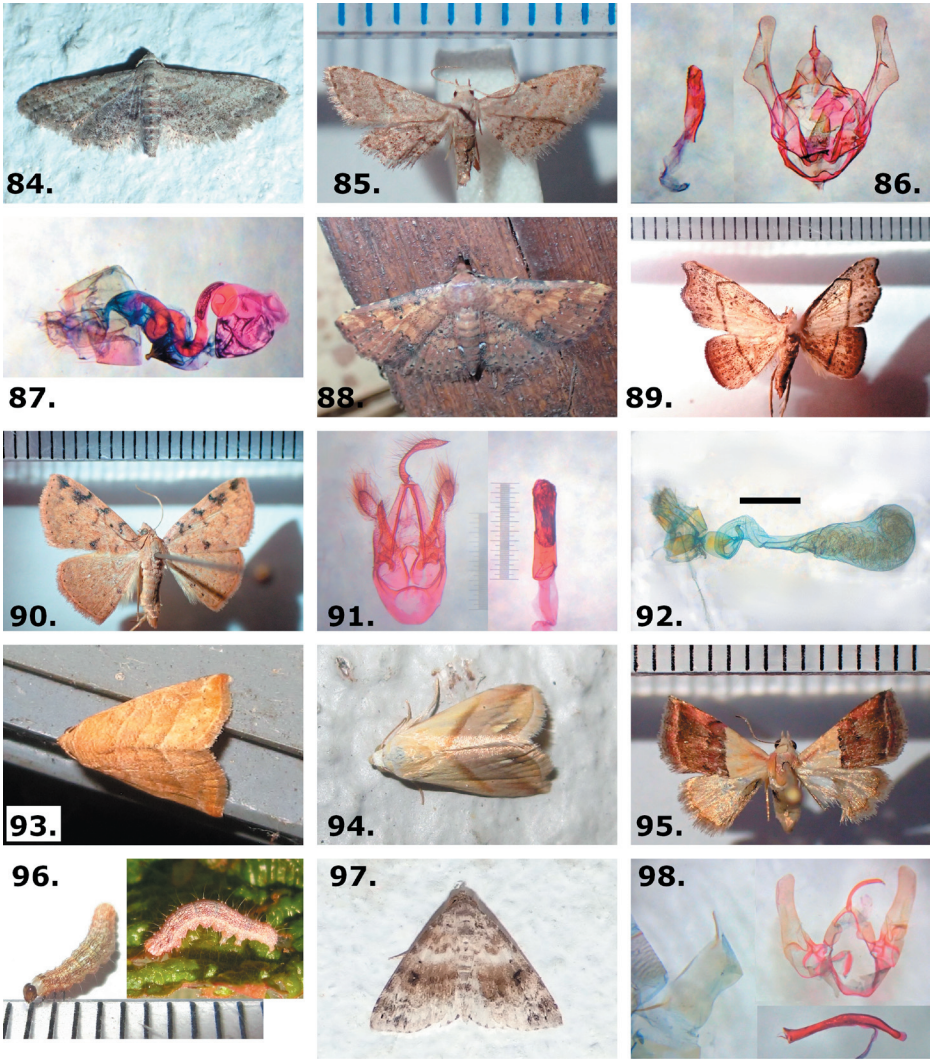

Plate 7. Scale bars = 1 mm. Fig. 84 - *Araeopteron papaziani*, in-situ; Fig. 85 - *Araeopteron papaziani*, Reunion; Fig. 86 - *Araeopteron papaziani*, male genitalia; Fig. 87 - *Araeopteron papaziani,* female genitalia; Fig. 88 - *Cerynea thermesialis*, Madagascar; Fig. 89 - *Corgatha submacariodes*, Madagascar; Fig. 90 - *Cerynea terracotta*, Reunion; Fig. 91 - *Cerynea terracotta*, male genitalia; Fig. 92 - *Cerynea terracotta*, female genitalia; Fig. 93 - *Eublemma baccalix*, Mauritius; Fig. 94 - *Eublemma cochyloides,* Mauritius; Fig. 95 - *Eublemma anachoresis*, e.l. *Waltheria indica*; Fig. 96 - *Eublemma anachoresis*, larvae; Fig. 97 - *Eublemma pyrosticta*, Réunion; Fig. 98 - *Eublemma pyrosticta*, male genitalia

Autoba costimacula (Saalmüller, 1880) – Fig. 83
Regional distribution: Madagascar, Mauritius, Mayotte (new record) , Reunion and Seychelles,.
In continental Africa also recorded from South Africa, Tanzania, Uganda and Yemen.
Winglength: 7.5 mm, wingspan: 17 mm.
This species was also found in Mayotte (new record) by Benjamin Halliez (pers.comm, 2015) on 04.vi.2015.
In Reunion I collected this species on 23.vii.2012, 08.iii.2013, 19.xii.2013, 06.xi.2015, 15.ii.2016, 27.iii.2016, 06.iv.2016, 04.x.2016 and in Madagascar, Mahamasina, Diana on 24.iv.2013.

Cerynea aviakala spec.nov. - Figs. 70-74 (adults, male & female genitalia)
Description:

Wingspan: 23 mm, forewing lengths: 10-10.5mm.
Antennae simple in female, fine ciliation in the male.
Head, thorax, abdomen, legs and wings are brownish-fuscous. Forewings with a series of dark-brownish spots along costa, two crenulated traverse lines in the first 1/3 of forewing, an additional outwardly arched traverse line at half, continued on the hindwings, a series of smaller terminal spots along termen (also on the hindwings).

Male genitalia (Fig. 73): Uncus long, slender, smoothly curved. Triangular, sclerotised tegumen. Valvae short, with a sickled apex, a sclerotised appendix with two tips and an unscleoritsed appendix. Saccus broad and U-shaped. Aedagus (Fig. 73a) a little longer than valvae.

Female genitalia (Fig. 74): Anterior apophyses broadend, a little shorter than posteriores, weekly sclerotised. Short and broad ductus bursae, about half lengths of bursae copulatrix, No signa in bursae copulatrix but with some few scattered very short spines in the posterior half.

Collected specimens:

Holotype: NHMUK 010896431; female, gen.prep., 05.vi.2017. Winglength 10.5 mm (Figs. 70-72;74)

Paratypes: 28.ii.2016 (male, gen.prep. RE-2485 (Fig. 73), winglengths 10-10.5 mm, wingspan 22-23 mm), 07.iv.2018 (male) and 08.vi.2018.

I had collected three supplementary specimens on 20.v.2015, 06.vi.2015 and 30.vi.2015 that I could not retrieve at the moment of description.

Distribution: Holotype and all collected paratypes provide from La Réunion, La Possession, alt. 400 m, 20°55’37’’S/55°21’45’’E. Recorded in the months of: ii, iv, v, vi

Etymology: Named *aviakala* after a legendary personality of a fairy tail from Réunion: Grand-mère Kal (translated: Grandmother Kal).

Cerynea terracotta (de Joannis, 1910) n.comb. [orig.comb. *Corgatha terracotta*]
Figs 90-92 (adult, male & female genitalia)
Distribution: Mauritius and Réunion

Winglengths: 10 mm, Wingspan: 23 mm.
1 male was collected in Bambous, Mauritius on 11-vi-2016, winglength: 10 mm.
This is also a common species in Réunion where I recorded this species in the months of i, ii, iii, v, vii, viii, xi and xii.
Hostplant: *Schinus terebinthifolius* Raddi (Anacardiaceae) (Martiré & Rochat, 2008).
Note: Two specimens from Réunion were placed in the BMNH in 2014.
There is also one specimen that was not examined physically from Ethiopia in the collection of R.& S. Fiebig/D.Stadie labelled: Ethiopia, Reg. of South Nations, Bonga Guesthouse, 7°15'4.33"/36°15'15.51", 1750 m ü.NN, LF 12.-14.05.2016, leg. R. & S. Fiebig/D.Stadie that probably belongs to the same species. As they are presently working on this family from continental Africa they may report on this specimen at another time.

Cerynea thermesialis (Walker, 1866) – Fig. 88 (adult)
2 specimens were collected in Madagascar, Andasibe on 28.xi. and 02.xii.2016.

Corgatha submacariodes (Berio, 1959) – Fig. 89 (adult)
Winglength 10.5-11 mm, Wingspan approx. 23-24 mm
3 specimens were collected in Madagascar, Andasibe between 24.xi.-03.xii.2016.

Eublemma anachoresis (Wallengren, 1863) – Figs. 95-96 (adult & larvae)
Distribution: widespread in Africa, including La Réunion and Mauritius (new record).
Forewing length; 6.5 mm
2 specimens were collected in Mauritius, Flic-en-Flac on 11.vii.2016, Mahébourg, 13.vii.2016.
This is also a common species in Réunion.
Biology: The larvae (Fig. 96) of this species are frequently found on *Waltheria indica* L. (Malvaceae). Adults were raised from larvae collected on this plant in the months of iii, x, xi, xii (Reunion, La Possession, altitude 20 m and 90 m). Some of the raised specimens were put into the collection of the BMNH, London in 2016.

Eublemma baccalix (Swinhoe, 1886) – Fig. 93 (adult)
Distribution: continental Africa, also in Asia from India to Taiwan.
Regional distribution: Madagascar, Mauritius, Réunion. New to the fauna of Mauritius.
Five specimens were collected in Mauritius, Blackriver, 09.vi.2016 and Flic-en-Flac on 10. and 11.vi.2016. This is also a very common species in Réunion.

Eublemma cochylioides (Guenée, 1852) – Fig. 94 (adult)
Two specimens were found in Mauritius, Blackriver (Vanilla House) 8-10.vi.2016 and Souillac, 14.v.2017. This is also a rather common species in Réunion.

Eublemma pyrosticta de Joannis, 1910 – Figs. 97-98 (adult & male genitalia)
Distribution: known only from La Réunion.

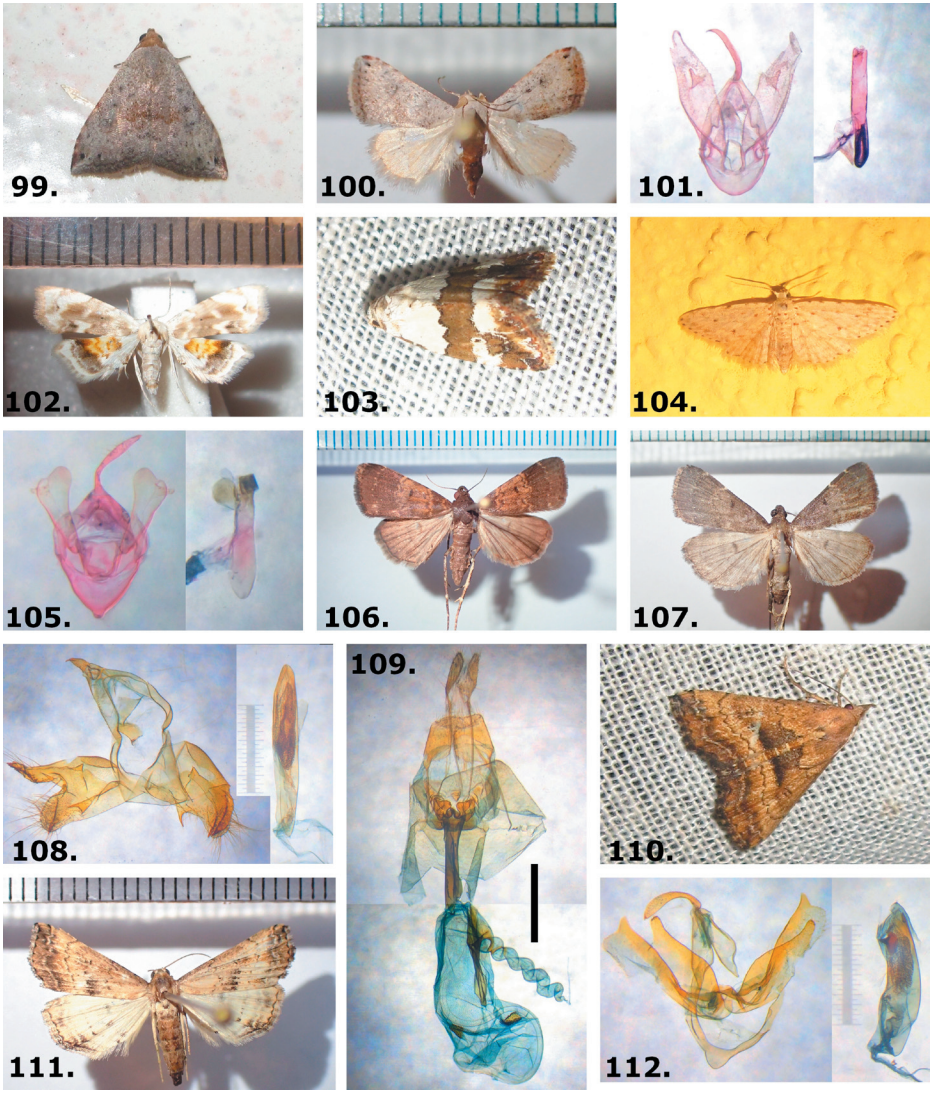

Plate 8. Scale bars = 1 mm. Fig. 99 - *Eublemma viettei*, Mauritius; Fig. 100 - *Eublemma viettei*, Réunion; Fig. 101 - *Eublemma viettei*, male genitalia; Fig. 102 - *Holocryptis interrogationis*, Réunion; Fig. 103 - *Lithacodia blandula*, Mauritius; Fig. 104 - *Pseudcraspedia punctata*, Mauritius; Fig. 105 - *Pseudcraspedia punctata*, male genitalia; Fig. 106 - *Hydrillodes uliginosalis*, male, Réunion; Fig. 107 - *Hydrillodes uligonisalis*, female, Réunion; Fig. 108 - *Hydrillodes uligonisalis*, male genitalia, Mauritius; Fig. 109 - *Hydrillodes uligonisalis*, female genitalia, Mauritius; Fig. 110 - *Progonia matilei*, Mauritius; Fig. 111 - *Progonia matilei*, Mauritius; Fig. 112 - *Progonia matilei*, male genitalia

Winglength: 8-9 mm, wingspan 19-21 mm
This species is rather rare in Réunion. I recorded this species on 29.viii.2014, La Possession, 400 m, male, gen.prep RE-1298 (Fig. 98), at the same locality also on 20.xi.2014, 13.xi.2016 and 31.viii.2017. In Saint-Philippe, alt 180 m on 20.xi.2014 and in Sainte-Suzanne, alt. 700 m on 08.xi.2014.

Eublemma viettei (Berio, 1954) – Figs. 99-101 (adult & male genitalia)
Distribution: Ethiopia, Zimbabwe (new records D.Stadie/R.&S.Fiebig and R.Butler), La Réunion, Madagascar, Mauritius (new record).
Wingspan: 14-15 mm
This species described from Madagascar had not yet been reported from Mauritius nor from continental Africa. I collected 3 specimens in June 2016 in Blackriver, alt. 20 m and Flic-n-Flac, alt. 10 m. It also seems to be rather common in Madagascar (Andasibe, xi.-xii.2016) and is found throughout the year in La Réunion.
Eublemma viettei appears to be present also in Zimbabwe and Ethiopia.
Rhett Butler (pers.comm. 2017, specimen illustrated at africanmoths.com) found it in Zimbabwe, Harare, Highlands, Fawlty Towers, 17°49'S 31°5'E, 06.ix.2013, leg. R. Butler, and there is also a specimen from Ethiopia in the collection of D. Stadie/R.& S. Fiebig (pers. comm., 2017), labelled: BC Eth.0746; Ethiopia ; Reg, of South Nations; Bonga Guesthouse; 7°15´4,33"N/36°15´15,51"E; 1750 m. ü.NN; LF 20.-23.v.2015; leg. D. Stadie /R. &S.Fiebig.
The specimens from Zimbabwe and Ethiopia were not examined physically.

Holocryptis interrogationis Viette, 1957 – Fig. 102 (adult)
Distribution: known only from La Réunion
This small species (wingspan 15 mm) was treated as being very rare in Réunion but actually I believe it is only not attracted to light.
At daytime I found 3 specimens in Saint-Denis, Saint-Francois, alt. estimated 750 m, 24.xi.2013.
Another specimen was found close to the type locality in Saint-Philippe, alt. 190 m, 14.vi.2014 in the early morning hours sitting under the leaf of a small tree. This tree was situated only 25 meters from my light trap that was lighted during the whole night but apparently it was not attracted by my lamps.

Lithacodia blandula (Guenée, 1862) – Fig. 103 (adult)
Distribution: Comoros, Madagascar, Mauritius, Réunion.
2 specimens were collected in Mauritius on 08-vi-2016 and 12.vi.2016 (Blackriver, alt. 20 m and 55 m). This species was also found in Madagascar, Andasibe 24.xi-03.xii.2016 (6 specimens) and one specimen in Mahamasina, Diana, 24.iv.2013. A rather common species also in Réunion.

Pseudcraspedia punctata Hampson, 1898 – Figs. 104-105 (adult & male genitalia)
Distribution: India (Sikhim - Type locality); Karnataka (J. Nagabhushan, pers. comm. 2017), Kenya, Uganda and Australia (B. Schacht, pers. comm. 2016); recorded new for

Australia, La Réunion and Mauritius.
Wingspan: 15 mm.
One male (Fig. 104) was collected in Flic-en-Flac, 11.vi.2016, wingspan 15 mm, gen.prep Mru-110 (Fig. 105). This species is also found in Réunion where Sébastian Bougreau had found this species in April 2012 in Saint-Paul, Hermitage, alt. 250 m (Bougreau, S., 2012). It had been illustrated from Réunion earlier also by Martiré & Rochat (2008) as Noctuidae – Acontiinae – Espece indeterminée (ref.B). Bernd Schacht, Germany, also found this species in the ANIC collections from Australia.

Erebidae - Herminiinae

Hydrillodes uliginosalis Guenée, 1854 – Figs. 106-109 (adults; male & female genitalia)
Distribution: widespread in central, southern and eastern Africa. including Madagascar, Réunion and Mauritius (new record).
Wingspan 27-29 mm, winglength: 12-13 mm
5 specimens were collected in Mauritius, Flic-en-Flac, 10.vi.2016 (male, gen.prep. Mru-077), Bambous., alt. 230 m, 11.vi.2016 (female, gen.prep. MRU-076) and in Blackriver, alt. 55 m on 12.vi.2016.
This is also a very common species in low altitudes in Réunion and also in Madagascar where I recorded two additional specimens in Andasibe on 26. and 28.xi.2016.

Paracolax tripunctum spec.nov**. -** Figs. 113-117 (adults, male & female genitalia)
Description:

Winglength: 10.5-11.5 mm, Wingspan: 23-25 mm

Antennae simple in female. In male with two rows of fine ciliations pointing downwards with a few shorter bristles in between.

Head, palpi, thorax, abdomen and wings entirely brownish-fuscous, last segment of palpi strongly upturned (Fig. 117).

Forewings with 5 clearer, undefined beige-brownish markings along second half of costal margin; an irregular crenulated transversal line with a small beige stigma at ¼, continued on hindwing; a second crenulated transversal line shortly before ½ containing two small clearer beige stigma near costa (fused in one specimen) also continued on the hindwing; an indication on a transversal line at ¾ not reaching 1/3 of width; a third transversal line shortly before apex, that is only indicated on the hindwing.

A row of seven small dark-brownish-black terminal spots along termen on fore- and hindwings.

1 frenelum in male.

Male genitalia (Fig. 115): Uncus long ,slender, smoothly curved, pointed at apex. Vinculum short, and broadened, valvae weakly sclerotised, broadened distally. almost straight ventrally, with a stretched, pointed process on sacculus. Aedeagus straight, without cornutus, about 2/3 of length of valvae.

Female genitalia (Fig. 114):
Posterior apophyses longer than anteriores, the later broadened distally. Long and stout

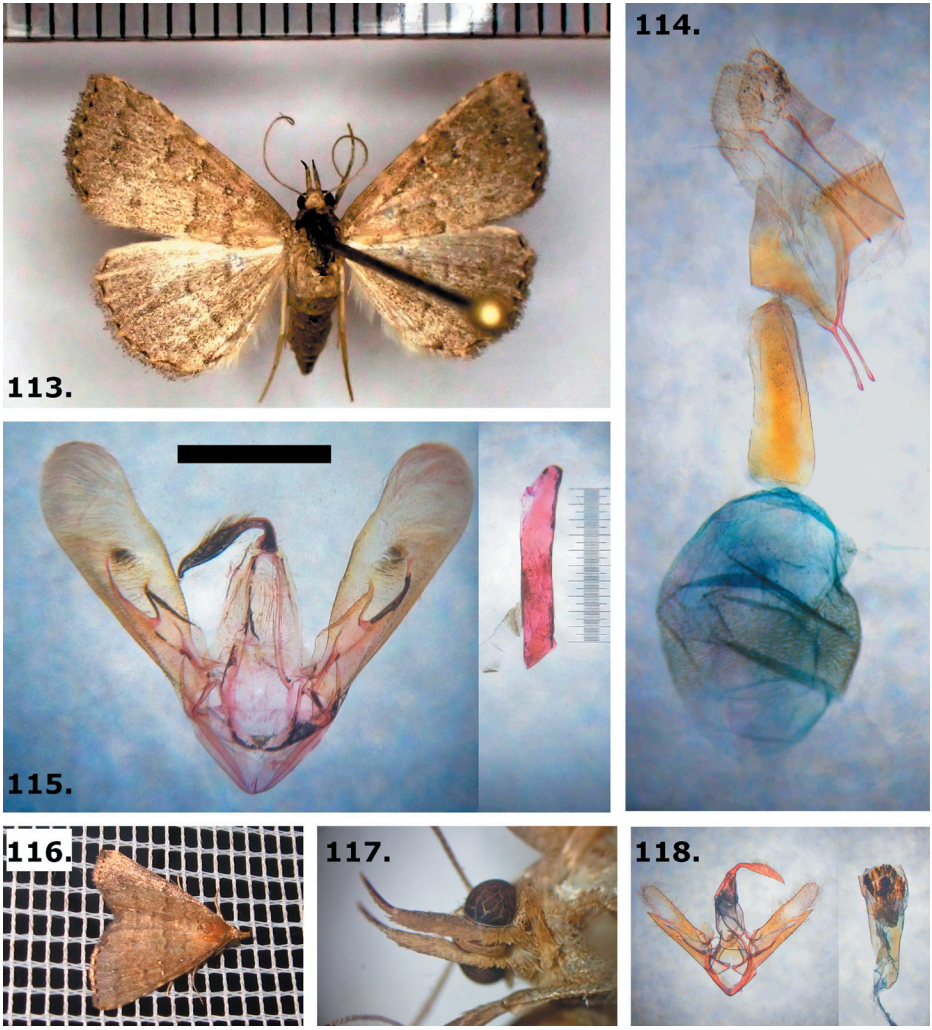

Plate 9. Scale bars = 1 mm. Fig. 113 - *Paracolax tripunctum*, female, Paratype 24.ii.2016; Fig. 114 - *Paracolax tripunctum*, male genitalia, gen.prep. RE-2279; Fig. 115 - *Paracolax tripunctum*, female genitalia, gen.prep. RE-2549; Fig. 116 - *Paracolax tripunctum*, female, in-situ, 24.ii.2016; Fig. 117 - *Paracolax tripunctum*, head and palpae; Fig. 118 - *Simplicia extensalis*, male genitalia. e.l.*Cannabis sativa*

ductus bursae, ovoid corpus bursae without signa, scattered with very short spines over its central third.

Collected specimens:

Holotype: NHMUK 010896432; female, 27.iii.2016 (not dissected)

Paratypes: Three males: 30.xi.2015 (gen.prep. RE-2279), 07.ii.2017 (numbered RE-3030), 07.iii.2017 (numbered RE-3067). Five females dated: 14.i.2015 (without a number), 24.ii.2016 (numbered RE-2475), 27.iii.2016 (gen.prep. RE-2549), 10.ii.2017 (numbered RE-3083) and 25.v.2018 (numbered RE-3555, wing-length 11 mm).

Locality: holotype and all paratypes were collected in: Réunion, La Possession, Ravine à Malheur, altitude 400 meters. Geographical coordinates: 20°55'37''S/55°21'45''E.

Flight period: Recorded on wings in the months of i, ii, iii, v and xi.

Progonia matilei Orhant, 2001 – Figs. 110-112 (adults & male genitalia)

Distribution: Madagascar, Mauritius, Réunion, Seychelles, Gambia and Zimbabwe (de Prins & de Prins, 2018, records of R.Goff and R.Butler).

Wingspan 21-22 mm, winglength 9-9.5 mm.

Two specimens were collected in Mauritius, Bambous on 11.vi.2016 and Flic-en-Flac, 10.vi.2016 (male, gen.prep. Mru-101 (Fig. 112).

I did not often record this species in Réunion. Some dates and localities are 24.viii.2012, La Possession, alt. 400 m; 01.viii.2016, St.Philippe, alt. 170 m and 08.xi.2014, Ste. Suzanne, alt. 700 m.

Simplicia extinctalis (Zeller, 1852) – Fig. 118-119 (male genitalia & adult), Fig. 121 (female genitalia)

Distribution: Widespread in continental Africa, including Madagascar, Mauritius, Réunion and Seychelles.

Females: wingspan: 26-28 mm, winglengths: 11-12 mm; male: wingspan 23 mm, winglength 10 mm

Simplicia extinctalis is very similar in habitus to *Simplicia inflexali*s Guenée, 1854.

I have no reliable clue to distinct the females without genitial dissection though for the males a very interesting and easy clue was given by P. Viette in Guillermet (2005) based on the antennae:

- absence of a node on the antennae of the male in *Simplicia extensalis*
- presence of a node on the antennae of the male in *Simplicia inflexalis*

Jean Armynot, Gendarme at the Gendarmerie Nationale of Saint-Louis brought me a lot of 5 raised moths that were bred from a confiscated lot of *Cannabis sativa* L. (Cannabaceae). These plants were seized still in the ground and were kept inside of a confined storage room where he found these moths after a little more than a week. Their larvae or pupae are likely to have been collected together with the seized plant material.

The examined male of *Simplicia extensalis* (Fig. 118) from this larval lot does not show any node on the antennae and therefore I attributed also the 3 female specimens (Fig.

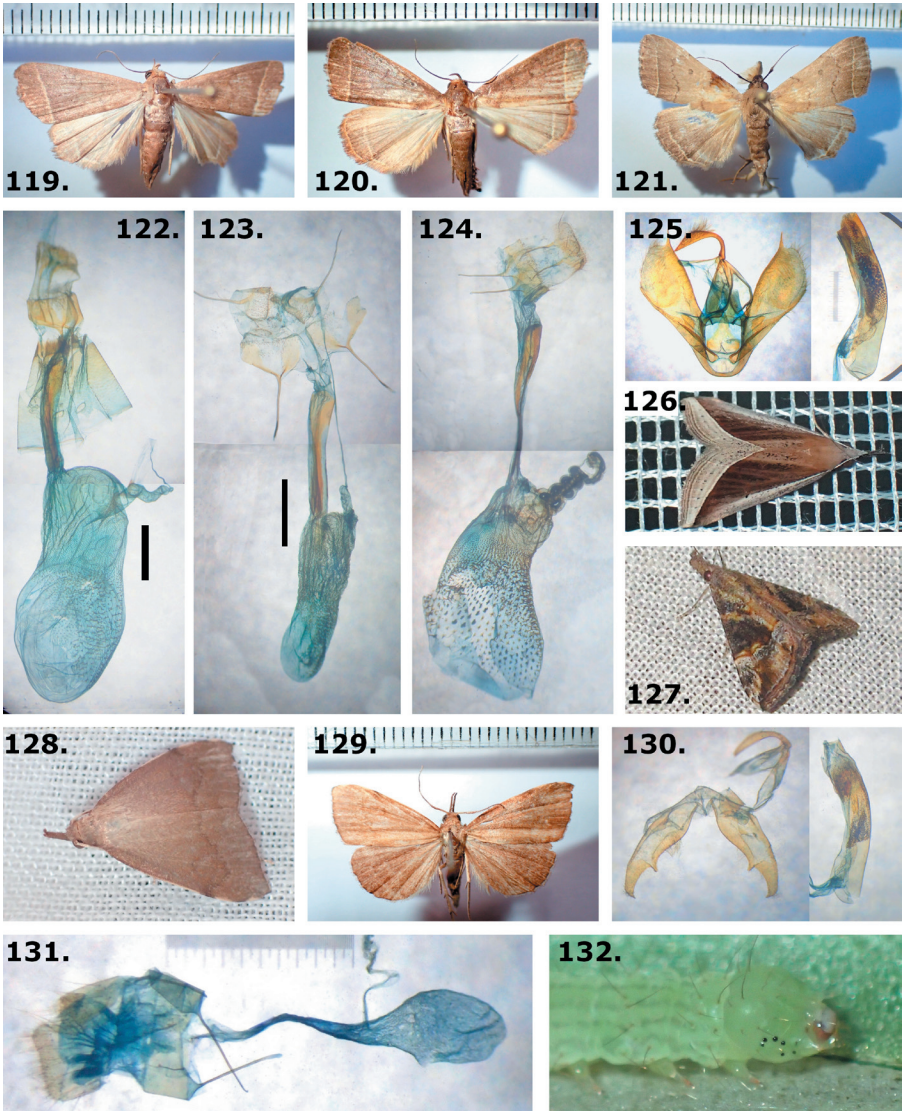

Plate. 10. Scale bars = 1 mm. Fig. 119 - *Simplicia extensalis*, e.l. *Cannabis sativa*; Fig. 120 - *Simplicia inflexalis*, Mauritius;Fig. 121 - *Simplicia pannalis*, Réunion; Fig. 122 - *Simplicia extensalis*, female genitalia, e.l. *Cannabis sativa*; Fig. 123 - *Simplicia inflexalis*, female genitalia, Mauritius; Fig. 124 - *Simplicia pannalis*, female genitalia; Fig. 125 - *Simplicia pannalis*, male genitalia; Fig. 126 - *Hypena conscitalis*, Réunion; Fig. 127 - *Hypena laceratalis*, Mauritius; Fig. 128 - *[Hypena] cf. diakonoffi*, in-situ; Fig. 129 - *[Hypena] cf. diakonoffi*, Madagascar; Fig. 130 - *[Hypena] cf. diakonoffi*, male genitalia; Fig. 131 - *Hypena obacerralis*, female genitalia; Fig. 132 - *Hypena obacerralis*, larvae

119;122; 2 dissected) as belonging to the same species.
An additional female specimen collected between 06.-10.vi.2016 in Mauritius, Blackriver (Vanilla House), gen.prep. Mru-058 proved to be identical in genitalia.
Examined material:
1 male (gen.prep. RE-3516; Fig. 118), 3 females (2 dissected, gen.prep. RE-3517 and RE-3518 (Fig. 122)), Reunion, Saint-Louis, alt. 50 m, e.l. *Cannabis sativa,* 25.ii.2018
1 female (gen.prep. Mru-058), Blackriver (Vanilla House), alt. 20 m, 06-10.vi.2016
Note: From the same larval lot of *Cannabis sativa* collected in Réunion, Saint-Louis was also bred one specimen of a hitherto unrecorded Pyralinae: *Ocrasa nostralis* (Guenée, 1854), a species that I had recorded earlier in Réunion, La Possession. alt. 400 m also on 31.xii.2013, 16.ix.2014, 20.x.2014, 25.xii.2014, 10.v.2015, 01.vii.2015, 02.i.2016, 25.i.2016, 06.ii.2016, 30.viii.2016, 31.viii.2016, 24.ix.2016, 26.xii.2016, 24.i.2017, 20.iii.2017, 25.i.2018 and of which I also found one specimen in Mauritius, Mahébourg, (Tyvabro) on 24.iv.2017.
Ocrasa nostralis is only a little smaller (wingspan 22-23 mm) than *Simplicia extinctalis* and *S. inflexalis but* has the same clear beige-brownish coloration.

Simplicia inflexalis Guenée, 1854 – Fig. 120 (adult), Fig. 123 (female genitalia)
Distribution: Congo, Kenya, Madagascar, Mauritius, Reunion and South Africa.
Wingspan: 27-29 mm
One female was collected in Mauritius, Bambous, alt. 230 m, 11.vi.2016 next to a sugarcane field that was harvested only a few days earlier.
Note: A total of 8 specimens of *Simplica* sp. were collected at this site (all females), though I prefer to attribute only the dissected specimen to this species.

Simplicia pannalis Guenée, 1862 – Fig. 121 (adult), Figs. 124-125 (female & male genitalia)
Distribution: known only from Réunion.
Wingspan: 31-35 mm, winglength: 14-16 mm
This species is a little larger in size than the previous *Simplicia* species and its wing markings are more pronounced. Therefore it is easily recognizable.
Furthermore the male specimens show a prominent node at ¼ of the antennae.
Recorded specimens: 11 specimens (10 males and 1 female)
Males: 10./12.xi.2015, 12.1.2016, 28.viii.2016, 24.ix.2016, 26.ix.2016 (2x), 23.x.2016 (2x) (gen.prep. RE-2802b),
Female: 30.ix.2016 (gen.prep. RE-3577, winglengths 16 mm; Fig. 124)
All specimens were recorded in Réunion, La Possession, alt. 400 m

Erebidae – Hypeninae

Hypena conscitalis Walker, 1866 – Fig. 126 (adult)
Distribution: widespread throughout the Oriental and Australasian region and the African continent, including Madagascar, Mauritius, Réunion and Seychelles.
Winglength: 11 mm.
In Madagascar (Imerimandroso, Alaotra-Mangoro) this species was raised on

Desmodium ramosissimum G.Don (Fabaceae) by L. Seret (pers.comm., 2016).
In Réunion it was recorded on *Desmodium intortum* (Miller) Urban. by Martiré & Rochat, 2008).

[*Hypena*] *diakonoffi* Viette, 1976 - Figs. 128-130 (adults & male genitalia)
Distribution: Madagascar
Wingspan: 26-27 mm
1 male, gen.prep. MG-553 collected in Andasibe, 27.xi.2016.
This species does not belong to the genus *Hypena* and the systematic position is unclear (Lödl, 1994: 576). No genitalia images of this species are presently available and I would like to illustrate the same to allow a correct positioning to other researchers.

Hypena laceratalis Walker, 1859 – Fig. 127 (adult), Fig. 137 (female genitalia)
Distribution: widespread in continental Africa, including Mauritius, Madagascar and Reunion. Also known from the Australasian region and Pacific islands (de Prins & de Prins, 2018).
Forewing length: 12-13 mm
1 female specimen was collected in Bambous, Mauritius, 12.vi.2016, gen.prep. Mru-099 (Fig. 137)
In Reunion I had raised this species several times on *Lantana camara* L., (La Montagne, alt. 600 m, 22.xii.2013) though it does not seem to be very abundant on this plant.
Hostplant: *Lantana camara* L. (Verbanaceae)

Hypena obacerralis Walker, 1859 – Fig. 131-133 (female genitalia, larvae & adult)
Distribution: a widespread species, know from most countries in continental Africa, incl. Madagascar, Mauritius, Seychelles, Reunion and also the Australasian and Pacific region.
Forewing lengths: 11-12.5 mm wingspan 25-28 mm
This is a rather common species in Réunion.
Adults were bred from larvae collected on *Commelina benghalensis* L. (Commelinaceae) collected in low altitudes near seal level (altitude approx. 15-25 m) in Réunion, La Possession (Ravine à Marquet) and Saint-Paul (Etang) Adults eclosed on 25., 27., 28. and 29.ix.2013 (gen.prep. RE-988), and 01.x.2013 and La Possession, alt.400 m, 22.iv-2017 (female, dissected). This seems to be its most common hostplant in Réunion and I found similar larvae rather often on this plant. This plant grows frequently in river beds, roadside ditches and other places with a high humidity level.
One additional specimen was bred from *Ocimum basilicum L.* (Lamiaceae) at an altitude of 400 m in Réunion, La Possession on 06.x.2013 but it seems to be more rare on this plant.
In Fiji this lepidopteran was also recorded on *Commelina pacifica* Vahl. (Lödl, 1994).
One specimen was also found in Madagascar, Andasibe, 02.xii.2016
Hostplants: *Commelina benghalensis* L., *Commelina pacifica* Vahl. (Commelinaceae) and *Ocimum basilicum L.* (Lamiaceae).

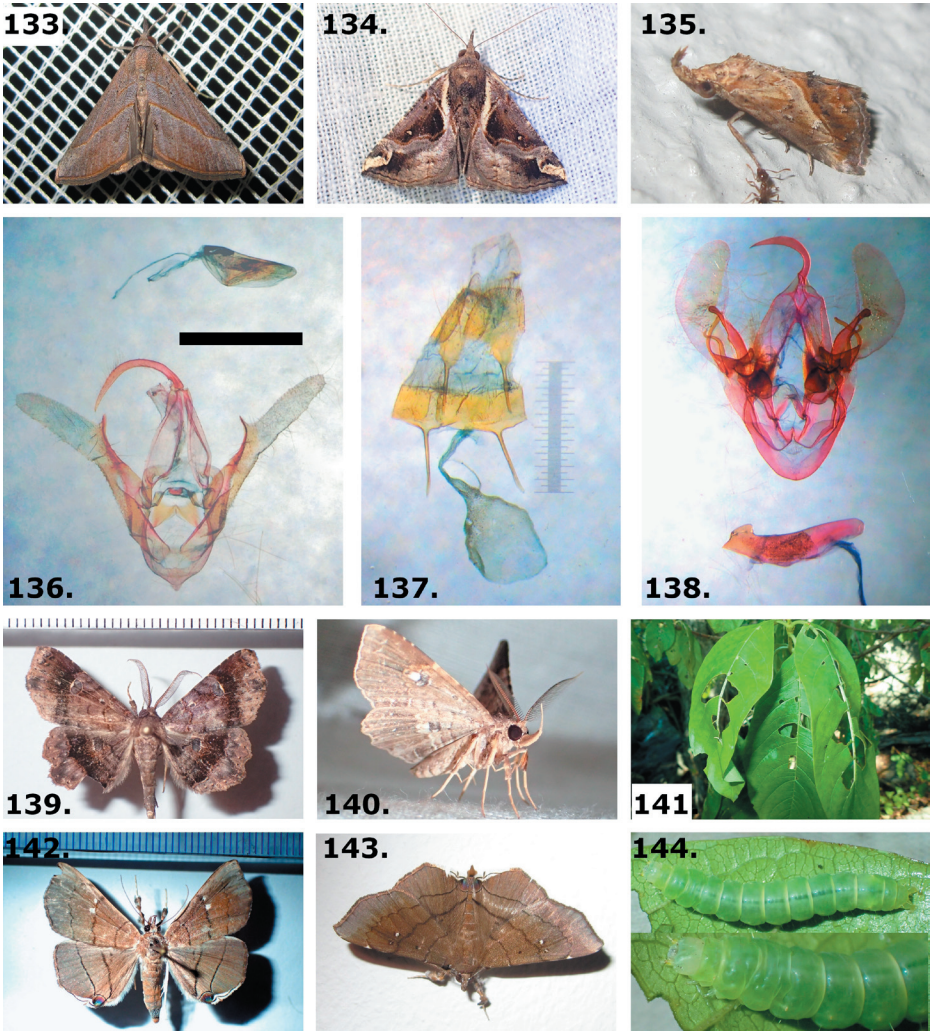

Plate 11: Scale bars = 1 mm. Fig. 133 - *Hypena obacerralis*, Réunion, e.l.*Commelina benghalensis*; Fig. 134 - *Hypena varialis*, Madagascar; Fig. 135 - *Zekelita angulalis*, Mauritius; Fig. 136 - *Zekelita angulalis*, male genitalia; Fig. 137 - *Hypena laceratalis*, Mauritius, female genitalia; Fig. 138 - *Gracilodes angulalis*, male genitalia; Fig. 139 - *Gracilodes angulalis*, Réunion; Fig. 140 - *Gracilodes angulalis*, Réunion; Fig. 141 - *Vangueria madagascariensis*; Fig. 142 - *Gracilodes nysa*, e.l.*Vangueria madagascariensis*; Fig. 143 - *Gracilodes nysa*, Réunion; Fig. 144 - *Gracilodes nysa,* larvae

Hypena varialis Walker, 1866 – Fig. 134 (adult)
Forewing lengths: 13 mm
One specimen was collected in Madagascar, Andasibe on 26.xi.2016. Not otherwise examined.

Zekelita angulalis (Mabille, 1880) – Figs. 136-136 (adult & male genitalia)
Distribution: Widespread in continental Africa. Lödl (2001) reported this species from Cameroons, Madagascar, Nigeria, Mozambique, South Africa and Tanzania.
Regional distribution: Madagascar, Mauritius (new record) and Réunion.
Wingspan: 18-19 mm, Forewing lengths: 8 mm
This is also a common species in Reunion and also in Mauritius. where I found 2 males, Blackriver (Vanilla House), alt.20 m on , 05.vi.2016 and 1male in Bambous, alt.230m (Fig. 135) on 11.vi.2016 (gen.prep Mru-081, Fig. 136).
In Réunion this species seems to have been missidentified with *Zekelita ravalis* (Herrich-Schäffer, 1851) (Guillermet, 2005b - as *Z .revolutalis* (Zeller, 1852))
This misidentification seems to be known already (see: afromoths.net) though I did not find any reference correcting it.
In Réunion I observe this species often at daytime in open grasslands, mostly sitting on high growing grasses (Poaceae).with its wings turned downwards.

Erebidae – Pangraptinae

Gracilodes angulalis Guillermet, 1992 – Figs. 138-140 (male genitalia & adults)
Distribution: Réunion
Winglength: 14 mm.
5 males were collected in Saint Philippe, Réunion on 01.viii.2016. 1 male dissected, gen.prep. RE-2805 (Fig. 138).

Gracilodes nysa Guenée, 1852 – Figs. 142-144 (adults & larvae)
Wingspan: Forewing length 17-20 mm
The larvae of this species is often found abundantly on *Vangueria madagascariensis* J.F.Gmel. (Fig. 141) and it seems to be an excellent defoliator of this plant that in many countries is considered to be an invasive species. Most plants in Réunion show severe foliage damage (Fig. 141) and I can often find more than 20 caterpillars on a single tree.
Specimens were raised from larvae on 03.ii.2017, 02.-05.iii.2017, Réunion, La Possession, Ruisseau Noir, alt. 60-70 m approximately and in vii.2018 in La Montagne, alt.700 m.
Hostplant: *Vangueria madagascariensis* J.F.Gmel. (Rubiaceae). This plant had been mentioned before as a hostplant of this species by Viette, 1957 from Madagascar and Mamet & Williams (1993) from Mauritius.

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References

Agassiz D. J. L. & Harper D. M., 2009. The Macrolepidoptera fauna of Acacia in the Kenyan Rift Valley (Part 1). *Tropical Lepidoptera Research* 19(1):4–8.

Anonymous, 2016. Website: http://idao.cirad.fr/ (accessed Dec.21, 2016)

Anonymous, 2017. Website:www.endemia.nc

Barnett L. K. & Emms C., 1998. An annotated checklist of the Chagos archipelago terrestrial fauna (omitting birds) recorded during the 1996 'Friends of the Chagos' expedition. *Phelsuma* 6:41–52.

Berio E., 1954. Etude de quelques Noctuidae Erastriinae de Madagascar (Lepid. Noctuidae). *Mémoires de l'Institut scientifique de Madagascar* (E) 5:133–153; pls. 6, 7.

Berio E., 1960. Descrizioni di alcune nuove Noctuidae del Madagascar al museo de Parigi. *Annali del Museo Civico di Storia Naturale Giacomo Doria* 71:83–98.

Berio, E., 1965. Le Catocaline Africane a tibie spinose del Museo di Tervuren. - *Annali del Museo Civico di Storia Naturale Giacomo Doria* 75:181–332.

Berio E., 1971. Revisione del gen. *Polydesma* Boisd. E *Trichopolydesma* Berio (Lepidoptera, Noctuidae). *Annali del Museo Civico di Storia Naturale di Genova* 78:264-300; pls. 1–2.

Bippus, M., 2014. *Radara subcupralis* (Walker, 1866), un nouveau papillon pour l'île de La Réunion (Lepidoptera : Erebidae). *Cahiers scientifiques de l'océan Indien occidental* 5:18.

Bippus, M., 2016. Notes on Lepidoptera from the Seychelles. - *Phelsuma* 24: 35–71.

Boisduval J. B. A., 1833. Faune entomologique de Madagascar, Bourbon et Maurice. Lépidoptères. Avec des notes sur les moeurs, par M. Sganzin :1–122, pls. 1–16.

Bougreau, S., 2012. web-site: http://papillons974.canalblog.com

Deguine, 1991. *Anomis flava* (Fabricius, 1775) (Lepidoptera, Noctuioidea. Noctuidae. Ophiderinae). *Cot.Fib.Trop.*, 1991, vol.46.fasc.2:105-142.

De Prins, J. & De Prins, W., 2016. Afromoths, online database of Afrotropical moth species (Lepidoptera). World Wide Web electronic publication (www.afromoths.net) [accessed 10-ix-2016 thru vii.2018]

Fibiger, M. & Kononenko, V., 2008. A revision of the subfamily Araeopteroninae Fibiger, 2005 in the Russian Far East and neighbouring countries with a description of four new species (Lepidoptera, Noctuidae). - *Zootax*a 1891: 39-54. Plates preview: http://treatment.plazi.org/id/03BFB002DB19FFF7FF3EB882653209E1

Fletcher D. S., 1961. Noctuidae. In: Evans, G. O. & Fletcher, D. S. (eds.), Ruwenzori Expedition 1952. 1(7):177–323.

Ganeshan, S. & Rajabalee, A., 1998. The Mythimna spp. (Lepidoptera: Noctuidae) Complex on Sugarcane in Mauritius. *Proc.S.afr.Sug.Technol.Ass.* 70: 15-17.

Guillermet C. & Guillermet C. W. W., 1986. Contribution à l'étude des Papillons Hétérocères de l'Ile de la Réunion. Résultats des chasses de nuit à l'usage des amateurs et des débutants. (1986):1–321.

Guillermet C., 2005. Les Hétérocères ou papillons de nuit, de l'île de La Réunion. Volume 1. Famille des Noctuidae Quadrifides. (2005):1–532, pls. 1–13

Guillermet C., 2009. Contribution à l'étude des Hétérocères de La Réunion: trois nouveaux Tineidae et un nouveau Noctuidae (Lepidoptera). *L'Entomologiste* 65(3):117–123.

de Joannis J., 1910. Trois nouvelles espèces d'Erastriinae (Lep., Noctuidae) provenant des Iles Mascareignes. *Bulletin de la Société entomologique de France* 79(10):201–204.

Hacker H. H. 2016. Systematic and illustrated catalogue of the Macroheterocera and Cossoidea Leach, [1815], Zygaenoidea Latreille, 1809, Thyridoidea Herrich-Schäffer, 1846 and Hyblaeoidea Hampson, 1903 of the Arabian Peninsula, with a survey of their distribution (Lepid.). *Esperiana* 20(1):1–742; (2): 1–430. (partially consulted only)

Hampson, G.F., 1898. The moths of India. Supplementary paper to the volumes in "The fauna of British India". Part I-II *J. Bombay nat. Hist. Soc*. 11(4):698-724.

Hampson, G. F., 1910a. Catalogue of the Lepidoptera Phalaenae in the British Museum. *Cat. Lepid. Phalaenae Br. Mus*. 10: i-xix, 1-829.

Hampson G. F., 1910b. Zoological collections from Northern Rhodesia and adjacent territories: Lepidoptera Phalaenae. *Proceedings of the Zoological Society of London* 1910 (2):388–510, pls. 36–41.

Holloway, J.D., 1979. A Survey of the Lepidoptera Biogeography and Ecology of New Caledonia. Dr.W.Junk B.V. Publishers. pp.546

Lavergne, C., 2011. Liste des espèces invasives de la Flore vasculaire de La Réunion. CNBM.http://www.especesinvasives.red/spip.php?action=acceder_document&arg=150&cle=395c7bd15ae456efcc6ddc6248199509781fbc72&file=pdf%2FListe_EspecesInvaisves_Flore_2011.pdf

Lödl M. 1994a. *Hypena evamariae* sp. n., eine neue ostafrikanische Hypeninen-Art aus der Verwandschaft von *Hypena polycyma* Hampson, 1902 (Lepidoptera: Noctuidae). *Entomologische Zeitschrift* 104(6):105–112

Lödl M., 1994b. Zur Wiederauffindung der Type von *Rhynchina obliqualis* (Kollar, 1844) [*Hypena*] comb. n. im Naturhistorischen Museum Wien, nebst Bemerkungen zur Synonymie (Insecta: Lepidoptera: Noctuidae). *Annalen des Naturhistorischen Museums in Wien* 96B(): 369–372.

Lödl M. 1994h. Revision der Gattung *Hypena* Schrank 1802 s.l., der äthiopischen und madagassischen Region, Teil 1 (Insecta: Lepidoptera: Noctuidae: Hypeninae). *Annalen des Naturhistorischen Museums in Wien* 96B:373–590.

Lödl M., 1995. Revision der Gattung *Hypena* Schrank, 1802 s.l., der äthiopischen und madagassischen Region, Teil 2. *Annalen des Naturhistorischen Museums in Wien* 97B:255–393.

Lödl,M. & Mayerl, B., 1998. Revision der Gattung *Zekelita* WACKER, 1863 (= *Rhynchodontodes* WARREN, 1913) (Lepidoptera: Noctuidae: Hypeninae). *Quadrifina* 1: 115-230.

Lödl M., 2001.The verification of the synonymy of *Zekelita angulalis* (Mabille, 1880) and *Z. antistropha* (Vári, 1962) (Lepidoptera: Noctuidae: Hypeninae). *Quadrifina* 4(): 1–4.

Mamet, J.R. & Williams, J.R. 1993. The recorded Foodplants of Mauritian Insects. *Mauritius Sugar Research Institute, Occassional Paper* No.35: 66-136.

Martiré, D. & Rochat, J., 2008. Les papillons de La Réunion et leurs chenilles. Muséum national d'Histoire naturelle, Paris; Biotope, Mèze: 1–496.

Orhant G. E. R. J., 2003. Contribution à la connaissance des Noctuides et Géométrides de l'île de la Réunion (Lepidoptera). *Bulletin de la Société entomologique de France* 108(): 139–146.

Orhant, G.E.R.J., 2006. IVème contribution à la connaissaince des Noctuides et des Géométrides de l'ile de La Réunion (Lepidoptera) *Pandesma muricolor* Bério, 1966, espèce nouvelle pour La Réunion. *Bull.Sté.ent. Mulhouse*, t.62 (2): 22-24.

Owada, M. (1987). A Taxonomic Study on the Subfamily Herminiinae of Japan (Lepidoptera, Noctuidae). *National Science Museum monographs* 2: 1-208.

Parnaudeau, R., 2009. Lépidoptères hétérocères nouveaux ou peu connus de l'ile de Mayotte. - *L'Entomologiste* 65 (5): 267-270.

Pyne, K., 2012. Report of Survey of Plants carried out at Mon Trésor Mon Désert. *Mauritius Cane Industry Authority, Report* Ref.H14/59: 1-3

Rousse P. & van Noort S., 2014. A frotropical Ophioninae (Hymenoptera, Ichneumonidae): an update of Gauld and Mitchell's revision, including two new species and an interactive matrix identification key. *ZooKeys* 456:59–73.

Saalmüller M., 1880. Neue Lepidopteren aus Madagascar, die sich in Museum der Senckenberg'schen naturforschenden Gesellschaft befinden. *Bericht über die Senckenbergische Naturforschende Gesellschaft in Frankfurt a.M. 1879–1880*:258–310.

Saalmüller M. & von Heyden L., 1891. Lepidopteren von Madagascar. Zweite Abtheilung. Heterocera: Noctuae, Geometrae, Microlepidoptera. (1891):247–531, pls. 7–14.

Schacht, B., 2016. www.notuidae.de (acc. 31.x.2016)

Sekhon, C.K., 2013. Taxonomic signifiance of External Genitalia in Family Noctuidae (Noctuoidea: Lepidoptera). Dep. of Zoology and Environnemental Sciences, Punjabi University, Patilia.: 1-233.

Sheikh, M. S., 2012) Studies on life cycle and population structure of jute semilooper

(*Anomis sabulifera* Guenée, Lepidoptera, Noctuidae) on tosa jute (*Corchorus olitorius* L.) in the district of Barpeta, Assam, India. *The Ecoscan* 6(3–4):129–131.

Staude, H.S., Mecenero, S., Oberprieler, R., Sharp, A., Sharp, I., Williams, M.C. & Maclean, M. 2016. An illustrated report on the larvae and adults of 962 African Lepidoptera species. Results of the Caterpillar Rearing Group: a novel, collaborative method of rearing and recording lepidopteran life-histories. *Metamorphosis* 27: 165-188.

Stojanovic, D. & Glavendekic, M., 2003. Five Species of Noctuidae (Lepidoptera) new for the Fauna of Serbia and Montenegro. *Acta entomologien Serbien* 8 (1/2):85-90

Tams, W.H.T., 1924. II. Notes on some species of the genus *Cosmophila* Boisd.. *Trans. Ent. Soc. London* 1924: 20–24, Plates I.-III.

Viette, P., 1957. Lépidoptères (excepté les Tordeuses et les Géométrides). In: La Faune entomologique de l'Ile de la Réunion. I. - *Mémoires de l'Institut scientifique de Madagascar* (E) 8:137–226, pls 1–4.

Viette, P., 1965. Nouvelles espèces de Noctuelles Quadrifides malgaches (Lépidoptères). *Lambillionea* 64(9–10):38–49, pl. 1.

Viette, P., 1976. Nouvelles noctuelles de Madagascar (Lep. Noctuidae). *Bulletin mensuel de la Société linnéenne de Lyon* 45(6):220–228.

Walker, F., 1858c. List of the Specimens of Lepidopterous Insects in the Collection of the British Museum. Part XIV. 14: i–iv, 1237–1519.

Wiltshire, E.P., 1970. Middle East Lepidoptera XVIII. A review of the genus Pericyma Herrich-Schäffer and neighbouring genera (Noctuidae). *Veröffentlichungen der zoologischen Staatssammlung München* 14: 91–111.