

New or poorly known Microlepidoptera from the Mascarenes (Lepidoptera: Autostichidae, Bedellidae, Batrachedridae, Carposinidae, Epermeniidae, Gelechiidae, Tineidae, Tortricidae)

With 79 figures

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Summary

Peragrarchis martirea (Carposinidae), *Epermenia senaciae* (Epermeniidae), *Opogona transversata* and *Tineovortex flavilineata* (Tineidae) are described as new species, and *Idioglossa bigemma mascarena* (Batrachedridae) as a new subspecies, from the Mascarene island of La Réunion, and Mauritius. Eleven species are new for the fauna of La Réunion, two are new for the fauna of Mauritius. New host plants are reported for twelve species. *Opogona reunionella* GUILLERMET, 2011 was found to be a new synonym of *Opogona siccata* (MEYRICK, 1910), based on the study of type material and additional specimens.

Key words

Lepidoptera, Autostichidae, Bedellidae, Batrachedridae, Carposinidae, Epermeniidae, Gelechiidae, Tineidae, Tortricidae, Mascarenes, taxonomy, new species, new synonym, additional records

Zusammenfassung

Von den maskarenenischen Inseln La Réunion und Mauritius werden *Peragrarchis martirea* (Carposinidae), *Epermenia senaciae* (Epermeniidae), *Opogona transversata* und *Tineovortex flavilineata* (Tineidae) als neue Arten und *Idioglossa bigemma mascarena* (Batrachedridae) als neue Unterart beschrieben. Elf Arten sind neu für die Fauna von La Réunion, zwei für die Fauna von Mauritius. Für zwölf Arten wurden neue Futterpflanzen festgestellt. *Opogona reunionella* GUILLERMET, 2011 erwies sich nach der Untersuchung des Typenmaterials und weiterer Exemplare als Synonym zu *Opogona siccata* (MEYRICK, 1910).

Material and methods

For the specimens collected at light: Osram HWL 160W mixed lamps were used to attract the moths.

For the specimens reared from larvae: larvae was searched in field and fed on their respective host-plant until maturity in sealed containers. Containers were

numbered and when possible, the larvae was imaged in several stages. Adults bred from larvae where kept alive for 24 hours in a separate recipient to allow genitalia to sclerotize.

Collection sites

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

Results

Autostichidae

Autosticha pelodes (MEYRICK, 1883)

Description (plate 1: figs 1–4): Wingspan: 13.5–17 mm. This species was not yet known from Reunion and Africa. Six specimens were collected and examined: La Réunion, La Possession, alt. 400 m, 03-v-2015, 14-xi-2015 (slide RE-2247, female), 25-i-2016 (slide RE-2379, male), 15-ii-2016, 09-vii-2016 and 15-x-2016. Three of the collected specimen were deposited in the Naturalis Biodiversity Center, Leiden, Netherlands in July 2016. Other specimens recorded but not collected: 09-iv-2013, 26-viii-2014, 14-x-2014, 18-x-2014, 21-x-2014.

Distribution: distributed by men, known from Java, Celebes, New Hebrides, Samoa, Austral islands, Marquesas, Hawaii (ZIMMERMANN, 1978), New Caledonia. New record for La Réunion.

Hostplants: decaying vegetable matter, including sugarcane (*Saccharum officinarum* L., Poaceae), palm fronds, *Ipomoea* capsules, dead twigs and sticks of *Araucaria*, *Lantana* and *Ricinus*.

Remarks: This species was illustrated by ZIMMERMANN (1978, pp. 1797–1801), including male & female genitalia, wing venations and larvae.

Batrachedridae

Idioglossa bigemma mascarena sspec. nov.

Description (plate 2: figs 5–9): Wingspan 7.5–8.0 mm, head, palpi creamish-white. Antennae creamish white, annealed with brownish-black, filiform in female (fig. 7c), filiform with a subconical projection (fig. 7b) in the male. Eyes blackish. Thorax and abdomen pale-yellowish, abdomen annealed silvery white.

Forwings pale-yellow with two marks of raised silvery scales. A brownish streak from base to 1/5 in cell, a brownish V-shaped angle at about 1/4 pointing to tornus, a brownish transverse strike from dorsum to costa at about 3/4 of forewing. Hindwing whitish-silvery with 2 larger pale yellowish fields bordered by 4 metallic, transverse fasciae.

The silvery and brownish scales seem to chip off quite easily on all wings. One of the collected specimens had almost no scales left on the forewing, another one (fig. 6) had perfectly scaled forewings but no scales and markings left on the hindwings.

Male genitalia (plate 2: figs 9–9a): Uncus and gnathos developed, tegumen sclerotized. Valvae with a short transtilla and a long, hooked ampulla. Aedeagus (fig. 9) longer than valvae.

Holotype: 1 male, Réunion, La Possession, alt. 400 m (20°55'37"S/55°21'45"E).

Paratypes: 3 males, 17-iii-2016 (dissected, slide RE-2529), 22-iv-2016, 23-v-2015, 14-vii-2016, 1 female, 20-ii-2016, same location.

Types will be deposited in the collections of the BMNH, London.

Distribution: La Réunion and Mauritius (subspecies); South Africa (nominal species).

Etymology: Named after the Mascarene islands.

Biology: unknown.

Remarks: The nominal species, *Idioglossa bigemma* WALSINGHAM, 1881 was described from KwaZulu-Natal/South Africa and recorded by MEYRICK (1910) from a single specimen from Mauritius.

Actually this species gave me a lot of headache. The only specimen conserved in the BMNH seems to be the Mauritian specimen from the Meyrick collection, labelled: *Idioglossa bigemma* 1/1 Wals. E. Meyrick det. in Meyrick Coll.; Meyrick Coll. B.M. 1938-290; Mauritius NM. 06; NHMUK010304567. I ignore how Meyrick determined the species and if he could see the specimens from the Walsingham collection or not.

Though the specimens collected in Réunion are rather similar to the Mauritian specimen there are some differences in wing markings to the drawing published by Walsingham and they are also much smaller in size (7.5–8.0 mm instead of 10.0 mm). The brownish strike at the base of the forewing was not illustrated by Walsingham and the V-shaped brownish marking at 1/4 of same seems to point into the opposite direction, to the base of the forewing instead. I really wonder if there are not even two different species involved or not.

It will certainly be necessary to study South African specimens to clear the status of this species in the Mascarenes.

Bedelliidae

Bedellia somnulentella (ZELLER, 1847)

Plate 14, figs 74–75 : Wingspan: 7.5–8.5 mm

Distribution: Widespread, Australia, Africa, incl. Mauritius, new recorded for La Réunion, Europe, Oceania.

This species was already recorded from Mauritius by MEYRICK (1910). It is also found in La Réunion where I bred it from *Ipomoea aquatica* FORSSK. (Saint-Paul, alt. 20 m, vii-2015) (Convolvulaceae).

In Fiji this species was recorded on *Ipomoea batatas* (L.) LAM. (BRADLEY, 1953).

Carposinidae

Genus: *Peragrarchis* DIAKONOFF, 1959Type species: *Peragrarchis rodea* (Diakonoff, 1950)

At present five described species are included in this genus – all of them are known only from few or single specimens from the Oriental or Pacific region (Andaman Islands, Austral Islands, China, New Guinea and New Hebrides). The following new described species is the first of this genus from the afrotropical ecozone.

Peragrarchis martirea spec. nov.

Description (plate 3: figs 10–12): Wingspan 16 mm; Antennae of male with fine, hairlike bristles, turned downwards. The length of the antennae is a little above 1/2 to 5/8 of forewing length.

Forewings: Ferruginous-brown-beige, marked with darker brown. Gently curved at its end, convex in the middle, apex moderately pointed, termen sinuate, straight. Cilia greyish. Hindwings: greyish.

Male genitalia (plate 3: figs 12–12b): Tegumen rounded, uncus membraneous, vinculum with an elongated saccus. Bifurcated valva partly sclerotized, fused along the basal portion of sacculi, cucullus with dentated, doubled processes. Aedeagus: long and slender, sclerotized; dilated at 1/3, with longitudinal patches of spines.

Holotype: 1 male (figs 10–12), collected at light 25-iv-2015, La Réunion, La Montagne (Colorado), alt. 700 m, 20°54'35"S/55°25'22"E, dissection slide RE-1866 (fig. 12), in Naturalis Biodiversity Center, Leiden, Netherlands; Naturalis Slide No. RMNH.INS.910262.

Distribution: La Réunion.

Etymology: I would like to dedicate this species to Mr. Dominique Martiré for honoring his works and publications on the study of Lepidoptera and other insects of La Réunion.

Epermeniidae

41 species of Epermeniidae are known from the Afrotropics (GAEDIKE, 2013) of which seven species are known from the neighboring island of Madagascar (GAEDIKE, 2004). So far the following described species is the first member of this family recorded from the Mascarene islands (La Réunion, Mauritius, Rodrigues).

Epermenia senaciae spec. nov.

Description (plate 3: fig. 13; plate 4: figs 14–16): Wingspan: 9–11 mm (most specimen have a wingspan of 9.0–9.5 mm, only one measures 11 mm).

Antennae are filiform, brownish-grey, reaching 2/3 of forewing length. Base of antennae beige-ochreous, broadend. Head and shoulders are beige-ochreous sprinkled with a few brownish scales.

Palpi are upturned, beige-ochreous with some darker scales on the external side, terminal joint darker sprinkled with brown-blackish.

Thorax and abdomen greyish-brown, the male has laterally on the first segment of the abdomen two abdominal pockets with hair brushes. Legs: femur ochreous-brown, tibia and tarsi are ochreous, ringed blackish.

Forewings are brownish with irregular clearer ochreous-beige and darker-brownish fields, along costa up to 2/3 and along dorsum sprinkled irregularly with a few blackish-brownish scales. There are three small blackish marks in the middle of the wings in cell, the first near base, the second at half, and the third at 3/4. A larger blackish field in the apical fifth and along the base of dorsum of the forewing. Cilia are greyish, blackish at tornus, with three to four tufts of blackish scales, one larger at 1/3 and 2–3 smaller, sometimes fused, between 1/2 and 3/4 of forewing consisting at some specimen only of 3–7 scales. Hindwings are brownish-grey.

Male genitalia (plate 5: figs 19a–19d): Uncus and tegumen (fig. 19c) rather normal for *Epermenia*, margin of tegumen sclerotized, a small sclerotization between tegumen and uncus; valva (fig. 19a) with a broad, short transtilla; ampulla nearly straight with an rounded tip, sclerotized, continuing in the cucullus. Dorsal edge of sacculus with a sclerotized margin. Aedeagus (fig. 19d) same length as valvae, with cornuti, rather straight with the tip moderately curved.

Female genitalia (plate 5: figs 20a–20c): posterior apophyses forked (fig. 20b), area around ostium only weakly marked, short ductus bursae, elongated corpus

bursae with an elongated signa (fig. 20a), pointed at both ends with a short digitate process at about 2/3.

Etymology: Named after its hostplant: *Pittosporum senacia* PUTT.

Hostplant (fig. 18): all specimens were bred ex-larvae from fruits of *Pittosporum senacia* Putt. (Pittosporaceae), collected in La Réunion, La Possession, Ravine à Malheur, alt. 550 m, 20°55'32"S/55°22'46"E.

Biology (plate 4: figs 17a–18): The larvae feed inside of the fruits of its hostplant. The mature larvae (fig. 17a) partly quit the fruit for pupation though many pupated inside the ripening fruits (fig. 17b).

About 1/3 of the eclosed adults were pretty worn but fully functional. Five specimens had almost no scales on the wings and abdomen. I believe that those specimens might have pupated inside the fruits and might have lost their scales in dried fruits or on eclosure.

There seems to be more than one generation per fructification period. I collected some 20 fruits in early July from which one specimen eclosed (09-vii-2015). Later, at around mid-July I collected the remaining fruits of the same bush (estimated 120–150 berries) from which another 55 specimens were bred between 07-viii and 23-viii-2015. The following year, in 2016, the same plant carried only a few shrinkled berries (approx. 15) from which I bred three supplementary specimens (06-ix-2016).

Holotype: male, 07-viii-2015, e.l. *Pittosporum senacia*, numbered RE-2016 in SDEI - Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany.

Paratypes: 17 specimens, both sexes dissected, in SDEI, Müncheberg, Germany:

15 specimens, both sexes, in Naturalis Biodiversity Center, Leiden, Netherlands;

Dates of paratypes: 1 specimen: 09-vii-2015, all remaining specimens between 07 and 23-viii-2015.

Parasites: one specimen was parasited by a Braconidae: *Bracon* spec. (identification: Pascal Rouse, France).

Gelechiidae

Idiophantis croconota MEYRICK, 1918

Description: Wingspan: 13.5–14.5 mm (plate 6: figs 21–23). Forwings are dark brown with a large ochreous yellow dorsal stripe, a black apical dot and whitish longitudinal apical mark.

The abdomen of the male has a coremata on the eight segment. Male genitalia: plate 6: figs 25–25b.

This species was described by a single female specimen from Antananarivo/Madagascar (MEYRICK, 1918) and

had not yet been illustrated, nor recorded outside of Madagascar.

Biology: Hostplants are *Syzygium cumini* (L.) Skeels. and *Syzygium jambos* L. (Alston) (Myrtaceae). The larvae (fig. 24b) ties two opposite leaves together and feed inside. The pupae (fig. 24a) are cream-whitish and its reddish eyes are well visible. It pupates between the tied leaves. Pupal stage: 14 days.

Most probably this is an introduced species, both food plants are considered being introduced species to the Malagasy region (LAVERGNE, C., 2011).

In La Réunion this species does not seem to feed on other endemic *Syzygium* ssp., nor other Myrtaceae.

The specimens at light were all collected in Réunion, La Possession, alt. 400 m. Most specimens bred from larvae were collected in the same town at an altitude of 550 m, 20°55'32"S/55°22'46"E, one specimen at an altitude of approximately 20 meters in Saint-Paul on *Syzygium cumini*.

Material examined: 23-ix-2013 (e.l.#247- *Syzygium cumini*, St. Paul, alt. 20 m), 02-i-2014 (e.l.#122- *Syzygium jambos*), 16-vi-2014 (e.l.#219- *S. jambos*), 23-x-2014, 13-xi-2014, 14-xi-2014, 16-xi-2014 (e.l.#289- *S. jambos*, slide RE-1382, male), 21-xi-2014 (e.l.#303- *S. cumini*), 23-i-2015, 24-i-2015 (slide RE-1520, female), 11-ii-2015, 15-ii-2015, 21-ii-2016 (slide RE-1516, female), 21-ii-2015 (slide RE-1589, male), 20-iv-2015 (2 specimen), 24-iv-2015, 13-v-2015, 13-viii-2015 (e.l.#461B- *S. jambos*), 22-viii-2015 (e.l.#461B- *S. jambos*), 03-xii-2015 (e.l.#521- *S. jambos*), 06-ii-2016, 15-ii-2016 (2 specimen), 23-iv-2016, 19-viii-2016.

Distribution: Madagascar and new record for La Réunion.

Parasites: From one larva found on *Syzygium jambos* was bred a Braconidae, *Wilkensonellos* spec., that might be an undescribed species (determination: Pascal Rouse, France). Though it might have parasitized also another species that was bred from the same lot: *Macarostola eugeniella* (VIETTE, 1951) (Gracillariidae) and for the moment I cannot attribute it with certainty to a species.

Remarks: I would like to thank Dr. David Lees (BMNH) for allowing me to study the types of several *Idiophantis* species, including *Idiophantis croconota* (labeled: NMMUK010304534; Abdomen missing; *Idiophantis croconota* MEYR., E. Meyrick det., in Meyrick Coll.; Meyrick Coll., BM 1938–290; Antananarivo, Madagascar, M. II; Holotype).

Twelve specimens (some raised from larvae) were placed at the same museum in July 2016 for thanking Mr Lees and the British Museum for their frequent help and efforts.

Two additional specimens were also deposited at the ZMHB - Zoologisches Museum der Humboldt Universität, Berlin in June 2016 for study to Dr. Mey.

Tineidae

Amphixystis siccata (MEYRICK, 1910)*Amphixystis reunionella* GUILLERMET, 2011, syn. nov.

Description (plate 7: figs 26–27; 30): This species has a wingspan of approx. 8.0–8.5 mm. Forewings are whitish-grey with blackish markings that show to be a little variable. In many specimens also the left and the right wing are marked differently (see figs 26; 30). Particularly the blackish strikes on costa show some variations in position and length.

This species, described from Mauritius was illustrated by ROBINSON & TUCK (1997). Thanks to Dr. David Lees of the BMNH I could study its lectotype (NHMUK010304529, labeled: *Oinophila siccata* 2/2 Meyr., E. Meyrick det. in Meyrick Coll.; Meyrick Coll. 1938–290; Mauritius NM.08; Lectotype) and it shows to be identical to specimens that I collected in Réunion from where this species was recently redescribed as *Amphixystis reunionella* GUILLERMET, 2011. Type and female genitalia of *A. reunionella* were illustrated in its original publication.

These illustrations and the female genitalia from the specimens from La Réunion (figs 28–29) shows the fully identity, this is why *Amphixystis reunionella* GUILLERMET, 2011 is a synonym of *Amphixystis siccata* (MEYRICK, 1910).

Material examined: 19 specimens collected and examined: 07-xii-2014 (female, slide RE-1411), 15-iv-2015, 16-iv-2014, 21-iv-2014, 13-v-2015, 18-v-2015, 15-vi-2015 (male, slide RE-1881), 02-ix-2015, 10-ix-2015, 13-xi-2015, 24-xii-2015, 15-ii-2016 (2 specimen), 20-ii-2016, 22-ii-2016, 03-iii-2016, 05-iii-2016, 06-iii-2016, 17-iii-2016 (all specimens in La Réunion, La Possession, 400 m).

Seven specimens (two dissected) were given to the collections of the BMNH in July 2016.

Distribution: Mauritius and Réunion.

Amphixystis syntricha (MEYRICK, 1910)

This is a common species in natural habitats in Réunion. In February & March 2016 I bred eight specimens from larvae collected in La Réunion, La Montagne, alt. 900 m on *Pandanus montanus* BORY (Pandanaceae).

Distribution: La Réunion, Mauritius, South Africa.

Wingspan: 13–14 mm; adult (plate 8: figs 34–35); male genitalia (plate 8: figs 38–38b); larva and pupa (plate 8: figs 36–37).

Hostplant: *Pandanus montanus* BORY (Pandanaceae).

Erechthias zebrina (BUTLER, 1881)

Wingspan: 7.0–9.5 mm; adult (plate 7: figs 31–32); male genitalia (plate 7, figs 33–33a).

This is another common species that astonishingly had not yet been recorded in La Réunion where it seems to be a rather common moth.

Biology: Its biology remains unknown. All my recorded specimens were caught inside of my living room, mostly on or around some leather furniture. The only other biological substrates in the room are papers (journals & books), wooden furniture, dried flowers and cotton material (curtains & rugs).

This species seems to be present throughout the year and I only collected a few samples for the determination of the species.

Collection dates: 02-vii-2015, 11-viii-2015 (male, slide RE-2038), 26-viii-2015, 22-ix-2015, 23-iv-2016, 07-iii-2016 (3 pcs.), 11-iii-2016 (4 pcs.), 15-iii-2016 (female, slide RE-2699), 25-iii-2016.

Distribution: A widespread species, known from Australia (ROBINSON & NIELSEN, 1993), China, Fiji, Hawaii, India, Indonesia, Samoa, South America, Sri Lanka, West Indies (ZIMMERMAN, 1978). Records from Africa include the Republic of Congo, Mauritius and Seychelles (DE PRINS & DE PRINS, 2016), recorded new to La Réunion.

Remarks: ZIMMERMAN (1978: 365–368) illustrated its head, male & female genitalia as well as the wing venations.

Opogona incorrectella VIETTE, 1957

Description: Wingspan: 7–8 mm; forewings are dark blackish-violet with a silvery iridescent-metallic transverse line near middle and two similar marks in the apical third. A small silvery area at base. Adult (plate 9, figs 39–40); female and male genitalia (plate 9: figs 41–42b).

I could collect numerous specimens in La Réunion, La Possession, alt. 400 m on: 15-x-2014 (four specimens), 26-x-2014, 06-xi-2014 (female, slide RE-1369), 11-xi-2014 (three specimens), 29-xi-2014, 17-xii-2014, 09-i-2015, 26-xi-2015 14-xii-2015, 29-i-2016, 16-ii-2016, 07-vii-2016, 04-viii-2016 and 30-ix-2016 and two specimens in Mauritius, Blackriver, alt. 20m, 20°22'5"S/57°22'47"E on 08-vi-2016.

J. Rochat had observed this species at Bois Court (Réunion), 21°11'44"S/55°31'50"E (alt. 1390 m) on 17-xii-2006, Grande Chaloupe (CD41) on 19-v-2009, Piton Montvert on 17-x-2011 and Trois Bassins on 07-x-2016 (pers. comm., 2016).

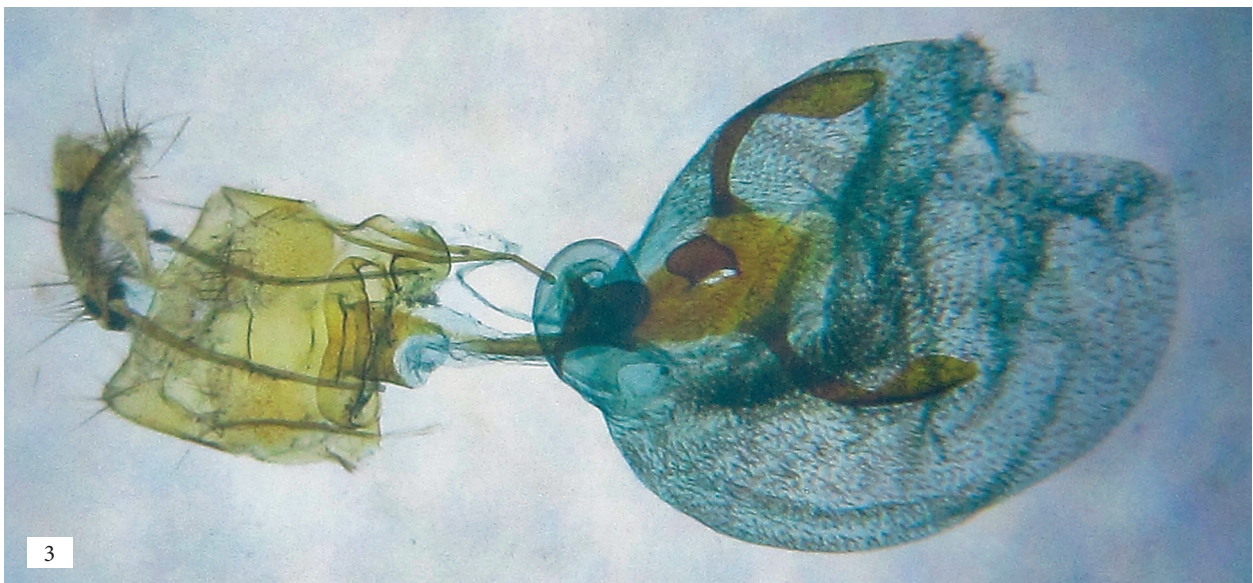
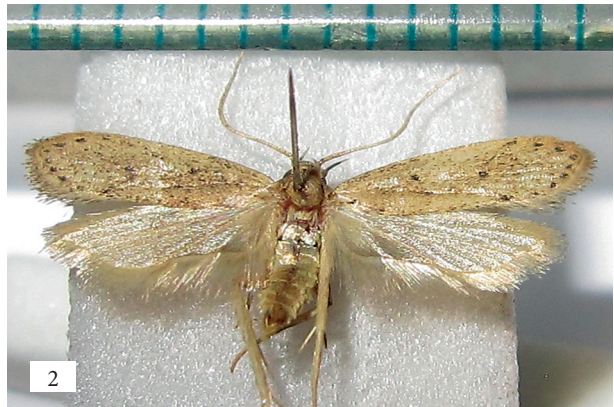


Plate1: Figs 1–4b: *Autosticha pelodes* (MEYRICK, 1883). 1: adult; 2: adult, wingspan 13.5 mm; 3: female genitalia; 4a: male genitalia; 4b: aedeagus.

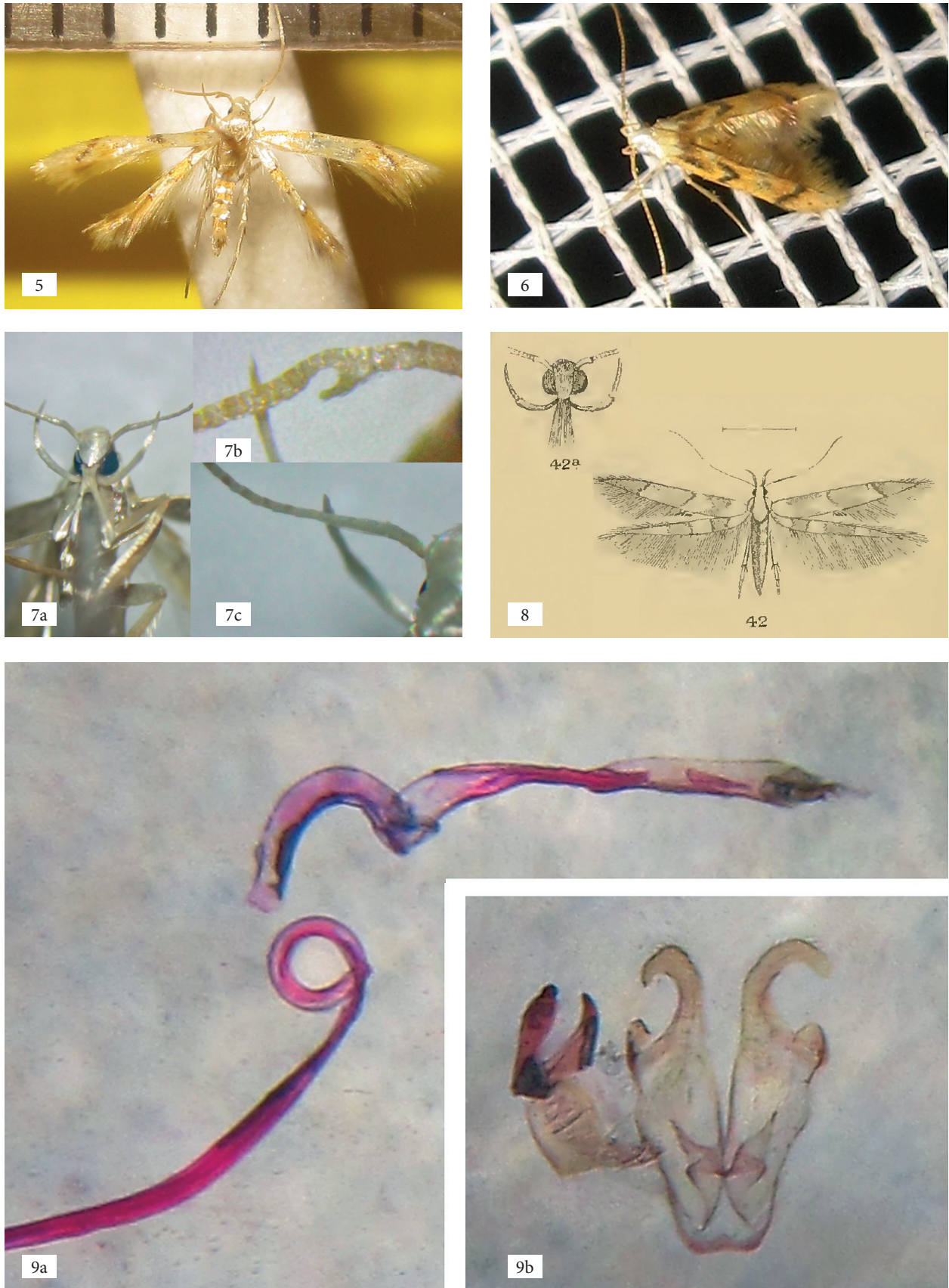


Plate 2: Figs 5–7c: *Idioglossa bigemma mascarena* sspec. nov. 5: adult, male, wingspan 8 mm; 6: adult; 7a: underside, female; 7b: antennae, male; 7c: antennae, female.

Fig. 8: *Idioglossa bigemma*, after WALSINGHAM, 1881 (10 mm).

Fig 9: *Idioglossa bigemma mascarena* sspec. nov. 9a: male genitalia; 9b: aedeagus.

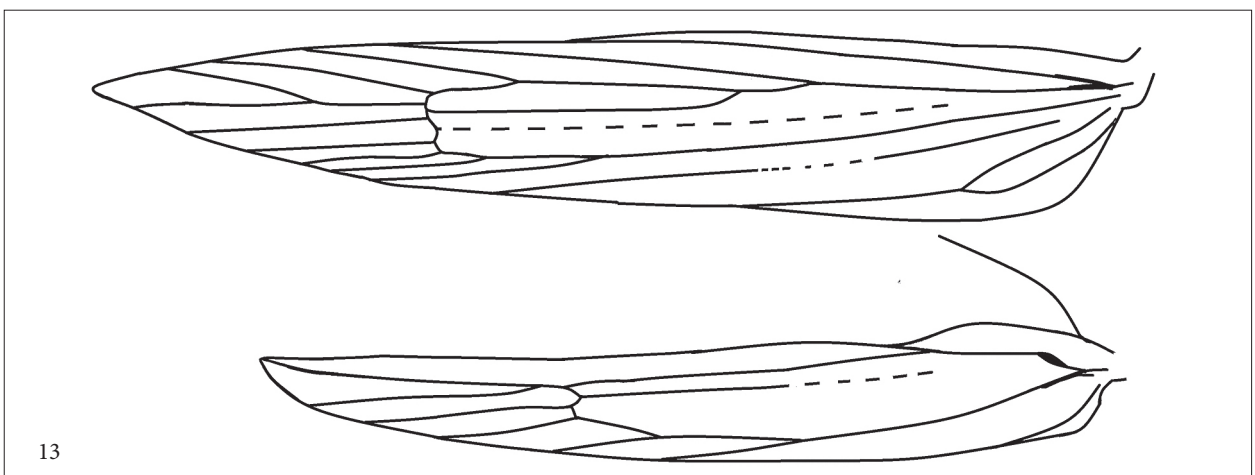


Plate 3: Figs 10–12: *Peragrarchis martireae* spec. nov. 10: adult, wingspan 16 mm; 11: adult; 12a: male genitalia; 12b: aedeagus. Fig. 13: *Epermenia senaciae* spec. nov. wing venations.



Plate 4: Figs 14–18: *Epermenia senaciae* spec. nov. 14: adult, wingspan 9 mm; 15: adult; 16: adult; 17a: larvae; 17b: pupae in fruit; 17c: pupae; 18: *Pittosporum senacia* with fruits.

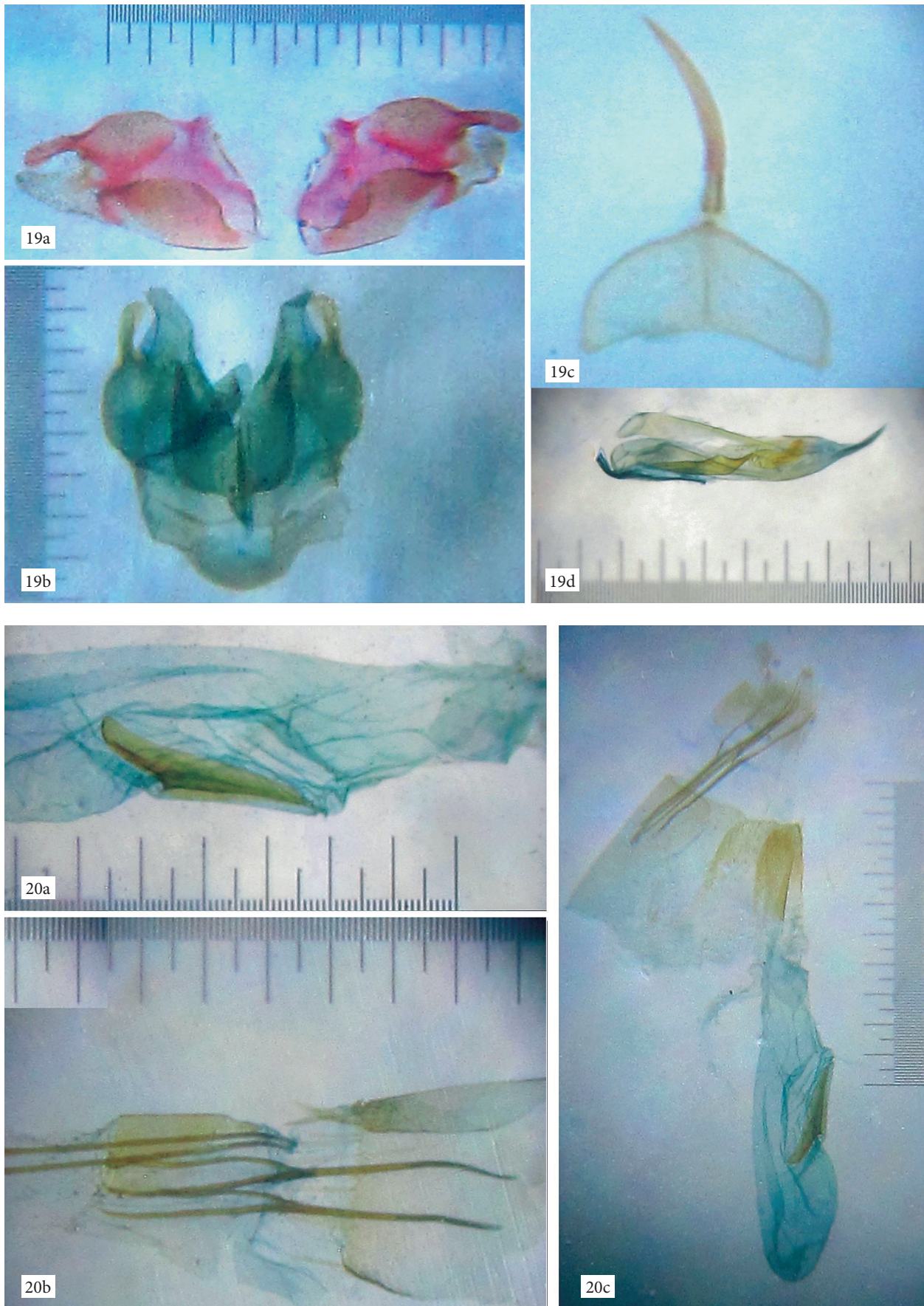


Plate 5: Figs 19–20: *Epermenia senaciae* spec. nov. 19a: male genitalia, valvae, pressed; 19b: male genitalia, unpressed; 19c: uncus-tergumen complex (not in scale); 19d: aedeagus; 20a: female genitalia, detail signa; 20b: female genitalia, detail apophyses; 20c: female genitalia.

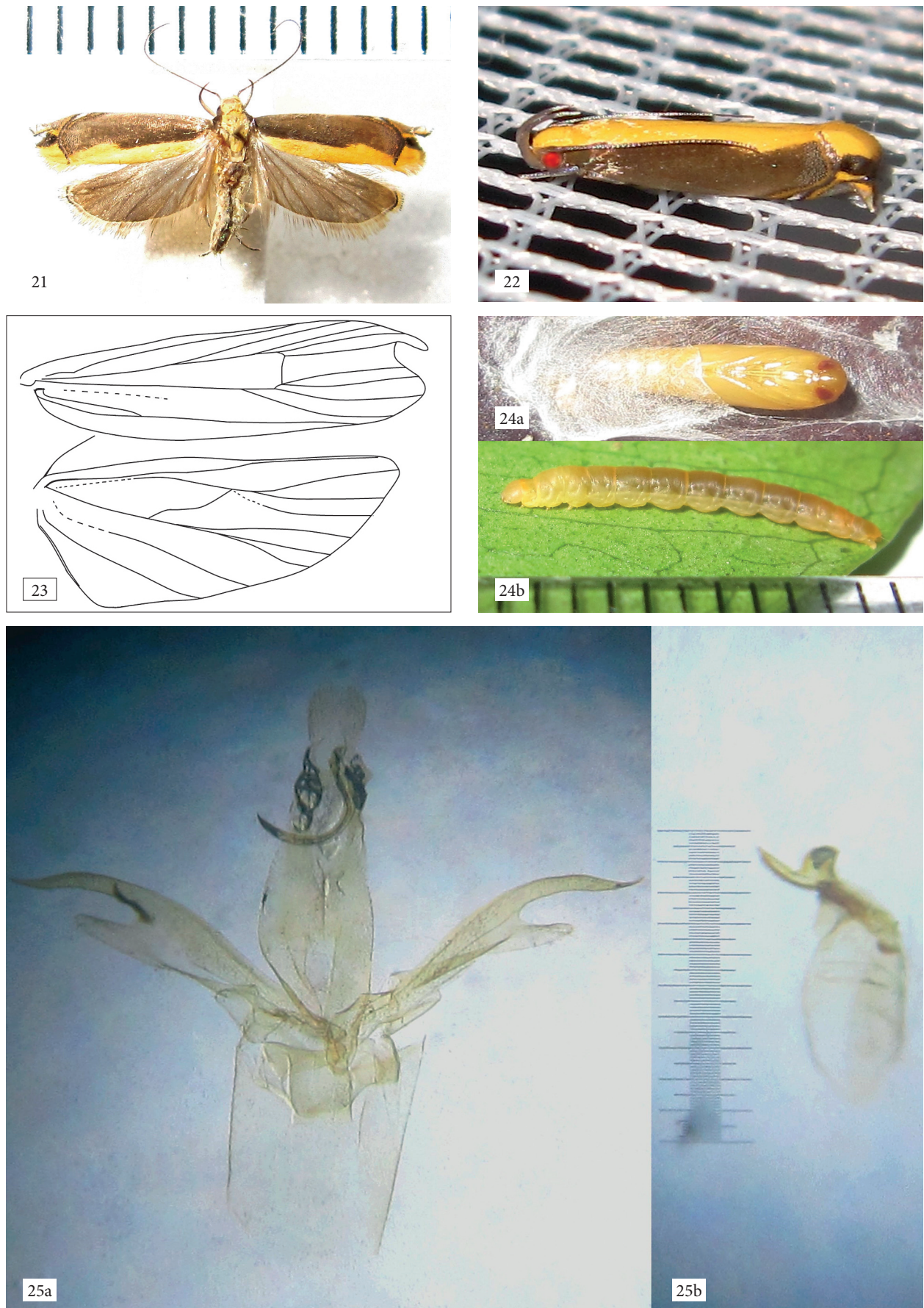


Plate 6: Figs 21–25: *Idiophantis croconota* MEYRICK, 1918. 21: adult, wingspan 13.5 mm; 22: adult; 23: wing venations; 24a: pupae; 24b: larvae on *Syzygium cumini*; 25a: male genitalia; 25b: aedeagus.

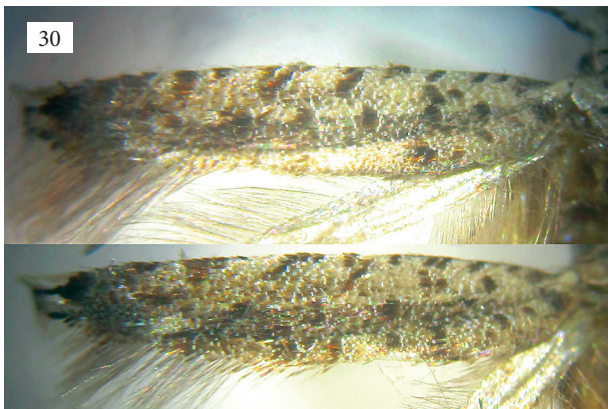
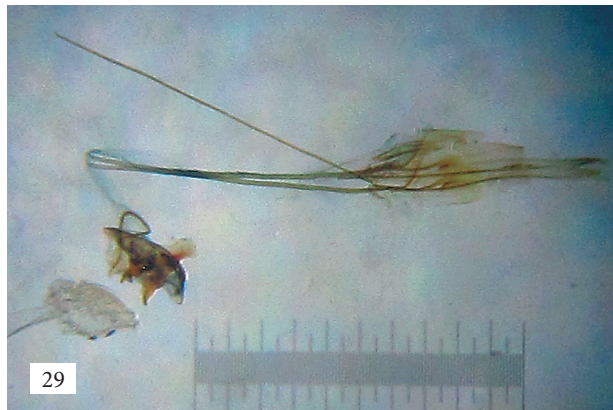
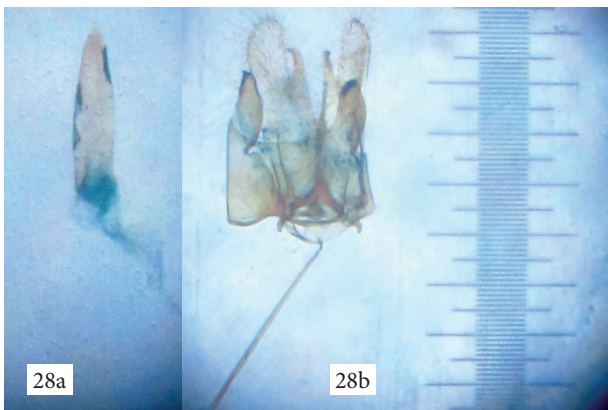


Plate 7: Figs 26–30: *Amphixystis siccata* (MEYRICK, 1910). 26: adult, wingspan 8.5 mm; 27: adult; 28a: aedeagus; 28b: male genitalia; Fig. 29: female genitalia; 30: left and right (mirrored) wing.
 Figs 31–33: *Erechtiastis zebrina* (BUTLER, 1881). 31: adult; 32: adult; 33a: aedeagus; 33b: male genitalia.

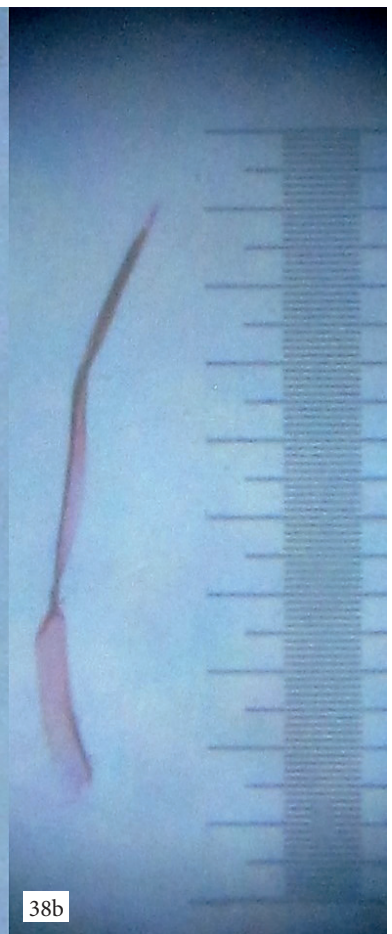
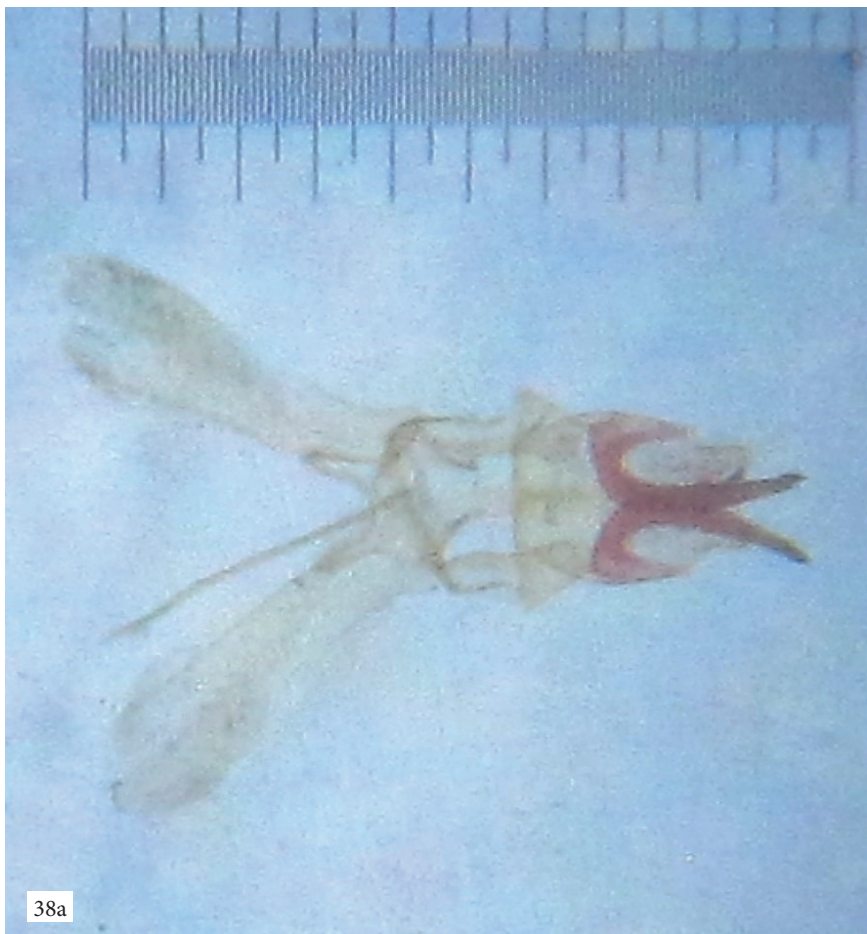


Plate 8: Figs 34–38: *Amphixystis syntricha* (MEYRICK, 1910). 34: adult, wingspan 13 mm; 35: adult; 36: larvae; 37: pupae; 38a: male genitalia; 38b: aedeagus.

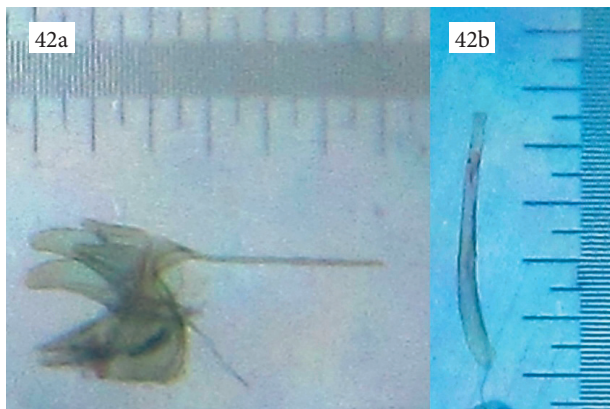
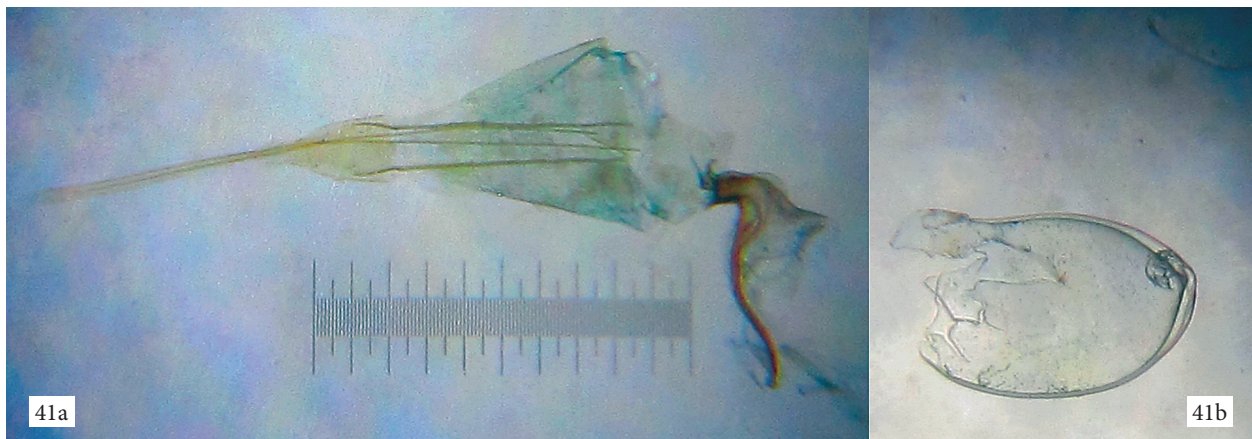


Plate 9: Figs 39–42: *Opogona incorrectella* VIETTE, 1957. 39: adult, Réunion, female; 40a: adult, Réunion; 40b adult, Mauritius; 41a: female genitalia; 41b female genitalia, corpus bursae right, detached; 42a: male genitalia; 42b: aedeagus. Figs 43–45: *Protaphreutis borboniella* (BOISDUVAL, 1833). 43: adult, male, ex-larvae; 44: larvae; 45: adult.

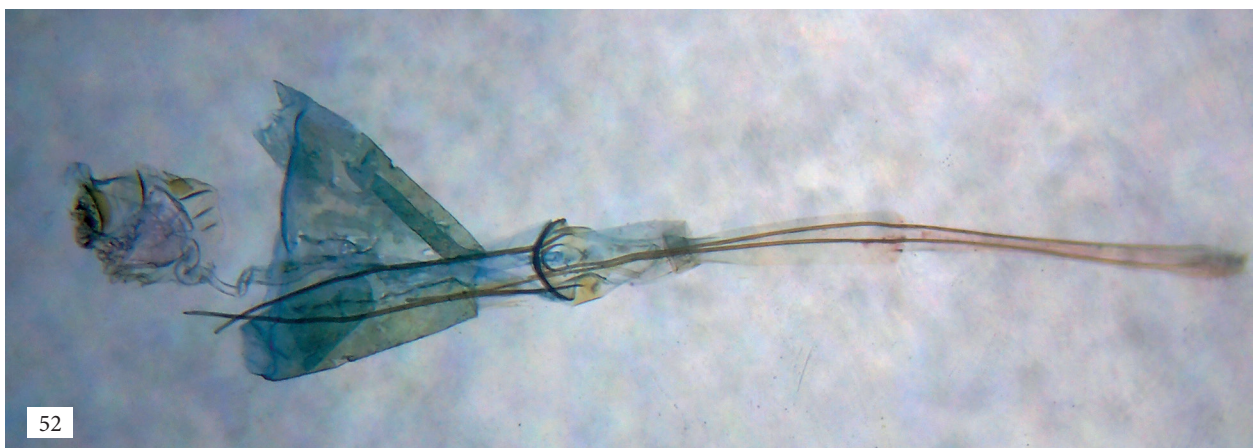
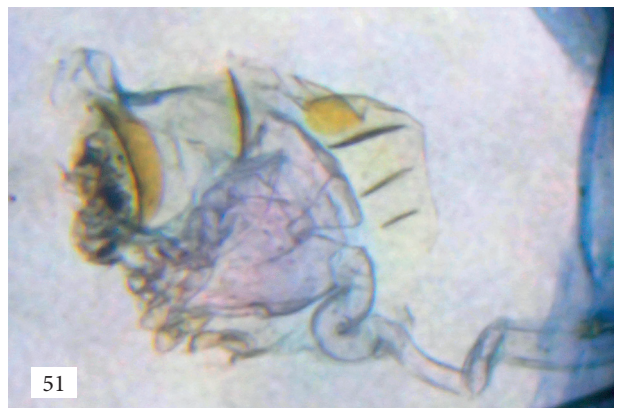
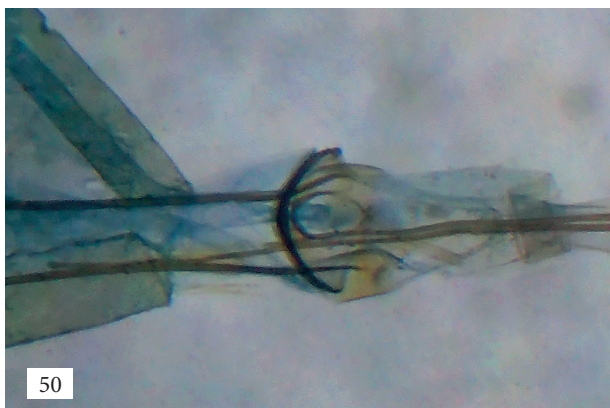
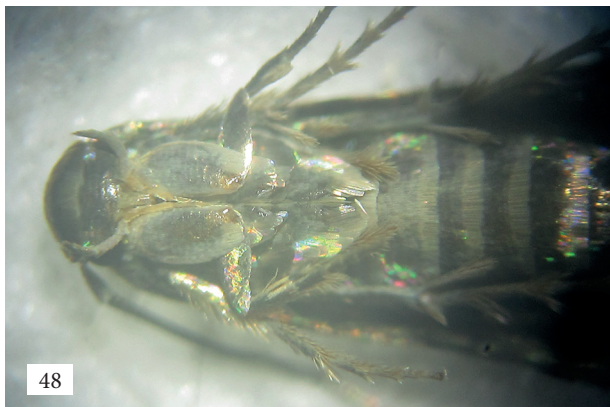


Plate 10: Figs 46–52: *Opogona transversata* spec. nov. 46: adult, holotype, female, wingspan 9.5 mm; 47: adult, holotype; 48: head, underside; 49: adult, holotype; 50: ostium; 51: corpus bursae; 52: female genitalia.

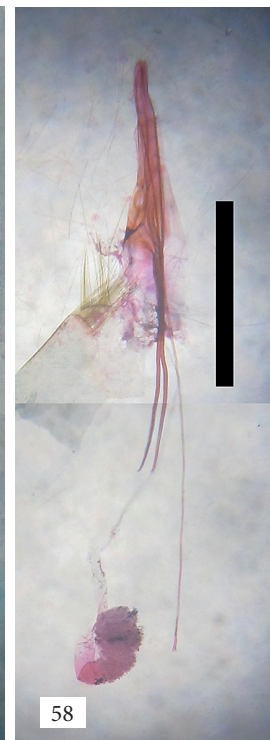
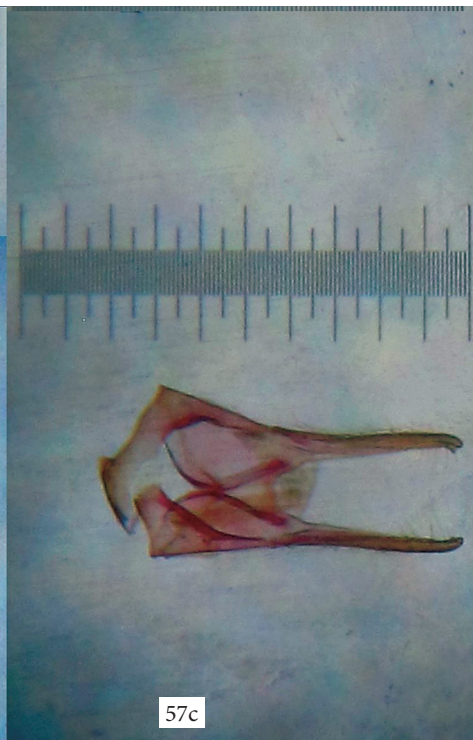
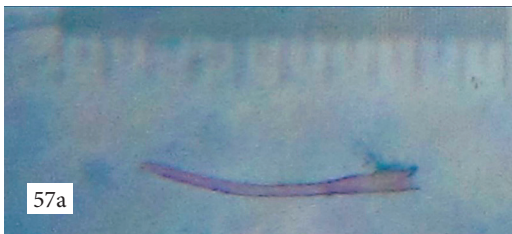
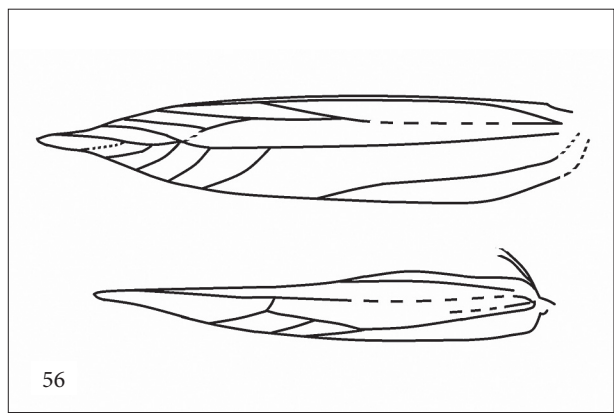


Plate 11: Figs 53–58: *Tineovortex flavilineata* spec. nov. 53: adult, wingspan 13 mm; 54: adult; 55: head, underside; 56: wing venations; 57: male genitalia; 57a: aedeagus; 57b: valvae & vessica; 57c: uncus/tegumen complex; 58: female genitalia (space bar = 1 mm).

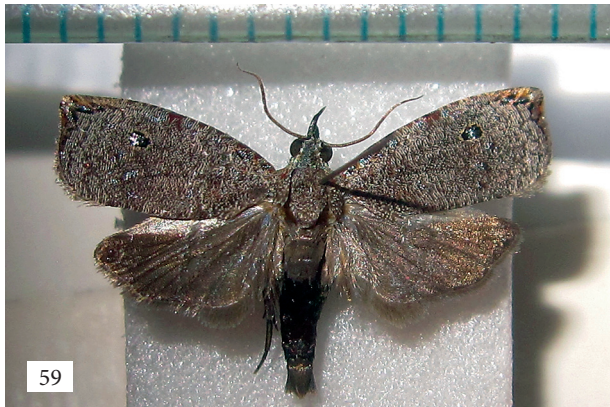


Plate 12: Figs 59–63: *Cosmorrhyncha ocellata* (MABILLE, 1900). 59: adult, Réunion, e.l. *Tamarindus indica*, wingspan 13 mm; 60: adult, Mauritius, e.l. *Acalypha indica*; 61: caterpillar; 62: pupal case, on *Acalypha indica* leaf; 63: male genitalia, aedeagus detached on the left.

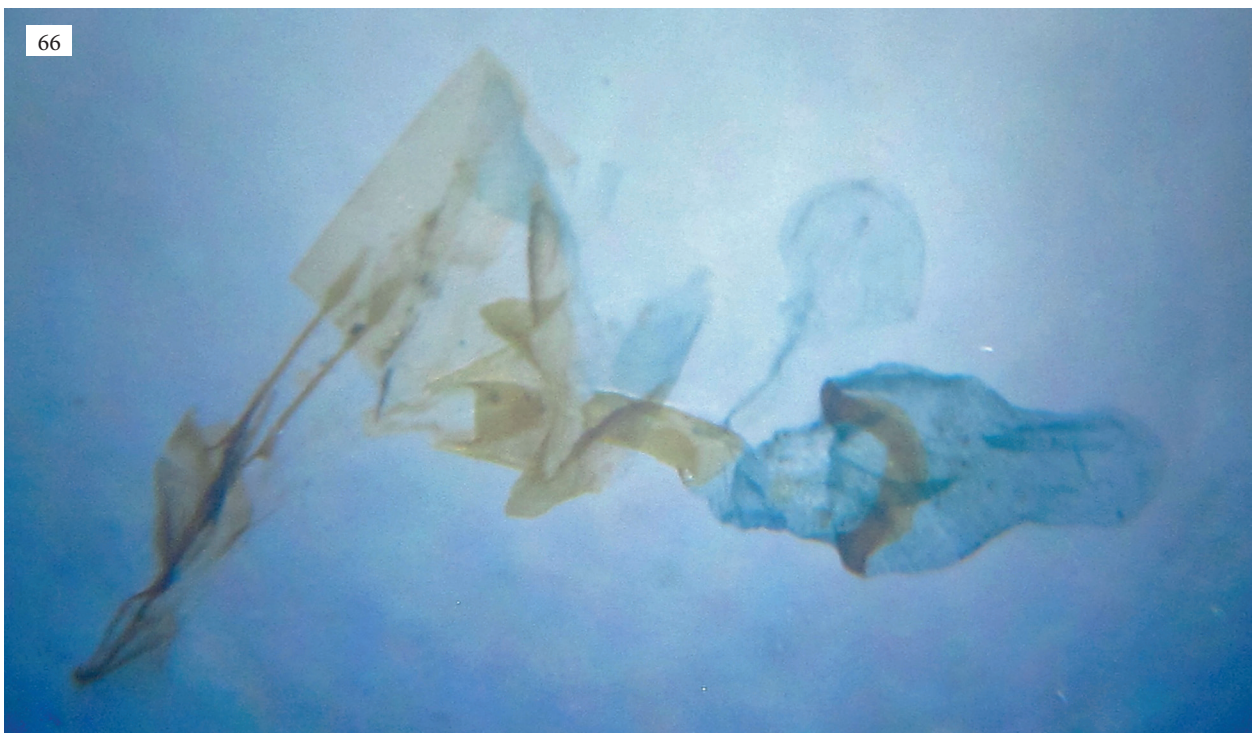
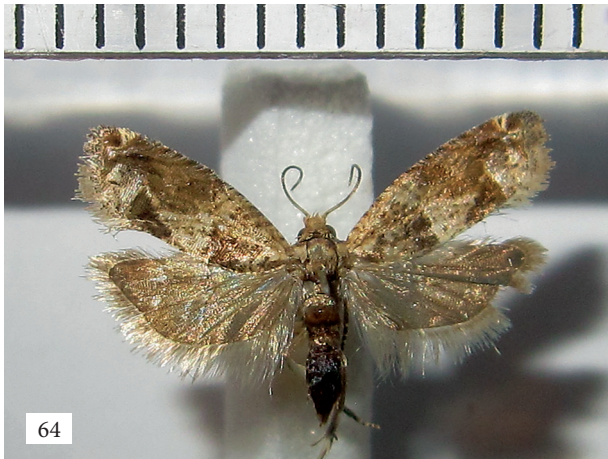


Plate 13: Fig. 64: *Crocidosema plebejana*, adult, e.l. *Sida rhombifolia*. Fig. 65: *Crocidosema lantana*, adult, e.l. *Lantana camara*. Fig. 66: *Crocidosema plebejana*, female genitalia. Fig. 67: *Crocidosema lantana*, female genitalia.

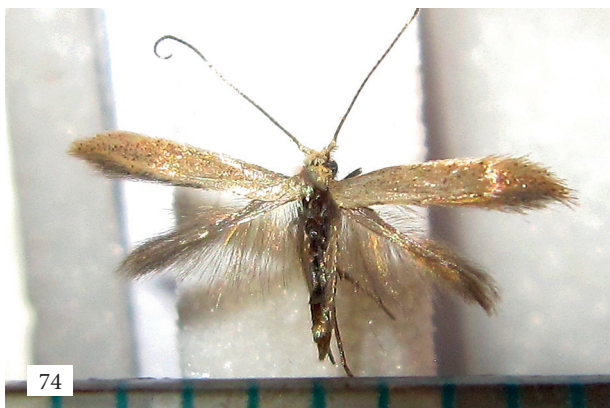
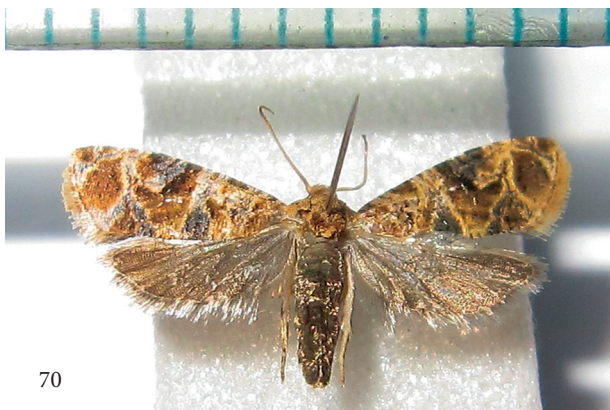


Plate 14: Figs 68–69: *Episimoides erythraea*.

Figs 70–72: *Lobesia vanillana*. 70: adult; 71: adult; 72: caterpillar feeding on mildew.

Fig. 73: *Crocidosema lantana*, in situ.

Figs 74–75: *Bedellia somnulatella*.

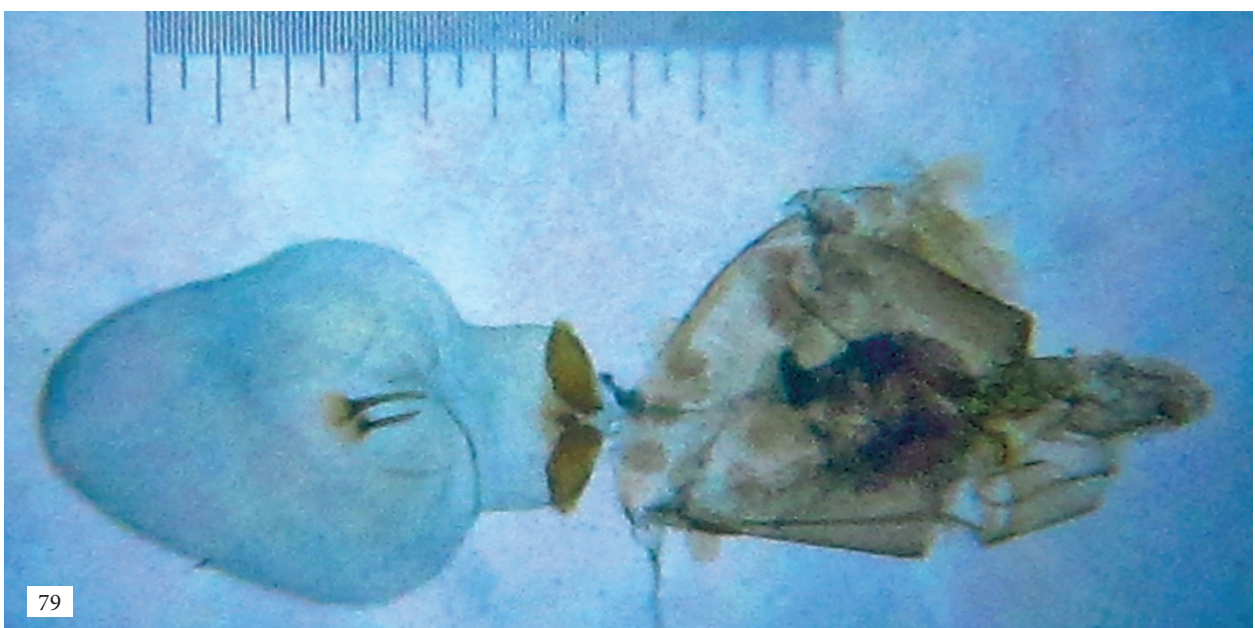
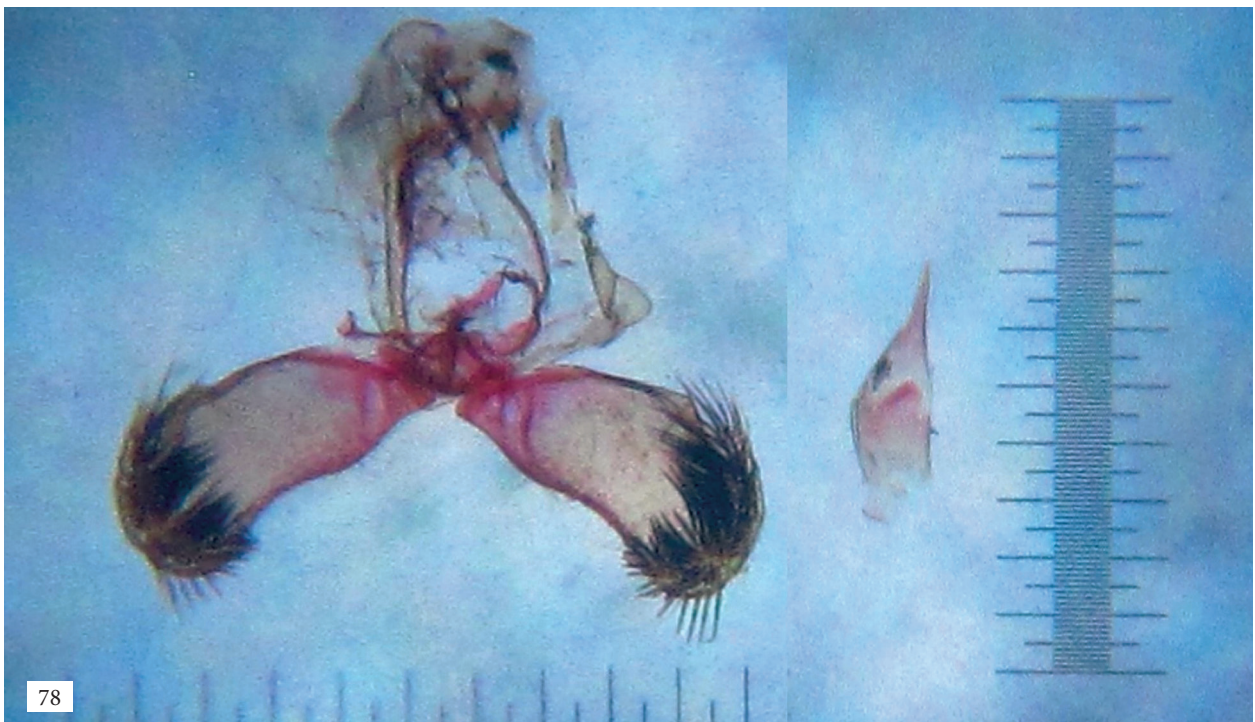


Plate 15: Figs 76–79: *Microsarotis lygistis* (DIAKONOFF, 1977). 76: adult, wingspan 10 mm; 77: pupae, on fruit; 78: male genitalia; 79: female genitalia.

Hostplant: One specimen was bred from inflorescence of *Pithecellobium dulce* (ROXB.) BENTH (Fabaceae) on 30-ix-2016.

Distribution: La Réunion (type locality) and new record for Mauritius.

Remarks: From the description of *Opogona iridogramma* MEYRICK, 1924 from Rodrigues island I learnt that the description of that species matches perfectly also to *Opogona incorrectella* VIETTE, 1957.

This species was described by MEYRICK (1924) after a female with a wingspan of 7mm as follows:

“Head and thorax dark violet-fuscous, face and fillet pale shining ochreous. Forewings lanceolate; dark purple-blue-fuscous; slender straight transverse pale iridescent-metallic line before middle, a similar transverse mark from costa at 2/3, a dot on costa before apex, and one on tornus: cilia dark fuscous. Hindwing and cilia rather dark bronzy-fuscous. Fore-wings beneath strongly iridescent.”

No image of *Opogona iridogramma* was published and the type was not available. Further studies will be necessary to clarify, whether these two taxa are synonyms.

Opogona transversata spec. nov.

Description (plate 10: figs 46-49): Wingspan: 9.5 mm. Antennae blackish-brown, a little broadend at base, about 3/4 of forewings length. Short palpi, dark grey-brownish. Head and shoulders dark purplish, almost blackish. Thorax grey-brownish, abdomen dark grey-brownish, underside silvery-white ringed blackish (fig. 48). Legs grey-brownish, mixed with some grey-silvery iridescent scales and bristles. Forewings: deep purplish with an iridescent, metallic shine, a broad yellow transverse line at 2/5. Base of dorsum a little descaled, brownish-silvery. Under-side brownish. Hindwings: grey-brownish, 2 frenulae in female.

Male genitalia: unknown.

Female genitalia (plate 10: figs 50–52): stout ductus bursae, about 2.5 times of the length of corpus bursae; corpus bursae with six aligned signa, four smaller, two larger, somewhat of half-round shaped.

Holotype: female, collected at light, La Réunion, La Possession, alt. 400 m (20°55'37"S/55°21'45"E).

Distribution: La Réunion.

Etymology: Named after its yellowish transverse line.

Biology: Unknown.

Protaphreutis borboniella (BOISDUVAL, 1833)

1 male from larva on 07-iii-2016, slide RE-2513. Locality: La Réunion, La Possession, alt. 400 m.

Distribution: La Réunion, Madagascar, Mauritius.

Wingspan: 13 mm; adult (plate 9, figs 43, 45).

Biology: This species is a refusal feeder. Its larvae (fig. 44) was found in a deposit of a mixture of dog hairs, plant seeds, dust, earth and dead leaves.

Tineovortex flavilineata spec. nov.

Description (plate 11: figs 53–56): Wingspan 12–13 mm. Head tufted greyish, antennae above 1, filiform, simple, enlarged at base. Fron whitish, eyes black. Palpi whitish, recurved (fig. 55).

Forewings (fig. 53) elongated, lanceolate, costa gently arched. Ground colour greyish with some iridescent reflexions (fig. 54). A white band along costa to apex, broken at 3/4 by a greyish strike, a yellow longitudinal line from base to apex along the white band and a second yellow longitudinal line, a little arched, joining the first shortly before apex. A small, round blackish apical dot. Tornus marked narrowly whitish. Cilia grey, hindwings bronzy-grey, female with two frenulae, one in male.

Male genitalia (plate 11: figs 57a–57c): A pair of separated uncal lobes, gnathos absent, strongly sclerotized. Aedeagus (plate 11: fig. 57b) long and slender, without cornuti.

Female genitalia (plate 11: fig. 58): Apophyses anteriores and posteriores long and stout, long ductus bursae, simple corpus bursae, reniform without signa.

Holotype: male, 04-vii-2015, La Réunion, La Possession, alt. 400 m (20°55'37"S/55°21'45"E) numbered RE-1941, in Naturalis Biodiversity Center, Leiden, Netherlands.

Paratypes: 6 males & 7 females

Same location as holotype, La Réunion, La Possession, alt. 400 m (20°55'37"S/55°21'45"E) with the following dates:

Males: 17-v-2015, (slide RE-1833), 19-viii-2015, (slide RE-2072), 10-ix-2015, 19-xii-2015, 28-i-2016 and 01-iii-2016; **Females:** 20-i-2015 (slide RE-1486), 28-iv-2015, 23-vii-2015 (slide RE-1984), 12-ii-2016, 18-ii-2016, 03-iii-2016 and 1 female, 25-iv-2015 from La Réunion, La Montagne, altitude 700 m.

An additional specimen was found in Mauritius, Black-river, 20°22'5"S/57°22'47"E, alt. 20 m on 06-vi-2016.

Distribution: La Réunion & Mauritius.

Etymology: Named *flavilineata* in honor of my sister-in-law, Flavie Mariamon from La Montagne, at whose place I found one of the first specimens but also for its recognizable yellow (flavi) lines (linea).

Tortricidae

Cosmorrhyncha ocellata (MABILLE, 1900)

I find this species regularly at light and bred more than 20 specimens from larvae (plate 12: fig. 61) on *Tamarindus indica* L. (Fabaceae) (plate 12: fig. 59) in the months of April, May and June 2015 (all collected from the same tree, located in La Reunion, La Possession, Ravine à Malheur, alt. 200 m, 20°55'33"S/55°21'3"E). MARTIRÉ & ROCHAT (2008) raised it on *Desmodium intortum* (Mil.) URB. (Fabaceae).

In Mauritius I found some empty pupal cases (plate 12: fig. 62) and a pupa of this species also on *Acalypha indica* L. (Euphorbiaceae) in Blackriver, Vanilla House, 20°22'5"S/57°22'47"E, alt. 20 m.

An adult eclosed already on the following day, 08-vi-2016 from the collected pupa. Additional specimens were collected at the same station at light and also in Blackriver, alt. 55 m, 20°21'31"S/57°24'27"E on 12-vi-2016.

Wingspan 13 mm; adult: (plate 12: fig 59-60); male genitalia (plate 12, fig. 63).

Hostplants: *Tamarindus indica* L., *Desmodium intortum* (MIL.) URB. (Fabaceae), *Acalypha indica* L. (Euphorbiaceae).

Distribution: Comoros, La Reunion, Madagascar and new record for Mauritius.

Parasites: Three specimens of a Braconidae, *Phanerotoma leucobasis* KRIECHBAUMER, 1894 were bred from this species on 15. and 19.vi.2016 (Identification: Pascal Rousse, France).

Remarks: There was a former record of the neotropical species *Cosmorrhyncha ocelliferana* (WALKER, 1863) from Mauritius (DE PRINS & DE PRINS, 2016). Most African records of this neotropical species had been invalidated since - and I believe that these species were also confused in Mauritius.

Crociosema lantana BUSCK, 1910

Wingspan: 12–13 mm; adult (plate 13: fig. 65; plate 14: fig. 73); female genitalia (plate 13: fig. 67).

Two females raised on the flowers of *Lantana camara* L. (Verbenaceae) 01-xi and 22-xi-2015 collected in La Réunion, La Possession, alt. 550 m, three specimens at light: 10-v-2015, 02-v-2016, 13-v-2016.

Also present in Mauritius (one specimen collected in Blackriver, 10-vi-2016, alt. 20 m).

Distribution: North America & Mexico, Australia (introduced, COMMON, 1957), Kenya, Mauritius, Réunion, South Africa, Sri Lanka (DIAKONOFF, 1982). New records for La Réunion and Mauritius.

Crociosema plebejana ZELLER, 1847

Wingspan: 12–13 mm; adult (plate 13: fig. 64); female genitalia (plate 13: fig. 66).

This small species is common at light in Réunion. One female was bred from larvae on 07-xi-2015 from *Sida rhombifolia* L. (Malvaceae). Locality: Réunion, La Possession, alt. 400 m.

Other specimens were collected at light at the same locality on 20-x-2014, 02-v-2016 and 13-v-2016.

I also found this species in Mauritius at light in Flic-en-Flac, 12-vi-2016.

Distribution: Cosmopolitan in tropical regions, incl. Madagascar, Mauritius, Seychelles, new record for La Réunion.

Episimoides erythraea DIAKONOFF, 1957

Wingspan: 15–16 mm; adult (plate 14: figs 68–69).

Three specimens bred from larvae on *Hypericum lanceolatum* LAM. (Hypericaceae) on 09/12/19-xi-2015, collected in Réunion, La Montagne, alt. 800 m.

Four specimens (one from light) were deposited at Naturalis, Netherlands in July 2016.

Distribution: La Réunion.

Lobesia vanillana (De Joannis, 1900)

Wingspan: 11.5 mm; adult (plate 14: figs 70-71).

A common species at light, 4 specimens I bred from larvae collected at the same site: Réunion, La Possession, alt. 200 m, 20°55'33"S/55°21'3"E.

Distribution: Kenya, La Réunion, Madagascar, Nigeria, Seychelles, Tanzania.

Biology: I could raise this species from larvae feeding on a mildew (Erysiphaceae) (plate 14: fig. 72) growing on the leaves of *Euphorbia heterophylla* (Euphorbiaceae), 15-iv-2015 (specimen put into the disposition of the

BMNH in June 2015) as well as from the inflorescence of *Tamarindus indica* L. (Fabaceae), 13-v-2015 and *Cocos nucifera* L. (Arecaceae), 17 & 22-vii-2016.

Microsarotis lygisticis (DIAKONOFF, 1977)

Wingspan: 10 mm; adult (plate 15: fig. 76); male genitalia (plate 15: fig. 78); female genitalia (plate 15: fig. 79); pupa (plate 15: fig. 77).

Six specimens ex-larvae: 26-ii-2015, 15-iii-2015, 19-iii-2015, 21-iii-2015 (female, slide RE-1673), 15-iv-2015 (male, slide RE-1779), 28-iv-2015.

Locality: Réunion, La Possession, Ravine à Malheur, alt. 100 m.

Five specimens were deposited with Naturalis, Netherlands in July 2016.

Biology: Hostplant: *Bauhinia monandra* KURZ (Fabaceae). This species was known by a female only, raised from fruits of *Bauhinia* spec. by J. ETIENNE in 1976.

I bred this species on *Bauhinia monandra* KURZ (Fabaceae), larvae fed on both: leaves (five specimens) and fruits (one specimen, fig. 77). Notable that all *Bauhinia* species found in La Réunion are introduced. This is certainly not an endemic species of Lepidoptera.

Distribution: La Réunion.

Acknowledgements

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