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A contribution to the knowledge of the slug moths (Zygaenoidea: Limacodidae) of the Maputo Special Reserve

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Abstract: This paper is the first comprehensive summary of the Limacodidae fauna of the Maputo Special Reserve in southern Mozambique, listing 18 species, eight of which are new records for the country. The lectotype of *Somara albicosta* Hampson, 1910 is designated. *Latoia albicosta* (Hampson, 1910) **syn. nov.** is synonymised with *Latoia intermissa* (Walker, 1865), and *Trogocrada dimorpha* Janse, 1964 **syn. nov.** is synonymised with *Trogocrada deleter* Tams, 1953. The paper is illustrated with 43 colour and 9 black and white diagnostic figures.

Key words: Taxonomy, faunistics, new records, species list, new synonymy, Afrotropics, Mozambique
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INTRODUCTION

The family Limacodidae, more commonly known as slug moths, consist of nearly 1700 species occurring mostly in tropical and subtropical regions (Nieukerken *et al*. 2011). De Prins & De Prins (2021) list 587 available species-group names including synonyms for the entire Afrotropical region. This particular family is one of the least studied in Africa: with the exceptions of a newly described genus from Zimbabwe (Mey 2018) and a new species from Yemen (Solovyev & Saldaitis 2010), Janse's (1964) review of Limacodidae remains the latest most comprehensive work on the family, although its coverage is restricted to South Africa. With regards to the Limacodidae fauna of Mozambique, 33 valid species of Limacodidae have currently been recorded in the country (De Prins & De Prins 2021), far fewer than the 103 species recorded by Janse (1964) for South Africa. Mozambique's entomological diversity is considered to be generally understudied (Sandramo *et al*. 2021), and there is currently a complete lack of specific literature on the Limacodidae of the country.

In order to obtain a clearer picture of the Lepidoptera fauna of Mozambique, a joint research project between the African Natural History Research Trust (ANHRT), the Museu de História Natural, Maputo (MNHM), and the National Administration of Conservation Areas (ANAC) was launched in 2016. Three consecutive sampling expeditions were undertaken between 2016 and 2018 to create a comprehensive knowledge of the Lepidoptera fauna of the Maputo Special Reserve. This research has already produced publications on *Tumicla* (Lithosiini, Arctiinae, Erebidae) (Volynkin & László 2018), Nolini (Nolinae, Nolidae) (László & Vetina, 2019), Cossidae (Yakovlev *et al*. 2020) Sphingidae (Bąkowski *et al*. 2020), and Notodontidae (László *et al*. 2021). This present paper aims to provide a first summary of the Limacodidae fauna of the Maputo Special Reserve based on the material collected between 2016 and 2018. Due to the lack of any revisional studies of African Limacodidae, many of the taxa referred to in this paper were verified by examination of type materials deposited in the NHMUK and MFN. Further taxonomic notes have been included where appropriate.

Maputo Special Reserve (MSR) covers a 77,400 ha area in southern Mozambique, adjacent to the border of South Africa, and has a coastal position with its highest prominence remaining below 50 m a.s.l. The reserve boasts rather diverse habitat types, harbouring a wide range of vegetation and endemic plants (Yakovlev *et al*. 2020), and is considered a Biodiversity Hotspot by the Critical Ecosystem Partnership Fund. The history of MSR is briefly summarised by László & Vetina (2019). The climate is subtropical, with a hot and rainy summer (September–April) and dry and cool winter (March–October) (Guldemond & van Aarde 2010). Further climatic details of the region can be found in Yakovlev *et al*. (2020).

METHODS AND MATERIALS

Sampling methods

Limacodidae specimens were sampled by various means of light trapping using a square ground-plan white tent illuminated by 125W Mercury vapour bulb, and automatic bucket traps equipped with 8 W actinic light tubes or LepiLED light source. Detailed information on the collecting sites can be found in Yakovlev *et al*. (2020). The collected material is deposited in the ANHRT and MNHM collections.

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Morphological studies
Genitalia dissections were required for the identification of some problematic species. The genitalia were dissected and stained with Eosin red and embedded in Euparal on microscope slides applying standard methods of preparation (Lafontaine & Mikkola 1987). Photos of adults were taken using a Nikon D90 camera equipped with a Nikkor AF Micro 60 mm lens. The genitalia preparations were photographed using a Canon EOS 700D camera mounted on a Wild M7Z stereomicroscope or a Leitz Diaplan compound microscope.

Genetic studies
Leg tissue from *Latoia intermissa* (Walker, 1865) (n = 2 from MSR, n = 1 from South Africa, KwaZulu-Natal, Pongola) and *Latoia albicosta* (Hampson, 1910) (n = 2, both from MSR) specimens were submitted to the Canadian Centre for DNA barcoding (CCDB, Guelph, Canada) for DNA extraction, amplification and sequencing of cytochrome c oxidase subunit I (COI-5P). Pairwise distances were calculated using Kimura's two-parameter model (Kimura 1980) in MEGA version X (Kumar *et al.* 2018).

Label data
Primary label data have been transcribed verbatim in "" and with ' / ' denoting a different label. Any additional information on locality is given in square brackets.

Distribution data
Obtained from De Prins & De Prins (2021).

Abbreviations
ANHRT – African Natural History Trust, Leominster, UK
NHMUK – The Natural History Museum, London, UK
MFN – Museum of Natural History/Museum für Naturkunde, Berlin, Germany
MHNM – Museum of Natural History/Museu de História Natural, Maputo, Mozambique
OUMNH – Oxford University Museum of Natural History, Oxford, UK
RMCA – Royal Museum for Central Africa, Tervuren, Belgium
SAMC – Iziko South African Museum, Cape Town, South Africa
SNHM – Swedish Museum of Natural History/ Naturhistoriska Riksmuseet, Stockholm, Sweden
TMSA – Ditsong Museum of Natural History (Transvaal Museum), Pretoria, South Africa
Other abbreviations:
LG – Genitalia slide prepared by Gyula M. László
TT – Genitalia slide prepared by Tabitha R. Taberer

RESULTS

Taxonomic list of the Limacodidae collected in the Maputo Special Reserve

Subfamily Limacodinae Duponchel

***Caffricola vicina* Alberti, 1954 (Figs 1–3, 44–47)**
Caffricola vicina Alberti, 1954, *Revue de Zoologie et Botanique Africaines*, 50(1–2): 42. Type locality: South Africa, Natal. Holotype, female (MFN).

Type material examined:

Holotype of *Caffricola vicina*. Female: red oblong label "Typus" / "Weenen. Natal. Coll. by G.H. Burn." / "coll. Weymer" / handwritten "clöeckneria Holl. Cram. 348 A" / handwritten "Crameria gloeckneria" / handwritten "Caffricola vicina Alberti ♀", gen. slide No. MfN gen. prep. 416 (prepared by László) (MFN).

Paratypes of *Caffricola vicina*. Male: Weenen, Natal, Peniston S., gen. slide No. MfN gen. prep. 417 (prepared by László); Male: Transvaal, Hävern, gen. slide No. MfN gen. prep. 418 (prepared by László) (MFN).

Material examined: **Mozambique, MSR**. 2 males, Ponta Milibangalala (Dune Grassland), 15 m, 26°26′58.6″S, 32°55′29.8″E, 17–21.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2, gen. slide No. LG 5728; 1 female, same site, 24.xi.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg. Trip Ref: MZ-001 (ANHRT 22), gen. slide No. LG 5729 (female).

Distribution: This species has been collected in Mozambique, South Africa, and Zimbabwe.

Taxonomic note: During our examination of *Caffricola* specimens, there have only been minor external morphological and genitalia differences detected between *C. vicina* and *C. cloeckneria* (Stoll, 1781), in agreement with Janse's (1964) findings. The confirmation of the validity of the two species requires further morphological and genetic studies to be carried out on more material. The female specimen from MSR (Fig. 1) shows slight differences with the female holotype of *C. vicina* as well as with specimens identified as *C. cloeckneria* in terms of the larger extent of black colouration in the anal half of the forewing. Having compared their copulatory organs, the holotype of *C. vicina* has a somewhat longer ductus bursae and tubular section of the corpus bursae. Additionally, there is also a noticeable difference in the shape of the signum bursae between the two examined specimens (Figs 46–47). In the male genitalia, certain differences between paratypes of *C. vicina* and a specimen collected in MSR were also found, expressed by the overall size of the genital capsule, the shape of the ventral margin of the valvae, and the length of the vinculum (Figs 44–45). Due to only a few specimens being examined, it is difficult to decide the taxonomic value of these differences.

***Gavara velutina* Walker, 1857 (Figs 4–7, 50)**
Gavara velutina Walker, 1857, *List of Specimens of Lepidopterous Insects in the Collection of the British Museum*, 12: 771. Type locality: South Africa, Port Natal. Holotype, male (NHMUK).

Material examined: **Mozambique, MSR**. 3 males, West Gate (Sand Forest, Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 9–17.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2, gen. slide No. LG 5703 (male); 1 male, same site and collectors, 24–25.ii.2018; 1 male, same site and collectors,13–15.ii.2018; 1 female, same site, 21–30.xi.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22; 1 male, Futi Corridor (Sand Forest Woodland Mosaic), 17 m, 26°32′10.1″S, 32°43′09.7″E, 23–24.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2.

Distribution: Our research has found this species to occur in MSR, which is a new record for Mozambique. This species is also known from Botswana, Kenya, Malawi, Namibia, Somalia, South Africa, Tanzania, and Zambia.

***Halseyia biumbrata* (Hampson, 1910) (Figs 8–9)**
Paraphanta biumbrata Hampson, 1910, *Annals and Magazine of Natural History*, 6(8) Number 31: 137. Type locality: South Africa, Natal, Durban. Syntype, 1 male (NMHUK) – examined. Original description states that there was a second syntype but this could not be located.

Material examined: **Mozambique, MSR**. 2 males, West Gate (Sand Forest), 22 m, 26°30′14.2″S, 32°42′59.6″E, 21–22.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 2 males, same site and collectors, 13–15.ii.2018; 1 male, Futi Corridor (Sand Forest Woodland Mosaic), 17 m, 26°32′10.1″S, 32°43′09.7″E, 23–24.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2.

Distribution: This species has been previously only found in South Africa, whilst our research has now also identified it in Mozambique.

***Macroplectra rufopallens* Hampson, 1910 (Figs 10–11)**
Macroplectra rufopallens Hampson, 1910, *Proceedings of the Zoological Society of London*, 1910(2): 485 pl. 39, fig. 16. Type locality: [Kenya] Br. E. Africa, between Machakos and Neugia. Syntypes, 13 males, 1 female (NHMUK).

Material examined: **Mozambique, MSR**. 4 males, West Gate (Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 21–30.xi.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22; 1 male, Ponta Milibangalala (Dune Grassland), 15 m, 26°26′58.6″S, 32°55′29.8″E, 25–30.v.2017, Aristophanous, M., László, G., Miles, W., Vetina, A. leg., ANHRT:2017.26.

Distribution: This species has been collected in Guinea, Kenya, South Africa, Uganda, Zambia, and Zimbabwe. This is the first record of the species from Mozambique.

***Parapluda invitabilis* (Wallengren, 1860) (Figs 12–13)**
Heterogenea invitabilis Wallengren, 1860, *Wiener entomologische Monatschrift*, **4(2)**: 44. Type locality: South Africa, Caffraria. Holotype, female (SNHM) – photograph examined.
Apluda similis Distant, 1897, *Annals and Magazine of Natural History*, (6)20: 204. Type locality: South Africa, Transvaal, Waterberg. Holotype, male (NHMUK).

Material examined: **Mozambique, MSR**. 3 males, West Gate (Sand Forest, Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 21–30.xi.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22; 1 male, same site and collectors, 3–13.xii.2016; 1 male, same site, 10–17.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 1 male, same site and collectors, 24.ii.2018; 1 female, same site and collectors, 9–17.ii.2018; 2 males, same site and collectors, 13–15.ii.2018; 1 male, same site, and collectors, 21–22.ii.2018; 2 males, Futi Corridor (Sand Forest Woodland Mosaic), 17 m, 26°32′10.1″S, 32°43′09.7″E, 23–24.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2.

Distribution: This species is known from Botswana, Democratic Republic of the Congo, Djibouti, Ethiopia, Malawi, Mozambique, Namibia, Senegal, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe.

***Zinara cymatoides* West, 1937 (Figs 26–27)**
Zinara cymatoides West, 1937, *Annals and Magazine of Natural History*, (10)20: 83, pl. 2, fig.19. Type locality: [Kenya] Brit. E. Africa, Taveta. Holotype, female (NHMUK).

Material examined: **Mozambique, MSR**. 4 males, 1 female, West Gate (Sand Forest, Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 21–30.xi.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22; 1 female, same site and collectors, 3–13.xii.2016; 2 males, same site, 10–17.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 3 males, same site and collectors, 9–17.ii.2018; 1 male, same site and collectors, 24.ii.2018; 2 males, same site and collectors, 13–15.ii.2018; 2 males, same site and collectors, 21–22.ii.2018; 1 male, Futi Corridor (Sand Forest Woodland Mosaic), 17 m, 26°32′10.1″S, 32°43′09.7″E, 23–24.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2.

Distribution: This species was described from specimens collected in Kenya. Our research has found it to also occur in Mozambique.

***Scotinochroa inconsequens* Butler, 1897 (Figs 14–15)**
Scotinochroa inconsequens Butler, 1897, *Proceedings of the Zoological Society of London*, 55(1896): 845. Type locality: [Malawi], Nyasaland, Deep Bay. Holotype, male (NHMUK) – examined.
Parathosea peringueyi Aurivillius, 1921, *Annals of the South African Museum*, 18(2): 242. Type locality: South Africa, Transvaal, Potgietersrust. Holotype, male (SAMC).

Material examined: **Mozambique, MSR**. 1 male, West Gate (Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 10–17.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 1 male, same site and collectors, 9–17.ii.2018; 1 male, Futi Corridor (Sand Forest Woodland Mosaic), 17 m, 26°32′10.1″S, 32°43′09.7″E, 23–24.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2.

Distribution: This species has been collected in Botswana, Kenya, Malawi, Mozambique, Namibia, South Africa, Zambia, and Zimbabwe.

***Micraphe lateritia* Karsch, 1896 (Figs 28–29)**
Micraphe lateritia Karsch, 1896, Entomologische Nachrichten, 22(17–18): 272. Type locality: [Togo], Togogebiet, Misahöhe. Holotype, female (MFN).
Miresa coccinea Hampson, 1910, *Annals and Magazine of Natural History*, 6(8) Number 31: 139. Type locality: [Nigeria], River Niger, between Akassa and Asaba. Holotype, male (NHMUK).
Miresa coccinea intensior Rothschild, 1921, *Novitates Zoologicae*, 28(2): 219. Type locality: [Niger], S. Damagarim, Songo. Syntypes, 3 males (NHMUK).

Miresa haematoessa Hampson, 1910, *Annals and Magazine of Natural History*, 6(8) Number 31: 139. Type locality: [South Africa], E. Transvaal, White River. Holotype, female (NHMUK).
Miresa haematoessa ab. *haematoessula* Strand, 1917, *Archiv für Naturgeschichte*, 82(A) 3: 10. Type locality: [Zimbabwe], Gazaland, Mount Chirinda. Holotype, female (NHMUK).

Material examined: **Mozambique, MSR**. 2 males, West Gate (Sand Forest, Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 3–13.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg. ANHRT:2017.22; 2 males, same site, 21–22.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 2 males, West Gate (Futi Riverine Veg.), 5 m, 26°29′51.4″S, 32°43′3.2″E, 5.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg. ANHRT:2017.22; 1 male, Ponta Milibangalala (Dune Grassland), 15 m, 26°26′58.6″S, 32°55′29.8″E, 17–21.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2.

Distribution: This species is known from Botswana, Kenya, Malawi, Mozambique, Namibia, Niger, Nigeria, South Africa, South Sudan, Tanzania, Togo, Zambia, Zimbabwe.

***Ctenolita habenichti* Wichgraf, 1913 (Fig. 16)**
Ctenolita habenichti Wichgraf, 1913, *Internationale Entomologische Zeitschrift* 7(2): 9. Type locality: [Mozambique], Delagoa Bay. Syntypes, 1 male, 2 females (MFN).

Material examined: **Mozambique, MSR**. 1 male, Ponta Milibangalala (Dune Grassland), 15 m, 26°26′58.6″S, 32°55′29.8″E, 25–30.v.2017, Aristophanous, M., László, G., Miles, W., Vetina, A. leg., ANHRT:2017.26.

Distribution: This species is known to date only from Mozambique.

Taxonomic note: *Ctenolita habenichti* is possibly synonymous with *Ctenolita melanosticta* (Bethune-Baker, 1909), which is known to also exist in Mozambique as well as Angola, the Democratic Republic of the Congo, Ghana, Kenya, Malawi, Tanzania, Zambia, and Zimbabwe. Both species have identical wing patterns although *C. melanosticta* is overall darker in colour. Further studies are required to determine whether these species are taxonomically distinct.

***Neomocena convergens* (Hering, 1928) (Figs 30–32)**
Omocena convergens Hering, 1928, in: Seitz, A. (Ed.) *Die Gross-Schmetterlinge der Erde*, 14: 467, pl. 75, fig. b. Type locality: South Africa, Transvaal, White River. Syntypes, 1 male, 1 female (MFN).

Material examined: **Mozambique, MSR**. 15 males, West Gate (Sand Forest, Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 13–15.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 1 male, same site and collectors, 21–22.ii.2018; 1 male, same site and collectors, 9–17.ii.2018; 1 male, same site and collectors; 4 males, same site, 3–13.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22; 1 male, same site and collectors, 21–30.xi.2016; 4 males, Ponta Milibangalala (Dune Grassland), 15 m, 26°26′58.6″S, 32°55′29.8″E, 17–21.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 1 male, same site, 30.xi–3.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg. ANHRT: 2017.22; 1 male, same site, 25–30.v.2017, Aristophanous, M., László, G., Miles, W., Vetina, A. leg. ANHRT: 2017.26; 3 males, Futi Corridor (Sand Forest Woodland Mosaic), 17 m, 26°32′10.1″S, 32°43′09.7″E, 23–24.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2.

Distribution: This species has been collected in Gambia, Malawi, Mozambique, South Africa, Tanzania, Zambia, and Zimbabwe.

***Trogocrada deleter* Tams, 1953 (Figs 33–34, 52)**
Trogocrada deleter Tams, 1953, *Bulletin of the British Museum of Natural History (Entomology)*, 3(2): 70. Type locality: [Mozambique], Portuguese E. Africa, Micaune. Holotype, male (NHMUK).
Trogocrada dimorpha Janse, 1964 **syn. nov.** *The Moths of South Africa Volume VII: Limacodidae*. Transvaal Museum, Pretoria, 105. Type locality: South Africa, Zululand, Dukuduku. Holotype, male (TMSA).

Type material examined:
Holotype of *Trogocrada deleter*. Male: red circle "Type HT" label / handwritten "Trogocrada deleter Tams Holotype ♂" / handwritten "Portuguese E. Africa Micaune B.M. 1953-666" / QR code label with unique id. NHMUK 010917876.
Allotype of *Trogocrada deleter*. Female: yellow circle "Allotype" label / handwritten "Trogocrada deleter Tams Allotype ♀" / handwritten "Portuguese E. Africa Micaune B.M. 1953-666" / QR code label with unique id. NHMUK 010917872.

Material examined: **Mozambique, MSR**. 5 males, West Gate (Sand Forest, Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 21–22.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 1 male, same site and collectors, 10–17.ii.2018, gen. slide No. LG5702 (male); 1 male, same site, 3–13.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22; 2 males, same site and collectors, 21–30.xi.2016; 2 males, Ponta Milibangalala (Dune Grassland, Dune Forest Ecotone), 15 m, 26°26′58.6″S, 32°55′29.8″E, 25–30.v.2017, Aristophanous, M., László, G., Miles, W., Vetina, A. leg., ANHRT:2017.26; 1 male, same site, 30.xi–3.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22; 3 males, Futi Corridor (Sand Forest Woodland Mosaic), 17 m, 26°32′10.1″S, 32°43′09.7″E, 23–24.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 2 males, Mangrove Camp (Mangrove-Woodland Mosaic), 9 m, 26°19′35.9″S, 32°42′35.7″E, 7–9.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg. ANHRT:2017.22.

Distribution: This species is known from Mozambique, South Africa, and Tanzania.

Taxonomic note: *Trogocrada dimorpha* is identical in external morphology to *T. deleter*, whereby adult males possess blackish-brown forewings, a darker curved postmedial fascia, and the distal portion of the wing diffused with tawny brown. Hindwings are greyish in the

basal area, diffusing to blackish-brown (see Figs 33–34). Females of the species display similar patterns although lighter brown, also possessing a darker curved postmedial fascia. Furthermore, both the description and image of Janse's (1964) genitalia dissection of a male *T. dimorpha* specimen are identical to what is observed in a specimen of *T. deleter* from MSR (see Fig. 52). These species have highly modified genitalia in contrast to other members of the Limacodidae (e.g. *Latoia, Parasa*), characterised by a very narrow, pointed uncus, two latero-distal processi of the tegumen, and a gnathos comprised of three, flat, sclerotised, apically rounded lobes. The valvae are short and wide, with long hairs at the apex. Despite the large number of highly modified characters of the male genitalia, no differences were found between the original illustration of *T. dimorpha* and the Mozambican specimen identified as *T. deleter*, suggesting that the two names refer to the same species.

Janse (1964) described *T. dimorpha* as a new species based merely on Tams' (1953) original description of *T. deleter* without examining the type or any material: "I have not seen a specimen of this species" (Janse, 1964). The only difference Janse (1964) specifies between the two species is that the female of *T. dimorpha* is lighter in colour than the males. However, similar sexual dimorphism is also observed in *T. deleter* when looking at the female allotype and its characters described by Tams (1953). In conclusion, due to the identical morphological features, *T. deleter* is here considered a senior synonym of *T. dimorpha* Janse, 1964 **syn. nov.**

***Latoia intermissa* (Walker, 1865) (Figs 17–20, 48–49)**
Nyssia intermissa Walker, 1865, *List of the Specimens of Lepidopterous Insects in the Collection of the British Museum*. 32: 479. Type locality: South Africa, Port Natal. Syntypes, 2 males. (NHMUK).
Somara albicosta Hampson, 1910 **syn. nov.** *Annals and Magazine of Natural History*, (8), 6(32): 145. Type locality: South Africa, Natal. Syntypes, 5 males, 2 females (NHMUK).

Type material examined:
Syntype of *Nyssia intermissa*. Male: blue ring "Syntype" label / "Pt Natal 55.96" / "Nyssia intermissa." / "BMNH(E) #1054383" / Limacodidae Brit. Mus. slide No. 1296 / QR code label with unique id. NHMUK 010894344 (NHMUK).
Lectotype of *Somara albicosta* (designated herein). Male: red ring "Type" label / "Natal. 1900-26." / handwritten "Durban bred Oct. 1900. G. F. Leigh" / handwritten "Somara albicosta type ♂. Hmpsn." / Limacodidae Brit. Mus. slide No. 1294 / QR code label with unique id. NHMUK 010894389 (NHMUK).
Paralectotype of *Somara albicosta.* Female: red ring "HOLOTYPE" label / handwritten "99.336"/ handwritten "Somara albicosta type ♀. Hmpsn." / "Type Status Verified A. Giusti VIII.2013" / QR code label with unique id. NHMUK 010894383 (NHMUK)".

Material examined: **Mozambique, MSR.** 3 males, West Gate (Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 21–30.xi.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22, gen. slide No. TT 017 (male); 4 males, same site, 10–17.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2, gen. slide No. TT 020 (male); 1 male, same site and collectors, 24–25.ii.2018, gen. slide No. TT 016 (male); 1 male, same site and collectors, 9–17.ii.2018; 1 male, same site and collectors, 21–22.ii.2018. BOLD process ID's: ANLMN7704-21, ANLMN7705-21, ANLMN7706-21, ANLMN7707-21. **South Africa.** 1 male, KwaZulu-Natal, Pongola, Belvedere Game Ranch, 430m, 27°31′S, 31°45′E, 22–26.ii.2018, Kovtunovich, V., Yakovlev, R. Leg., ANHRT:2018.34, gen. slide No. TT 023 (male). BOLD process ID: ANLMN7610-21.

Distribution: Our research has found this species to exist in MSR, which is a new record for Mozambique. This species has also been found in the Democratic Republic of the Congo, South Africa, Tanzania, and Zambia.

Taxonomic note: Species of tropical and subtropical moths with distinctive green body and wing patterns have often been assigned with the genus *Parasa* Moore, 1859 (Solovyev 2014), although a clear definition of the genus based on diagnostic features has not yet been formed (Holloway *et al.* 1987). There is also a lack of a diagnoses for many similar Limacodidae genera, often causing conflicting reports of the nomenclature of these species. *Latoia intermissa* has previously been treated as *Latoia* (Gozmány & Vári 1973; Kiriakoff 1963), *Parasa* (Hering 1940), and *Stroter* (Shaw *et al*. 2018). Although Solovyev (2014) refers to this species as *Parasa* without justifying the combination, he considers the phylogeny of green Limacodids unresolved. The type species of *Parasa*, *P. chloris* Herrich-Schäffer, 1854, is described from North America, and our preliminary studies (Taberer, in prep.) suggest that the Old World green Limacodids are not congeneric with *Parasa*. Therefore, we follow Janse's (1964) generic concept of the species, treating it as *Latoia intermissa*. The identification of the delimiting characters and the species content of these genera require an extensive revision including taxa from the Afrotropical, Holarctic, Neotropical and Indomalayan Regions.

Latoia albicosta (Hampson, 1910) (referred to as *Latoia* by Janse, 1964) is very similar to *L. intermissa* in its shape and ground colour of the wings. Both species are characterised by having a pure white costa and brownish-grey forewings with a large medio-ventral macula at the inner margin adjoining the postmedial line. The hindwings of both species are ochreous yellow with brownish grey suffusion and dark brown veins in the distal half. The only conspicuous morphological difference between them is the colour of the macula and the thorax, which are cinnamon in *L. albicosta*, hardly differing from the ground colour, and a contrasting bright green in *L. intermissa* (see Figs 17–20). Both species were described from the same locality (Natal, South Africa), and were collected together in the MSR, too. Genetic analysis of cytochrome c oxidase subunit I (COI-5P) barcodes of both putative species from MSR and South Africa revealed 0–0.92% pairwise genetic distance between them suggesting that the two species are conspecific.

The male genitalia of three specimens from Mozambique (one "*albicosta*" and two "*intermissa*") together with an "*albicosta*" from South Africa were dissected and no noticeable differences in genital morphology were found (Figs 48–49). In conclusion, it can be stated that *L. albicosta* is a mere colour form of *L. intermissa* without

any genetic divergence or distinctive genitalia characters which would support the distinctness of the two taxa, thus the former species is here considered a junior synonym of *L. intermissa*: *L. albicosta* (Hampson, 1910) **syn. nov.**

It should be noted that there is often confusion interpreting Hampson's types from his descriptions. Hampson used the singular word "type" after a list of specimens even when describing a species based on a series of syntypes, thus leading to errors when referencing his species descriptions (see comment in Mulvaney (2021:5)). In the case of *Latoia albicosta*, rather confusingly, only a single measurement of wingspan which corresponds to a female specimen is stated in the original description, yet a greater proportion of the description is devoted to the males. It can be concluded that in this case, as per Hampson's other descriptions, his use of the word "type" when describing the new species is likely an abbreviation of "type specimen(s)" and refers to all of the specimens listed prior to it and not just the one immediately before it.

Due to this confusion with Hampson's descriptions, a single female *Latoia albicosta* specimen was labelled as a holotype, however, this species was described from a series of seven syntypes: one male from Kilimanjaro, Tanzania, one female from Salisbury [= Harare], Zimbabwe, and four males and one female from Natal, South Africa. The single specimen from Kilimanjaro collected by Bishop Hannington was considered by Hampson in his original description as an aberration ("Ab. 1.") with "Thorax and fore wing much brighter rufous"; this specimen was later described as an aberration *kilimandscharonis* by Strand (1916). From our preliminary analyses of genetics and morphology, the populations further north in Tanzania are likely to be a different taxon. Therefore, in order to stabilise the nomenclature and taxonomy of *Latoia albicosta*, a male specimen from Natal, South Africa is designated here as the lectotype.

***Latoia latistriga* (Walker, 1855) (Figs 21–22)**
Neaera latistriga Walker, 1855, *List of the Specimens of Lepidopterous Insects in the Collection of the British Museum*, 5: 1141. Type locality: [Africa] Not stated. Holotype, female (NHMUK).

Material examined: **Mozambique, MSR**. 11 males, West Gate (Sand Forest, Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 21–30.xi.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22; 1 male, same site, 10–17.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 1 male, same site and collectors, 24–25.ii.2018; 2 males, same site and collectors, 9–17.ii.2018; 1 male, same site and collectors, 13–15.ii.2018; 1 female, same site and collectors, 21–22.ii.2018; 1 male, West Gate (Futi Riverine Veg.), 5 m, 26°29′51.4″S, 32°43′3.2″E, 5.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg. ANHRT:2017.22; 2 males, Ponta Milibangalala (Dune Grassland), 15 m, 26°26′58.6″S, 32°55′29.8″E, 25–30.v.2017, Aristophanous, M., László, G., Miles, W., Vetina, A. leg. ANHRT:2017.26; 1 male, same site, 17–21.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 1 male, 1 female, Mangrove Camp (Mangrove–Woodland Mosaic), 9 m, 26°19′35.9″S, 32°42′35.7″E, 7–9.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg. ANHRT:2017.22.

Distribution: This species is known from Mozambique, Namibia, South Africa, Tanzania, and Zimbabwe.

Taxonomic note: Like *L. intermissa*, *L. latistriga* has been referred to as *Latoia* (Faucheux 2012) or *Parasa* (Poinar & Vega 2019, Gilmer 1925) in various publications. We follow Janse's (1964: 115) review of South African Limacodidae and for the time being, treat this species as *Latoia*.

***Latoia vivida* (Walker, 1865) (Figs 23–25)**
Neaera vivida Walker, 1865, *List of the Specimens of Lepidopterous Insects in the Collection of the British Museum*, 32: 478. Type locality: South Africa, Natal. Syntypes, 2 males (NHMUK).

Material examined: **Mozambique, MSR**. 3 males, West Gate (Sand Forest, Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 13–15.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 2 males, same site and collectors, 21–22.ii.2018; 1 male, same site and collectors, 24–25.ii.2018; 1 male, same site and collectors, 9–17.ii.2018; 1 male, same site and collectors, 10–17.ii.2018; 4 males, same site, 3–13.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22; 5 males, same site and collectors, 21–30.xi.2016; 4 males, Ponta Milibangalala (Dune Grassland, Dune Forest Ecotone), 15 m, 26°26′58.6″S, 32°55′29.8″E, 17–21.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 1 female, 4 males, same site, 30.xi–3.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22.

Distribution: This species has been collected in Angola, Cameroon, Congo, Democratic Republic of Congo, Ethiopia, Ghana, Guinea, Ivory Coast, Kenya, Malawi, Mozambique, Namibia, Sierra Leone, Somalia, South Africa, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.

Taxonomic note: Due to the prevalent confusion in diagnoses of the green tropical and subtropical slug moths, *Latoia vivida* has been referred to as *Latoia* (Fourie & Hull 1980) or *Parasa* (Hill 2008, Evans 1968) in scientific literature. We follow Janse's (1964) review and consider this species to belong to *Latoia* (pp. 118–119).

***Niphadolepis auricincta* Butler, 1898 (Figs 35–36)**
Niphadolepis auricincta Butler, 1898, *Proceedings of the Zoological Society of London*, 57: 437, pl. 32, fig. 9. Type locality: [Kenya], British East Africa, Taru. Syntype, 1 male (NHMUK) – examined.

Material examined: **Mozambique, MSR**. 5 males, West Gate (Sand Forest, Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 21–30.xi.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22; 1 male, same site and collectors, 3–13.xii.2016; 3 males, same site, 24–25.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2; 3 males, same site and collectors, 9–17.ii.2018; 1 male, same site and collectors, 10–17.ii.2018; 2 males, same site and collectors, 13–15.ii.2018;
Distribution: This species was described from a single specimen from Kenya. Our research has found it to also exist in Mozambique for the first time.

Unidentified Limacodinae sp. (Figs 37, 51)

Material examined: **Mozambique, MSR**. 1 male, Futi Corridor (Sand Forest Woodland Mosaic), 17 m, 26°32′10.1″S, 32°43′09.7″E, 23–24.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2, gen. slide No. LG 5704.

Taxonomic note: Despite a thorough literature review and examination of major natural history museum and private research collections, this specimen could not be identified even to genus level. The specimen is rather worn, making it difficult to diagnose the wing pattern. Dissection of the genitalia confirmed that the specimen undoubtedly belongs to Limacodinae (Fig. 51), although the clasping apparatus is largely simplified and similar in ground plan to that of numerous genera i.e. *Latoia*, *Parasa* or *Stroter*. Initially, due to similar external morphology, the specimen was thought to belong to the genus *Gavara* Walker, 1857, but the genitalia differed significantly for it to be confidently placed in this genus (Fig. 50). It is possible that this species belongs to a new undescribed genus, but based on a single worn specimen, we have refrained from describing one – further investigations are necessary.

Subfamily Chrysopolominae Aurivillius

***Chrysopoloma bicolor* (Distant, 1897) (Figs 38–39)**
Stenoglene bicolor Distant, 1897, *Annals and Magazine of Natural History*, (6)20: 206. Type locality: South Africa, Gauteng, Transvaal, Pretoria, Pienaars River. Syntypes, 4 females (NHMUK).

Material examined: Mozambique, MSR. 4 males, Ponta Milibangalala (Dune Grassland-Dune Forest Ecotone), 15 m, 26°26′58.6″S, 32°55′29.8″E, 30.xi–3.xii.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22.

Distribution: This species had previously only been collected in South Africa. Our research has now also identified it in Mozambique.

***Chrysopoloma restricta* Distant, 1899 (Figs 40–43)**
Chrysopoloma restricta Distant, 1899, *Annals and Magazine of Natural History*, (7), 4(23): 362. Type locality: South Africa, Transvaal, Lydenburg District. Syntypes, 2 males (NHMUK).

Material examined: Mozambique, MSR. 3 males, 1 female, West Gate (Sand Thicket), 22 m, 26°30′14.2″S, 32°42′59.6″E, 21–30.xi.2016, Aristophanous, M., Cristóvão, J., László, G., Miles, W. leg., ANHRT:2017.22; 1 male, Ponta Milibangalala (Dune Grassland), 15 m, 26°26′58.6″S, 32°55′29.8″E, 17–21.ii.2018, László, G., Mulvaney, J., Smith, L. leg. ANHRT:2018.2.

Distribution: This species has previously been known from the Democratic Republic of the Congo, South Africa, and Tanzania. The specimens sampled in the MSR represent a new country record for Mozambique.

CONCLUSIONS

This preliminary species account of the Limacodidae of the MSR is based on three, four-week-long sampling expeditions undertaken during November–December 2016, May–June 2017 and February 2018. These expeditions targeted the beginning, middle and end of the rainy season to obtain as complete a picture of the species composition of the reserve as possible.

As a result of the sampling effort, 18 species of Limacodidae have been identified, eight of which are recorded in Mozambique for the first time increasing the number of species reported from the country from 33 to 41. The considerable number of species found in the relatively small area of the MSR compared to the number of taxa currently known from the whole country shows the importance of the reserve for preserving the country's biodiversity. Additionally, the fact that even a short-term sampling project can contribute so significantly to the knowledge of the Lepidoptera fauna of the entire country underlines the need for similar biodiversity surveys in other regions of Mozambique. It is also likely, that further sampling in the MSR may yield further new records either for the reserve or for the country.

The taxonomy of the Afrotropical Limacodidae remains in a poor state with even the smaller genera requiring a thorough review (Taberer *et al.* in prep). The synonymies of *Latoia albicosta* with *Latoia intermissa* and *Trogocrada dimorpha* with *Trogocrada deleter* in this paper is aimed to provide a first step in the much-needed taxonomic revision of the African Limacodidae.

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The authors declare that to the best of their knowledge they conform to the national regulations and meet with the conditions and requirements of International Conventions concerning collecting/export and handling of the specimens presented in this Article.

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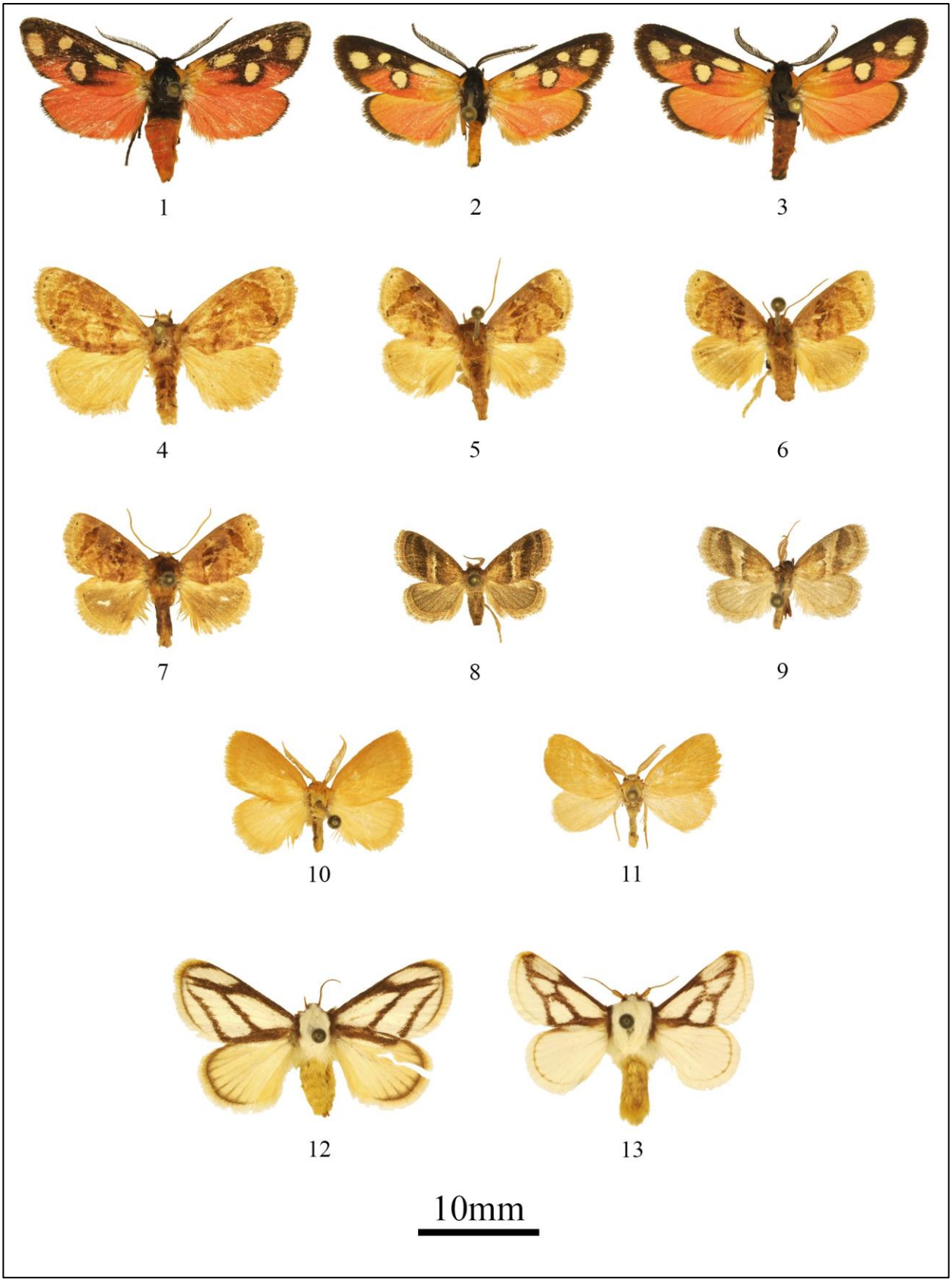
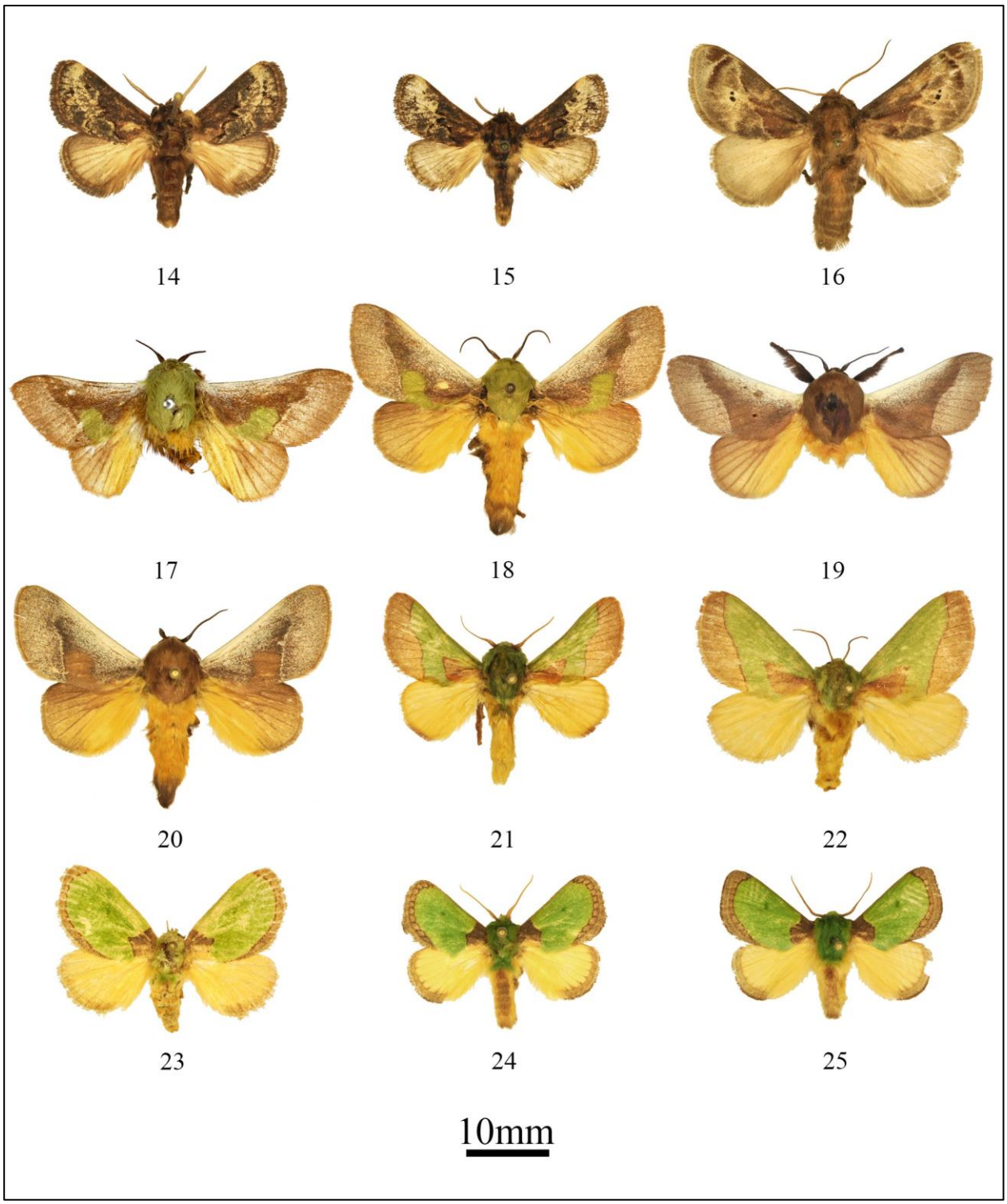
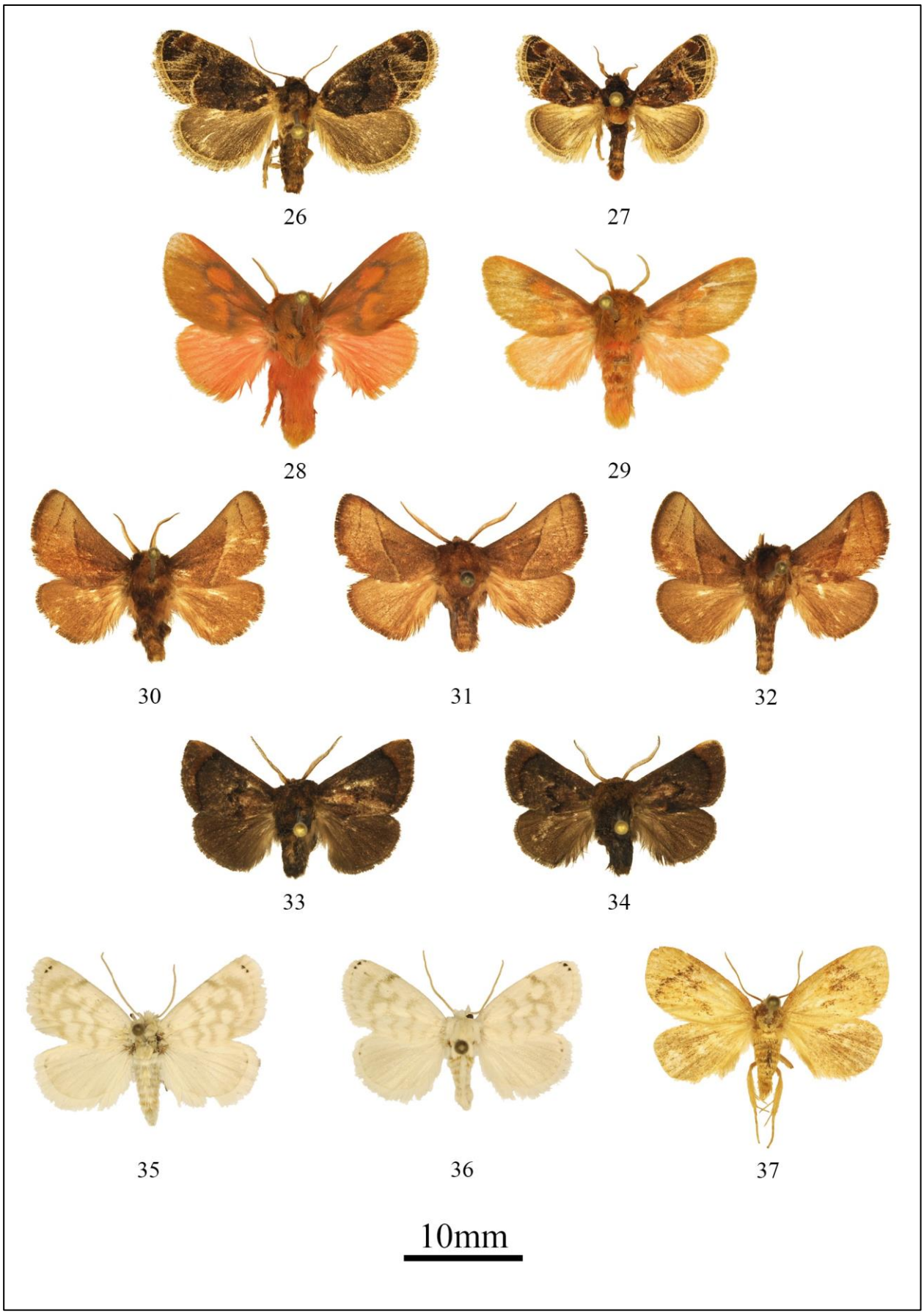


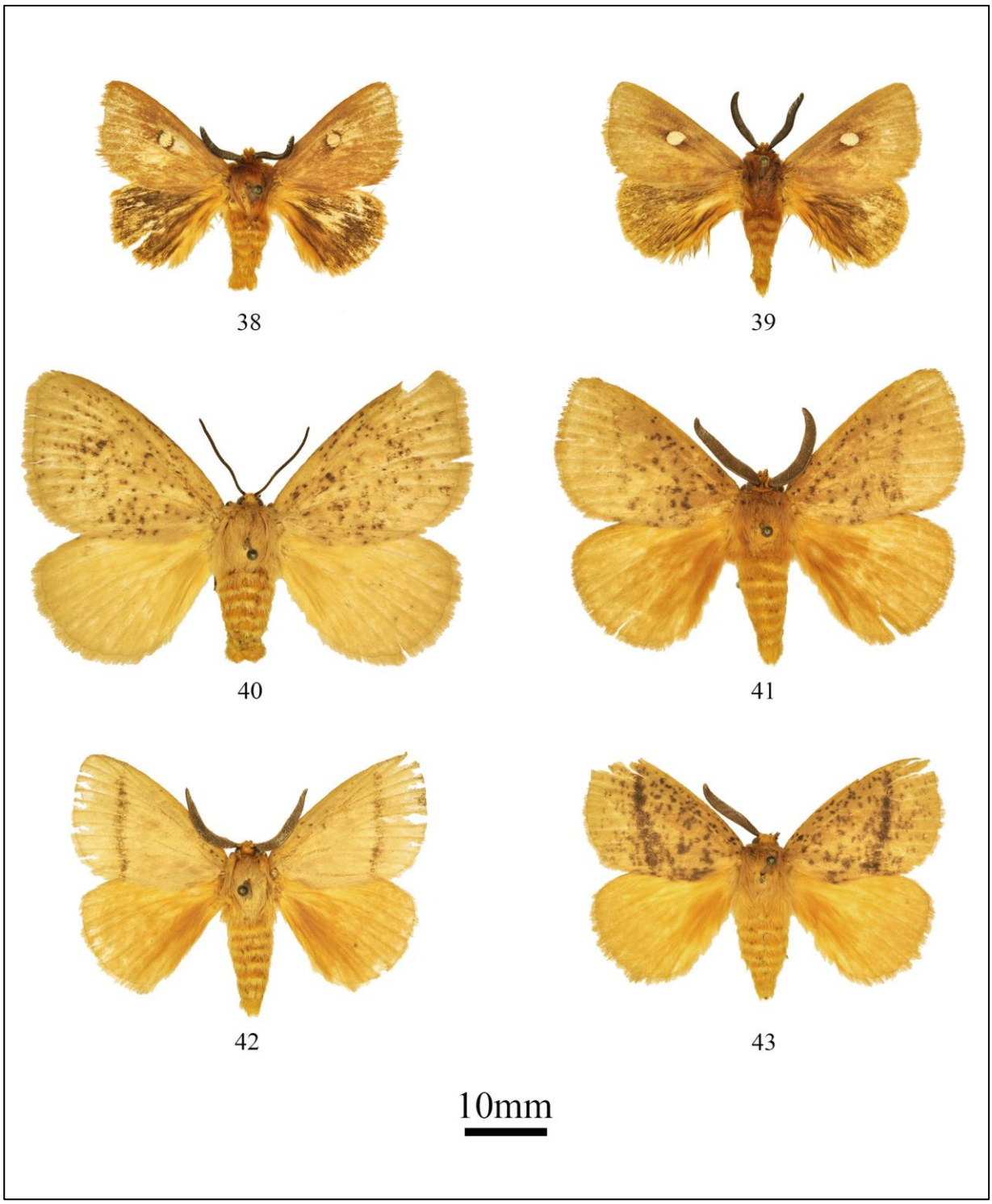
Figures 1–13. Adults (collected in the MSR and deposited in coll. ANHRT). 1 – *Caffricola vicina,* female; 2 – *ibidem,* male; 3 – *ibidem,* male; 4 – *G. velutina,* female; 5 – *ibidem,* male; 6 – *ibidem,* male; 7 – *ibidem,* male; 8 – *Halseyia biumbrata,* male; 9 – *ibidem,* male; 10 – *Macroplectra rufopallens,* male; 11 – *ibidem,* male; 12 – *Parapluda invitabilis,* female; 13 – *ibidem,* male.



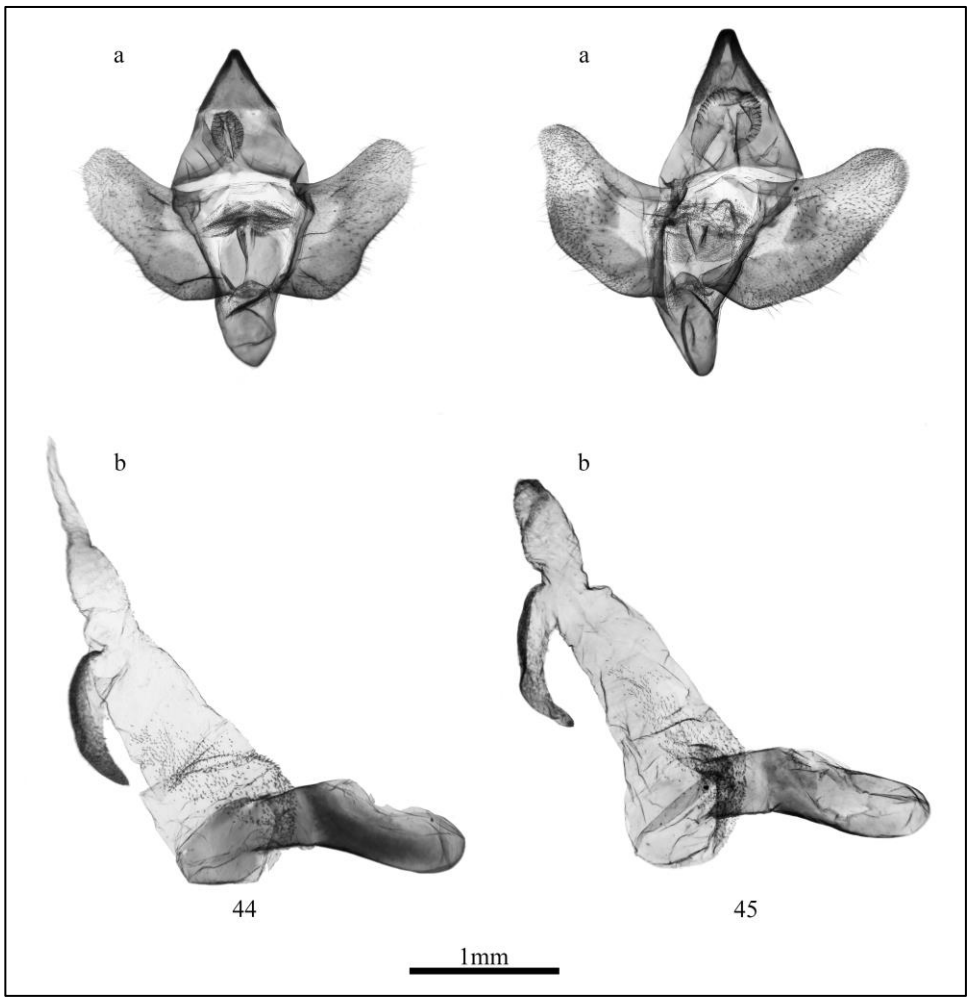
Figures 14–25. Adults (collected in the MSR and deposited in coll. ANHRT unless otherwise stated). 14 – *Scotinochroa inconsequens*, male; 15 – *ibidem*, male; 16 – *Ctenolita habenichti*, male; 17 – *Latoia intermissa*, male Syntype (NHMUK); 18 – *Latoia intermissa*, male; 19 – *Latoia albicosta*, male Syntype (NHMUK); 20 – *Latoia albicosta*, male; 21 – *Latoia latistriga*, male; 22 – *ibidem*, female; 23 – *Latoia vivida*, female; 24 – *ibidem*, male; 25 – *ibidem*, male.



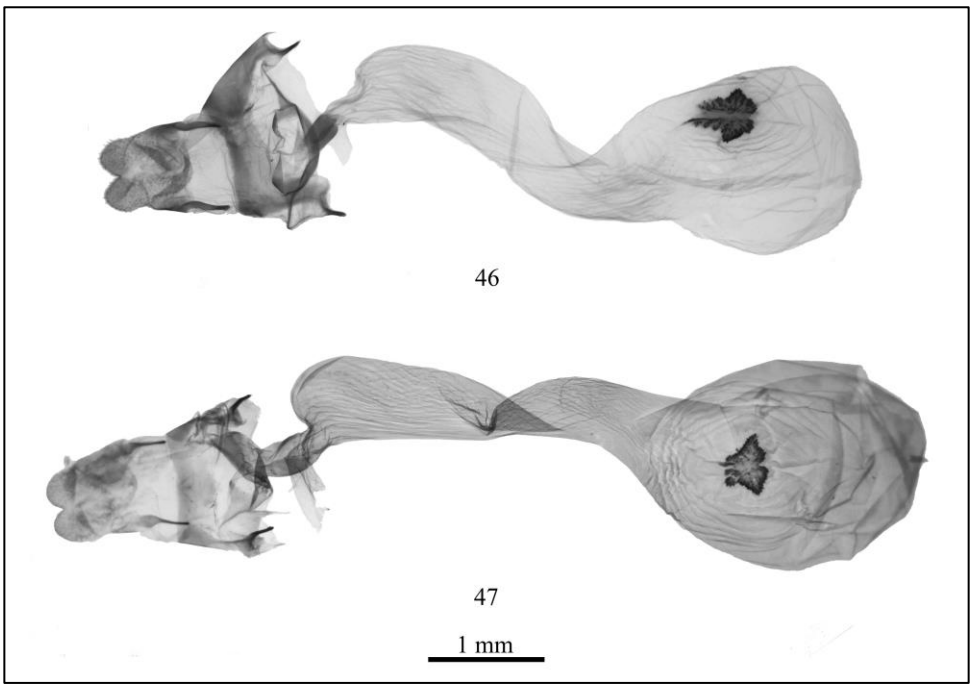
Figures 26–**37.** Adults (collected in the MSR and deposited in coll. ANHRT). 26 – *Zinara cymatoides*, female; 27 – *ibidem*, male; 28 – *Micraphe lateritia*, male; 29 – *ibidem*, male; 30 – *Neomocena convergens*, male; 31 – *ibidem*, male; 32 – *ibidem*, male; 33 – *Trogocrada deleter*, male; 34 – *ibidem*, male; 35 – *Niphadolepis auricincta*, male; 36 – *ibidem*, male; 37 – Unidentified Limacodinae sp., male.



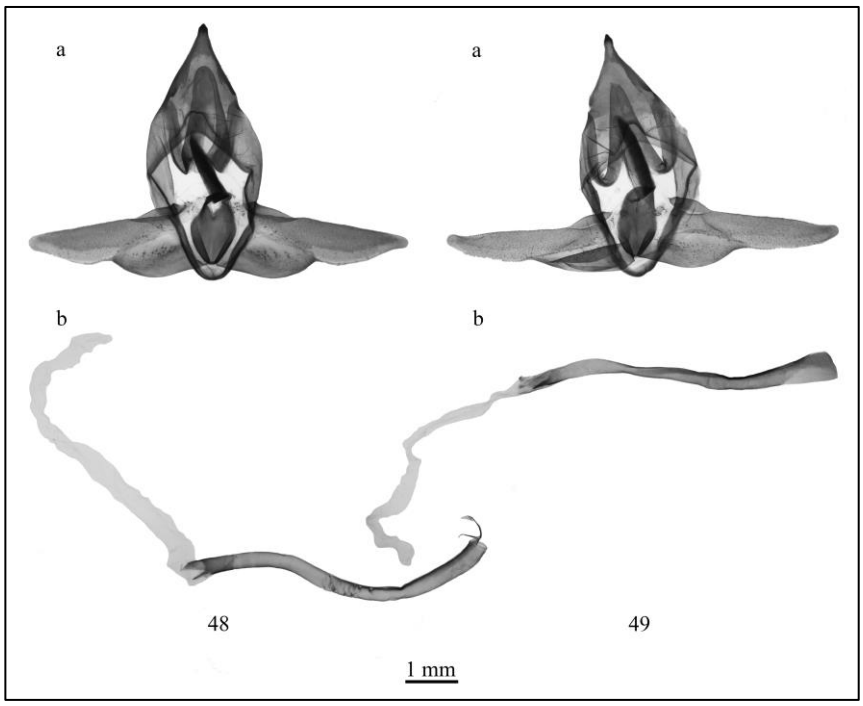
Figures 38–43. Adults (collected in the MSR and deposited in coll. ANHRT). 38 – *Chrysopoloma* bicolor, male; 39 – *ibidem*, male; 40 – *Chrysopoloma restricta*, female; 41 – *ibidem*, male; 42 – *ibidem*, male; 43 – *ibidem*, male.



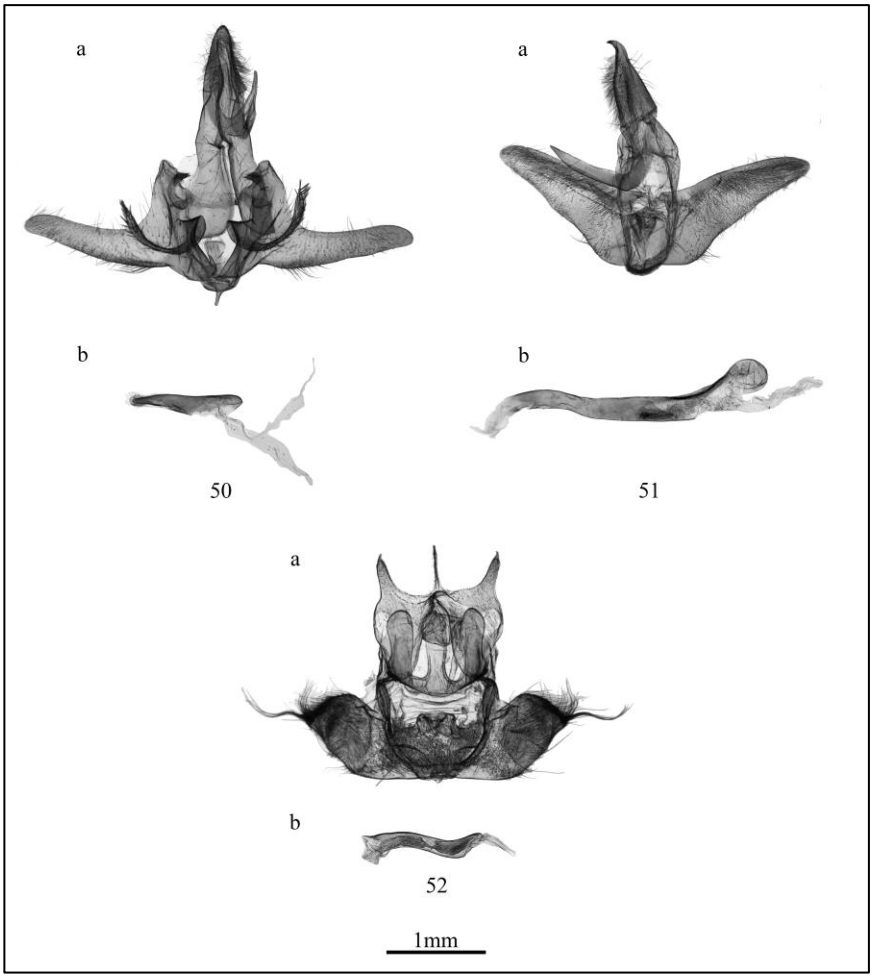
Figures 44–45. Male genitalia of Limacodidae (a: clasping apparatus; b: phallus). 44 – *Caffricola vicina* (MSR), genitalia slide No. LG 5728 (ANHRT); 45 – *Caffricola vicina* PT (South Africa), genitalia slide No. MFN 417 (MFN).



Figures 46–47. Female genitalia of Limacodidae. 46 – *Caffricola vicina* (MSR), genitalia slide No. LG 5729 (ANHRT); 47 – *Caffricola vicina* HT (South Africa), genitalia slide No. MFN 416 (MFN).



Figures 48–49. Male genitalia of Limacodidae (a: clasping apparatus; b: phallus). 48 – *Latoia intermissa* (MSR), genitalia slide No. TT 020 (ANHRT); 49 – *Latoia* "*albicosta*" (MSR), genitalia slide No. TT 023 (ANHRT).



Figures 50–52. Male genitalia of Limacodidae (a: clasping apparatus; b: phallus). 50 – *Gavara velutina* (MSR), genitalia slide No. LG5703 (ANHRT); 51 – Unidentified Limacodinae sp. (MSR), genitalia slide no. LG 5704 (ANHRT); 52 – *Trogocrada deleter* (MSR), genitalia slide No. TT 074 (ANHRT).