

Review of the genus *Aphanostola* Meyrick, 1931 (Lepidoptera, Gelechiidae, Anomologinae) with description of 19 new species from the Afrotropical Region

Oleksiy V. Bidzilya¹, Wolfram Mey², David Agassiz³

¹ Kiev National Taras Shevchenko University, Zoological Museum, Volodymyrska str., 60, MSP 01601, Kyiv, Ukraine

² Museum für Naturkunde, Leibniz Institute at Humboldt Universität, Invalidenstrasse 43, D-10115, Berlin, Germany

³ Natural History Museum, Department of Life Sciences, Cromwell Road, London SW7 5BD, UK

<http://zoobank.org/542B0277-F899-48ED-8387-EE760EEEF5A4>

Corresponding author: Oleksiy Bidzilya (bidzilya@univ.kiev.ua)

Abstract

Received 18 December 2015

Accepted 27 January 2016

Published 19 February 2016

Academic editor:

Dominique Zimmermann

Key Words

Lepidoptera
Gelechiidae
Aphanostola
new species
taxonomy
host plants
Afrotropical region
Oriental region

New diagnosis of the genus *Aphanostola* is provided, and its position within Gelechiidae is briefly discussed. 19 species are described from South Africa, Namibia, Botswana, Zimbabwe, Tanzania, Kenya and Ethiopia: *A. acaciae* Bidzilya & Mey, **sp. n.**, *A. morogorensis* Bidzilya, **sp. n.**, *A. calderae* Bidzilya & Mey, **sp. n.**, *A. kenyella* Bidzilya & Agassiz, **sp. n.**, *A. kruegeri* Bidzilya & Mey, **sp. n.**, *A. alternella* Bidzilya & Agassiz, **sp. n.**, *A. antennata* Bidzilya & Mey, **sp. n.**, *A. rooiklipella* Bidzilya & Mey, **sp. n.**, *A. griseella* Bidzilya & Mey, **sp. n.**, *A. centripunctella* Bidzilya & Mey, **sp. n.**, *A. joannoui* Bidzilya & Mey, **sp. n.**, *A. namibiensis* Bidzilya & Mey, **sp. n.**, *A. brandbergensis* Bidzilya & Mey, **sp. n.**, *A. aarviki* Bidzilya, **sp. n.**, *A. africanella* Bidzilya, Agassiz, & Mey, **sp. n.**, *A. emarginata* Bidzilya & Mey, **sp. n.**, *A. melliferae* Bidzilya, Agassiz & Mey, **sp. n.**, *A. maxima* Bidzilya & Mey, **sp. n.**, *A. longicornuta* Bidzilya, Agassiz & Mey, **sp. n.** A key to the species is given based on external characters and the genitalia of both sexes. Adults and genitalia of all species are illustrated.

Introduction

The genus *Aphanostola* was originally established for two species: *A. atripalpis* Meyrick, 1931 (type species) and *A. sparsipalpis* Meyrick, 1931. Later *A. intercepta* Meyrick, 1932 was added to this genus. The latter two species are only known from single males without abdomens, therefore their generic assignment with *Aphanostola* remains rather obscure.

As a result of our study of the Gelechiidae from the Brandberg Massif in Namibia, a number of small-sized specimens that represent a separate group consisting of four species have been discovered. Their genitalia matched in most details to the genitalia of *Lanceopen-*

na pentastigma Janse, 1960. It was realized however that *L. pentastigma* is not congeneric with *L. pseudogaleotis* Janse, 1950 – the type species of *Lanceopenna* Janse, 1950, but better fits in genitalia characters to *A. atripalpis* from India (Bidzilya 2007). In spite of similarity of the male genitalia of *A. atripalpis* and specimens from the Brandberg the species have not been transferred to *Aphanostola* because the type specimens of *A. atripalpis* remained unexamined. They were mentioned in the list of the Gelechiidae from the Brandberg as “Genus 1, spec. 1” – “Genus 1, spec. 4” (Bidzilya 2007).

The recent examination of the holotype and male paratype of *A. atripalpis* confirmed the assumption that specimens from the Brandberg are indeed congeneric with

Aphanostola. Moreover, a number of additional species from this genus have been found in collections of material from southern Africa and other countries of the Afro-tropical region since 2007. Some of these species were mentioned as new but not formally described in recent papers (Mey and Kühne 2014; Agassiz and Bidzilya 2016 in press). However, we already transferred *Lanceopenna pentastigma* to the genus *Aphanostola* (Agassiz and Bidzilya 2016 in press).

The aim of the present paper is to describe new species, which were found belonging to *Aphanostola*. A total of 19 new species are described and an improved and expanded diagnosis of the genus *Aphanostola* within the subfamily Anomologinae is provided.

Material and methods

The present paper is based mainly on material from Museum für Naturkunde, Berlin, Germany (MfN). Additional material has been received from Ditsong National Museum of Natural History (formerly Transvaal Museum), Pretoria, South Africa (TMSA), Natural History Museum, London, United Kingdom (BMNH), Natural History Museum, University of Oslo, Norway (NHMO), Landesmuseum für Kärnten, Klagenfurt (LMK) and from the collection of David Agassiz, London, UK (Agassiz coll.) (now deposited in BMNH).

The genitalia slides were prepared according to the “unrolling technique” (Pitkin 1986; Huemer 1988). The descriptive terminology of genitalia structures generally follows Huemer and Karsholt (1999) and Kristensen (2003).

In the paragraph “Material” of the descriptions the localities were arranged geographically from south-west to north-east and countries are referred to using their current names.

Results

Check-list of the genus *Aphanostola*

- A. acaciae* Bidzilya & Mey, sp. n.
- A. pentastigma* (Janse, 1960)
- A. morogorensis* Bidzilya, sp. n.
- A. calderae* Bidzilya & Mey, sp. n.
- A. kenyella* Bidzilya & Agassiz, sp. n.
- A. kruegeri* Bidzilya & Mey, sp. n.
- A. alternella* Bidzilya & Agassiz, sp. n.
- A. antennata* Bidzilya & Mey, sp. n.
- A. rooiklipella* Bidzilya & Mey, sp. n.
- A. griseella* Bidzilya & Mey, sp. n.
- A. centripunctella* Bidzilya & Mey, sp. n.
- A. joannoui* Bidzilya & Mey, sp. n.
- A. namibiensis* Bidzilya & Mey, sp. n.
- A. brandbergensis* Bidzilya & Mey, sp. n.
- A. aarviki* Bidzilya, sp. n.
- A. africanella* Bidzilya, Agassiz & Mey, sp. n.
- A. emarginata* Bidzilya & Mey, sp. n.
- A. melliferae* Bidzilya, Agassiz & Mey, sp. n.

- A. maxima* Bidzilya & Mey, sp. n.
- A. longicornuta* Bidzilya Agassiz & Mey, sp. n.
- A. atripalpis* Meyrick, 1931
- A. sparsipalpis* Meyrick, 1931
- A. intercepta* Meyrick, 1932

Aphanostola Meyrick, 1931

Exotic Microlepidoptera 4: 56

Type-species. *Aphanostola atripalpis* Meyrick, 1931 (by original designation).

Diagnosis. The genus *Aphanostola* is defined by the combination of the following characters in the male genitalia (Fig. 40a): phallus usually with basal projection, uncus covered with setae, gnathos long sickle-shaped, valva divided into strongly sclerotized basal part and weakly sclerotized distal part, sacculus strongly curved inwardly, the posterior margin of the vinculum with medial incision and more or less developed projections. The female genitalia (Fig. 40b) are rather variable, but a weakly sclerotized unmodified sternite VIII, moderately thick apophyses anteriores and a usually well defined antrum are the characteristic features of the genus. The presence of the basal projection of the phallus can be considered as a presumed autapomorphy of *Aphanostola*. The lack of this character in some species seems to be a secondary reduction.

Remarks. The male genitalia of *Aphanostola* display similarity to the genitalia of *Leuronoma* Meyrick, 1918 and *Platyphala* Janse, 1951. These genera share such characters as a weakly sclerotized distal portion of the valva, the sacculus strongly curved inwardly and the inner margin of the valva with tendency to form a thorn. The adults of all three genera are characterized by sexual dimorphism in the width of the antenna. The monotypic genus *Platyphala* seems to be more closely related to *Aphanostola* in having the phallus with short basal projection, but differs in the prolonged uncus without long setae and the shorter gnathos. The diagnosis of *Leuronoma* is unclear as the type species (*L. chlorotoma* Meyrick, 1918) lacks the abdomen and its affiliation with of the other species is rather provisional. Most of the species currently associated with *Leuronoma* differ from *Aphanostola* species in the uncus which is deeply divided into two lobes, the reduced saccus and a differently shaped phallus. *Aphanostola*, *Platyphala* and *Leuronoma* along with several unrevised groups of species form a separate branch within the tribe Anomologini (subfamily Anomologinae) remotely related to *Aristotelia* Hübner, [1825].

Based on the above diagnosis 23 species are considered here to be members of *Aphanostola*. However, there is a group of still undescribed species which takes an intermediate position among *Aphanostola*, *Leuronoma* and *Platyphala*. It is possible that the current diagnosis of *Aphanostola* must be expanded and additional species have to be included resulting from future revisions of related genera.

Description. Head smoothly scaled, ocelli absent, grey or brown sometimes white (*A. brandbergensis* sp. n.). Labial palpus straight or weakly up-curved, segment 2 slightly broader than segment 3, segment 3 acute, about as wide as segment 2; antenna of male slightly thicker and more distinctly ciliated than antenna of female in most of species (*A. calderae* sp. n., *A. longicornuta* sp. n., *A. rooiklipella* sp. n., *A. griseella* sp. n.), scape without pecten, antennal segments grey to brown with black rings at base.

Thorax grey to brown; wingspan 5.8–10.5 mm; forewing usually pale, grey, or light brown, sometimes whitish or yellowish with brown base of costal margin (*A. calderae* sp. n., *A. morogorensis* sp. n., *A. brandbergensis* sp. n., *A. aarviki* sp. n.), three diffuse dark spots in cell, margins often mottled with black appearing darker than medial part of wing, some species with additional black spots at base and on $\frac{3}{4}$ of dorsum (*A. morogorensis* sp. n.). Hindwing grey, with well developed tornal excavation and pointed tip.

Abdomen. Male tergum VIII sub-rectangular, usually broader than long, strongly edged and weakly emarginated anteriorly; sternum VIII broader than long, posterior margin broadly rounded, anteriolateral corners projected, sometimes strongly. Female segment VII trapezoidal, tergum VIII about twice length of other abdominal segments, sternum VIII three times longer than broad; sternum II of both sexes with pair of venulae, apodemes well developed.

Male genitalia (Fig. 40a). Uncus usually short, broader than long, rounded in *A. atripalpis* and *A. brandbergensis* sp. n., posterior margin weakly or distinctly emarginated, covered with strong setae. Gnathos usually long, slender, hook-shaped, curved in middle or at base, distal portion straight, apex pointed. Tegumen sub-rectangular or trapezoidal, about twice as long as broad, anterior margin with deep medial emargination, lateral folds well developed, turned inwardly and connected medially. Valva (cucullus) digitate, distinctly exceeding the apex of uncus, basal portion usually more strongly sclerotized than distal portion, inner margin distinctly edged in basal half, often bears a short thorn or serrated lobe (*A. aarviki* sp. n.), distal portion densely covered with short hairs, apex more or less inflated, rounded. Saccus merged on $\frac{1}{4}$ – $\frac{1}{2}$ length with cucullus, turned inwards, differing in shape, usually long, narrow, thorn-shaped (*A. calderae* sp. n., *A. acaciae* sp. n., *A. griseella* sp. n.) or short triangular (*A. centripunctella* sp. n., *A. brandbergensis* sp. n.), sometimes broad, beak-shaped (*A. joannoui* sp. n., *A. melliferae* sp. n.); saccus sometimes merged at base with medial thorn on inner margin of valva (*A. kenyella* sp. n., *A. centripunctella* sp. n., *A. africanella* sp. n., *A. brandbergensis* sp. n., *A. namibiensis* sp. n.). Vinculum usually broad, posterior margin with short, triangular or broadly rounded medial projections separated by a narrow incision, two additional medial humps or short projections on the posterior margin of the vinculum present in some species (*A. morogorensis* sp. n., *A. calderae* sp. n.); sometimes (*A. longicornuta* sp. n.) additional lateral

projections of the posterior margin of the vinculum well developed. Saccus broad, triangular, rounded or narrowly digitate (*A. centripunctella* sp. n., *A. longicornuta* sp. n.), exceeding beyond the apex of pedunculus, but sometimes short (*A. namibiensis* sp. n.) or nearly reduced (*A. brandbergensis* sp. n.). Phallus a flattened tube, usually slightly but in some cases considerably (*A. antennata* sp. n.) shorter than tegumen, very long in *A. longicornuta* sp. n., sub-apical area with small lateral teeth by *A. calderae* sp. n. and *A. acaciae* sp. n. or with big apical thorn (*A. kenyella* sp. n., *A. brandbergensis* sp. n.); vesica may bear very small (*A. acaciae* sp. n.) or moderately large (*A. africanella* sp. n.) cornuti, *A. longicornuta* sp. n. with one very big and numerous small spikes in vesica; a narrow and usually long projection of phallus is developed in most of species; ductus ejaculatorius elongate.

Female genitalia (Fig. 40b). Papilla analis ovate, covered with short hairs; segment VIII sub-rectangular, longer than broad, weakly sclerotized, without modifications except for *A. centripunctella* sp. n. and *A. namibiensis* sp. n. with sclerotized patches from the base of apophyses anteriores extending posteriorly to half length of segment VIII. Apophyses anteriores slightly (*A. rooiklipella* sp. n., *A. griseella* sp. n.) or more than twice as long as segment VIII, sometimes moderately thick (*A. pentastigma*, *A. brandbergensis* sp. n., *A. joannoui* sp. n.), apophyses posteriores narrow, twice as long as apophyses anteriores. Antrum elongated (*A. rooiklipella* sp. n., *A. griseella* sp. n., *A. africanella* sp. n.), short and funnel-shaped (*A. pentastigma*, *A. centripunctella* sp. n., *A. joannoui* sp. n., *A. antennata* sp. n.) or as wrinkled tube (*A. longicornuta* sp. n.), not developed by the remaining species. Ostium bursae surrounded with sub-ovate (*A. longicornuta* sp. n.), v-shaped (*A. antennata* sp. n.), rounded (*A. morogorensis* sp. n.), sub-rectangular (*A. rooiklipella* sp. n., *A. griseella* sp. n.) sclerite or with sclerite of another shape (*A. acaciae* sp. n., *A. centripunctella* sp. n.), sometimes sub-ostial area without modification (*A. brandbergensis* sp. n., *A. joannoui* sp. n.). Ductus bursae usually slender, moderately short, in exceptional cases very broad with indistinct transition to corpus bursae and with short lateral appendix at $\frac{1}{3}$ length (*A. acaciae* sp. n.), finely papillated in some species (*A. rooiklipella* sp. n., *A. centripunctella* sp. n., *A. joannoui* sp. n.). Corpus bursae globular, pear-shaped or distinctly prolonged (*A. brandbergensis* sp. n.); signa varying in shape: brush-shaped (*A. centripunctella* sp. n.), a prolonged sclerite laterally covered with small spikes (*A. morogorensis* sp. n., *A. rooiklipella* sp. n., *A. griseella* sp. n., *A. africanella* sp. n., *A. longicornuta* sp. n.), a spinose plate (*A. antennata* sp. n.), reduced by *A. acaciae* sp. n., *A. brandbergensis* sp. n., *A. joannoui* sp. n.; corpus bursae in *A. pentastigma* covered with numerous teeth and spikes, in *A. namibiensis* sp. n. with narrow sub-ovate belt consisting of very small spikes.

Distribution. Afrotropical (South Africa, Zimbabwe, Namibia, Botswana, Kenya, Tanzania, Ethiopia) and Oriental (India) regions.

Biology. *A. pentastigma*, *A. acaciae* sp. n., *A. africanella* sp. n. and *A. melliferae* sp. n. were reared from

various *Acacia*-species in Kenya (Agassiz and Bidzilya 2016 in press). *A. atripalpis* were bred from *Acacia [Senegalia] katechu* (L.f) P.J.H. Hurter & Mabb. in India. It is most likely that *Acacia* s. l. (Fabaceae) is a host plant for most of the *Aphanostola*-species.

In the southern Africa the adults were observed from late August to early May, up to 2000 m elevation in Auas Mts and Brandberg, easily attracted to light. In East Africa adults fly from August to January up to 1850 m elevation.

Key to adults based on external characters

(Note: *A. joannoui* sp. n., *A. antennata* sp. n., *A. longicornuta* sp. n., *A. alternella* sp. n. and *A. rooiklipella* sp. n., *A. melliferae* sp. n., *A. africanella* sp. n. can hardly be distinguished from each other without examination of the genitalia)

- 1 Wingspan 9.5–10.5 mm, forewing light brown with brown dots..... *A. maxima* sp. n.
- Wingspan less than 9.5 mm 2
- 2 Forewing white with distinct black markings..... *A. acaciae* sp. n.
- Forewing otherwise coloured..... 3
- 3 Forewing yellow, black markings large..... 4
- Forewing grey, light brown, cream or light yellow, black markings usually small 5
- 4 Black spot on $\frac{3}{4}$ of dorsum large, forewing comparatively narrow, 7.1 mm..... *A. morogorensis* sp. n.
- Black spot on $\frac{3}{4}$ small, forewing comparatively broad, 6.2 mm *A. aarviki* sp. n.
- 5 Forewing light yellow or cream-white 6
- Forewing grey 7
- 6 Forewing light yellow, costal margin without black irroration, 7.1–7.5 mm *A. calderae* sp. n.
- Forewing cream-white, costal margin with black irroration, 5.8–6.1 mm *A. brandbergensis* sp. n.
- 7 Forewing with large brown, transverse spot in middle *A. centripunctella* sp. n.
- Forewing without large brown, transverse spot in middle 8
- 8 Wingspan 8.0–9.1 mm 9
- Wingspan less than 8.0 mm 10
- 9 Forewing black-brown without markings, head brown, 8.0–8.2 mm..... *A. kenyella* sp. n.
- Forewing grey with rounded black spot in middle, head white, 9.0–9.1 mm *A. namibiensis* sp. n.
- 10 Forewing long and narrow, with four black spots in cell and three black spots on costal margin *A. pentastigma*
- Forewing shorter and broader..... 11
- 11 Forewing light brown 12
- Forewing grey 13
- 12 Forewing densely mottled with black irroration..... *A. kruegeri* sp. n.
- Forewing without black irroration *A. emarginata* sp. n.
- 13 Forewing uniformly grey *A. atripalpis*
- Forewing with black markings..... 14
- 14 Forewing comparatively dark, grey *A. joannoui* sp. n., *A. antennata* sp. n., *A. longicornuta* sp. n., *A. alternella* sp. n.
- Forewing comparatively light grey, with white pattern 15
- 15 Forewing uniformly grey except of margins mottled with black *A. griseella* sp. n.
- Forewing with black markings in cell *A. rooiklipella* sp. n., *A. melliferae* sp. n., *A. africanella* sp. n.

Key to male based on genitalia

(Note: The male of *A. griseella* sp. n. is unknown)

- 1 Projection of phallus present..... 2
- Projection of phallus absent..... 13
- 2 Vesica with one long cornutus, lateral vincular projections very long..... *A. longicornuta* sp. n.
- Vesica with several small cornuti or without cornutus, lateral vincular projections short or absent 3
- 3 Phallus as long as or slightly longer than saccus..... *A. antennata* sp. n.
- Phallus twice as long as saccus 4
- 4 Projection of phallus very short, reaching $\frac{1}{5}$ of its length..... *A. kruegeri* sp. n.
- Projection of phallus long, reaching at least $\frac{3}{4}$ of its length 5
- 5 Tooth on inner margin of valva situated close to sacculus and joined on base 6
- Tooth on inner margin of valva situated more distally from sacculus 8
- 6 Phallus with apical tooth *A. kenyella* sp. n.
- Phallus without apical tooth 7

7	Tooth on inner margin of valva about as long as sacculus	<i>A. centripunctella</i> sp. n.
–	Tooth on inner margin of valva much shorter than valva	<i>A. alternella</i> sp. n.
8	Sacculus twice as broad as valva in middle	<i>A. joannoui</i> sp. n.
–	Sacculus as broad or narrower than valva in middle	9
9	Lateral vincular projections large, rounded, phallus strongly pointed apically	<i>A. rooiklipella</i> sp. n.
–	Lateral vincular projections small or absent, phallus not pointed apically or gradually tapered	
10	Phallus serrated laterally in distal portion	11
–	Phallus not serrated in distal portion	12
11	Saccus rounded apically, process of phallus broadened at apex, vesica with small cornuti	<i>A. acaciae</i> sp. n.
–	Saccus pointed apically, process of phallus not broadened at apex, vesica without cornuti	<i>A. calderae</i> sp. n.
12	Saccus long, subrectangular, process of phallus arising from 1/3 of its length	<i>A. morogorensis</i> sp. n.
–	Saccus triangular, process of phallus arising from about middle of phallus	<i>A. pentastigma</i>
13	Uncus covered with short setae	<i>A. atripalpis</i>
–	Uncus covered with long setae	14
14	Vesica with 7–9 cornuti	<i>A. africanella</i> sp. n.
–	Vesica without cornuti	15
15	Saccus stout, broadly rounded	<i>A. melliferae</i> sp. n.
–	Saccus smaller	16
16	Tegumen broad, trapezoid, sacculus sub-rectangular	<i>A. maxima</i> sp. n.
–	Tegumen narrow, elongate sub-rectangular	17
17	Saccus comparatively long, pointed apically, sacculus very short, hump-shaped	<i>A. emarginata</i> sp. n.
–	Saccus comparatively short, rounded, sacculus longer	18
18	Sacculus narrow, long, uncus longer than broad	<i>A. namibiensis</i> sp. n.
–	Sacculus broader and shorter, uncus broader than long or rounded	19
19	Uncus rounded, sacculus strongly pointed, phallus without apical thorn	<i>A. aarviki</i> sp. n.
–	Uncus heart-shaped, sacculus weakly pointed, phallus with single apical thorn	<i>A. brandbergensis</i> sp. n.

Key to female based on genitalia

(Note: The females of *A. calderae* sp. n., *A. kenyella* sp. n., *A. emarginata* sp. n., *A. aarviki* sp. n., *A. maxima* sp. n., *A. alternella* sp. n. are unknown; the female of *A. atripalpis* has not been examined.)

1	Signum present	2
–	Signum absent	8
2	Antrum longer than half length of apophyses anteriores	3
–	Antrum shorter than half length of apophyses anteriores	5
3	Signum a prolonged plate with small teeth	<i>A. africanella</i> sp. n.
–	Signum a prolonged plate covered with spikes and with cord inside	4
4	Antrum distinctly longer than apophyses anteriores, subostial sclerite with posterior projection	<i>A. rooiklipella</i> sp. n.
–	Antrum sub-equal in length to apophyses anteriores, subostial sclerite without posterior projection	<i>A. griseella</i> sp. n.
5	Signum a large, rounded plate with numerous spikes	<i>A. morogorensis</i> sp. n.
–	Signum of another shape	6
6	Signum brush-shaped, corpus bursae large, rounded; subostial sclerite big, of irregular shape	<i>A. centripunctella</i> sp. n.
–	Signum a weakly curved, narrow plate, corpus elongated; subostial sclerite narrow	<i>A. kruegeri</i> sp. n.
7	Ductus bursae coiled, posterior portion weakly wrinkled, signum a prolonged plate with serrated margins	
–	Ductus bursae not coiled and without wrinkles, signum a spinose plate	<i>A. longicornuta</i> sp. n.
–	Ductus bursae with short appendix	<i>A. antennata</i> sp. n.
8	Ductus bursae with short appendix	<i>A. acaciae</i> sp. n.
–	Ductus bursae without appendix	9
9	Corpus bursae covered with numerous spikes	<i>A. pentastigma</i>
–	Corpus bursae without spikes	10
10	Ductus bursae with sclerotized band	<i>A. melliferae</i> sp. n.
–	Ductus bursae without sclerotized band	11
11	Subostial sclerite absent	<i>A. brandbergensis</i> sp. n.
–	Subostial sclerite present	12
12	Sternum VIII with sclerotized patches arising from base of apophyses anteriores, subostial sclerite digitate	
–	Sternum VIII without sclerotized patches, subostial sclerite a transverse prolonged plate	<i>A. namibiensis</i> sp. n.
–	Sternum VIII without sclerotized patches, subostial sclerite a transverse prolonged plate	<i>A. joannoui</i> sp. n.

Review of species

Aphanostola acaciae Bidzilya & Mey, sp. n.

http://zoobank.org/CF042B14-D95D-4369-BAE0-0713B53BC496

Figs 1–3, 41, 42, 65

Genus 1, sp. 1. – Bidzilya 2007: 94, figs 2, 5; pl. 5, figs 2, 3. *Aphanostola* sp. 1 – Agassiz and Bidzilya 2016 (in press).

Type material. Holotype ♂, [Namibia] 20 km NW Uis, LF, 27.ii.2002 (Turm) (Mey) (gen. slide 101/05, O. Bidzilya) (MfN). Paratypes: 1 ♂, 2 ♀, Namibia, Brandberg, Ugab, LF (MEY), 30.xi.2000, LF (gen. slide 78/05♀; 224/12♂; 575/14♂, O. Bidzilya) 1 ♀, Namibia, 10 km W Brandberg, 28.ii.2002(Turm) (Mey) (gen. slide 73/05, O. Bidzilya); 2 ♂, 1 ♀, Namibia, Omatako Ranch, LF, 22–23.iii.2003 (Mey) (gen. slide 501/14♂, O. Bidzilya); 1 ♂, Namibia, Mile 46, 18 18 S, 19 15 E, 24–26.iii.2003 (Mey); 2 ♂, Namibia, Erichsfelde, 21 35 S, 16 56 E, 19–21.iii.2003 (Mey) (gen. slide 164/15, O. Bidzilya); 2 ♀, Namibia, Waterberg NP, 21–22.xi.2000, LF (Mey); 2 ♂, 2 ♀, Namibia, Namutoni, Etosha Nat. Park, 14–16.xii.1993 (Mey & Ebert); 1 ♀, Namibia, Etosha, Namutoni, 7.xi.1999 (Mey); 2 ♀, Namibia, Namutoni, Etosha NP, 23–25.xi.2000, LF (Mey) (gen. slide 152/15, O. Bidzilya); 1 ♂, Namibia, Okatjikona, Waterberg Nat. Park, 14–16.ii.2008, LF (Mey); 1 ♂, NAMIBIA-Exp., ZMB 1992, E. Caprivi, Katima Mulilo, 17 29 S/ 24 17 E, lux, 3–8.iii.92 (Mey); 1 ♂, 2 ♀, Namibia, Naukluft, Tsams-Ost, 3.xii.08 (Ebert, Mey & Kune); 4 ♀, Namibia, Mirabib, Central Namib, 27.i.2009, LF (Mey) (gen. slide 548/14, O. Bidzilya); 1 ♂, 1 ♀, Namibia, Auas Mts., Windhoek, 1917 m, 25.i.2009 LF (Mey); 1 ♀, RSA, Transvaal, Nylsvley Nat. Res., 29.xi.2004, LF, Turm (Mey); 1 ♂, Namibia, Gamsberg, Rooiklip Farm, 10–11.ix.2012 (Mey) (gen. slide 496/14, O. Bidzilya); 4 ♀, Namibia, Rooisand, Gamsberg Pass, 20.i.2007, aut. Falle (Mey & Ebert) (gen. slide 200/12; 201/12; 42/15, O. Bidzilya) (all MfN); 2 ♂, [Namibia] Gobabeb, Game Reserve No. 3, 12–17.iv.1967 (Potgieter) (gen. slide 57/15, O. Bidzilya); 3 ♂, S.W.Afr., Namib, Gobabeb, 23.24 S – 15.03 E, 3.x.1974: E-Y447, light trap (Endrödy-Younga) (gen. slide 35/15, O. Bidzilya); 1 ♂, Abachaus, SWA, xii.1946 (Hobohm) (gen. slide 16/15, O. Bidzilya) (all TMSA); 1 ♂, **South Africa**, Kgalagadi, Transfrontier Park, Mata Mata, 950 m, 18.xii.2009, 25 15 403 S; 021 38 427 E (Wieser) (gen. slide 513/14, O. Bidzilya) (LMK); 1 ♀, **Zimbabwe**, 6–10.iv.1954 (Janse) (gen. slide 19/15, O. Bidzilya) (all TMSA); 1 ♂, **Kenya**: Rift Valley, Logumgum 1000 m, 0°27'N, 36°05'E, e.l. *Acacia tortilis*, em. 1.ix.2007 (Agassiz) (gen. slide 1362, O. Bidzilya) (coll. Agassiz).

Diagnosis. The species is recognizable externally by the white or light grey forewing with a black dash at base of costa, two black dashes at base of fold and three distinct black spots in cell. The male genitalia differ from the rest of *Aphanostola* species in the very short uncus in combination with apically narrowed saccus, the long, strongly curved gnathos, the basal projection of the phallus broadened at apex and the presence of small cornuti

in the vesica. The female genitalia can be recognized unmistakably by the shape of the antrum and by the broad ductus bursae bearing a lateral appendix.

Description. Adult (Figs 1–3). Wingspan 7.2–8.4 mm. Head, thorax and tegulae light grey to white; labial palpus up-curved, segment two black with white apex, segment three white with broad black ring in middle; antenna in male thicker than in female, scape brown with some white scales beneath, other segments brown with white rings. Forewing white to light grey, costal margin black from base to 1/3 length, single black scales sparsely scattered along costal and dorsal margins; two black dashes in fold, sometimes merging; two black spots at base of cell and one black spot in corner of cell; cilia white, black-tipped. Hindwing white to greyish white.

Variation. Ground colour of forewing varies from white to light grey.

Male genitalia (Figs 41, 42). Uncus very short, posterior margin weakly emarginated, covered with strong setae; gnathos long, curved by nearly right angle in middle; tegumen broad, with deep and broad anterior emargination; valva weakly narrowed in middle, apical half distinctly inflated, teeth on inner margin indistinct; sacculus narrow, thorn-shaped; vinculum moderately broad with short projections on posterior margin, medial postero-medial incision narrow; saccus broad at base, narrow distally, apex abruptly cut or rounded, exceeding far beyond apex of pedunculus; phallus wide, apex with group of 3–8 very small cornuti and three lateral teeth, basal projection slightly shorter than length of phallus, its apex weakly widened.

Variation. Uncus sometimes reduced to short, paired hump.

Female genitalia (Fig. 65). Segment VIII weakly sclerotized, distinctly shorter than apophyses anteriores; antrum broad, rounded; left side with a few teeth; sub-ostial sclerite narrow, prolonged with outwardly curved apex; ductus bursae of moderate width in basal 1/3, then very wide with indistinct transition to prolonged corpus bursae, short lateral appendix at 1/3 length; signum absent.

Etymology. The specific epithet refers to the host-plant, *Acacia tortilis*, of the new species.

Distribution. South Africa, Namibia, Zimbabwe, Kenya.

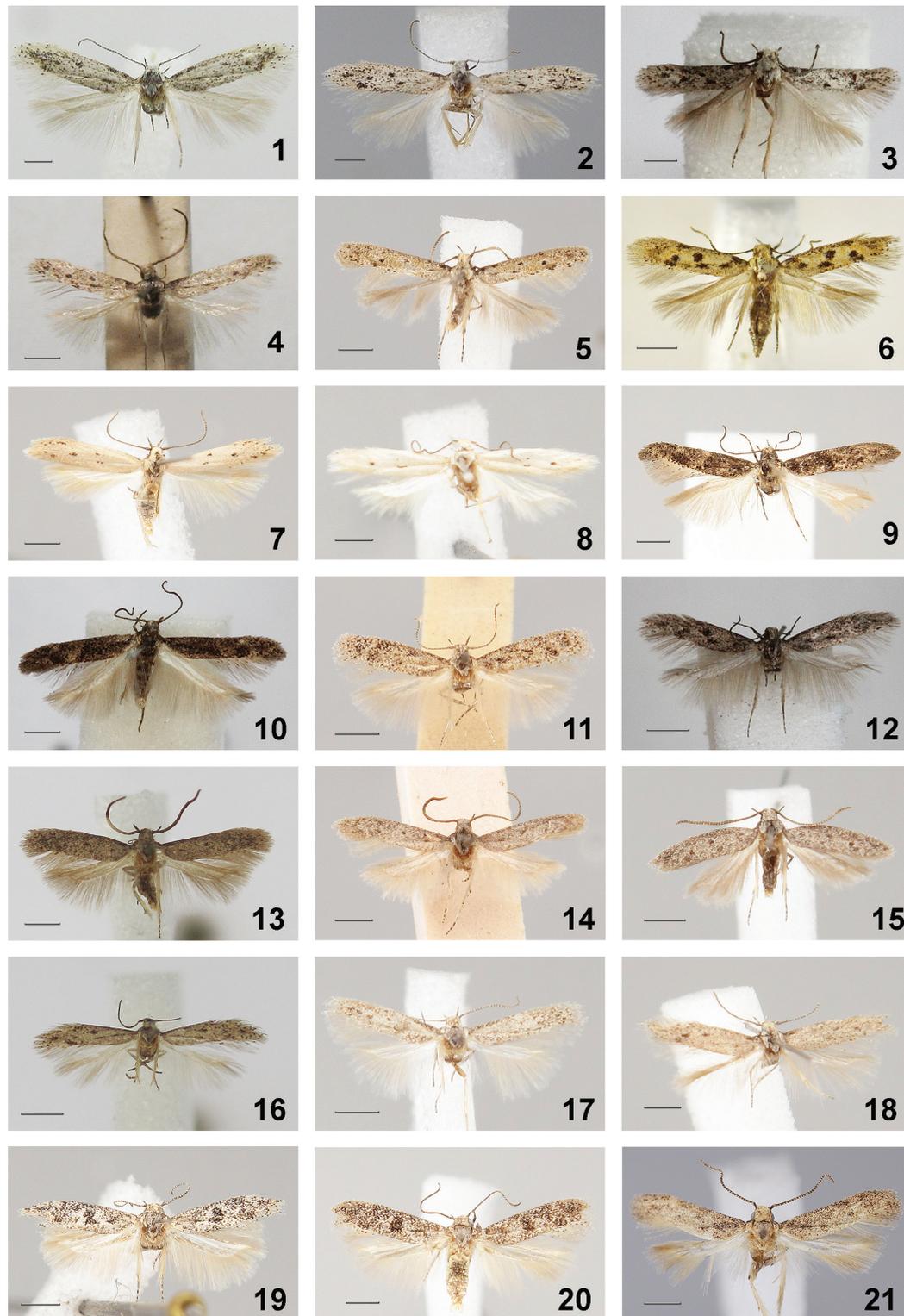
Biology. The larva feeds on *Acacia tortilis* (Forssk.) Hayne (Fabaceae) in Kenya (Agassiz and Bidzilya 2016 in press). Adults were collected from late August to early June.

Aphanostola pentastigma (Janse, 1960)

Figs 4, 5, 43, 66, 67

Lanceopenna pentastigma Janse, 1960 – Moths of South Africa, 6 (2): 216, pl. 105, pl. 109f, pl. 121e, pl. 118 h, i. *Aphanostola pentastigma* (Janse, 1960) – Agassiz and Bidzilya 2016 (in press).

Material examined. Holotype of *L. pentastigma*, ♀, [South Africa], Pretoria, 28.viii.1937 (Vári) (gen. slide.



Figures 1–21. Adults of *Aphanostola* spp. (scale bar 1.0 mm) **1.** *A. acaciae* sp. n., Namibia, Brandberg (gen. slide 73/05); **2.** *A. acaciae* sp. n., Namibia, Mirabib (gen. slide 548/14); **3.** *A. acaciae* sp. n., Kenya, Logumgum (gen. slide 1362); **4.** *A. pentastigma*, HT, RSA, Pretoria; **5.** *A. pentastigma*, Kenya, L. Naivasha; **6.** *A. morogorensis* sp. n., HT, Tanzania, Morogoro Town; **7.** *A. calderae* sp. n., RSA, Asante-Sana; **8.** *A. calderae* sp. n., HT, RSA, Asante-Sana; **9.** *A. kenyella* sp. n., Kenya, between Limuru and Mai Mahiu (gen. slide 1497); **10.** *A. kenyella* sp. n., HT, Kenya, between Limuru and Mai Mahiu; **11.** *A. kruegeri* sp. n., RSA, Pretoria (gen. slide 8/15); **12.** *A. alternella* sp. n., HT, Kenya, Turi; **13.** *A. antennata* sp. n., HT, Namibia, Popa Falls; **14.** *A. antennata* sp. n., RSA, Nwanedzi (gen. slide 36/15); **15.** *A. antennata* sp. n., Namibia, Kavango; **16.** *A. rooiklipella* sp. n., HT, Namibia, Rooiklip Farm; **17.** *A. griseella* sp. n., HT, Namibia, Grootfontein; **18.** *A. griseella* sp. n., Kenya, Nakuru NP (gen. slide 596/14); **19.** *A. centripunctella* sp. n., Namibia, E. Caprivi (gen. slide 76/05); **20.** *A. centripunctella* sp. n., Namibia, E. Caprivi; **21.** *A. centripunctella* sp. n., Namibia, E. Caprivi (gen. slide 155/15).

8394), *L. pentastigma* Janse, ♀, Holotype No: 3684. Paratypes: ♂, Pretoria, 30.x.1948 (Vári) (gen. slide 8781), 2 ♂, Gladde Klipkop, 1–9.iii.1954 (Janse) (gen. slide 254/12, O. Bidzilya); 1 ♀, Pretoria, 20.x.1952 (Vári) (gen. slide 260/12, O. Bidzilya); 1 ♀, Pretoria, 10.i.1951 (Vári); 1 ♂, Pretoria, 21.viii.1949 (Vári); 1 ♂, Pretoria, 15.viii.1953, e.l. *Acacia* sp. (Vári); 1 ♂, Pretoria, 8.i.1975 (Vári) (gen. slide 32/15, O. Bidzilya); 1 S, Pafuri, K.N.P. Survey, 8.v.1975 (Potgieter & Scoble) (gen. slide 44/15, O. Bidzilya) (all TMSA); 1 ♀, Zimbabwe, 6–10. iv.1954 (Janse); 1 ♀, Kei River Bridge, 5–6.ii.1955 (Janse) (slide venation 2913) (TMSA); 9 ♂, 9 ♀, Kenya: Rift Valley, L. Naivasha 1900 m, 0°47'S, 36°24'E, l. on *Acacia xanthophloea*, em. 18–23.xi, 4–10.xii.2003 (Agassiz) (gen. slide 1357♂; 1358♀, O. Bidzilya); 1 ♂, 1 ♀, KENYA: Rift Valley, L. Naivasha 2000 m, 0°45'S, 36°24'E, ex l. on *Acacia xanthophloea*, em. 27.iv.2003 (Agassiz) (gen. slide 1357♂; 614/14♀, O. Bidzilya) (coll. Agassiz); 2 ♂, 1 ♀, Kenya, Nakuru National Park, Makalia Falls Camp Site, 00°25'S 036°04'E, 1830 m, 11.x.2001 (J. De Prins) (BMNH).

Diagnosis. *L. pentastigma* is recognizable externally by the narrow, prolonged forewing with four black spots in cell and two black spots on costal margin. The male genitalia resemble those of *A. acaciae* sp. n., but the uncus is longer, the saccus is narrower, the phallus lacks cornuti and teeth, and the basal projection is shifted nearly to the middle. The female genitalia differ from the other *Aphanostola* species in the presence of numerous spikes on the wall of the corpus bursae.

Redescription. Adult (Figs 4, 5). Wingspan 7.2–8.0 mm. Head, thorax and tegulae covered with grey black-tipped scales, frons light grey; labial palpus weakly up-curved, pale with broad black medial belts, segment two whitish on inner surface; antenna in male finely ciliated and thicker than antenna in female, scape black, other antennal segments grey with narrow black rings at base. Forewing grey densely suffused with brown, black spot just at base, at 1/4 and 1/3 of costal margin; four black spots in cell: two in fold, one in middle under costal margin and last one in corner of cell; diffuse black spot at 2/3 of dorsal margin, apex mottled with black, termen black spotted; cilia grey. Hindwing grey.

Male genitalia (Fig. 43). Uncus more than two times broader than long, posterior margin with broad and shallow emargination, densely covered with strong setae; gnathos long, curved before middle, weakly broadened in distal portion, with pointed tip; tegumen broad, with deep and broad anterior emargination; distal half of valva gradually widened towards rounded apex, inner margin with very small tooth; saccus narrow, beak-shaped; vinculum moderately broad with short projections on posterior margin, postero-medial incision narrow; saccus broad at base, triangular, apex weakly pointed, slightly exceeding beyond the apex of pedunculus; phallus gradually tapered, basal projection narrow, shifted nearly to middle of phallus.

Female genitalia (Figs 66, 67). Segment VIII without modification, weakly sclerotized, distinctly shorter

than apophyses anteriores; antrum short, funnel-shaped; sub-ostial sclerite cup-shaped; ductus bursae long, narrow, weakly widened before entrance to globular corpus bursae; signum absent, but corpus bursae covered with a number of teeth and spikes.

Variation. The specimens from Kenya have no teeth on the wall of the corpus bursae, only spikes are present, and their number is much smaller than in females from South Africa; the corpus bursae is distinctly smaller too, the ductus bursae is broader, the transition to the corpus bursae is more gradual.

Distribution. South Africa, Zimbabwe, Kenya.

Biology. Larva feeds on *Acacia xanthophloea* Benth. (Fabaceae) in Kenya (Agassiz and Bidzilya 2016 in press) and in *Acacia* sp. in South Africa. Adults were observed from late August to early April, up to 1830 m elevation in Kenya.

Notes. *Lanceopenna pentastigma* was described from nine specimens of both sexes collected in South Africa and Zimbabwe. We were able to examine the type series. The genitalia of both sexes match well with those of *Aphanostola*, therefore the species was transferred to this genus (Bidzilya and Agassiz 2016 in press).

The specimens from Kenya agree well externally with specimens from the type series and also in the male genitalia, but differ in some details in the female genitalia (see above). However, we do not consider these to be separate species.

Aphanostola morogorensis Bidzilya, sp. n.

<http://zoobank.org/B92045EC-677F-4E58-94BC-4C359DA5F285>
Figs 6, 44, 68

Type material. Holotype ♂, Tanzania, Morogoro, Morogoro Town, 20.ix.1992 (Aarvik) (gen. slide 2378, O. Bidzilya) (MNHO). Paratype: 1 ♀, same data as holotype but 13.ix.1992 (gen. slide 2375, O. Bidzilya) (MNHO).

Diagnosis. The new species is very similar externally to *A. aarviki* sp. n., but larger, the forewing is narrower and black spot on 3/4 of dorsum is larger. The male genitalia are most close to those of *A. acaciella* sp. n. but differ in the longer saccus, the bigger vincular projections, a slenderer phallus and in other details. The female genitalia remotely resemble those of *A. africanella* sp. n., but the antrum is not developed and the signum is larger, rounded rather than elongated.

Description. Adult (Fig. 6). Wingspan 7.1 mm. Head, thorax and tegulae light brown, frons lighter, dark yellow, labial palpus yellow with broad black medial rings, scape brown, other segments brown with yellowish rings; forewing yellow, costal margin and subapical area mottled with black, two black spots just at base of costal margin and middle width near the base, black spot in middle of cell and another prolonged spot below near dorsum, two black spots in 2/3 near dorsal margin; cilia grey. Hindwing grey.

Male genitalia (Fig. 44). Uncus very short, posterior margin weakly emarginated, with strong long setae;

gnathos long, evenly curved in basal half, distal portion straight, weakly widened before narrow tip; tegumen broad, with deep and broad anterior emargination; valva straight, apical half distinctly inflated, curved outwardly; sacculus narrow, digitate, straight, weakly constricted before apex; vinculum moderately broad, posterior margin with broad, comparatively big medial projections, lateral projection very small, tooth-shaped, postero-medial incision narrow; saccus parallel-sided, apex tapered, far exceeding beyond apex of pedunculus; phallus narrow, vesica with three small cornuti, basal projection extending from 1/3 length, slightly shorter than phallus.

Female genitalia (Fig. 68). Segment VIII weakly sclerotized, distinctly shorter than apophyses anteriores; apophyses posteriores very long, slender; antrum short, narrow; sub-ostial sclerite rounded, edged posteriorly; ductus bursae long, narrow, gradually broadened in distal half towards rounded corpus bursae; signum a big rounded plate densely covered with small spikes, with tapered posterior process.

Etymology. The name refers to the type locality.

Distribution. Tanzania.

Biology. The host plant is unknown. The adults have been collected in September.

Aphanostola calderae Bidzilya & Mey, sp. n.

<http://zoobank.org/71E004FA-DE31-4302-AC3F-931D4112062E>
Figs 7, 8, 45, 46

Type material. Holotype ♂, [South Africa], RSA, East. [ern] Cape, Sneeu Berg [area], Asante-Sana, 2.-6. iv.2011 (Mey) (gen. slide 184/12, O. Bidzilya) (MfN). Paratypes: 5 ♂, same locality, 22-26.i.2012 (Mey) (gen. slide 582/14; 609/14, O. Bidzilya) (all MfN).

Diagnosis. The new species is well recognizable externally by the yellow-white forewing with black markings. The male genitalia resemble those of *A. acaciae* sp. n. but differ in the longer uncus, the inner margin of the valva bearing a medial thorn, the sacculus not constricted before apex, the triangular saccus, and the shorter process of the phallus.

Description. Adult (Figs 7, 8). Wingspan 7.1-7.5 mm. Head, thorax and tegulae white, labial palpus weakly up-curved, brown with white apical rings, inner surface white; antenna dark brown, ciliated in male; forewing yellow-white, black dot in middle of cell, black dash in middle of fold, black spot on 2/3 near dorsal margin, a few black dots along termen, cilia white. Hindwing and cilia white.

Male genitalia (Figs 45, 46). Uncus short, twice as broad as long, covered with strong, long setae, posterior margin weakly emarginated in middle; gnathos narrow, weakly curved, sickle-shaped; tegumen as a right angle, anterior margin deeply emarginated; basal half of valva straight, basal half of inner margin strongly sclerotized, terminating in a short thorn in the middle of valva length, distal part inflated, hairy, far exceeding top of

uncus; sacculus narrow to moderately wide, prolonged, apex abruptly cut; vinculum moderately broad, posterior margin with very short medial and short triangular lateral humps, postero-medial incision relatively broad; saccus a right-angled triangle or slightly elongated; phallus comparatively wide, straight, edges finely serrated in apical 1/4, apex abruptly cut, about as long as length of valva, basal projection shorter than phallus, narrow, pointed.

Female. Unknown.

Etymology. The name refers to the location of the game farm Asante Sana in the escarpment, where the landscape is reminiscent of a caldera.

Distribution. South Africa.

Biology. Host plant unknown. Adults were collected late January and early April.

Aphanostola kenyella Bidzilya & Agassiz, sp. n.

<http://zoobank.org/470BB9F9-0E57-44A3-95E8-7929A3BD424F>
Figs 9, 10, 47

Type material. Holotype ♂, Kenya, Central, Escarpment, between Limuru and Mai Mahiu, 01°02'09"S, 36°35'58" E, 1850 m, M.V., light, 14.viii.1999 (Agassiz) (gen. slide 578/14, O. Bidzilya) (coll. Agassiz). Paratype: ♂, same data as holotype (gen. slide 1497, O. Bidzilya) (coll. Agassiz).

Diagnosis. *A. kenyella* sp. n. is recognizable externally by the dark, nearly entirely black forewing and comparatively large size. The male genitalia are characterized by the broad sacculus, the narrow saccus and the phallus with distinct lateral teeth on the tip.

Description. Adult (Figs 9, 10). Wingspan 8.0-8.2 mm. Head and thorax brown, frons light brown, labial palpus weakly up-curved, segment two black with white apex, segment three black with white ring at base, apex white, scape black, other segments black with narrow whitish rings at base, finely ciliated by male; tegulae black with rare brown tipped scales; ground colour of forewing black to light brown, diffuse light brown medial fascia from 1/2 to 2/3 length, greyish indistinct spots on 3/4 length on both margins, light brown sub-apical area separated with black pattern of irregular shape from light brown medial fascia, cilia brown, black-tipped. Hindwing grey.

Variation. Forewing, head and thorax varies from those of described above to dark, nearly uniformly black.

Male genitalia (Fig. 47). Uncus twice as broad as long, posterior margin with deep v-shaped medial incision; gnathos strongly curved, apical 1/4 weakly widened; tegumen twice as long as broad, anteromedial incision deep and broad; valva straight, inner margin strongly sclerotized, terminating in a short thorn merged with the posterior margin of the sacculus; sacculus stout, sub-triangular, broader than valva; vinculum slightly broader than long, posterior margin with short triangular medial projections, medial incision deep and narrow, lateral projections short, hump-shaped, placed very close to sacculus; saccus narrow, far exceeding beyond the tip of pedunculus; phallus

about as long as valva, gradually narrowed apically, with distinct lateral teeth on apex, basal projection narrow, not reaching the tip of phallus.

Female. Unknown.

Etymology. The species name refers to the country of occurrence of the new species.

Distribution. Kenya.

Biology. Host plant unknown. The specimens from the type-series were collected in mid-August at 1850 m elevation.

Aphanostola kruegeri Bidzilya & Mey, sp. n.

<http://zoobank.org/510FAAFA-E485-4EBA-939E-EEF2F8E21C3E>
Figs 11, 48, 81

Type material. Holotype ♀, [South Africa] Pretoria, 1.ii.1951 (Vári) (gen. slide 8/15, O. Bidzilya) (TMSA). Paratypes: 1 ♂, same data as holotype but 19.x.1951 (gen. slide 6/15, O. Bidzilya); 1 ♂, same data but 18.i.1950 (gen. slide 8332); 1 ♂, Pretoria N, 26.i.1954 (Vári) (gen. slide 4/15, O. Bidzilya); 1 ♀, Pretoria N, 27.i.1951 (gen. slide 11/15, O. Bidzilya) (all TMSA).

Diagnosis. The new species is externally very similar to *A. emarginata* sp. n. in having brown forewing, but the forewing is densely black irrorated. The male genitalia are defined by the very short basal projection of the phallus. The elongated narrow subostial sclerite and the narrow signum are characteristic for the female genitalia.

Description. Adult (Fig. 11). Wingspan 7.3–8.1 mm. Head, thorax and tegulae covered with grey brown-tipped scales, labial palpus brown, segment two mixed with grey on inner side, segment three with white medial belt and white apex, antenna in male thicker than antenna in female, finely ciliated, scape brown, flagellum with alternated brown and whitish rings; forewing brown, costal margin mottled with black, diffuse black spot at 2/3 on both margins, black dot in fold, paired black spots in cell, apical ¼ scattered with black, cilia grey, black tipped. Hindwing light grey.

Variation. Some specimens with blackish dorsal margin of forewing.

Male genitalia (Fig. 48). Uncus broader than long, posterior margin distinctly emarginated; gnathos long, gradually curved in basal half, weakly broadened before pointed tip; tegumen sub-trapezoidal, anterior margin twice as long as posterior margin, anteromedial emargination broad, moderately deep; basal half of valva straight, inner margin with distinct thorn just after sacculus, distal half narrow, densely haired, apex rounded; sacculus stout, triangular, broader than valva; vinculum moderately broad, medial projections short, rounded, medial incision very narrow; saccus basally broad, then tapered, far exceeding beyond apex of pedunculus; phallus weakly narrowed apically, basal projection narrow, nearly reaching tip of phallus.

Female genitalia (Fig. 81). Segment VIII slightly longer than broad, evenly sclerotized, apophyses anteri-

ores about 2.5 times longer than segment VIII; antrum funnel-shaped; sub-ostial sclerite sub-ovate with lateral folds; ductus bursae narrow in posterior part, then broadened gradually to broad corpus bursae; signum narrow, elongate.

Etymology. The species is dedicated to Martin Krüger, Lepidoptera curator in the TMSA, for his continuous help during our work in the collections of the TMSA.

Distribution. South Africa.

Biology. The host plant is unknown. The adults were collected in October, January and February.

Aphanostola alternella Bidzilya & Agassiz, sp. n.

<http://zoobank.org/31062F61-FBB3-4C64-95B7-A625DCD7A146>
Figs 12, 49

Type material. Holotype ♂, Kenya, Rift valley, Turi, 8000ft, 11.iii.2000 (Agassiz) (gen. slide 307/14 (=1538), O. Bidzilya) (coll. Agassiz).

Diagnosis. The new species can be reliably separated from *A. joannoui* sp. n., *A. antennata* sp. n. and *A. longicornuta* sp. n. by the study of the genitalia. The male genitalia are most similar to those of *A. kruegeri* sp. n. but the sacculus is longer, the gnathos is narrower and the basal projection of the phallus is longer than in the mentioned species.

Description. Adult (Fig. 12). Wingspan 7.0 mm. Head, thorax and tegulae greyish-brown, labial palpus brown mottled with black, segment two mixed with grey on inner side, segment three with white medial belt and white apex, antenna in male moderately thick, finely ciliated, scape brown, flagellum with alternating brown and whitish rings; forewing grey, costal margin and apical 1/4 mottled with black, two black spots in cell; cilia grey, black tipped; hindwing light grey.

Male genitalia (Fig. 49). Uncus heart-shaped, posterior margin with deep medial emargination; gnathos long, narrow, slightly broadened before apex, gradually curved in basal half; tegumen sub-trapezoidal, anterior margin twice as long as posterior margin, anteromedial emargination broad, moderately deep; basal part of valva straight inner margin with distinct narrow thorn just after the sacculus, distal part densely haired, apex rounded; sacculus stout, elongated, as broad as valva, narrowed towards pointed apex, outer margin strongly curved; vinculum moderately broad, medial projections deep and narrow, medial incision very narrow; saccus basally broad, then tapered, slightly exceeding beyond apex of pedunculus; phallus weakly narrowed apically, basal projection narrow, reaching to ¾ length of phallus.

Female. Unknown.

Etymology. The specific name is derived from “alternarius” (Latin), alternating, which refers to the alternating brown and white rings of the antenna.

Distribution. Kenya.

Biology. The host plant is unknown. The adult moth was collected in March at an altitude of 2400 m.

***Aphanostola antennata* Bidzilya & Mey, sp. n.**

<http://zoobank.org/F9855EB9-E425-4BB1-AB14-FA0ABA6CFBFB>
Figs 13–15, 50, 69

Aphanostola sp. – Mey and Kühne 2014: 241.

Type material. Holotype ♂, NAMIBIA-Exp., ZMB 1992, Kavango: Popa Falls, 18 07S/ 21 35 E, lux., 26.ii.–3.iii.92 (Mey) (MfN). Paratypes: 12 ♂, 12 ♀, NAMIBIA-Exp., ZMB 1992, Kavango: Popa Falls, 18 07S/ 21 35 E, lux., 26.ii.–3.iii.1992 (Mey) (gen. slide 206/12♀; 214/12♂; 433/07♂; 41/15♂, O. Bidzilya); 7 ♂, 2 ♀, NAMIBIA-Exp., ZMB 1992, East Caprivi: Mudumu NP: Nakatwa, 18 10 S/ 23 26 E, lux., 8–13.iii.92 (Mey); 1 ♂, 1 ♀, Popa-Falls, Okavango River, 23–24.ii.1993 (Mey & Ebert) (gen. slide 54/08♂, O. Bidzilya; ♀ in glycerol); 1 ♀, same data but 13.xii.1993 (gen. slide 167/15, O. Bidzilya); 1 ♂, Namibia, Mt. Etjo, 30 km E Kalkrand, 14.iii.2005, LF (Mey); 1 ♀, [South Africa], RSA, Mpumalanga, Hongonyi Lodge, S 24 27,17 E 31 4,56, 30. iv–1.v.2010, LF (Mey & Kühne) (gen. slide 478/14, O. Bidzilya) (all MfN); 1 ♂, [RSA] Skukuza, 3.iv.1952 (Vári) (gen. slide 579/14, O. Bidzilya); 1 ♀, Satara, 27.iii.1952 (Janse & Vári) (gen. slide 27/15, O. Bidzilya); 1 ♂, Nwanedzi, K.N.P. Survey, 30.iv–1.v.1968 (Potgieter & Goode) (gen. slide 36/15, O. Bidzilya) (all TMSA).

Diagnosis. The new species can be reliably separated from *A. joannoui* sp. n., *A. longicornuta* sp. n., and *A. alternella* sp. n. by comparing the genitalia. The males can be recognized further by the extremely thickened antennae. The male genitalia are similar to those of *A. calderae* sp. n., but can be easily recognized by the short phallus, the short postero-medial incision of the vinculum and the more prolonged tegumen. The female genitalia are characterized by the unique spinose signum and V-shaped antrum.

Description. Adult (Figs 13–15). Wingspan 6.5–8.0 mm. Head, thorax and tegulae covered with grey black-tipped scales, frons off-white, labial palpus weakly up-curved, segment two black with whitish scales at base, segment three black with white basal, medial and apical rings, inner surface lighter, greyish, antenna very thick in male, thin in female, scape black, other antennal segments black with narrow whitish rings at base, underside greyish, finely ciliated by male; forewing grey densely suffused with brown along margins and particularly on apex, four diffuse brown dots in cell, cilia grey, brown-tipped; hindwing grey.

Male genitalia (Fig. 50). Uncus twice as broad as long, posterior margin slightly emarginated; gnathos evenly curved, of even width except for pointed tip; tegumen comparatively long, weakly narrowed distally, antero-medial emargination large, triangular; valva straight in basal half, distal portion turned outwards, weakly widened, apex rounded; sacculus narrow to moderately wide, thorn- or finger-shaped; vinculum broad, posterior margin with very short medial humps, postero-medial inci-

sion relatively broad but short; saccus triangular, tapered, slightly exceeding beyond the top of pedunculus; phallus short, about 2.5 times longer than broad, apex abruptly cut, basal projection relatively broad, distinctly shorter than phallus with rounded apex.

Female genitalia (Fig. 69). Segment VIII twice as long as broad, evenly sclerotized; apophyses anteriores moderately thick, twice as long as segment VIII; antrum short, funnel-shaped; lateral sub-ostial sclerite narrow horn-shaped; ductus bursae gradually broadened towards large, globular corpus bursae; signum a spinose plate.

Etymology. The specific name refers to the thickened antenna of the male.

Distribution. South Africa, Namibia.

Biology. Host plant unknown. Adults occur from November to December and from February to early May.

***Aphanostola rooiklipella* Bidzilya & Mey, sp. n.**

<http://zoobank.org/6E6F7B55-91F7-4807-A91E-26DAC7A50B24>
Figs 16, 51, 70, 71, 71a

Type material. Holotype ♀, Namibia, Gamsb[er]g., Rooiklip Farm, 10–11.ix.20012, LF (Mey) (MfN). Paratypes: 8 ♀, same data as holotype (gen. slide 495/14; 547/14; 554/14, O. Bidzilya); 1 ♀, Namibia, Rooisand, Gamsberg Pass, 20.i.2007, aut[omatische] Falle (Mey & Ebert) (gen. slide 203/12, O. Bidzilya); 1 ♂, 1 ♀, Namibia, Omatako Ranch, LF, 22–23.iii.2003 (Mey) (gen. slide 213/12♂, 66/15♀, O. Bidzilya); 1 ♀, Namibia, Otjiwarongo, Hohenfels, 25–27.viii.2012, LF (Mey) (gen. slide 561/14, O. Bidzilya) (MfN); 1 ♀, RSA, Natal, Mkuzi, [15°sq NW cnr, 27 30'S, 32 05'E], 23–26.iv.1982 (Scoble, Laurenson & Kroon) (gen. slide 45/15, O. Bidzilya) (TMSA).

Diagnosis. The new species can reliably be separated from *A. melliferae* sp. n. and *A. africanella* sp. n. by the genitalia. The male genitalia most resemble those of *A. acaciae* sp. n., but are well recognizable by the presence of the big rounded lateral, vincular projections in combination with sub-rectangular tegumen and apically tapered phallus. The female genitalia resemble those of *A. griseella* sp. n., but the antrum is distinctly longer than the apophyses anteriores in *A. rooiklipella* sp. n. whereas the antrum in *A. griseella* sp. n. is sub-equal in length to apophyses anteriores; moreover the sub-ostial sclerite in *A. griseella* sp. n. is shorter and having shorter posterior projections.

Description. Adult (Fig. 16). Wingspan 6.2–6.4 mm. Head, thorax and tegulae covered with grey black-tipped scales, frons off-white, labial palpus weakly up-curved, segment two black with whitish scales at base, segment three black with white basal, medial and apical rings, inner surface lighter, greyish, antenna thick in male, thin in female, finely ciliated in both sexes, scape black, other antennal segments black with narrow whitish rings at base, underside greyish; forewing light grey densely suffused with brown along margins and particularly on apex,

three prolonged brown spots in cell, diffuse brown dash in fold, cilia grey, brown-tipped; hindwing grey.

Male genitalia (Fig. 51). Uncus about as broader as long, weakly widened apically, posterior margin slightly emarginated; gnathos sickle-shaped; tegumen sub-rectangular, 1.5 times longer than broad, anterior margin with comparatively shallow, rounded emargination; valva straight, inner margin with distinct thorn at 2/3 length, distal 1/3 inflated, hairy; sacculus prolonged, narrow, curved inwardly; vinculum narrow, posterior margin with short medial and long lateral projections, anteromedial emargination shallow; saccus broad, triangular, slightly exceeding beyond apex of pedunculus; phallus with pointed apex, basal projection arises from 1/3 length of phallus and exceeding nearly to its tip.

Female genitalia (Figs 70, 71, 71a). Segment VIII nearly as long as broad, evenly sclerotized; apophyses anteriores moderately thick, twice as long as segment VIII; antrum long, tubular, exceeding the tips of apophyses anteriores; sub-ostial sclerite sub-rectangular with long posterior projection; ductus bursae narrow; corpus bursae sub-ovate; signum a long sub-triangular plate densely covered with spikes and with medial cord inside.

Etymology. Named after the farm Rooiklip in the escarpment of Namibia.

Distribution. Namibia.

Biology. The host plant unknown. The adults were observed from late August to mid-September, and again in January and in March, which is suggestive for the development of two generations per year.

Aphanostola griseella Bidzilya & Mey, sp. n.

<http://zoobank.org/34C85764-6BB7-4917-93F3-9FE564802152>

Figs 17, 18, 72, 73

Type material. Holotype ♀, **NAMIBIA**-Exp., ZMB 1992, Grootfontein: Otavi Lux, 19 38S/ 17 21E, lux., 16.-19.ii.92, leg. Mey (gen. slide 502/14, O. Bidzilya) (MfN). Paratypes: 1 ♀, same data as holotype; 1 ♀, **NAMIBIA**-Exp., ZMB 1992, Kavango: Katima Mulilo, 17 29S/ 24 17 E, lux., 3-8.iii.92 (Mey) (gen. slide 225/12, O. Bidzilya) (all MfN); 1 ♀, Abachaus, SWA, xii.1946 (Hobohm) (gen. slide 5/15, O. Bidzilya) (TMSA); 1 ♀, **South Africa**, RSA, Transvaal, Nyslvley, Sericea-Farm, 28-30.xi.2004, LF (Mey) (gen. slide 221/12, O. Bidzilya) (MfN); 1 ♀, **Kenya**, Nakuru National Park, Makalia Falls Camp Site, 00°27'S 036°04'E, 1855 m, 10.x.2001 (J. De Prins) (gen. slide 596/14, O. Bidzilya) (NHM).

Diagnosis. The species is very similar externally to *A. rooiklipella* sp. n., *A. africanella* sp. n. and *A. melliferae* sp. n., but can be defined by the nearly uniformly grey forewing with poorly expressed black markings in cell. The female genitalia most closely resemble those of *A. rooiklipella* sp. n. - for the differences see under that species.

Description. Adult (Figs 17, 18). Wingspan 6.7-7.1 mm. Head, thorax and tegulae light grey with a few brown scales, labial palpus brown with narrow white apical rings,

antenna in male thick, antenna in female thin, finely ciliated in both sexes, scape brown with a few white scales, other antennal segments brown, whitish-ringed; forewing grey mottled with brown-tipped scales along margins and in subapical area particularly, costal margin brown from base to 1/5 length, two very indistinct brown spots in cell, brown dot on 3/4 of dorsal margin, cilia light grey; hindwing grey.

Male. Unknown.

Female genitalia (Figs 72, 73). Segment VIII about as broad as long, evenly sclerotized; apophyses anteriores about 1.5 times longer than segment VIII; antrum tubular, weakly broadened before ductus bursae, sub-equal in length to apophyses anteriores; sub-ostial sclerite trapezoidal with short and narrow posterior projection; ductus bursae of moderate width; corpus bursae large, egg-shaped; signum a prolonged plate densely covered with spikes and with medial cord inside.

Etymology. Derived from "griseus" (Latin), grey, referring to the grey forewings.

Distribution. South Africa, Namibia, Kenya.

Biology. The host plant is unknown. The adults were observed in October-November and again in February-March.

Aphanostola centripunctella Bidzilya & Mey, sp. n.

<http://zoobank.org/0575170C-7F9B-4824-97F5-F10095AFCD4C>

Figs 19-21, 52, 74, 74a

Genus 1, sp. 2. - Bidzilya 2007: 94, figs 3, 6; pl. 5, fig. 4.

Type material. Holotype ♂, **NAMIBIA**-Exp., ZMB 1992, E. Caprivi, Katima Mulilo, 17 29 S/ 24 17 E, lux, 3.-8.iii.[19]92 (Mey) (gen. slide 542/14, O. Bidzilya) (MfN). Paratypes: 6 ♂, 3 ♀, same data as holotype (gen. slide 508/14♀, 509/14♂; 155/15♂, O. Bidzilya); 1 ♀, Namibia, Brandberg, Tsisab, 1.iii.2002 (Turm) (gen. slide 76/05, O. Bidzilya); 2 ♀, Namibia, nr Uis, Ugab Campsite, 2.iii.2002, 160 W (gen. slide 106/05, O. Bidzilya) (all MfN); 1 ♀, [**South Africa**], Mpumalanga, Lower Sabi, 26.iii.1962 (Janse & Vári) (gen. slide 49/15, O. Bidzilya); 1 ♂, **Botswana**, Maun c. 20 km W, [c.19 59°S, 23 13'E]. 19.i.1978 (Scoble) (all TMSA).

Diagnosis. The new species is well recognizable externally by the comparatively large size and the forewing with a large brown spot in the middle. The external differences to *A. namibiensis* sp. n. are explained under that species. The male genitalia are characterized by the sacculus merged with the medial teeth on the inner margin of the valva in combination with the narrow saccus. The female genitalia differ from other *Aphanostola* species by the shape of the sub-ostial sclerite, the large globular corpus bursae and the brush-formed signum.

Description. Adult (Figs 19-21). Wingspan 7.8-9.0 mm. Head, thorax and tegulae covered with white black-tipped scales, labial palpus up-curved, black, evenly mottled with white scales on inner surface particularly, segment two with narrow white apical ring, antenna in male

thick, finely ciliated, antenna in female thin, scape black, other antennal segments black with white basal rings, comparatively thick; forewing white, densely suffused with brown along margins and on apex, large brown, transversally elongated spot in the middle, an indistinct brown dash in fold, a small brown spot in the corner of cell, cilia white, black-tipped; hindwing grey.

Variation. Ground colour of head, thorax and forewing varies from white to light grey, paired black spot on $\frac{3}{4}$ of dorsal margin expressed in some specimens, medially prolonged spot sometimes divided into two smaller dots. Hindwings in male with light brown scales along margins, particularly on base near dorsal margin.

Male genitalia (Fig. 52). Uncus twice as broad as long, weakly broadened apically, posterior margin nearly straight; gnathos curved abruptly before middle, distal portion slightly widened, tip pointed; tegumen sub-rectangular, length exceeds width two times, anteromedial incision broad, moderately shallow; basal portion of valva moderately wide, distal $\frac{2}{3}$ narrow, gradually broadened towards rounded apex; sacculus 1.5 times longer than broad, merged at base with medial thorn on inner margin of valva; vinculum moderately broad, posterior margin with short, triangular, medial projections, medial incision narrow; saccus narrow, apex rounded, clearly exceeding beyond apex of pedunculus; phallus prolonged, apex tapered, basal projection straight, narrow extending nearly to apex of phallus.

Female genitalia (Figs 74, 74a). Segment VIII nearly as long as broad, evenly sclerotized, except for sclerotized patches from the base of apophyses anteriores extending posteriorly to half length of segment VIII; antrum short, funnel-shaped; sub-ostial sclerite big, of irregular shape; apophyses anteriores about three times longer than segment VIII; ductus bursae long, slender papillated in proximal half, with abrupt transition to large, globular corpus bursae; signum prolonged, brush-like.

Etymology. Named after the brown spot in the middle of the forewing.

Distribution. Namibia, Botswana, South Africa.

Biology. The host plant is unknown. The adults were collected in January and March.

Aphanostola joannoui Bidzilya & Mey, sp. n.

<http://zoobank.org/92C64E11-29BB-4ADF-9D81-FACEFF9C9174>

Figs 22, 23, 53, 75, 75a

Type material. Holotype ♂, [South Africa] RSA, Mpumalanga, Hongonyi Lodge, S24°27,17', E31°4,56', 30.iv–1.v.2010, LF (Mey & Kühne) (MfN). Paratypes: 8 ♂, 2 ♀ same data as holotype (gen. slide 28/12♂, W. Mey, 81/12♀; 82/12♂; 208/12♂; 209/12♀; 482/14 ♂; 383/14♂, O. Bidzilya) (all MfN); 1 ♂, RSA, Natal, Mkuzi, [15°sq NW cnr, 27 30°S, 32 05°E], 23–26.iv.1982 (Scoble, Laurenson & Kroon) (gen. slide 54/15, O. Bidzilya); 1 ♂, Punda Milia, K.N.S. Survey, 6–15.v.1975 (Potgieter & Scoble) (gen. slide 21/15, O. Bidzilya); 1 ♂, Pretoriuskop, 1.iv.1952 (Vári) (gen. slide 10/15, O. Bidzilya); 1

♂, Malelane, 24.iii.1952 (Janse & Vári) (gen. slide 40/15, O. Bidzilya) (all TMSA).

Diagnosis. The new species can reliably be separated from *A. antennata* sp. n., *A. longicornuta* sp. n., and *A. alternella* sp. n. by the genitalia. The male genitalia are well recognizable by the large and broad sacculus. The female genitalia are characterized by the unmodified sclerite VIII in combination with the funnel-shaped antrum and the small corpus bursae.

Description. Adult (Figs 22, 23). Wingspan 6.0–7.2 mm. Head, thorax and tegulae covered with grey black-tipped scales, frons off-white, labial palpus weakly up-curved, black with white apex, antenna in male thick, finely ciliated, antenna in female thin, scape black, other antennal segments black with narrow whitish rings at base, underside greyish; forewing grey densely suffused with brown along margins and particularly on apex, three very indistinct brown spots in cell area, cilia grey, brown-tipped; hindwing grey.

Male genitalia (Fig. 53). Uncus as broad as long, weakly widened distally, posterior margin straight or weakly emarginated; gnathos weakly curved at $\frac{1}{4}$, wide at base, tapered apically with pointed tip; distal portion of tegumen rectangular, basal part broad, anteromedial emargination broadly rounded; basal part of valva comparatively broad, distal portion distinctly inflated, apex rounded, shortly ciliated; sacculus large, broader than distal portion of valva, with curved posterior margin; vinculum moderately broad, posterior margin without medial projections, postero-medial incision deep and narrow; saccus basally broad, then strongly narrowed, apex rounded; phallus gradually tapered, basal projection distinctly shorter than phallus, narrow, apically weakly inflated.

Female genitalia (Figs 75, 75a). Segment VIII weakly sclerotized, rectangular, twice as long as broad, without modifications; antrum funnel-shaped, strongly edged; sub-ostial sclerite a transversely prolonged plate; apophyses anteriores moderately thick, distinctly longer than segment VIII; ductus bursae long, slender, papillated in middle portion; corpus bursae small, rounded; signum absent.

Variation. The antrum is variable in width.

Etymology. Named in memory of the lepidopterist John Joannou (1949–2013), who participated in the collecting campaign around Hongonyi Lodge with the second author in 2010.

Distribution. South Africa.

Biology. The host plant is unknown. The adults were collected from late March to mid-May.

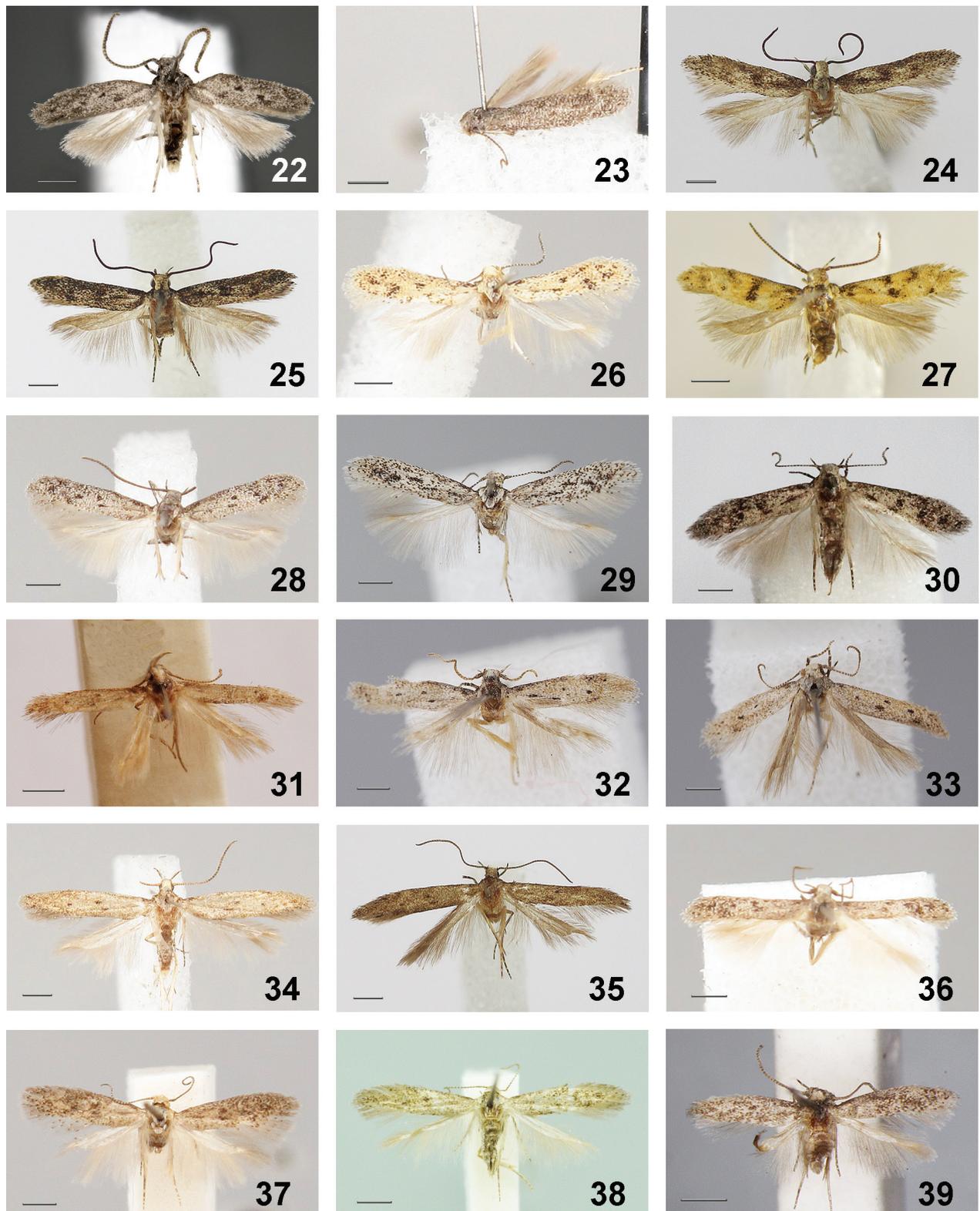
Aphanostola namibiensis Bidzilya & Mey, sp. n.

<http://zoobank.org/96418C55-813E-424A-896D-DE3E8E9DCD01>

Figs 24, 25, 54, 76

Genus 1, sp. 3. – Bidzilya 2007: 95, fig. 4; pl. 5, fig. 5.

Type material. Holotype ♂, Namibia, Brandberg, Waserfallfläche, 18.iii.2002, LF, 1940 m (gen. slide 107/05,



Figures 22–39. Adults of *Aphanostola* spp. (scale bar 1.0 mm) **22.** *A. joannoui* sp. n., HT, RSA, Hongonyi Lodge; **23.** *A. joannoui* sp. n., RSA, Hongonyi Lodge (209/12); **24.** *A. namibiensis* sp. n., HT, Namibia, Brandberg; **25.** *A. namibiensis* sp. n., Namibia, Auas Mts.; **26.** *A. brandbergensis* sp. n., Namibia, Brandberg (gen. slide 74/05); **27.** *A. aarviki* sp. n., HT, Tanzania, Morogoro Town; **28.** *A. africanella* sp. n., Namibia, Mt. Etjo (gen. slide 597/14); **29.** *A. africanella* sp. n., Namibia, E. Etosha (gen. slide 151/15); **30.** *A. africanella* sp. n., Kenya, Baringo; **31.** *A. emarginata* sp. n., HT, RSA, Mkuzi; **32.** *A. melliferae* sp. n., Kenya, L. Bogoria (gen. slide 143/15); **33.** *A. melliferae* sp. n., HT, Kenya, L. Bogoria; **34.** *A. maxima* sp. n., Ethiopia, Tana-See; **35.** *A. maxima* sp. n., HT, Ethiopia, Tana-See; **36.** *A. longicornuta* sp. n., Kenya, L. Bogoria (gen. slide 577/14); **37.** *A. longicornuta* sp. n., Kenya, Kakamega Forest (gen. slide 590/14); **38.** *A. longicornuta* sp. n., Kenya, Kakamega Forest; **39.** *A. atripalpis*, PT, India, Pusa (gen. slide 411/14).

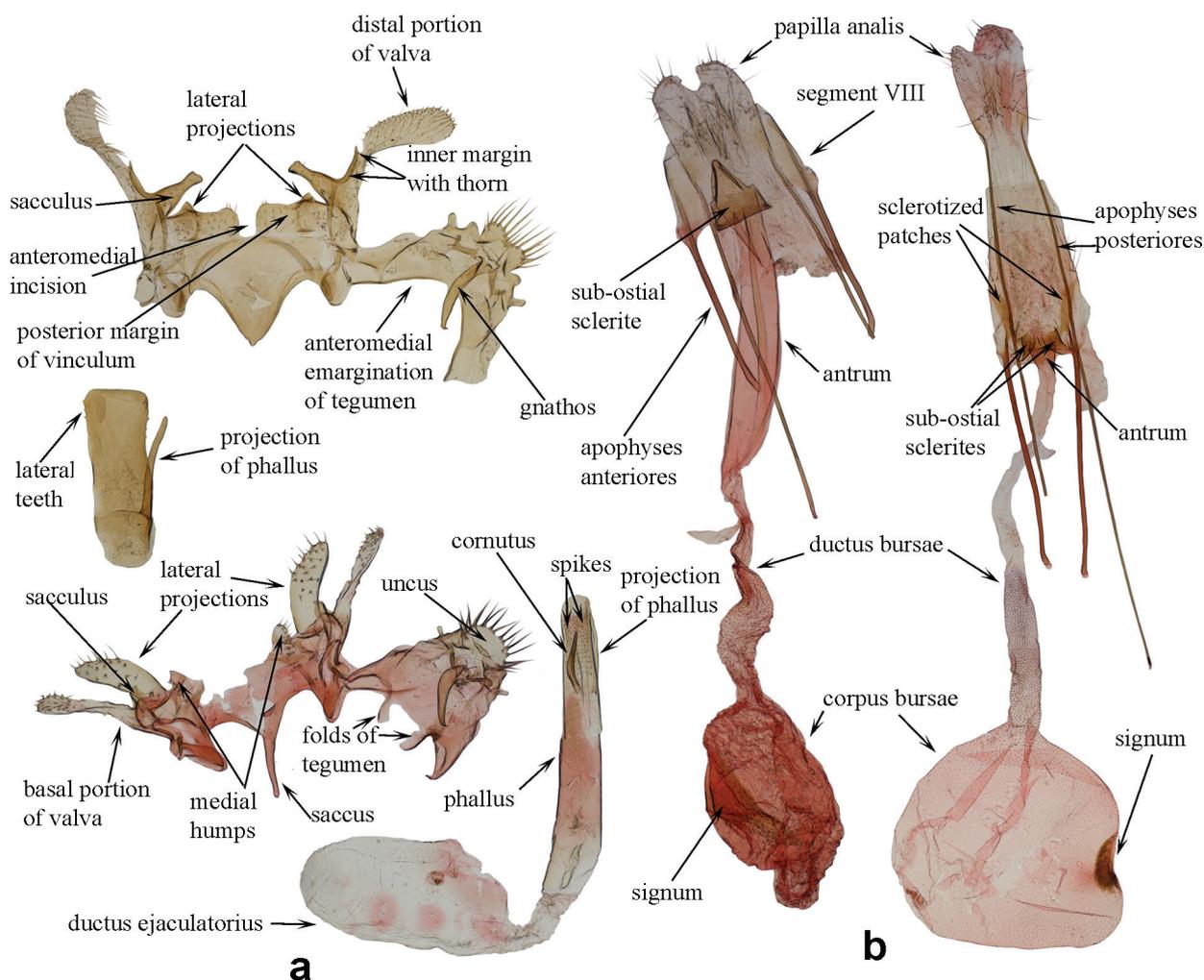


Figure 40. *Aphanostola* spp. Male (a) and female (b) genitalia.

O. Bidzilya (MfN). Paratypes: 2 ♂ (1 ex abd. miss.), Namibia, Auas Mt., Kromhuk, 1850 m, 24.i.2009, LF (Mey); 1 ♀, Namibia, Auas Mt., Windhoek, 1917 m, 25.i.2009, LF (Mey) (gen. slide 465/14♀, *O. Bidzilya*); 1 ♀, Namibia, E Etosha, Farm Sachsenheim, 29-30.viii.2012 (Mey) (gen. slide 534/14, *O. Bidzilya*) (all MfN).

Diagnosis. The new species resembles externally *A. centripunctella* sp. n., but differs by the narrower forewing and the smaller, rounded black spot in the middle. The male genitalia are well recognizable by the shape of the sacculus, deep and comparatively broad medial emargination of the posterior margin of the vinculum, the short saccus and the comparatively long uncus. The female genitalia are characterized by distinctly sclerotized patches on segment VIII, short, digitate sub-ostial sclerites, long ductus bursae and the presence of a belt of spikes on the wall of the corpus bursae.

Description. Adult (Figs 24, 25). Wingspan 9.0–9.1 mm. Head white, neck with some brown-tipped scales, segment two of labial palpus black rarely mottled with white, inner and outer surface white, three white with some black scales, antenna in male thick, finely ciliated,

antenna in female thin, scape and other antennal segments black; thorax and tegulae black, white-tipped; hindwing light grey to whitish, black pattern to ¼ of costal margin, in its distal half and in sub-apical area, black dash in fold to mid-length, rounded black spot in middle, diffuse black spot on ¾ near dorsal margin, cilia grey black-tipped; hindwing grey.

Male genitalia (Fig. 54). Uncus longer than broad, slightly widened apically, posterior margin shortly ciliated, with distinct triangular, medial incision; gnathos moderately thick, of even width, gradually curved; tegumen twice as long as broad, anterior margin with moderately deep triangular emargination; valva straight, strongly inflated in distal 1/3, apex rounded; sacculus long, narrower than valva, apex distinctly pointed; vinculum broad, posterior margin with deep and wide medial emargination, medial projections short, triangular; saccus short, sub-rectangular, extending to apex of pedunculus; phallus comparatively long, weakly narrowed distally, apex distinctly tapered, basal projection absent.

Female genitalia (Fig. 76). Segment VIII nearly as long as broad, evenly sclerotized, except for distinct, sclero-

tized patches from the base of apophyses anteriores extending to the posterior margin of segment VIII; antrum weakly broadened, membranous; sub-ostial sclerite short, digitate; apophyses anteriores about 2.5 times longer than segment VIII; ductus bursae long, gradually broadening proximally to sub-ovate corpus bursae; the wall of corpus bursae with ovate belt of spikes; signum absent.

Etymology. The species is named after the country of its occurrence.

Distribution. Namibia.

Biology. The host plant is unknown. The adults were observed in late August, January and March up to 1900 m elevation.

***Aphanostola brandbergensis* Bidzilya & Mey, sp. n.**

<http://zoobank.org/25C76335-6C9E-498E-959D-183F69D38190>
Figs 26, 55, 77

Genus 1, sp. 4. – Bidzilya 2007: 94, figs 7, 8; pl. 5, fig. 6.

Type material. Holotype ♀, **Namibia**, Brandberg, Mason Shelter, 6.iii.2002, 1740 m (Mey) (gen. slide 74/05, O. Bidzilya) (MfN). Paratypes: 1 ♂, same data as holotype (gen. slide 103/05, O. Bidzilya); 2 ♂, 1 ♀, same data but 5,6,9.iii.2002; 2 ♂, Namibia, Brandberg, 1100 m, 1.xii.2000, LF (Mey) (gen. slide 82/05, O. Bidzilya); 1 ♂, Namibia, Brandberg, Ugab, 4.xii.2000 (Mey) (gen. slide 80/05, O. Bidzilya) (all MfN).

Diagnosis. The new species can easily be recognized by the cream forewing with black dots and black irroration along costal margin and by its comparatively small size. The male genitalia are well defined by the broad valva, the very short saccus, the shape of valva and other details. The female genitalia are characterized by long apophyses anteriores, prolonged corpus bursae and unmodified sternite VIII.

Description. Adult (Fig. 26). Wingspan 5.8–6.1 mm. Head yellowish-white, labial palpus nearly straight, segment two yellow basally, brown in distal portion, inner surface yellowish-white, segment three brown with yellow apex, antenna in male slightly thicker than in female, scape brown with some white scales, other segments brown with narrow, whitish basal rings; thorax and tegulae yellowish-white, sometimes with a few black scales; forewing cream, mottled with brown mostly along margins and near apex, costal margin brown from base to 1/5 length, three brown spots in cell, two brown spots on 3/4 of dorsal margin, diffuse brown spot and a few black dots in termen, cilia white, brown-tipped; hindwing light grey.

Male genitalia (Fig. 55). Uncus heart-shaped, short, twice as broad as long, posterior margin straight; gnathos strongly curved at base, distal portion straight, gradually narrowing towards pointed apex; tegumen sub-rectangular, twice as long as broad, anterior margin with deep emargination; valva wide and comparatively short, angled at 150° in the middle, distal half turned outwards,

apex rounded, inner margin with distinct, medial thorn placed close to sacculus; sacculus short, triangular and narrow; vinculum narrow, medial projections short, rounded, medial incision short, narrow; saccus weakly developed, very short, extending to apex of pedunculus; phallus as long as tegumen, gradually narrowed distally, apex with short tooth, basal projection absent.

Female genitalia (Fig. 77). Segment VIII twice as long as broad, weakly sclerotized, without modification; apophyses anteriores twice the length of segment VIII and less than half length of apophyses posteriores; ductus bursae narrow, gradually merging into the long corpus bursae; signum absent.

Etymology. The specific name is derived from the Brandberg, the type locality of the new species.

Distribution. Namibia.

Biology. The host plant is unknown. Adults were collected in December and in February up to 1740 m elevation.

***Aphanostola aarviki* Bidzilya, sp. n.**

<http://zoobank.org/8D052652-F4D3-47C3-830D-2CEC6B54CD6F>
Figs 27, 56

Type material. Holotype ♂, **Tanzania**, Morogoro, Morogoro Town, 11.iv.1992 (Aarvik) (gen. slide 2380, O. Bidzilya) (MNHO).

Diagnosis. The new species remotely resembles externally *A. morogorensis* sp. n., but is smaller, the forewings are broader and the black spot on 3/4 of dorsum is indistinct. The male genitalia somewhat resemble those of *A. brandbergensis* sp. n., but differ in the short, rounded uncus, longer saccus, slenderer gnathos and the phallus without apical tooth.

Description. Adult (Fig. 27). Wingspan 6.2 mm. Head yellow, labial palpus yellow with brown subapical rings, scape brown with few yellowish scales; other antennal segments brown with broad yellow belts at base; thorax and tegulae yellow, densely mottled with black; forewing yellow, diffuse black spot at base, in middle and on 2/3 of costal margin, black spot in middle of cell that is connected or nearly connected with medial sub-costal spot, indistinct black dot on 3/4 of dorsal margin, apex slightly mottled with black; cilia light brown; hindwing light grey.

Male genitalia (Fig. 56). Uncus short, broadly rounded; gnathos strongly curved at base, distal portion straight, gradually narrowing towards pointed apex; tegumen broader than long, anterior margin with deep emargination; basal portion of valva wide, inner margin with serrated lobe in basal half and with distinct thorn in the middle, distal portion narrow, digitate, outwardly curved; sacculus short, triangular; vinculum narrow, medial projections very short, hump-shaped, medial incision moderately broad; saccus broad, tapered, apex rounded, exceeding beyond apex of pedunculus; phallus prolonged, weakly narrowed apically, basal projection absent.

Female. Unknown.

Etymology. The species name is dedicated to Leif Aarvik (Natural History Museum, Oslo), the collector of the species.

Distribution. Tanzania.

Biology. The host plant is unknown. The holotype was collected in mid-April.

***Aphanostola africanella* Bidzilya, Agassiz & Mey, sp. n.**

<http://zoobank.org/8A708EFE-D286-45E8-BFE0-B01D4D00F843>

Figs 28–30, 57, 58, 78, 79, 79a

Aphanostola sp. 2 – Agassiz and Bidzilya 2016 (in press).

Type material. Holotype ♂, **Namibia**, Kombat, Omatjete Farm, 27.viii.2012, Turm (Mey) (gen. slide 553/14, O. Bidzilya) (MfN). Paratypes: 2 ♂, 1 ♀, Namibia, Kunene, Fort Sesfontein, 5.ix.2009, Turm (Mey) (gen. slide 488/14♂; 489/14♀, O. Bidzilya); 1 ♀, Namibia, E Etosha, Farm Sachsenheim, 29-30.viii.2012 (Mey) (gen. slide 151/15, O. Bidzilya); 1 ♂, Namibia, 50 km N Okahandja, 10.-11.i.2007, LF (Mey & Ebert) (gen. slide 198/12, O. Bidzilya); 1 ♀, Popa-Falls, Okavango River, 13.xii.1993 (Mey & Ebert) (gen. slide 162/15♀, O. Bidzilya); 1 ♂, Namibia, Waterberg, Touristencamp, 18.xii.1993 (Mey & Ebert) (gen. slide 584/14, O. Bidzilya); 1 ♂, Namibia, Mt. Etjo, 30 km E Kalkrand, 14.iii.2005, LF (Mey) (gen. slide 597/14, O. Bidzilya); 1 ♂, Namibia, Erongo, Kuduberg Farm, 12.-14.i.2007, LF (Mey, Ebert) (all MfN); 1 ♀, **South Africa**, Pretoria N., ix.1946 (van Son) (gen. slide 31/15, O. Bidzilya); 1 ♂, Zoutpan, Zp bg., 15–30.xi.1932 (van Son) (gen. slide 30/15, O. Bidzilya) (TMSA); 1 ♀, **Kenya**: Rift Valley, Lake Bogoria E, 1000 m, 0°15'N, 36°7'E, l. *Acacia mellifera*, em. 22.xi.2005 (Agassiz) (gen. slide 1370, O. Bidzilya); 2 ♀, Kenya: Rift Valley, L. Baringo 1000 m, 0°36'N, 36°00'E, l. *Acacia tortilis*, em. 25.viii.2007 (Agassiz) (gen. slide 1363, O. Bidzilya); 2 ♀, KENYA: Rift Valley, L. Baringo 1000 m, 0°36'N, 36°05'E, l. *Acacia seyal* galls, em. 30.viii.2007 (Agassiz) (gen. slide 1504, O. Bidzilya) (all coll. Agassiz).

Diagnosis. The new species is externally similar to *A. rooiklipella* sp. n. and *A. melliferae* sp. n. but differs in genitalia. The male genitalia are well defined by the phallus bearing seven to eight large cornuti in combination with a long saccus and other details. The female genitalia remotely resemble those of *A. morogorensis* sp. n., but differ in having a distinctly longer antrum and a narrow, rounded signum.

Description. Adult (Figs 28–30). Wingspan 7.1–7.3 mm. Head, thorax and tegulae grey, labial palpus weakly up-curved, light brown with narrow white ring before apex, scape light brown, other segments light brown with narrow whitish basal ring, antenna finely ciliated and very thick in male, moderately thick in female; forewing light grey, rarely covered with brown-tipped scales mainly along margins, costal margin brown from base to ¼, two brown spots in middle, diffuse brown dash in fold, cilia grey, brown-tipped; hindwing grey.

Variation. Black pattern along margins of forewing varies from grey to nearly black.

Male genitalia (Figs 57, 58). Uncus twice as broad as long, posterior margin with short medial emargination; gnathos curved at base, then straight, gradually narrowing towards pointed apex; tegumen gradually narrowing distally, anterior margin with deep rounded emargination; basal half of valva moderately broad, distal half strongly constricted at base, then weakly inflated, apex rounded; sacculus short triangular, merged with the thorn on the inner margin of valva; vinculum moderately broad, posterior margin with short, broad, triangular medial projections, medial emargination deep and narrow; saccus broad at base, distal portion narrow, tapered apically, far exceeding beyond apex of pedunculus; phallus prolonged, tapered apically, with seven to eight big cornuti, which differ in length, basal projection absent.

Female genitalia (Figs 78, 79, 79a). Segment VIII distinctly longer than broad, evenly sclerotized; apophyses anteriores twice as long as segment VIII and half of apophyses posteriors; antrum long, tubular, strongly edged; sub-ostial sclerite rounded; ductus bursae long, narrow, papillated before antrum; ductus bursae sub-ovate; signum a prolonged sclerite densely covered with teeth.

Etymology. The name refers to the obviously wide distribution of the species in Africa.

Distribution. Namibia, Kenya.

Biology. The larva feeds on *Acacia mellifera* (M. Vahl) Benth. (Fabaceae) in Kenya (Agassiz and Bidzilya 2016). The adults were observed in late August-early September, then in November-January and in March.

***Aphanostola emarginata* Bidzilya & Mey, sp. n.**

<http://zoobank.org/3146B6FB-DBC9-43C3-91D9-AEE0BC3BAC8E>

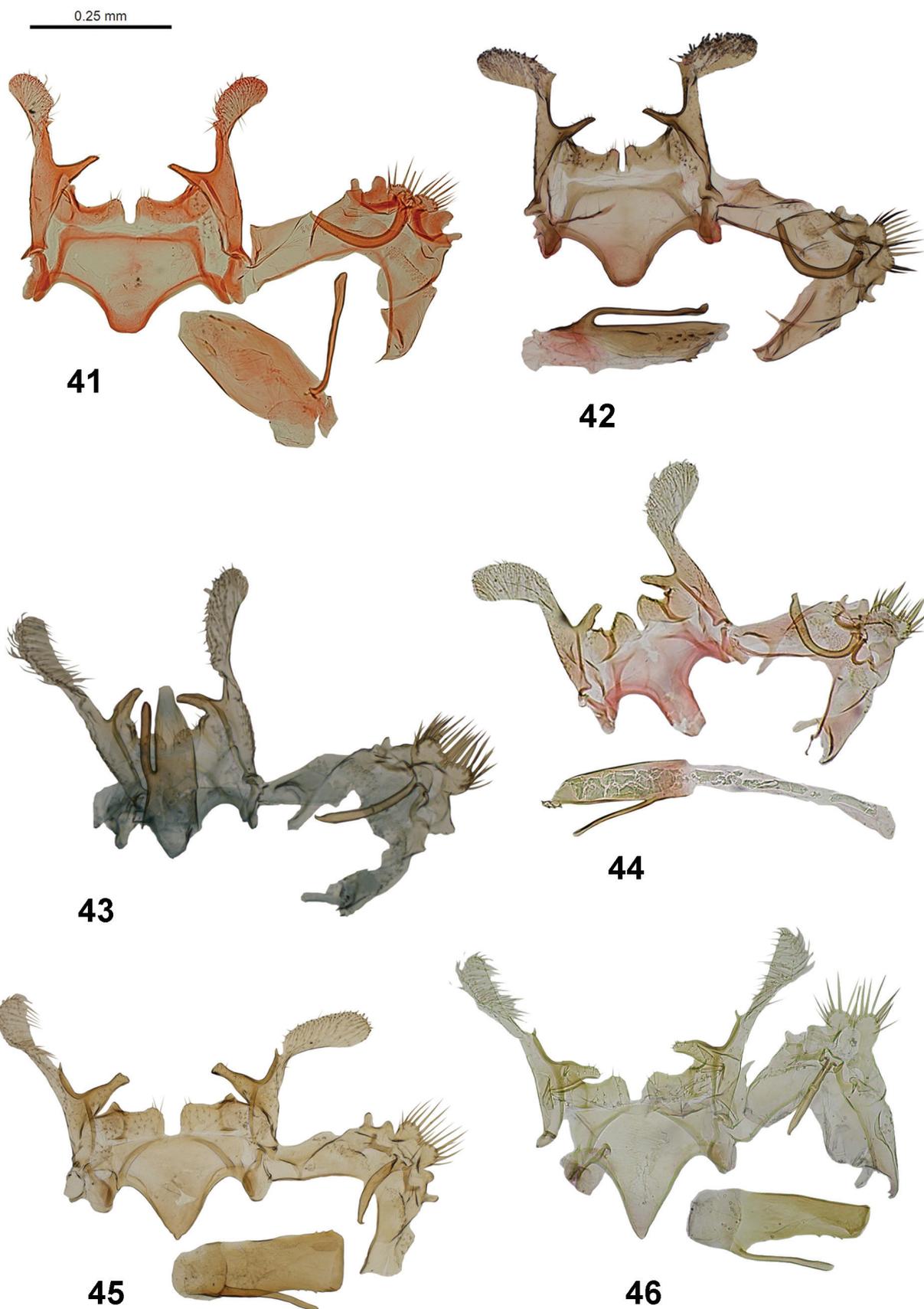
Figs 31, 59

Type material. Holotype ♂, [**South Africa**] RSA, Natal, Mkuzi, [15°sq NW cnr, 27 30'S, 32 05'E], 23–26. Apr. 1982 (Scoble, Laurenson & Kroon) (gen. slide 48/15, O. Bidzilya) (TMSA).

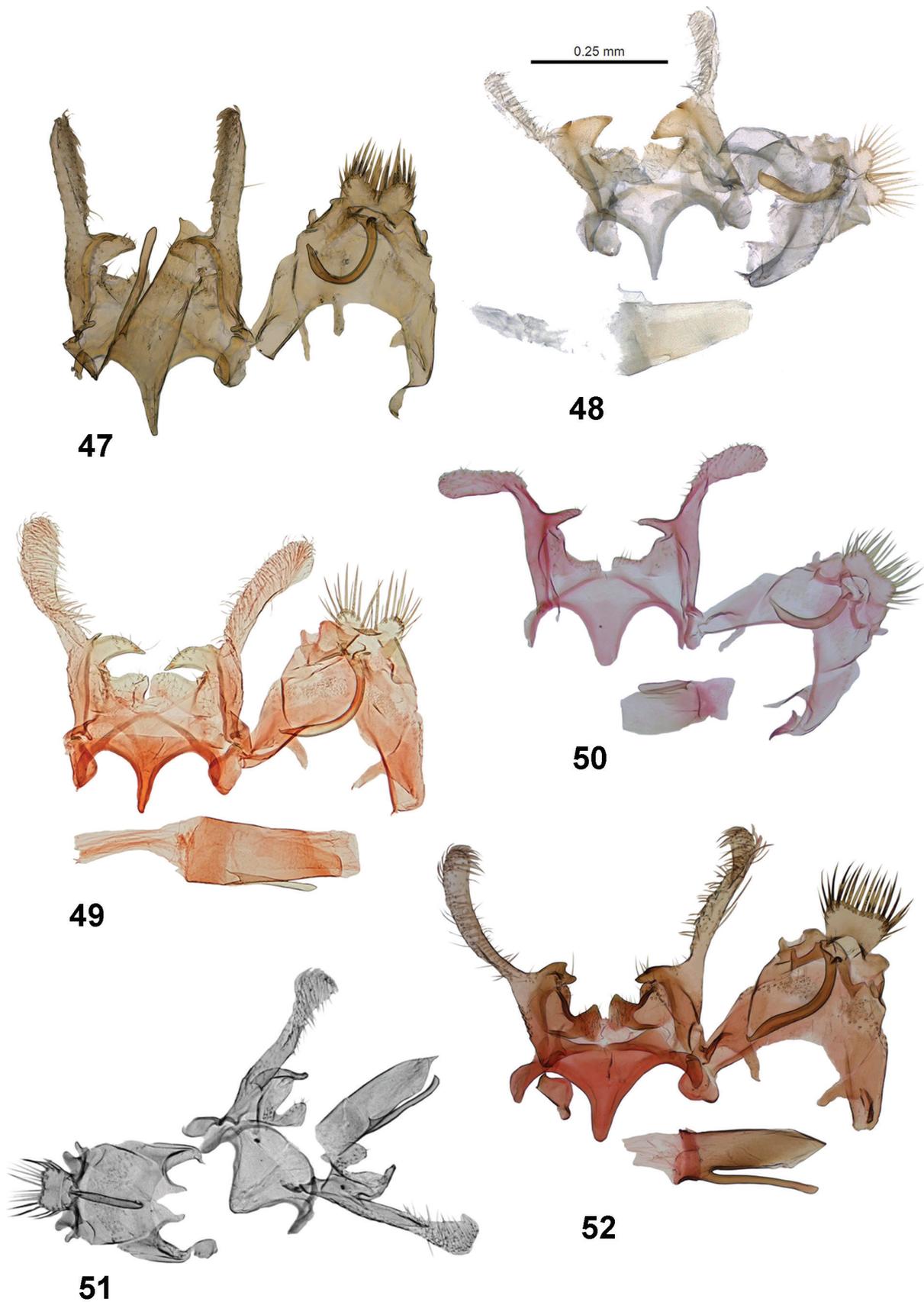
Diagnosis. As far as we can judge from the single male, the new species is most similar to *A. kruegeri* sp. n. in having brown forewings, but differs in exhibiting a poorly expressed irroration. The male genitalia are well defined by the very deep medial emargination of the posterior margin of the vinculum, a short hump-shaped sacculus and by the absence of the vincular projections.

Description. Adult (Fig. 31). Wingspan 6.0 mm. Head light grey, labial palpus brown, segment two with white upper and inner side, segment three with white medial ring and white apex, antenna in male moderately thick, scape brown, other antennal segments brown, whitish-ringed; thorax and tegulae brown; forewing light brown with dark brown scales particularly along margins and in sub-apical area, cilia grey, brown tipped; hindwing grey.

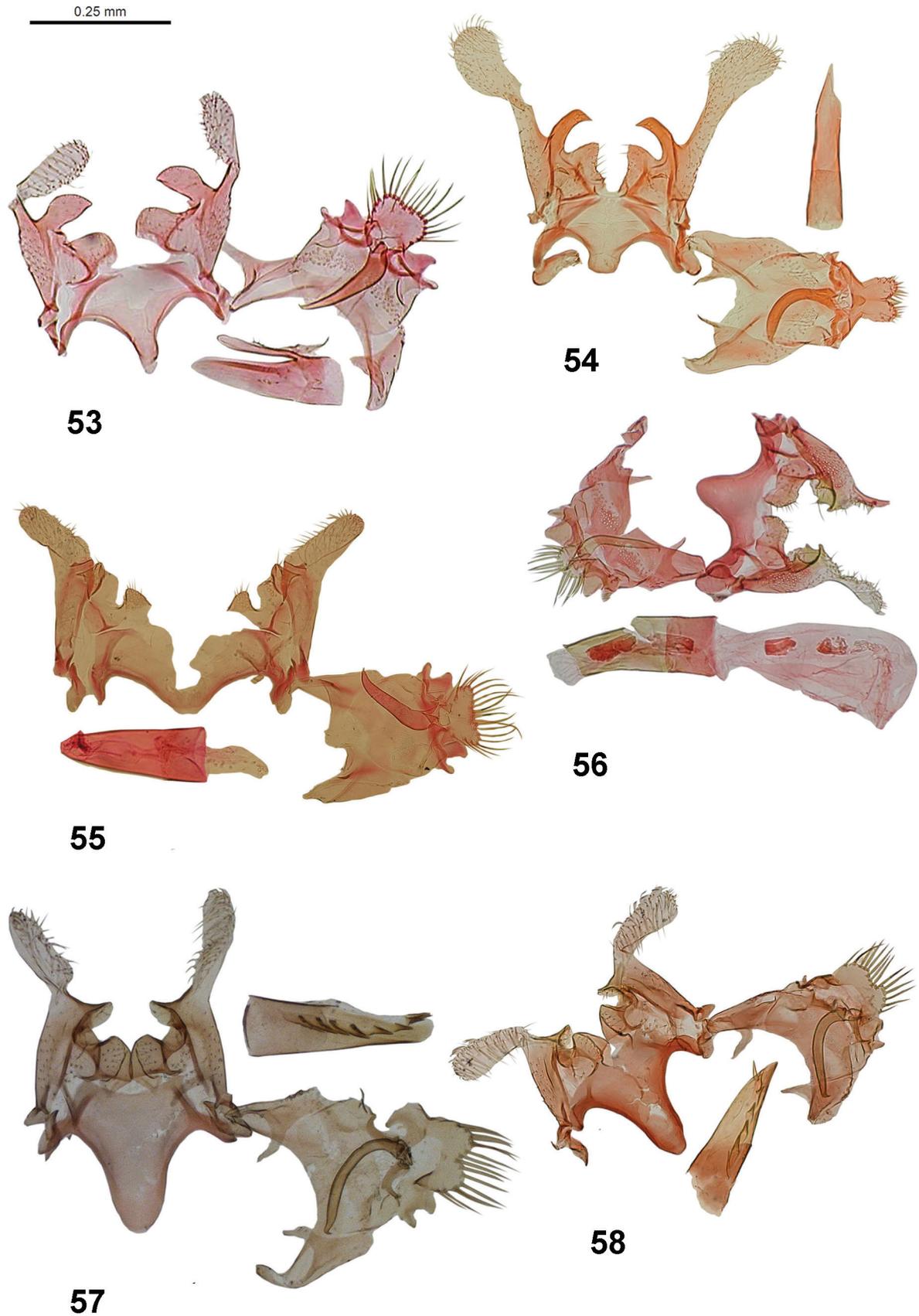
Male genitalia (Fig. 59). Uncus about as broad as long, weakly broadened apically, posterior margin slightly



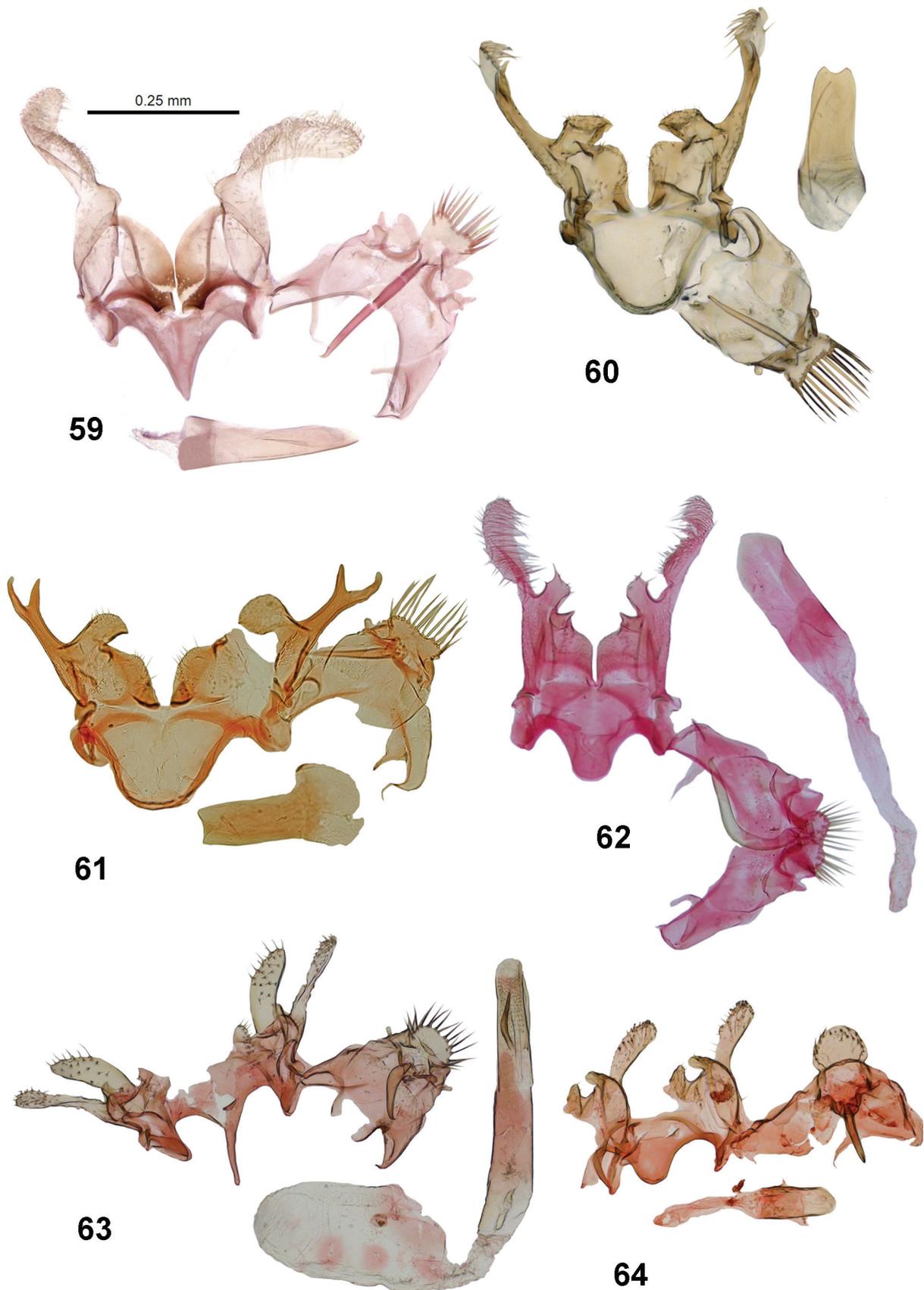
Figures 41–46. Male genitalia of *Aphanostola* spp. **41.** *A. acaciae* sp. n., HT, Namibia, 20 km NW Uis (gen. slide 101/05); **42.** *A. acaciae* sp. n., Namibia, Rooiklip Farm (gen. slide 496/14); **43.** *A. pentastigma*, Kenya, L. Naivasha (gen. slide 1357); **44.** *A. morogorensis* sp. n., HT Tanzania, Morogoro Town (gen. slide 2378); **45.** *A. calderae* sp. n., HT, Namibia, Asante-Sana (gen. slide 184/12); **46.** *A. calderae* sp. n., Namibia, Asante-Sana (582/14).



Figures 47–52. Male genitalia of *AphanoStola* spp. **47.** *A. kenyella* sp. n., Kenya, between Limuru and Mai Mahiu (gen. slide 1497); **48.** *A. kruegeri* sp. n., RSA, Pretoria (gen. slide 4/15); **49.** *A. alternella* sp. n., HT, Kenya, Turi (gen. slide 307/14); **50.** *A. antennata* sp. n., Namibia, Popa Falls (gen. slide 54/08); **51.** *A. rooiklipella* sp. n., Namibia, Omatako (gen. slide 213/12); **52.** *A. centripunctella* sp. n., Namibia, Brandberg (gen. slide 106/05).



Figures 53–58. Male genitalia of *Aphanostola* spp. **53.** *A. joannoui* sp. n., HT, RSA, Hongonyi Lodge (gen. slide 208/12); **54.** *A. namibiensis* sp. n., Namibia, Brandberg (gen. slide 107/05); **55.** *A. brandbergensis* sp. n., Namibia, Brandberg (gen. slide 103/05); **56.** *A. aarviki* sp. n., HT, Tanzania, Morogoro Town (gen. slide 2380); **57.** *A. africanella* sp. n., HT, Namibia, Omatjete Farm (gen. slide 553/14); **58.** *A. africanella* sp. n., Namibia, Okahanja (gen. slide 198/12).



Figures 59–64. Male genitalia of *Aphanostola* spp. **59.** *A. emarginata* sp. n., HT, RSA, Mkuzi (gen. slide 48/15); **60.** *A. melliferae* sp. n., Kenya, L. Bogoria (gen. slide 1549); **61.** *A. melliferae* sp. n., Namibia, Sandveld (gen. slide 457/07); **62.** *A. maxima* sp. n., HT, Ethiopia, Tana-See (gen. slide 427/07); **63.** *A. longicornuta* sp. n., Namibia, Etosha (gen. slide 503/14); **64.** *A. atripalpis*, India, Pusa, PT (gen. slide 411/14).

emarginated; gnathos narrow, weakly curved, tapered; tegumen sub-rectangular, anterior margin deeply emarginated; valva broad in basal half, weakly constricted in middle, distal portion outwardly curved and hairy, apex rounded; sacculus short, rounded, hump-shaped; vinculum broad, posterior margin without projections, divided by deep and narrow medial incision into strongly sclerotized rounded lobes, saccus triangular, broad on base, tapered; phallus long and narrow, weakly narrowed apically, without basal projection.

Female. Unknown.

Etymology. Derived from “emarginatus” (Latin), excised, referring to the excised vinculum in the male genitalia.

Distribution. South Africa.

Biology. The host plant is unknown. The holotype was collected in late April.

Aphanostola melliferae Bidzilya, Agassiz & Mey, sp. n.

<http://zoobank.org/6C5CD8FD-4D8B-4C2D-8CF4-3F2ED9621B4D>
Figs 32, 33, 60, 61, 80

Aphanostola sp. 4 – Agassiz and Bidzilya 2016 (in press).

Type material. Holotype ♀, **Kenya:** Rift Valley, Lake Bogoria, 1000 m, 0°15'N, 36°05'E, l. *Acacia mellifera*, em. 30.viii.2007 (Agassiz) (gen. slide 142/15, O. Bidzilya) (coll. Agassiz). Paratypes: 1♂, 2♀, same data as holotype (gen. slide 1549♂, 1550♀, O. Bidzilya); 1♂, **KENYA:** Rift Valley, Lake Bogoria, 1000 m, 0°21'N, 36°04'E, l. *Acacia mellifera*, em. 6.xi.2007 (Agassiz); 1♀, **KENYA:** Rift Valley, Lake Bogoria, 1000 m, 0°21'N, 36°04'E, l. *Acacia mellifera*, em. 26.viii.2007 (Agassiz); 1♂, 1♀, **KENYA:** Rift Valley, Lake Bogoria, 1000 m, 0°15'N, 36°7'E, l. on *Acacia mellifera*, em. 23.xi, 2.xii.2005 (Agassiz) (gen. slide 143/15♂, O. Bidzilya); 1♂, **KENYA:** Rift Valley, Lake Bogoria, 1000 m, 0°21'N, 36°4'E, l. *Acacia mellifera*, em. 23.xi.2005 (Agassiz) (all coll. Agassiz); 2♂, 1♀, **Namibia,** Sandveld, 60 km N Gobabis, 22.–26.i.2007, LF (Mey & Ebert) (gen. slide 457/07♂, O. Bidzilya); 1♂, **Namibia,** Omatako Ranch, LF, 22-23.iii.2003 (Mey) (gen. slide 67/15, O. Bidzilya) (all MfN).

Diagnosis. The new species can reliably be separated from *A. rooiklipella* sp. n., and *A. africanella* sp. n. by the genitalia. *A. antennata* sp. n. is very similar to above mentioned species, but differs in broader forewing. *A. pentastigma* is usually larger than *A. melliferae* sp. n. the forewing are narrower with black spot at base of costal margin. The male genitalia are well recognizable by very short, weakly sclerotized distal portion of valva, stout broadly rounded sacculus and the shape of the phallus. The female genitalia are defined by a characteristically shaped antrum and sub-ostial sclerites as well as by a strongly sclerotized entrance to the corpus bursae which is unique for *Aphanostola*.

Description. Adult (Figs 32, 33). Wingspan 7.2–8.1 mm. Head white, labial palpus weakly curved, dark grey

with white apex, inner surface white, antenna thick and finely ciliated in male, thinner in female, scape brown, antennal segments light brown with whitish basal rings; head and thorax white to light grey; forewing covered with white brown-tipped scales, costal margin mottled with brown, apex black spotted, narrow black dash in folds, three black spots in cell, cilia grey, brown tipped; hindwing light grey.

Male genitalia (Figs 60, 61). Uncus very short, about 1.5 times broader than long, posterior margin straight; gnathos curved at base, then straight, narrow, strongly pointed apically; tegumen trapezoid anterior margin twice the length of posterior margin, anteromedial emargination deep; valva straight, narrow, basal portion strongly sclerotized, inner margin with long thorn on ¾ length, distal ¼ weakly sclerotized, hairy; sacculus, broader than valva, beak-shaped; vinculum broad, without projections, medial incision deep, narrow; saccus stout, wide, broadly rounded, far exceeding beyond the apex of pedunculus; phallus straight, broad, posterior margin weakly emarginated, base weakly inflated, basal projection absent.

Female genitalia (Fig. 80). Papilla analis sub-ovate; apophyses posteriores long, narrow; apophyses anteriores thick, twice as long as segment VIII; segment VIII sub-rectangular, weakly sclerotized; antrum tubular, strongly edged, broadened in distal half; lateral sub-ostial sclerite prolonged, leaf-shaped, posterior sub-ostial sclerite rounded; ductus bursae narrow, gradually merging into very long and narrow corpus bursae with strongly sclerotized entrance; signum absent.

Etymology. The species is named after the name of its host plant, *Acacia mellifera*.

Distribution. Kenya, Namibia.

Biology. Larvae feed on *Acacia mellifera* in Kenya (Agassiz and Bidzilya 2016 in press) and probably also on this tree in Namibia. Adults were observed in late August and late November to early December in Kenya and in January and March in Namibia.

Aphanostola maxima Bidzilya & Mey, sp. n.

<http://zoobank.org/6000099E-9332-499D-9F06-83F269FBC5A3>
Figs 34, 35, 62

Type material. Holotype ♂, [**Ethiopia**], Äthiopien, 11.-16.i.1996, Tana-See, Bahir-Dar, 1600 m (Mey & Ebert) (gen. slide 427/07, O. Bidzilya) (MfN). Paratypes: 3♂, same data as holotype (all MfN).

Diagnosis. *A. maxima* sp. n. is the largest species of the genus. Besides the big size it is recognizable by comparatively narrow, light brown, uniformly coloured forewing with distinct brown dots in the cell. The male genitalia can be distinguished by broad trapezoidal tegumen, sub-rectangular sacculus, and elongated vinculum.

Description. Adult (Figs 34, 35). Wingspan 9.5–10.5 mm. Head, cream-white, labial palpus up-curved, brown with diffuse grey belts, scape brown, other antennal segments brown with whitish basal rings, moderately thick;

thorax and tegulae light brown; forewing light brown, mottled with brown in sub-apical area, diffuse brown spot at base near costal margin, three brown dots in cell, cilia light brown; hindwing grey.

Male genitalia (Fig. 62). Uncus heart-shaped, twice as broad as long, posterior margin slightly emarginated medially; gnathos large, curved at right angle in the middle, distal portion straight, apex pointed; tegumen broad, trapezoid, anterior margin twice as long as posterior margin, anteromedial emargination deep, rounded; basal half of valva straight inner margin with distinct thorn just near the sacculus, distal half constricted at base, weakly inflated, densely haired, apex rounded; sacculus sub-rectangular, about as wide as distal part of valva; vinculum long, medial projections absent, medial incision deep and narrow; saccus moderately broad, apex rounded, exceeding beyond apex of pedunculus; phallus parallel-sided, apex tapered, lamina very long, basal projection absent.

Female. Unknown.

Etymology. Derived from “maximus” (Latin), the largest, referring to the large size of the species.

Distribution. Ethiopia.

Biology. The type series was collected in mid-January at 1600 m elevation.

***Aphanostola longicornutata* Bidzilya, Agassiz & Mey, sp. n.**

<http://zoobank.org/7E679154-CDB7-4CA9-9D73-1361222864CF>

Figs 36–38, 63, 82

Type material. Holotype ♀, **Namibia**, E. Etosha, Farm Sachsenheim, 29.-30.viii.2012, LF (Mey) (MfN). Paratypes: 3 ♂, 12 ♀, same data as holotype (486/14♂; 503/14♂; 484/14♀; 485/14♀; 487/14♀, O. Bidzilya); 3 ♀, **Namibia**, Kunene, Fort Sesfontein, 5.ix.2009, Turm (Mey) (gen. slide 500/14, O. Bidzilya) (all MfN); 1 ♂, **Kenya**: Rift Valley, L. Bogoria, 3000 ft, 3.vii.1999 (Agassiz) (gen. slide 577/14) (coll. Agassiz); 2 ♂, 1 ♀, **Kenya**, Kakamega Forest, UDO Camp, 1600 m, 00 21N, 34 52 E (08), 17.iv.2001 (J. De Prins) (gen. slide 589/14♂; 590/14♀, O. Bidzilya) (all BMNH).

Diagnosis. The new species can be separated from the similar *A. joannoui* sp. n., *A. antennata* sp. n., and *A. alternella* sp. n. only by examining the genitalia. The male genitalia can easily be recognized by the presence of a very large, lateral, vincular projection, a long and narrow saccus as well as an extremely long phallus with one large cornutus. The female genitalia are defined by a wrinkled antrum, a narrow, serrated signum, the coiled corpus bursae and by the other details.

Description. Adult (Figs 36–38). Wingspan 5.8–7.0 mm. Head, thorax and tegulae light grey with a few brown-tipped scales, frons slightly lighter, labial palpus nearly straight, black with white apex, inner surface grey, antenna thick in both sexes, finely ciliated by male, scape brown, flagellum with alternate brown and whitish rings; forewing dark grey, margins and apical area suffused with

black, two black spots in middle of cell, indistinct black dash in fold, black spot in the corner of cell hidden by black scales, cilia grey, black-tipped; hindwing and cilia light grey.

Variation. The black markings can be reduced so that the forewing looks uniformly grey in some specimens.

Male genitalia (Fig. 63). Uncus very short, posterior margin broadly rounded; gnathos short, strongly curved at base, distal portion straight, gradually narrowed apically; tegumen short, sub-rectangular, anteromedial emargination broad, shallow; valva straight, narrow; sacculus short, beak-shaped; vinculum moderately broad, medial projections short, lateral projections very large, broader than valva, extending to $\frac{3}{4}$ of its length; medial incision triangular, v-shaped; saccus very long, far exceeding beyond the apex of pedunculus, distal portion very narrow; phallus very long, straight apex broadly rounded, distal portion with big weakly curved cornutus, basal projection narrow, arising from $\frac{2}{3}$ length of phallus, vesica with numerous small spikes.

Female genitalia (Fig. 82). Segment VIII about as long as broad, weakly narrowed posteriorly, evenly sclerotized, apophyses anteriores moderately thick, longer than segment VIII; antrum tubular, wrinkled; sub-ostial sclerite sub-ovate; ductus bursae long, coiled before corpus bursae, with sclerotized filament inside of coil; corpus bursae large, pear-shaped; signum a narrow, prolonged plate with serrated margins.

Etymology. Derived from “longus” and “cornutus” (Latin), long resp. cornutus, referring to the unusual long cornutus of the phallus

Distribution. Namibia, Kenya.

Biology. The host plant is unknown. The adults have been collected in late August-early September in Namibia and in mid-April, early July in Kenya.

***Aphanostola atripalpis* Meyrick, 1931**

Figs 39, 64

Aphanostola atripalpis Meyrick, 1931 – Exotic Microlepidoptera 4: 57.

Clarke 1969: VI, pl. 134, figs 1–1c.

Material examined. Lectotype: ♂, **India**, Pusa, Bihar. R. bred. .6.29, reared from *Acacia catechu*, Rungi (slide No. 8328) (BMNH).

1 ♂, 6.vi.1929, Pupa on leaves of *Acacia cati*[sic!]chu, Pusa, Rangi Coll., 5699, Cotype, *Aphanostola atripalpis*, M., Meyrick det. 1980, Presented by R.L.E. Ford, B.M. 1949-487 (gen. slide 411/14, O. Bidzilya) (BMNH).

Diagnosis. As far as we can judge from rather limited material, *A. atripalpis* differs from the other species by the uniformly greyish-brown forewings and the whitish head. The male genitalia have a rounded uncus covered with very short setae.

Redescription. Adult (Fig. 39). Wingspan 5.9–6.1 mm. Head whitish, labial palpus weakly up-curved, grey



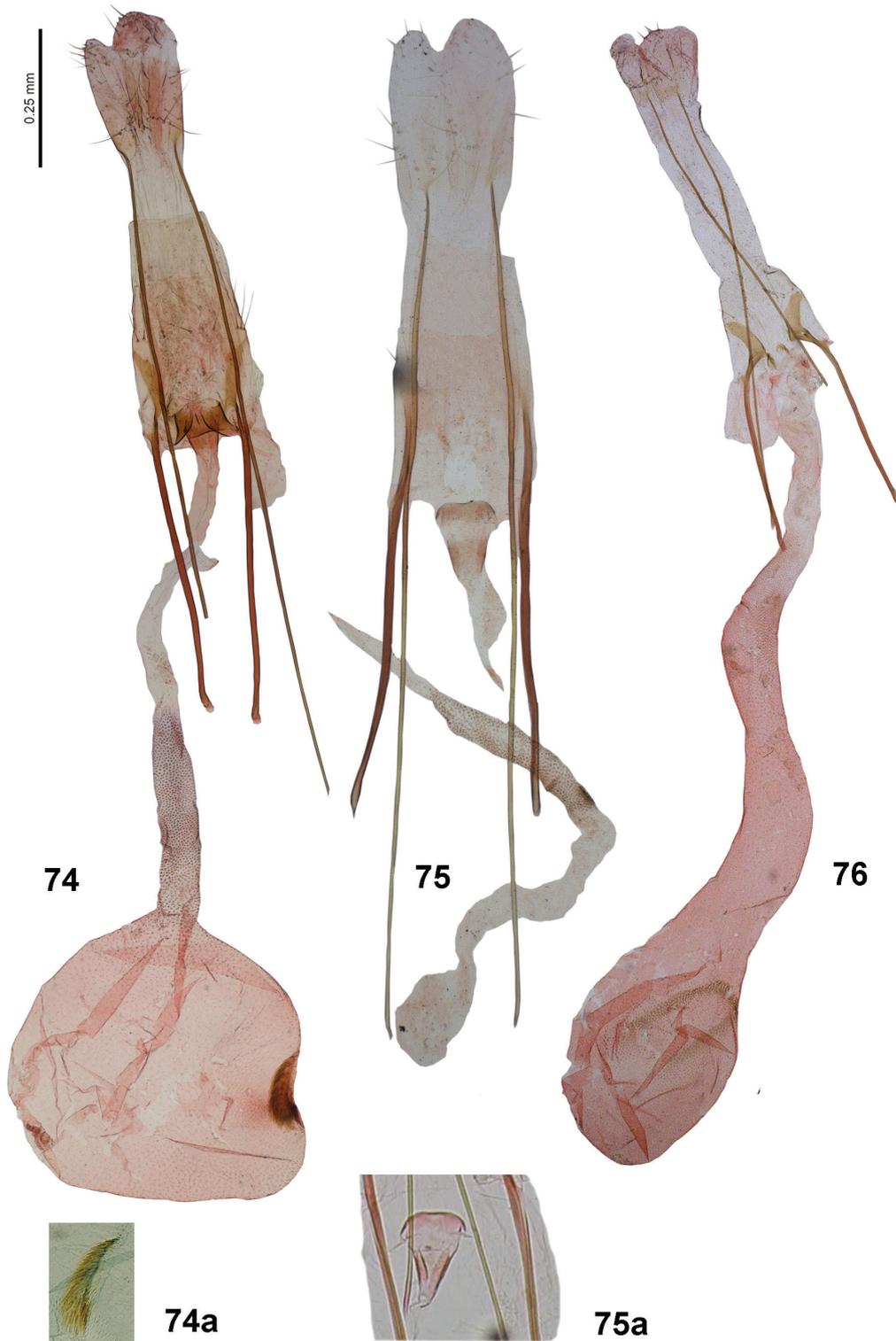
Figures 65–67. Female genitalia of *Aphanostola* spp. **65.** *A. acaciae* sp. n., Namibia, Mirabib (gen. slide 548/14); **66.** *A. pentastigma*, RSA, Pretoria (gen. slide 260/12); **67.** *A. pentastigma*, Kenya, L. Naivasha (gen. slide 614/14).



Figures 68–70. Female genitalia of *Aphanostola* spp. **68.** *A. morogorensis* sp. n., Tanzania, Morogoro Town (gen. slide 2375); **69.** *A. antennata* sp. n., Namibia, Popa Falls (gen. slide 206/12); **70.** *A. rooiklipella* sp. n., Namibia, Rooisand (gen. slide 203/12).



Figures 71–73. Female genitalia of *Aphanostola* spp. **71.** *A. rooiklipella* sp. n., Namibia, Rooiklip Farm (gen. slide 554/14); **71a.** Signum (gen. slide 547/14); **72.** *A. griseella* sp. n., HT, Namibia, Otavi (gen. slide 502/14); **73.** *A. griseella* sp. n., Namibia, Popa Falls (gen. slide 225/12).



Figures 74–76. Female genitalia of *Aphantostola* spp. **74.** *A. centripunctella* sp. n., Namibia, Katima Mulilo (gen. slide 508/14); **74a.** Signum (gen. slide 76/05); **75.** *A. joannoui* sp. n., RSA, Hongonyi Lodge (gen. slide 81/12); **75a.** Subostial sclerite (gen. slide 209/12); **76.** *A. namibiensis* sp. n., Namibia, Etosha (gen. slide 534/14).



Figures 77–79. Female genitalia of *Aphanostola* spp. **77.** *A. brandbergensis* sp. n., HT, Namibia, Brandberg (gen. slide 74/05); **78.** *A. africanella* sp. n., Namibia, Fort Sesfontein (gen. slide 489/14); **79.** *A. africanella* sp. n., Kenya, L. Baringo (gen. slide 1363); **79a.** Signum (enlarge) (gen. slide 1370).



Figures 80–82. Female genitalia of *Aphanostola* spp. **80.** *A. melliferae* sp. n., Kenya, L. Bogoria (gen. slide 1550); **81.** *A. kruegeri* sp. n., RSA, Pretoria (gen. slide 8/15); **82.** *A. longicornuta* sp. n., Namibia, E. Etosha (gen. slide 500/14).

with broad medial ring, antenna thick in male, scape brown, other antennal segments light brown with dark basal rings; forewing, thorax and tegulae covered with grey, brown-tipped scales, forewing uniformly coloured but costal margin and sub-apical area slightly darker, cilia grey; forewing light grey.

Male genitalia (Fig. 64). Uncus rounded, covered with short setae posteriorly; gnathos moderately long, thick, strongly curved at 1/4; tegumen broad, anterior emargination broad and shallow; valva gradually curved, basal portion distinctly edged; sacculus short, sub-rectangular, apex rounded; vinculum moderately broad with short sub-triangular projections on posterior margin, postero-medial incision moderately broad; saccus broad, weakly narrowed apically, apex rounded, extending to apex of pedunculus; phallus short, with triangular apex, basal projection absent, vesical with small cornuti.

Female. Not examined.

Distribution. India.

Biology. Larva feeds on *Acacia* [*Senegalia?*] *catechu* (L.f) P.J.H. Hurter & Mabb. (Fabaceae). Adults emerged in June.

Notes. *A. atripalpis* was described from two males collected in Bihar, Pusa (India). The adult moth and the venation, and the male genitalia in lateral position, were illustrated by Clarke (1969). We examined the second paratype and prepared the genitalia in unrolling position to compare them with other *Aphanostola* species.

Acknowledgements

We are thankful to Leif Aarvik (NHMO), Jurate De Prins, Kevin Tuck (BMNH), Martin Krüger (TMSA) and Christian Wieser (LMK) for access to their collections and providing material for study. Igor Kostjuk (Kiev) kindly helped us taking the photographs of some specimens.

The first author expresses his gratitude to Jurate De Prins for her assistance during his work in the collection of BMNH, in particular for providing photo equipment.

The visits of the first author to MfN and TMSA were financially supported by German Academic Exchange Service (DAAD) and Ernst Mayr Travel Grant from the Museum of Comparative Zoology, Harvard University. Field work in South Africa by the second author was supported by the DFG (Me 1085/18).

We are thankful to the editor of DEZ and two reviewers, who made constructive suggestions to improve the manuscript. Authors are acknowledged the MfN for waiving the authors fees.

References

- Agassiz DJL, Bidzilya O (2016) Gelechiidae (Lepidoptera) bred from acacia in Kenya with description of eight new species. *Annals of the Ditsong National Museum of Natural History*. [in press]
- Bidzilya O (2007) The Lepidoptera of the Brandberg Massif in Namibia. Part 2. Gelechiidae (Lepidoptera: Gelechioidea) (Plates 5-8). *Espieriana Memoir* 4: 91–118.
- Clarke JFG (1969) Catalogue of the type specimens of Microlepidoptera in the British Museum (Natural History) described by Edward Meyrick. *Glyphipterigidae, Gelechiidae (A-C)* 6: 537 pp. [267 pls.]
- Huemer P (1988) A taxonomic revision of *Caryocolum* (Lepidoptera, Gelechiidae). *Bulletin of the British Museum (Natural History), Entomology* 57(3): 439–571.
- Huemer P, Karsholt O (1999) Gelechiidae I (Gelechiidae: Gelechiinae, Teleiodinae). In: Huemer P, Karsholt O, Lyneborg L (Eds) *Microlepidoptera of Europe*. Vol. 3. Apollo Books, Stenstrup, 356 pp.
- Janse AJT (1960) Gelechiidae. *The Moths of South Africa* 6(2): 145–240. [pl. 33–129]
- Kristensen NP (Ed.) (2003) *Lepidoptera: Moths and Butterflies 2. Morphology, Physiology and Development*. *Handbook of Zoology* 4(36). Berlin & New-York, 564 pp.
- Mey W, Kühne L (2014) Results of a short collecting trip to the Central Lowveld in the Limpopo Province, South Africa, with description of *Deltote johnjoannoui* sp. nov. (Lepidoptera: Noctuidae). *Entomologische Zeitschrift* 124(4): 239–246.
- Meyrick E (1931) *Exotic Microlepidoptera* 4: 33–64.
- Pitkin L (1986) A technique for the preparation of complex male genitalia in Microlepidoptera. *Entomologist's Gazette* 37: 173–179.