

New taxa and new records of Afrotropical Epermeniidae (Lepidoptera) with a distributional checklist

With 14 figures and 1 table

REINHARD GAEDIKE¹

¹ Florusstraße 5, 53225 Bonn, Germany. – tinagma@msn.com – c/o Senckenberg Deutsches Entomologisches Institut, Müncheberg

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Abstract

The study of specimens, collected by DAVID AGASSIZ in several African countries and in Madagascar, together with some specimens collected by WOLFRAM MEY, enabled not only the confirmation of some country records, but also the description of two new species (*Epermenia (Calotripis) larseni* and *E. (C.) albofasciata*), the description of the hitherto unknown female genitalia of *Epermenia minuta* GAEDIKE, 2004 and *Ochromolopis namibica* GAEDIKE, 2004, and the male genitalia of *Ochromolopis xeropa* (MEYRICK, 1909). Two first records (*Africepermenia tanzanica* GAEDIKE, 2004 and *Phaulernis montuosa* GAEDIKE, 2013) for Zimbabwe and one for Kenya (*Epermenia triacuta* GAEDIKE, 2013) were made. A distribution list showing hitherto known occurrence of the family in the Afrotropics is presented.

Nomenclatural acts

Epermenia (Calotripis) larseni spec. nov. – urn:lsid:zoobank.org:act:FD37A601-032A-472B-9599-9E6DBCE52738

Epermenia (Calotripis) albofasciata spec. nov. – urn:lsid:zoobank.org:act:EB6346C8-5761-4BFE-96F1-1FFD4B0A8FF0

Key words

Lepidoptera, distributional checklist, Epermeniidae

Zusammenfassung

Die Bearbeitung einer Ausbeute von DAVID AGASSIZ aus verschiedenen Ländern Afrikas und aus Madagaskar sowie einiger von WOLFRAM MEY gesammelter Exemplare ergab neben der Bestätigung früherer Fundnachweise die Möglichkeit der Beschreibung von zwei neuen Arten (*Epermenia (Calotripis) larseni* und *E. (C.) albofasciata*), die Beschreibung der bisher unbekanntenen weiblichen Genitalien von *Epermenia minuta* GAEDIKE, 2004 und *Ochromolopis namibica* GAEDIKE, 2004 und der männlichen Genitalien von *Ochromolopis xeropa* (MEYRICK, 1909). Für Zimbabwe konnten zwei Erstfunde (*Africepermenia tanzanica* GAEDIKE, 2004 und *Phaulernis montuosa* GAEDIKE, 2013) und für Kenia ein Erstfund (*Epermenia triacuta* GAEDIKE, 2013) gemacht werden. Die Verbreitungsliste zeigt den gegenwärtigen Stand der Verbreitung in der Afrotropischen Region.

Introduction

The kindness of DAVID AGASSIZ enabled me to continue my studies on Afrotropical epermeniids (GAEDIKE, 1976; 2004a; 2004b; 2013). Together with some colleagues, he collected the specimens in several African countries and in Madagascar. Additionally, I had the opportunity to include in the present study the examination of some specimens collected by my colleague WOLFRAM MEY, Museum of Natural History, Berlin.

The study resulted in the discovery of two new species, the previously unknown females of two species, and the previously unknown male of one species. New country records for three species were established.

The hitherto known distribution of the family in the Afrotropics reflects more or less the the collection activities, it needs observations concerning the biology for a more detailed knowledge to the distributional pattern.

Abbreviations

BMNH	British Museum (Natural History), London, U.K.
coll. Agassiz	D. J. L. Agassiz, North Somerset, UK
RSA	Republic of South Africa
SDEI	Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany
ZMHB	Museum für Naturkunde, Leibniz-Institut für Evolutions- und Biodiversitätsforschung, Berlin, Germany

Systematics

Africepermenia tanzanica GAEDIKE, 2004

Zimbabwe: 1 ♂, 1 ♀, Manicaland, Upper Bvumba 1680 m, 19°07'15"S, 32°46'10"E, 3.xi.2016, [leg.] D. Agassiz & K. Larsen: coll. Agassiz; 2 ♂♂, 1 ♀, Manicaland, Bvumba 1360 m, 19°03'33"S, 32°43'41"E, 4.xi.2016, [leg.] D. Agassiz & K. Larsen: coll. Agassiz; SDEI: **first records for the country.**

Phaulernis montuosa GAEDIKE, 2013

Zimbabwe: 1 ♂, Manicaland, Upper Bvumba 1680 m, 19°07'15"S, 32°46'10"E, 4.xi.2016, [leg.] D. Agassiz & K. Larsen: coll. Agassiz: **first record for the country.**

Epermenia minuta GAEDIKE, 2004

Madagascar: 2 ♂♂, 1 ♀, 1 specimen without abdomen, Andasibe, 950 m, 18°57'S 48°25'E, 15.–19.iv.2018, [leg.] D. Agassiz & K. Larsen: coll. Agassiz; SDEI.

The material contains one female, which allows the description for the first time of the genitalia structure (Figs 3–4):

Proximal edge of segment VIII indented in the middle, ostium more strongly sclerotized, signum small, prolonged triangularly, the longest edge serrate.

Epermenia paramalawica GAEDIKE, 2013

Kenya: 2 ♀♀, Central Castle Forest lodge, 2050 m, 0°22'51"S, 37°18'35"E, 22., 23.x.2013, [leg.] Agassiz, Beavan, Heckford & Larsen: coll. Agassiz

Epermenia (Calotripis) larseni spec. nov.

urn:lsid:zoobank.org:act:FD37A601-032A-472B-9599-9E6DBCE52738

Holotype: ♂, „Zimbabwe: Manicaland, Upper Bvumba, 1680 m, 19°07'15"S, 32°46'10"E, 5.xi.2016, [leg.] A. Agassiz & K. Larsen“; „Gen.präp. [genitalia slide] Gaedike 9682“; „Holotypus ♂, *Epermenia larseni* sp. n. det. R. Gaedike 2020“ BMNH.

Derivatio nominis: Named after my colleague Knud Larsen, one of the collectors of the new species.

Diagnosis (Fig. 1): Wingspan 12 mm; head pale yellowish, laterally around eyes with some darker scales, labial palpus on inside with same coloration, on outside with dark brown scales, scape of antenna pale yellowish, with pecten, flagellum ringed; thorax and tegulae pale yellowish, basally overlaid with darker brown scales; forewing on dorsum with three tufts of raised scales at 1/3, 1/2 and 2/3, at ¾ an indication of a fourth tuft, the largest at 1/3; in the middle at 1/3, ½ and ¾ each a minute black dot, surrounded by white; ground coloration white, the apical half covered by light and darker brown pattern; brown in the area between half and 2/3 from costa to the second and third tuft; light and darker brown in the area surrounding the second black dot and from third dot to apex; hindwing grey.

Male genitalia (Figs 5–7): Uncus slender, with pointed tip; tegumen with more strongly sclerotized edges; valva as long as uncus-tegumen, ampulla stout, nearly straight, with pointed tip, ventral edge more strongly sclerotized; border to valva strongly sclerotized, sacculus with apically rounded sclerotized tip below border; cucullus clearly longer than ampulla; phallus about two thirds of the length of valva, with a long thin cornutus.

Female genitalia: Unknown.

Remarks: Superficially similar to *E. malawica*, but the forewing with white ground colour, clearly visible on basal third, while in *malawica* the ground colour is pale

ochreous. In the male genitalia the uncus slender, phallus clearly shorter than valva, while in *malawica* the uncus is stout and phallus as long as valva.

Epermenia bulbosa GAEDIKE, 2004

Kenya: 1 ♂, Eastern Lewa, 2000 m, 0°8'25"N, 37°27'24"E, 10.–12.xii.2015, [leg.] D. Agassiz & K. Larsen: coll. Agassiz.

Epermenia agassizi GAEDIKE, 2013

Kenya: 1 ♀, Central NaroMoru, 1945 m, 0°09'13"S, 37°00'42"E, 3.–5.xii.2015, [leg.] D. Agassiz & K. Larsen: coll. Agassiz.

Epermenia triacuta GAEDIKE, 2013

Kenya: 1 ♂, Eastern Lewa 2050 m, 0°8'24,5"N, 37°27'23,8"E, 30.x.2013, [leg.] Agassiz, Beavan, Heckford & Larsen: coll. Agassiz: **first record for the country.**

Epermenia (Calotropis) albofasciata spec. nov.

urn:lsid:zoobank.org:act:EB6346C8-5761-4BFE-96F1-1FFD4B0A8FF0

Holotype: ♂, Zimbabwe: Manicaland, Upper Bvumba, 1680 m, 19°07'15"S, 32°46'10"E, 4.vi.2016, [leg.] D. Agassiz & K. Larsen; Gen.präp. [genitalia slide] Gaedike 9681: BMNH.

Derivatio nominis: Named after the characteristic white stripe on the forewing.

Diagnosis (Fig. 2): Wingspan 16 mm; head pale creamy, laterally around eyes dark brown; labial palpus directed obliquely upwards, the first two segments on outside dark brown, on inside pale creamy, apical segment totally creamy, only with single dark scales; scape of antenna creamy too, pecten nearly invisible; thorax and tegulae somewhat darker creamy than the head, tegulae basally and thorax apically with dark brown scales; forewing nearly black with clear white pattern; dorsum with three tufts of raised scales at 1/3 (the largest), 1/2 and 2/3; a broad white stripe from base of dorsum oblique to costa in the basal third of wing, interrupted by black patch near the base; between first and third tuft from dorsum to cell a white area, the border to cell with some light brown scales, also white are a smaller patch on costa at 3/4, a patch subapically, surrounded by black to apex and a thin stripe in the middle of termen; apically the cell with a small light brown patch, three black dots in the middle of wing, above the three tufts; hindwing shiny light grey.

Male genitalia (Figs 8–10): Uncus long, straight, basally rounded and laterally with small bristles; tegumen more strongly sclerotized on edges and in the middle; valva as long as uncus + tegumen, ampulla straight, clearly shorter than cucullus, apically blunt, covered with numerous bristles, ventral edge somewhat more strongly sclerotized, the sclerotized border with a prolongation to cucullus; sacculus apically with thin pointed tip, phallus clearly shorter than valva, slightly curved, with very thin cornutus. **Female genitalia:** Unknown.

Remarks: Superficially distinguishable from the other Afrotropical members of the genus by the large wingspan and the characteristic forewing pattern. In the genitalia structure the clearly distinctive characters for this species are the basally rounded and bristled uncus and the straight and blunt ampulla.

Ochromolopis xeropa (MEYRICK, 1909)

RSA: 1 ♂, West Cape, N Montagu, Burger Pass, 27.xi.2013, leg. W. Mey; ZMHB; 1 ♀, West Cape, Villiersdorp, Wolf-Kloof, 26.ii.2014, leg. W. Mey: ZMHB.

The studied material contains the first known male specimen, which allows description of the genitalia structure (Figs 11–13):

Uncus long, straight, at 1/3 from base laterally each with small bristled area, tip rounded, with dentate edge, tegumen with more strongly sclerotized edges; valva as long as uncus and tegumen, from broad base narrowing to rounded tip, longitudinally folded, basal end of costal edge more strongly sclerotized, costal arm basally with upwardly directed rounded tip, apex dorsally enlarged and rounded, ventrally prolonged to a pointed tip; phallus nearly as long as valva, vesica with a large area with dense thin thorns, subapically a smaller area with some isolated larger and smaller thorns, in the apical half a narrow rod-shaped sclerotizaion.

Ochromolopis namibica GAEDIKE, 2004

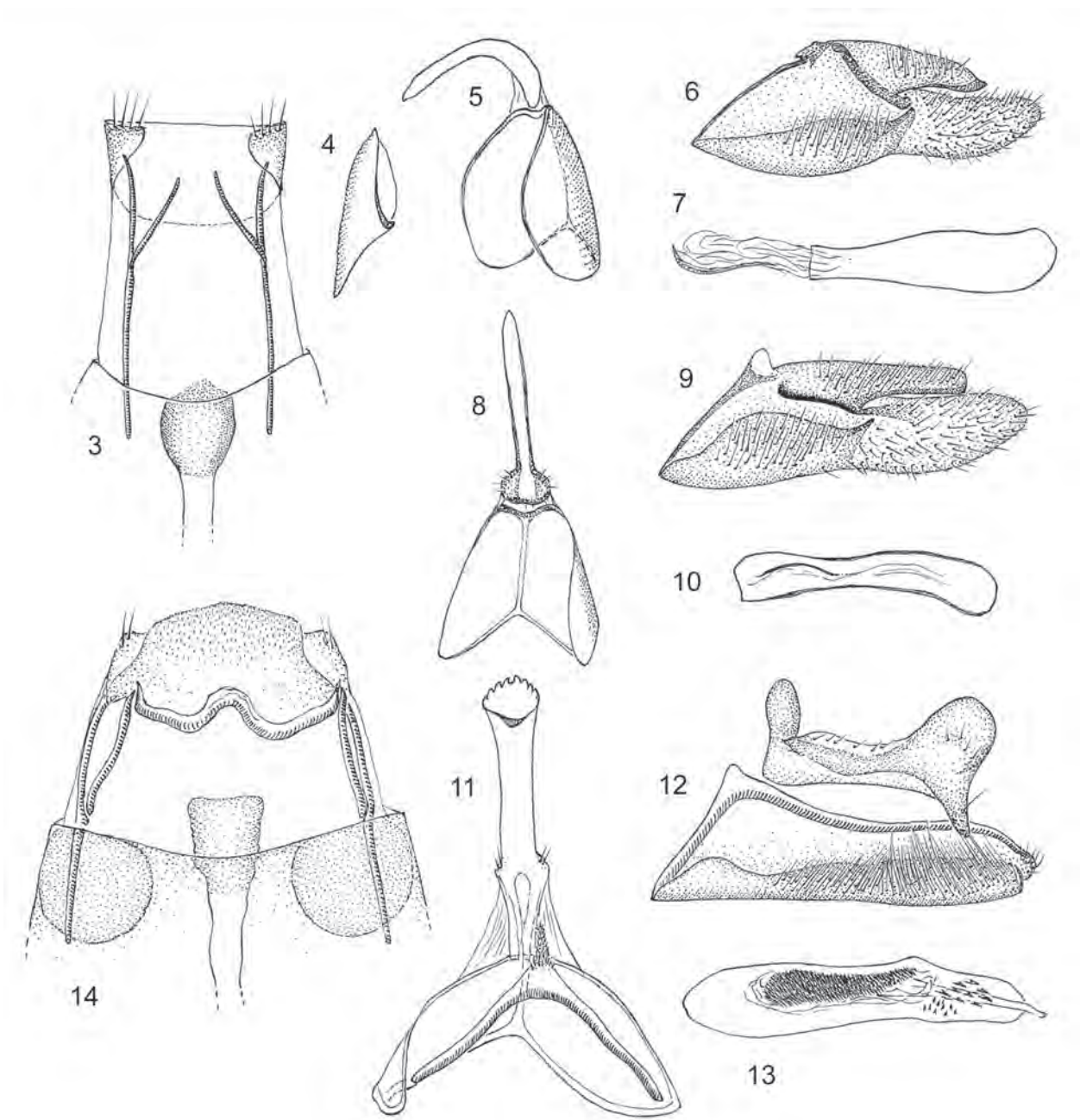
1 ♀, Namibia, Gamsbg., Northern slope, 28.i.2007, LF [lux], leg. Mey & Ebert, Gen.präp. [genitalia slide] Gaedike 7030: ZMHB; 1 ♀, Namibia, Auers mts, Windhoek, 1917 m, 25.i.2009, leg. W. Mey, Gen.präp. [genitalia slide] Gaedike 7530: ZMHB.

The studied material contains for the first time female specimens, which allow the description of the genitalia structure (Fig. 14):

Ventral arms of anterior apophysae connected by a more strongly sclerotized narrow band, dorsal arms ending in a more or less square area, covered by minute thorn-like sclerotizations; ductus bursae proximally more strongly sclerotized; laterally on each side of the ostium a round somewhat more strongly sclerotized patch on segment VIII.



Figs 1–2: 1 – *Epermenia (Calotropis) larseni*; 2 – *Epermenia (Calotropis) albofasciata*.



Figs 3–14: *Epermenia minuta* (female: 3 – segment VIII, 4 – signum); *Epermenia larseni* (male: 5 – uncus-tegumen, 6 – valva, 7 – phallus); *Epermenia albofasciata* (male: 8 – uncus-tegumen, 9 – valva, 10 – phallus); *Ochromolopis xeropa* (male: 11 – uncus-tegumen, 12 – valva, 13 – phallus); *Ochromolopis namibica* (female: 14 – segment VIII).

Tab. 1: Distribution list of the Epermeniidae of the Afrotropical Region (new records in Bold text).

Taxa	Distribution
<i>Africepermenia tanzanica</i> GAEDIKE, 2004	Tanzania; Kenya; Zimbabwe
<i>Mesepermenia malgachica</i> GAEDIKE, 2004	Madagascar
<i>Inuncus juratae</i> GAEDIKE, 2013	Kenya; Tanzania
<i>Phaulernis montuosa</i> GAEDIKE, 2013	Kenya; Zimbabwe ; Tanzania; Malawi; Uganda
<i>P. africana</i> GAEDIKE, 2013	Kenya; Tanzania
<i>Epermenia (Calotripis) minuta</i> GAEDIKE, 2004	Madagascar
<i>E. (C.) criticodes</i> MEYRICK, 1913	RSA; Kenya
<i>E. (C.) griveaudi</i> GAEDIKE, 2004	Madagascar
<i>E. (C.) conioptila</i> MEYRICK, 1921	Zimbabwe; Kenya
<i>E. (C.) maculata</i> GAEDIKE, 2004	Madagascar
<i>E. (C.) meyi</i> GAEDIKE, 2004	Malawi; Kenya; Ethiopia
<i>E. (C.) brevilineolata</i> GAEDIKE, 2004	Madagascar
<i>E. (C.) malawica</i> GAEDIKE, 2004	Malawi; Kenya
<i>E. (C.) larseni</i> sp. n.	Zimbabwe
<i>E. (C.) paramalawica</i> GAEDIKE, 2013	Kenya
<i>E. (C.) karurucola</i> GAEDIKE, 2013	Kenya
<i>E. (C.) formosa</i> GAEDIKE, 2013	Kenya
<i>E. (C.) dallastai</i> GAEDIKE, 2013	Kenya
<i>E. (C.) costumaculata</i> GAEDIKE, 2013	Kenya
<i>E. (C.) turicola</i> GAEDIKE, 2013	Kenya; Tanzania
<i>E. (C.) hamata</i> GAEDIKE, 2013	RSA
<i>E. (C.) aarviki</i> GAEDIKE, 2013	Tanzania; Kenya
<i>E. (C.) ruwenzorica</i> GAEDIKE, 2013	Dem. Rep. Congo
<i>E. (C.) bulbosa</i> GAEDIKE, 2004	RSA; Kenya
<i>E. (C.) bicornis</i> GAEDIKE, 2004	RSA
<i>E. (C.) oriplanta</i> BRADLEY, 1965	Uganda
<i>E. (C.) philoritis</i> (BRADLEY, 1965)	Uganda
<i>E. (C.) epirrhicna</i> MEYRICK, 1938	Dem. Rep. Congo
<i>E. (C.) tenuipennella</i> GAEDIKE, 2013	Kenya
<i>E. (C.) agassizi</i> GAEDIKE, 2013	Kenya
<i>E. (C.) albofasciata</i> sp. n.	Zimbabwe
<i>E. (Cataplectica) mineti</i> GAEDIKE, 2004	Madagascar
<i>E. (C.) kenyacola</i> GAEDIKE, 2013	Kenya; Malawi; Dem. Rep. Congo
<i>E. (C.) triacuta</i> GAEDIKE, 2013	Namibia; Kenya
<i>E. (C.) iniquella</i> (WOCKE, 1867) = <i>ochrodesma</i> MEYRICK, 1913	RSA; Kenya
<i>Gnathifera proserga</i> (MEYRICK, 1913)	RSA
<i>G. punctata</i> GAEDIKE, 2013	RSA
<i>Ochromolopis xeropa</i> (MEYRICK, 1909) = <i>praefumata</i> MEYRICK, 1911	RSA
<i>O. pallida</i> GAEDIKE, 2004	Madagascar
<i>O. ithycentra</i> (MEYRICK, 1926)	RSA

Taxa	Distribution
<i>O. namibica</i> GAEDIKE, 2004	Namibia, RSA
<i>O. sagittella</i> GAEDIKE, 2013	Kenya
<i>O. cana</i> GAEDIKE, 2013	RSA

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