

TWO GENERA AND NINETEEN SPECIES OF FRUIT-FEEDING EREBID MOTHS (LEPIDOPTERA: EREBIDAE) RECORDED IN CAMEROON FOR THE FIRST TIME¹

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ABSTRACT: During our surveys of fruit-feeding Lepidoptera at the Mount Cameroon National Park and the Bimbia Bonadikombo Community Forest (both southwestern Cameroon) we recorded nineteen species of Erebidae moths not previously reported from Cameroon. Simultaneously, we provide the first records of genera *Ametropalpis* and *Lacera* from the country.

KEY WORDS: Erebinae, Calpinae, Hypeninae, Macroheterocera, Mount Cameroon, the Gulf of Guinea Highlands, Africa, frugivorous insects, distribution

INTRODUCTION

Cameroon lies on the border between the West African and Central African biogeographic regions, one of the areas of highest species diversity in the world (Bergl et al., 2007). The forests of Mt. Cameroon, lying west of the Sanaga River and thus belonging to the West African forests (Larsen, 2005), are recognized as an important hotspot of biodiversity and endemism of many organisms, including Lepidoptera (Myers et al., 2000; Larsen, 2005). On the other hand, despite its high conservation value, this region suffers from a lack of entomological surveys, including even basic faunistic data on many groups of moths.

Erebidae is a hyperdiverse family of moths (Lepidoptera: Macroheterocera) with more than 24,500 described species (Zahiri et al., 2011). In contrast to its high diversity and potential negative impacts of some species on agriculture, the Erebidae faunal diversity and distribution patterns remain poorly understood in the Afrotropics, especially for subfamilies covered by our paper (i.e., Erebinae, Calpinae, Hypeninae). Since 2014 we have intensively sampled communities of fruit-feeding Lepidoptera on the forested slopes of Mt. Cameroon. Erebrids, containing many species with fruit-feeding adults, constitute a substantial part of all captured Lepidoptera specimens. Here, we report several species identified in the

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material sampled between November 2014 and January 2015 and not previously recorded in Cameroon.

METHODS

All erebid specimens listed in this paper were captured by intensive bait trapping at three different elevations (ca. 350, 650, and 1100 m a.s.l.) of the southwestern slope of Mt. Cameroon and in the Bimbia Bonadikombo Community Forest on the coast (see Table 1 for sampling area coordinates). At each elevation, five traps (modified IKEA PS Fångst hanging storage, height 85 cm, diameter 30 cm; first modified and used by Sáfián et al., 2011) were exposed in each of the sixteen 50 m plots (i.e., 80 traps per elevation). Within each plot, four traps were installed in the understory, with the entrance placed as close to the ground as possible, and one trap in the canopy layer about 20 m (± 5 m) above the ground. The traps were baited with fermented mashed bananas refreshed each 3-5 days according to the bait condition. All the traps were checked and emptied every day for a 10-day sampling session. All trapped moth specimens were dried by silica gel and kept for later identification. All the specimens are currently stored in the Institute of Entomology, Biology Centre, České Budějovice, Czech Republic. Voucher specimens of each species will be later deposited also in the Zoological Museum of the Jagiellonian University, Krakow, Poland. For identification we used various available literature and online sources, and collections of the Bavarian State Collection of Zoology in Munich and the Zoological Museum of the Jagiellonian University in Krakow. Nomenclature and distribution of individual species follow the AfroMoth online database (De Prins and De Prins, 2016) reviewing currently more than 5,600 published sources and thus being by far the most comprehensive source of information on Afrotropical moths.

Table 1. Overview of the sampled localities (MC: Mt. Cameroon; BBCF: the Bimbia Bonadikombo Community Forest).

Locality	Coordinates		Altitude	Habitats
Mexico camp, BBCF	N 03.98183°	E 09.26250°	0 m	Disturbed lowland rainforest
Bamboo camp, MC	N 04.08990°	E 09.05174°	350 m	Disturbed lowland rainforest
Drinking Gari camp, MC	N 04.10221°	E 09.06304°	650 m	Lowland rainforest
PlantiCam camp, MC	N 04.11750°	E 09.07094°	1100 m	Open-canopy upland rainforest

RESULTS

In total, we identified 19 species of erebid moths never previously reported from Cameroon, including two never reported genera. Nine are also new records in the West African biogeographic region. The details on the individual sampling sites are listed in Table 1.

Erebidae: Erebininae

Achaea ezea (Cramer, 1779)

1 ♂, Bimbia Bonadikombo Community Forest, Mexico camp, 05.I.2015; 1 ♂, Mt. Cameroon, Drinking Gari camp, 27.XI.2014.

This is a West/Central African species recorded from several countries from Gambia in the west to the Democratic Republic of Congo (DRC) and Congo in the east and Equatorial Guinea and Gabon in the south.

Achaea finita (Guenée, 1852)

1 ♀, Mt. Cameroon, Bamboo camp, 05.XII.2014; 1 ♂, Mt. Cameroon, Drinking Gari camp, 02.XII.2014.

This widespread species is known from many countries across Sub-Saharan Africa, including countries bordering with Cameroon (Nigeria and DRC).

Achaea indicabilis Walker, 1858

1 ♂, Mt. Cameroon, Drinking Gari camp, 02.XII.2014.

A. indicabilis is known from West (Sierra Leone, Ghana, São Tomé & Príncipe) and Central (DRC) Africa.

Achaea mormoides Walker, 1858

2 ♀♀, Bimbia Bonadikombo Community Forest, Mexico camp, 01-07.I.2015; 2 ♀♀, Mt. Cameroon, Bamboo camp, 06-10.XII.2014.

A. mormoides is a relatively widespread species known from various countries of Sub-Saharan Africa, including several countries bordering Cameroon (DRC, Equatorial Guinea, Nigeria).

Ercheia subsignata (Walker, 1865)

1 ♀, Mt. Cameroon, Bamboo camp, 04.XII.2014; 1 ♂, 5 ♀♀, Mt. Cameroon, Drinking Gari camp, 29.XI.2014-06.XII.2014; 1 ♂, 7 ♀♀, Mt. Cameroon, PlantiCam camp, 09-15.XII.2014.

This widespread species is known from many countries across Sub-Saharan Africa, including those bordering Cameroon (Nigeria and DRC).

Euminucia conflua Hampson, 1913

1 ♂, Mt. Cameroon, Drinking Gari camp, 02.XII.2014; 1 ♂, Mt. Cameroon, PlantiCam camp, 11.XII.2014.

This relatively uncommon West African species has so far been known from Ghana and Nigeria only. Our record extends its known distribution to the east.

Pseudoarcte melanis (Mabille, 1890)

1 ♂, 8 ♀♀, Bimbia Bonadikombo Community Forest, Mexico camp, 01-09.I.2015; 20 ♀♀, Mt. Cameroon, Bamboo camp, 04-12.XII.2014; 11 ♀♀, Mt. Cameroon, Drinking Gari camp, 28.XI.2014-05.XII.2014; 4 ♀♀, Mt. Cameroon, PlantiCam camp, 11-16.XII.2014.

This species occurs from Ivory Coast to Uganda, although it has never been recorded from Cameroon.

Thyas metaphaea (Hampson, 1913)

2 ♀♀, Mt. Cameroon, Drinking Gari camp, 29.XI.2014-01.XII.2014.

T. metaphaea has so far been recorded from Ghana, Nigeria and DRC.

Erebidae: Calpinae*Deinypena lathetica* Holland, 1894

10 ♂♂, 8 ♀♀, Mt. Cameroon, Bamboo camp, 04-09.XII.2014; 3 ♂♂, 2 ♀♀, Mt. Cameroon, Drinking Gari camp, 27-29.XI.2014.

This species has been so far considered as an endemic to Gabon. This is thus its first record from the West African biogeographic region.

Deinypena marginepunctata Holland, 1894

1 ♀, Mt. Cameroon, Bamboo camp, 04.XII.2014.

So far, this species has been reported from DRC and Gabon only, and we thus extend its distribution into the West African biogeographic region.

Deinypena lacista Holland, 1894

6 ♂♂, 18 ♀♀, Mt. Cameroon, Bamboo camp, 04-13.XII.2014.

This species has been so far known from the Central African region (Central African Republic, DRC, Equatorial Guinea). This is its first record from West Africa.

Gonioscia piperita (Holland, 1894)

6 ♂♂, 2 ♀♀, Mt. Cameroon, Bamboo camp, 04-12.XII.2014.

G. piperita has been so far considered to be endemic to Gabon. We extend its known distribution to the West African biogeographic region.

Hesperochroa multiscripta (Holland, 1894)

2 ♂♂, 14 ♀♀, Mt. Cameroon, Bamboo camp, 04-12.XII.2014; 1 ♂, 4 ♀♀, Mt. Cameroon, Drinking Gari camp, 28.XI.2014-04.XII.2014; 6 ♀♀, Mt. Cameroon, PlantiCam camp, 10-14.XII.2014.

This species has been so far known from Central Africa (DRC, Gabon), and this is its first record from the West African biogeographic region.

Lacera alope (Cramer, 1790)

1 ♀, Mt. Cameroon, PlantiCam camp, 09.XII.2014.

A widespread species, with a distribution ranging to East and South-East Asia, and New Guinea. Pinhey (1975) suggested that the African counterpart could be a separate species but so far no taxonomic decision has been made. It is known from the eastern part of Africa to South Africa and DRC. This is thus the species' westernmost known record extending its range to the West African biogeographic region, as well as the first record of the genus *Lacera* in Cameroon.

Miniodes phaeosoma Hampson, 1913

2 ♂♂, Mt. Cameroon, Bamboo camp, 10.XII.2014.

M. phaeosoma was previously known from several West African countries (Sierra Leone, Ghana, Nigeria) and DRC.

Ogovia tavetensis Holland, 1892

1 ♂, Mt. Cameroon, Bamboo camp, 10.XII.2014; 3 ♂♂, Mt. Cameroon, PlantiCam camp, 10-17.XII.2014.

This species was previously known from East/Central Africa only (DRC, Tanzania, Zimbabwe), but by this westernmost record we extend its known distribution to the West African biogeographic region.

Pseudotolna eximia (Holland, 1894)

3 ♂♂, 3 ♀♀, Mt. Cameroon, Bamboo camp, 05-11.XII.2014; 1 ♂, 3 ♀♀, Mt. Cameroon, Drinking Gari camp, 05-06.XII.2014; 3 ♂♂, 9 ♀♀, Mt. Cameroon, PlantiCam camp, 10-16.XII.2014.

The known distribution of this species is quite patchy in West (Sierra Leone, Ghana) and Central (DRC, Equatorial Guinea) Africa.

Serrodus trispila (Mabille, 1890)

1 ♂, Mt. Cameroon, Drinking Gari camp, 30.XI.2014.

This species occurs in several countries of southern and eastern Africa, and also in Congo and São Tomé & Príncipe. We extend its known distribution to the West African biogeographic region.

Erebidae: Hypheninae*Ametropalpis vidua* (Holland, 1894)

1 ♂, Mt. Cameroon, Drinking Gari camp, 30.XI.2014; 3 ♂♂, Mt. Cameroon, PlantiCam camp, 09-10.XII.2014.

A. vidua was previously known from Gabon and Uganda only. This is thus the first record of the genus from the West African geographic region. The genus *Ametropalpis* has not previously been recorded from Cameroon.

DISCUSSION

Our findings of the relatively high number of so far unrecorded erebid species in a quite small area confirm the poor knowledge of the group in Cameroon. The majority of the reported species were already known from the neighboring countries and their distribution in Cameroon thus could be expected, although the lack of extensive faunistic research of Erebidae has prevented their detection. Considering the family's high diversity in the Afrotropics together with a general lack of recent comprehensive studies of the group from the whole region, we suppose that more species of biogeographic interest are present in Cameroon and adjoining countries. Extending the known distribution of the nine reported species to the West African biogeographic region provides further evidence of high biogeographical importance of the Mt. Cameroon area. The first results of our study also reveal a high potential of using fruit-baited net traps for sampling of fruit-feeding moths. These traps are quite often used for various studies of butterflies (e.g., Sáfián et al., 2011; Aduse-Poku et al., 2012; Van Swaay et al., 2015), but the captured moths are generally ignored. Following the initial results of our sampling, we appeal to lepidopterists studying fruit-feeding butterflies to pay more attention to captured moths.

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