

Article VI.—LEPIDOPTERA OF THE CONGO, BEING A SYSTEMATIC LIST OF THE BUTTERFLIES AND MOTHS COLLECTED BY THE AMERICAN MUSEUM OF NATURAL HISTORY CONGO EXPEDITION, TOGETHER WITH DESCRIPTIONS OF SOME HITHER-TO UNDESCRIBED SPECIES¹

BY W. J. HOLLAND

PLATES VI TO XIV AND 9 TEXT FIGURES

About twenty-five years ago I published a number of papers upon the Lepidoptera of tropical Africa, in which I described numerous forms, which appeared to me to be new to science. These papers appeared in various journals.² I am pleased to observe that in most cases the correctness of my judgment with the lapse of time has been confirmed, and but few of the species named in these publications have been relegated to the synonymy. In the case of the moths my industrious and learned friend, Sir George F. Hampson, in his monumental work upon the moths of the world, has in some instances changed the generic references, but has accepted most of the new genera of *Heterocera* which I proposed, and has allowed my specific names to stand. At the time to which I refer I had in contemplation the preparation of a comprehensive work upon the butterflies of Africa. As a preliminary to this large undertaking I published in the Proceedings of the Zoological Society of London, 1896, pp. 1-104, a 'Synonymic Catalogue of the Hesperiidæ of Africa and the Adjacent Islands.' Shortly after this had appeared I became aware through correspondence that my friend, Dr. Christopher Aurivillius, the Secretary of the Royal Academy of Science in Stockholm, was about to publish a work upon the same subject. It presently appeared under the title '*Rhopalocera Æthiopica*.' To my astonishment I discovered that the author had paid me the compliment of omitting from his treatise the great family of the Hesperiidæ, for the reason, as he states in his introduction, that this family had been so thoroughly covered in my recently published paper, that he did not deem it necessary to retrace the ground. With the appearance of the great work of Dr. Aurivillius the motive to further prosecute my self-imposed labors vanished to a great degree, but my interest in

¹Scientific Results of the American Museum Congo Expedition. Entomology, No. 6.

²Entomological News, Psyche, Annals and Magazine of Natural History, Canadian Entomologist, Proceedings of the U. S. National Museum, and Proceedings of the Zoological Society of London.

the subject did not altogether cease. Though busy with many other things, and becoming more and more absorbed in paleontological researches, I still cherished a fondness for that particular faunal nook in which I had passed so much time with pleasure, and kept on from time to time adding to my collection, and latterly to that of the Carnegie Museum, as opportunities presented themselves. The result has been the gradual accumulation of a collection of the insects of Africa, and particularly of the Lepidoptera, which is one of the largest in the world. It is indeed far from complete, but, nevertheless, contains many thousands of species and a vast assemblage of specimens.

At this point I am tempted to narrate a little incident, which I have never recorded, but which is recalled to me as I am writing these preliminary notes. In the summer of 1903 it became my duty to repair to Brussels in order to supervise the removal from that city to Pittsburgh of the great paleontological collection which had been brought together by Baron Ernst Bayet, and which Mr. Andrew Carnegie had instructed me to secure for the museum of which I have the honor to be the Director. His Majesty, King Leopold, on the day set apart to celebrate Belgian Independence, sent me an invitation to lunch with him at the Royal Palace. The Court was in attendance, because at half-past two o'clock in the afternoon the king, attended by his ministers, was to repair in state to the church of St. Gudule to join in the *Te Deum*. After having been presented to the ladies and gentlemen of the Court who were in waiting, I was introduced to Sir Ernst Cassel, the only other guest, and then the king was announced. He entered the room with the Princess Clementine upon his arm, came forward and greeted Sir Ernst and me, turned the Princess Clementine over to me to escort to table, and then with Cassel at his side bade the assembled company follow on into the apartment where refreshments were provided. I found myself seated between the King and the Princess. Conversation went on merrily, and finally a mischievous notion occurred to me, and, turning to the king, I said "Your Majesty, I have a favor to ask of you, which I am sure you will be willing to grant, and the propriety of asking for which I am sure you will recognize." He looked me in the face and answered, "My dear Doctor, I shall be happy to serve you, if I can, but what is the favor you wish?" I replied, "Your Majesty, I wish a concession in the Congo Free State." "A concession in the Congo Free State!" he exclaimed, and I saw a look of astonishment pass over the faces of a number of those at the table. "Yes, your Majesty. But I must explain myself fully. For many years I have been interested in

African entomology, and have named and described many species of butterflies and moths from the region over which you in part bear rule. I wish to go on with my work, and I therefore wish you to issue a decree that the insect tribes of the Congo shall at a given date depute two of each species, a male and a female, to surrender themselves as hostages of science to whomsoever you may appoint to receive them, they then to be turned over to me that I may go on with the good work of finishing the task, which Adam left incomplete, of naming the living things on the globe." The king laughed, and answered, "Doctor, you are as great a flatterer as the man who told King Canute to order the waves of the sea to retire before him." "What?" I replied, "is it possible that the royal prerogative does not extend so far?" "I am afraid it does not," he answered, "but I will tell you what to do. Go to the Congo Museum and tell the Director that it is my wish that he shall turn over to you all the butterflies which he has not yet named, so that your wish may be gratified." "Your Majesty," I answered, "I know the Director of the Congo Museum, and unless you give me a note to the effect just stated, I am sure I shall not get a single butterfly into my hands." The king laughed and retorted, "Aha! I discover that he is a faithful servant of mine." We both laughed, and that was the end of this particular bit of our conversation.

About two years ago I happened to visit The American Museum of Natural History and, among other things, was shown the large collection of Lepidoptera which had been brought back from the interior of the Congo State by Messrs. Lang and Chapin. The gentlemen in charge requested me to undertake the task of arranging and classifying the Lepidoptera. In a moment of weakness I acceded to the request, but with the proviso that they must not expect from me an immediate report, in view of the fact that my duties were already very numerous and that the work would have to be done at odd moments of time. The collections were sent to me, the butterflies being, I think, more in number than were in the Congo Museum in 1903. The result is the list herewith presented, which represents work done in the midst of incessant interruptions, or at times given to me for rest and vacation, or when others have been in bed and asleep. It has been a labor of love. I hope that to some extent it may help students of the future.

It is hardly necessary for me to enter into a lengthy and detailed discussion of the relationship of the Ethiopian faunal region with those of other parts of the globe. It suffices to say that, while the lepidopterous fauna of those parts of Africa which border immediately upon the

Mediterranean is distinctly palæarctic, the fauna of the lands lying south of the Sahara and traversed by the great river systems of the continent is more nearly related to the Indo-Malaysian fauna, but possesses a number of genera and species which occur nowhere else upon the globe. Beginning in the southern part of Senegal, in latitude 12° N., and extending eastward and southward to the headwaters of the various affluents of the Congo and the Coanza, there is a more or less densely forested region, throughout which the flora and fauna with slight modifications are practically the same. Southern and eastern Africa are characterized by the presence of great expanses of grass-land, save along the watercourses. This territory, in which there is more or less aridity, extends northwest from the region of Uganda and thence west about the headwaters of the various rivers flowing into the Atlantic south of the Sahara, forming a selva between the hot densely forested jungle-lands to the south and the dry desert-lands to the north. Here and there the forested country is interrupted, as in Angola and various points along the western coast, by smaller tracts where the forests are less luxuriant and open grass-lands occur. The lepidopterous fauna of the grass-lands, which until the end of the last century have been the home of vast herds of ruminant animals, reveals the predominance of certain genera, such as *Teracolus*, which are characteristic also of Abyssinia, Arabia, and southern India. The humid jungles along the Coanza, the Congo and its tributaries, the Ogové, the lower Niger, and the various rivers emptying into the Atlantic from Lagos to Dakar are the home of a fauna which by common consent is known as West African. Here is the metropolis of the African Nymphalidæ, of various mimetic forms of Lycænidæ belonging to the genera of the subfamily Lipteninæ and of various genera of the Hesperiidæ, which are found nowhere else upon the globe. Here and there this great forest region is invaded on its eastern and northern borders by inwardly projecting stretches of the surrounding grass-lands, and there is thus noted a transition on its periphery from the West African fauna to the South African or East African fauna. In fact, the East African fauna and South African fauna reappear on the north and northwest of the irregular territory in which the West African fauna occurs. At the very mouth of the Congo there occurs in the region of Matadi an intrusion into the West African region of some forms which may properly be considered as characteristic of the South and East African fauna.

The largest portion of the collection returned by the American Museum Congo Expedition was obtained at Medje, a point near the

Nepoko River in the very heart of the forest. The collections at Medje were principally made from April until September, 1910. A number of specimens are recorded as taken at points not far distant from Medje, such as Gamangui, Bafwabaka, and Avakubi. In the fall of the year 1910 and thereafter during the year 1912 considerable collecting was done at Niangara and Faradje, the former on the Uelle River, the latter upon the Dungu, an eastern affluent of the Uelle. The collections from Niangara and Faradje reveal the fact that those localities, while still within the limits of the West African subregion, are nevertheless not far from the line of contact with the East African, or Abyssinian, region which sends a long, narrow, westward projection south of the Sahara toward the mouth of the Senegal. Specimens were occasionally taken in the course of the journeyings of the members of the expedition at various points throughout the region from Angola eastward, and the labels attached to the insects reveal captures made at such points as Matadi, Basoko, Stanleyville, and Bafwaboli. Regular and systematic collecting, however, seems to have been confined largely to the three points already indicated, Medje, Niangara, and Faradje, and more than nine-tenths of the specimens brought back bear these locality labels. The collection as a whole has a distinctly West African *facies*.

The collection is one of the largest which has been made in recent years in that region. I am given to understand by the gentlemen who made it that to a considerable extent they employed the assistance of natives. It is particularly rich in the larger and showier species, especially of the Nymphalidæ, which are characteristic of the territory visited. But little attention was paid to the moths, which is much to be regretted, as it is among these that the greatest number of novelties might have been expected to occur. Mr. Lang tells me that little collecting was done at night. The smaller diurnal lepidoptera are also but scantily represented. This is particularly true of the Lycænidæ and the Hesperiidæ. Of course I understand the principal aim of the expedition was to collect vertebrates. The making of entomological collections was more or less a subsidiary purpose. Nevertheless, it is upon the whole an extensive collection, containing not far from nine thousand specimens, representing more than seven hundred and twenty-five species and varieties. Most of the specimens are in good condition, and, while not yielding as many species new to science as I had hoped might be the case, it gives the American Museum a fine nucleus upon which to build in coming years.

In preparing the following list I have acted upon the suggestion of Mr. Lang to give a reference to the most easily accessible illustration of each species. In a few cases no illustration has as yet been published, in other cases the only illustration is in a recondite corner of the literature, and I have not in some such instances taken the pains to cite the figure, as the specialist interested in the subject will know as well as I how to find such illustrations. I have constantly referred, in the case of the butterflies, to the illustrations given by Aurivillius in Vol. XIII of Seitz's '*Die Gross-Schmetterlinge der Erde*.' This volume gives, for the most part, very good figures of the Rhopalocera of the Ethiopian region. The copy in my possession unfortunately is incomplete, its publication apparently having been interrupted at the outbreak of the war. At all events, since the fall of 1914 no parts of the book which was being issued at Leipzig have come to hand.¹

In no instance have I endeavored to give a complete synonymy where a species has been frequently mentioned in the literature of the subject. I have, however, endeavored in all cases to cite the original description or figure of the species and have followed this by citation of one of the latest references to that species, or of the subspecies, in case a subspecific reference is called for. The student who desires to explore the synonymy may consult among other works the '*Rhopalocera Æthiopica*' of Dr. Aurivillius and the revisions published by Rothschild and Jordan in the '*Novitates Zoologicae*' of the genera *Charaxes*, *Papilio*, and the family Sphingidæ. The synonymy of the Hesperiidæ published up to the year 1895 is given quite completely in my '*Synonymic Catalogue of the Hesperiidæ of Africa*,' and so forth (cf. Proc. Zool. Soc. London, 1896). In studying the moths, reference should be made to Sir George F. Hampson's '*Catalogue of the Phalaenæ*' so far as published. Assistance may be derived from Kirby's '*Catalogue of the Lepidoptera-Heterocera*,' but this work must be used with caution for, although references to the literature are correct, many species have in recent years been assigned to other genera than those under which Kirby listed them. In studying the Pyraustids and allied groups the writings of Sir George F. Hampson must be consulted, and in studying the Geometridæ it is necessary to consult various papers published in recent years by Warren, a number of which appeared in the '*Novitates Zoologicae*.'

¹The edition I have is that published in the German language between which and that published in the English language there may be a few slight discrepancies in the pagination.

I have not attempted to give in connection with this paper a complete bibliography of the subject, as such an undertaking seems unnecessary in the case of any student who has access to the works mentioned above and to the 'Zoological Record.' A complete bibliography would constitute a considerable volume in itself.

Before closing these brief introductory notes I desire to express my sincere gratitude to Dr. F. E. Lutz and his amiable associates in the Department of Invertebrate Zoology in The American Museum of Natural History, and to the Director of the Museum, Dr. F. A. Lucas, who kindly granted me the privilege of reserving for our collections in Pittsburgh a small series of duplicates of each species in cases where there were duplicate specimens in sufficient number to permit the writer to retain a few. For this generous permission, as well as for the uniformly kind indulgence shown me by the officials of The American Museum of Natural History, I desire to express my thanks. To Mr. Herbert Lang, the leader of the expedition, I am indebted for a number of kind letters written to me in answer to inquiries made during the progress of my work.

APPROXIMATE LOCATION OF PLACES MENTIONED IN THIS PAPER

Avakubi.—1° 20' N., 27° 40' E.	Isiro.—2° 50' N., 27° 50' E.
Bafwabaka.—2° 10' N., 27° 50' E.	Ja R.—2° to 3° 30' N., 12° 25' to 15° E.
Bafwaboli.—0° 40' N., 26° 10' E.	Kangvé.—0° 45' S., 9° E.
Bafwasende.—1° 10' N., 27° 15' E.	Kwamouth.—3° 20' S., 16° 10' E.
Banalia.—1° 30' N., 25° 40' E.	Leopoldville.—4° 25' S., 15° 20' E.
Banana.—6° S., 12° 20' E.	Lolodorf.—3° 15' N., 10° 40' E.
Banza Manteka.—5° 30' S., 13° 50' E.	Lubila R.—1° N., 26° 30' E.
Barumbu.—1° 10' N., 23° 20' E.	Lukolela.—1° 10' S., 17° 10' E.
Basoko.—1° 20' N., 23° 35' E.	Malela.—6° S., 12° 40' E.
Batama.—1° N., 26° 40' E.	Matadi.—5° 50' S., 13° 35' E.
Benito.—1° 35' N., 9° 35' E.	Medje.—2° 25' N., 27° 30' E.
Bolengi.—0° 5' S., 18° 10' E.	Munie Katoto.—0° 35' N., 26° 5' E.
Boma.—5° 50' S., 13° 10' E.	Ngayu.—1° 40' N., 27° 40' E.
Boyulu.—1° N., 27° E.	Niangara.—3° 40' N., 27° 50' E.
Bumba.—2° 10' N., 22° 30' E.	Noki.—5° 50' S., 13° 30' E.
Duala.—4° N., 9° 40' E.	Nouvelle Anvers.—1° 40' N., 19° 10' E.
Efulen.—2° 40' N., 10° 45' E.	Ogové R.—1° S., 10° E.
Faradje.—3° 40' N., 29° 40' E.	Panga.—1° 45' N., 26° 15' E.
Fernando Po.—3° 30' N., 8° 30' E.	Pawa.—2° 25' N., 27° 50' E.
Freetown.—8° 30' N., 13° 15' W.	Poko.—3° 10' N., 26° 50' E.
Gamangui.—2° 10' N., 27° 20' E.	Risimu.—1° N., 26° 45' E.
Isangi.—0° 50' N., 24° 15' E.	Stanleyville.—0° 30' N., 25° 15' E.
Ukaturaka.—2° N., 20° 30' E.	

NEW GENERA, WITH THEIR TYPE SPECIES

	PAGE
<i>Kallimula</i> ; type, <i>K. osborni</i> , new species.....	149
<i>Neptidomima</i> ; type, <i>Neptis exaleuca</i> Karsch.....	164

NEW SPECIES AND VARIETIES, WITH THEIR TYPE LOCALITIES

	PAGE
<i>Bicyclus medontias</i> var. <i>obsoletus</i> . Medje.....	132
<i>Mycalesis langi</i> . Medje.....	139
“ <i>chapini</i> . Niangara.....	140
<i>Precis stygia</i> var. <i>fuscata</i> . Medje.....	148
<i>Kallimula osborni</i> . Medje.....	150
<i>Hypolimnas bartteloti</i> var. <i>obliterata</i> . Medje.....	156
<i>Euphædra preussi</i> var. <i>notata</i> . Medje.....	173
“ “ “ <i>subviridis</i> . Medje.....	174
“ “ “ <i>fulvofasciata</i> . Medje.....	174
“ “ “ <i>latefasciata</i> . Medje.....	175
“ “ “ <i>angustior</i> . Medje.....	175
“ <i>inanooides</i> . Medje.....	175
“ <i>rezioides</i> . Medje.....	177
“ <i>xypete</i> var. <i>maxima</i> . Medje.....	178
“ <i>cyanea</i> . Medje.....	178
“ <i>medon</i> var. <i>innotata</i> . Medje.....	179
<i>Euryphene lucasi</i> . Medje.....	183
<i>Diestogyna kahli</i> . Medje.....	191
“ <i>rotundata</i> . Medje.....	191
<i>Cymothoë herminia</i> var. <i>poënsis</i> . Fernando Po.....	196
“ <i>langi</i> . Medje.....	197
“ <i>capellides</i> . Medje.....	198
“ <i>cænis</i> form <i>rubida</i> . Medje.....	199
“ <i>Reginæ-Elizabethæ</i> . Medje.....	201
“ <i>ogova</i> var. <i>rubescens</i> . Kangvé.....	203
<i>Charaxes protoclea</i> var. <i>marginepunctata</i> . Gaboon.....	206
<i>Telipna rothioides</i> . Medje.....	214
“ <i>medjensis</i> . Medje.....	214
<i>Epitola langi</i> . Medje.....	217
<i>Deudorix batikelides</i> . Niangara.....	221
<i>Spindasis chapini</i> . Niangara.....	225
<i>Triclema lutzi</i> . Medje.....	229
<i>Oboronia ornata</i> var. <i>flava</i> . Benito.....	235
<i>Mylothris spica</i> form <i>donovani</i> . Niangara.....	236
<i>Papilio ridleyanus</i> var. <i>fumosus</i> . Bafwasende.....	247
<i>Abantis rubra</i> . Medje.....	253
<i>Leptalina niangarensis</i> . Niangara.....	256
<i>Myopsyche langi</i> . Medje.....	262
<i>Metarctia chapini</i> . Medje.....	264
<i>Nola bananæ</i> . Banana.....	266

<i>Deilemera</i> (?) <i>anomala</i> . Benito.....	268
<i>Xanthospilopteryx medjensis</i> . Medje.....	271
<i>Eutelia nigricans</i> . Bolengi.....	274
<i>Pseudogonitis variabilis</i> . Lolodorf.....	275
<i>Leocyma congoensis</i> . Ukaturaka.....	277
<i>Dermaleipa nubilata</i> . Avakubi.....	278
<i>Tolna bolengensis</i> . Bolengi.....	280
<i>Sphingomorpha aliena</i> . Banza Manteka.....	285
<i>Rhynchodes avakubi</i> . Avakubi.....	287
“ <i>efulensis</i> . Cameroon.....	287
<i>Amphigonina hyalinata</i> . Stanleyville.....	288
<i>Heterospila</i> (?) <i>rubida</i> . Medje.....	289
<i>Deinypena morosa</i> . Medje.....	291
“ “ var. <i>pallidior</i> . Ukaturaka.....	292
“ <i>fulvida</i> . Medje.....	292
“ <i>multilineata</i> . Medje.....	292
“ <i>transversata</i> . Kangvé.....	293
“ <i>obscura</i> . Medje.....	294
<i>Sapelia bipunctata</i> . Medje.....	295
<i>Leucoperina kahli</i> . Cameroon.....	296
<i>Lælia hildoides</i> . Efulen.....	298
“ <i>soloides</i> . Medje.....	299
<i>Phasicnecus grandiplaga</i> . Medje.....	304
<i>Ctenogyna</i> (?) <i>medjensis</i> . Medje.....	305
<i>Rhamidava</i> (?) <i>pieridaria</i> . Medje.....	307
<i>Pitthea famulita</i> . Medje.....	310
<i>Gonanticlea</i> (?) <i>langaria</i> . Medje.....	311
<i>Acidalia</i> (?) <i>medjaria</i> . Medje.....	312
<i>Osteosema</i> (?) <i>phyllobrota</i> . Medje.....	313
<i>Pseudoterpna</i> (?) <i>chapinaria</i> . Belgian Congo.....	314
<i>Eudemonia brachyura</i> var. <i>minor</i> . Sierra Leone.....	316
<i>Callocossus langi</i> . Faradje.....	318
<i>Leipoxais punctulata</i> . Efulen.....	320
<i>Chrysopoloma nubila</i> . Niangara.....	322
<i>Saliunca rubriventris</i> . Stanleyville.....	324
<i>Proterozeugis</i> (?) <i>medjensis</i> . Medje.....	325
<i>Phryganodes sex-guttata</i> . Bolengi.....	328

The following new names are proposed in this paper:

Mylothris spica form *donovani* Holland, p. 236, ♀ of *M. spica* (Moeschler) = ♀ *Papilio rhodope* Donovan, not ♀ of *P. rhodope* Fabricius.

Anua hampsoni Holland, p. 280, for *Anua producta* Hampson, 1913, not *A. producta* Holland, 1894.

I. RHOPALOCERA

Danaidæ

DANAIS¹ Latreille(1) 1. *Danais chrysippus* (Linnaeus)

Papilio chrysippus LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 471.

Danaida chrysippus AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 71.

In the entire collection, consisting of one hundred and ninety-seven specimens of this species, there are only thirteen individuals which can be referred to the typical form, *D. chrysippus*, and even these show traces on the hind wings of the white squamation, which is characteristic of the varietal form *D. alcippus*. As in the case of the latter form, they fall into two categories, those in which the upper side of the wings is bright rufous and those in which it is dark chestnut or maroon. Noki, Kwamouth, Medje, Niangara, and Faradje.

(2) 1a. *Danais chrysippus alcippus* (Cramer)

Papilio alcippus CRAMER, 1777, Pap. Exot., II, p. 45, Pl. CXXVII, figs. E, F.

Danaida alcippus AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 72.

One hundred and eighty-four specimens are referable to this varietal form. There is great variation in the shading of the wings. Some have the color of the fore wings bright rufous, others dark chestnut, while one aberrant male has both the fore and the hind wings prevalently pale argillaceous. The majority of the specimens have the hind wings broadly white, which is the typical form, but there are many specimens in which the white is reduced in extent until in some they nearly approach the condition which prevails in typical *D. chrysippus*, in which the white color is totally lacking. I find it utterly impossible by associating the specimens under the dates of capture, or according to the localities given upon the labels, to divide them into seasonal or local races. According to the labels, captures took place in January and February, then again in June, July, and August, and still later in November. From this it appears probable that there are at least two annual broods, and the insect may be on the wing throughout the year. Isangi, Avakubi, Gamangui, Risimu, Niangara, Medje, Bafwabaka, and Faradje.

¹As every student knows, the word *Danaus*, first introduced by Linnaeus into entomological nomenclature, was not by him and cannot be by us employed in a strictly generic sense.

Aurivillius has resuscitated the name *Danaida* originally employed by Latreille, but for which he latter substituted *Danaus* and finally *Danaïs*. An author surely has a right to correct himself and amend his nomenclature. Latreille did this and, as *Danaïs* has been universally employed for a century, it seems to the writer an excess of obedience to "the law of priority" to fish up Latreille's long abandoned and forgotten name and apply it again.

(3) 2. **Danais petiverana** Doubleday and Hewitson

Danais petiverana DOUBLEDAY AND HEWITSON, 1857, Gen. Diurn. Lep., I, p. 93, Pl. XII, fig. 1.

Danais petiverana, AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 72, Pl. xxiii^a.

This is the African form of *D. limniace* (Cramer). The collection contains thirty-four males, taken mostly at Medje in June, July, and August, though there are a number captured at Niangara in November, and several from other localities: Bafwasende, Bafwaboli, Risimu, Faradje.

AMAUROS Hübner(4) 1. **Amauris niavius** (Linnæus)

Papilio niavius LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 470.

Amauris niavius AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 74, Pl. xxiii^d.

There are twenty-five specimens, of which three (two of them not expanded) are females. The most of them were taken at Medje from July to September, though a few are labelled as taken at Niangara in November.

(5) 2. **Amauris damocles** (Palisot de Beauvois)

Papilio damocles PALISOT DE BEAUVOIS, 1805-1821, Ins. Rec. en Afrique et Amérique, Lép., p. 239, Pl. VI, figs. 3a, 3b.

Amauris damocles AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 74.

This common species is represented in the collection by twenty-eight males and two females. A few are labelled as having been captured at Gamangui in February, most of them were taken at Medje about the middle of the year, and a few were captured at Niangara in November.

(6) 3. **Amauris psyttalea** Plötz

Amauris psyttalea PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 189. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 74, Pl. xxv^a.

This species is discriminated from the preceding by the fact that the white basal area of the hind wing reaches the tip or goes a little beyond the tip of the cell, while in *A. damocles* it does not, and by the further fact that the outer angle of the hind wing is adorned on the upper side by a continuous band of marginal spots.

There are twenty-four males in the collection. They were taken at various localities and at different dates from July to December.

(7) 4. **Amauris damocles** Staudinger

Amauris damocles STAUDINGER, 1896, Iris, VIII, p. 367, Pl. VII, fig. 3. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 74, Pl. xxvb.

There are two specimens of this species, one taken at Medje in July, the other at Avakubi in November.

(8) 5. **Amauris tartarea** Mabille

Amauris tartarea MABILLE, 1876, Bull. Soc. Zool. France, I, p. 199. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 74, Pl. xxva.

Six males, five taken at Medje in June, July, and August, and one at Niangara in November.

(9) 6. **Amauris hecate** Butler

Amauris hecate BUTLER, 1866, Proc. Zool. Soc. London, p. 44. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 75, Pl. xxivb.

Fifteen males, one taken at Stanleyville in August 1909, one at Gamangui in February, two at Medje in September, six at Avakubi in November, and five at Niangara in the same month.

(10) 7. **Amauris hyalites** Butler

Amauris hyalites BUTLER, 1874, Cist. Ent., I, p. 209. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 76, Pl. xxiva.

Of this species the collection contains forty-six males and five females. Most of the specimens were taken at Niangara in November, but quite a number are labelled as from Medje and other localities and were taken in the midsummer months.

Acræidæ**PLANEMA** Doubleday and Hewitson(11) 1. **Planema epæa** (Cramer)

Papilio epæa CRAMER, 1779, Pap. Exot., III, p. 64, Pl. ccxxx, figs. B, C.

Planema epæa AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 245, Pl. LVIIIa.

The collection contains five males and seventeen females, all of which were taken at Medje from July to September, except one female which was collected at Faradje, "1911-1912."

(12) 2. **Planema tellus** Aurivillius

Planema tellus AURIVILLIUS, 1893, Ent. Tidskr., XIV, p. 280, fig. 7; 1913, Seitz, Gross-Schmett., XIII, p. 245, Pl. LVIIIa.

Two males taken at Medje, one on June 6, the other on July 30, 1910.

(13) 3. ***Planema epiprotea*** Butler

Planema epiprotea BUTLER, 1874, Cist. Ent., I, p. 210. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 245, Pl. LVIIIb.

Twelve females taken at Medje from May to September.

(14) 4. ***Planema consanguinea*** Aurivillius

Planema consanguinea AURIVILLIUS, 1893, Ent. Tidskr., XIV, p. 282, fig. 8; 1913, Seitz, Gross-Schmett., XIII, p. 244, Pl. LVIIIb.

Two males caught at Medje, one in July, the other in September.

(15) 5. ***Planema elongata*** Butler

Planema elongata BUTLER, 1874, Cist. Ent., I, p. 212. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 244, Pl. LVIIIb, c.

A single female taken at Medje, August 1, 1910.

(16) 6. ***Planema pseudeuryta*** Godman and Salvin

Planema pseudeuryta GODMAN AND SALVIN, 1890, Story of the Rear Column, p. 429.

Planema dewitzi STAUDINGER, 1896, Iris, IX, p. 209, Pl. II, fig. 5.

Planema pseudeuryta AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 243, Pl. LVIIIc.

I refer to this species a single male taken at Medje, May 6, 1910.

(17) 7. ***Planema nelsoni*** (Smith and Kirby)

Plate VI: Figure 1, ♂; Figure 2, ♀

Acræa nelsoni SMITH AND KIRBY, 1892, Rhop. Exot., I, *Acræa*, Pl. III, figs. 9, 10.

I refer to this species a male captured at Niangara, November 26, and a female taken at Medje, August 24, 1910. As the female of *P. nelsoni* has never been described or figured, I give on Plate VI a representation of this female, and also of the male, for purposes of comparison. The insect has been erroneously identified with *P. poggei* Dewitz.

(18) 8. ***Planema alcinoë*** (Felder)

Acræa alcinoë FELDER, 1865-1867, Reise Novara, Lep., III, p. 368, Pl. XLVI, figs. 12, 13.

Planema alcinoë AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 241, Pl. LVIf.

I assign to this species seven females, six taken at Medje at dates ranging from May 6 to September 1, and another female taken at Niangara, November 26, 1910. They agree very closely with specimens in my collection determined as *P. alcinoë* by the late Dr. Otto Staudinger, except that the discal area of the hind wings is pure white and not creamy white, as is the case in the specimens sent me from Dresden. It is possible that they may belong to a closely allied species, but there is

no way of certainly determining this. The association of the sexes in some species of this genus without the help of correct data obtained in the field is a matter of conjecture, as the females of related species are very much alike.

(19) 9. **Planema macaria** (Fabricius)

Papilio macaria FABRICIUS, 1793, Ent. Syst., III, part 1, p. 174.

Planema macaria AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 240, Pl. LVII f.

One male caught at Medje, August 1, 1910.

ACRÆA Fabricius

(20) 1. **Acræa alciope** Hewitson

Acræa alciope HEWITSON, 1852, Exot. Butt., I, *Acræa*, Pl. I, figs. 4, 5.

Acræa fumida ELTRINGHAM, 1912, Trans. Ent. Soc. London, p. 325, ♀.

Acræa bakossua STRAND, 1912, Archiv f. Naturg., LXXVII, part 1, Suppl. 4, p. 114, ♀.

Acræa macarina BUTLER, 1868, Proc. Zool. Soc. London, p. 221, Pl. XVII, fig. 6, ♀.

Acræa aurivillii STAUDINGER, 1896, Iris, IX, p. 209, Pl. II, fig. 2, ♀.

Acræa alciope AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 248, Pl. LVIII, ♂.

The collection contains sixty-five males and forty-one females of this species and its varieties. The males are all quite alike, except seven which do not have the ground-color of the wings a bright pale orange-yellow, which is the normal color, but are dull brownish, and the darker markings are not deep black but grayish black. There is also a single female which, in these respects, is like the males I am describing and agrees perfectly with the description of a female to which Eltringham applied the subspecific name of *fumida* (cf. Eltringham, *loc. cit.*). The name used by Eltringham is, in my judgment, also to be applied to these males, and the aberration is evidently not in this case confined merely to the female sex. Most of the aberrant female forms described by authors are represented in the batch of specimens before me. There are several specimens referable to the form dubbed *macarina* by Dr. Butler, in which the margin of the hind wings is not marked with a dark band; of the form named *aurivillii* by Dr. Staudinger, in which the hind wings are crossed on the middle by a band of white of varying degrees of intensity; and of the variety named *bakossua* by Strand, in which the costal third of the transverse median band of the fore wings is whitish. And there are some intergrading forms which the writer, if he were a professed "species-maker" and not engaged in other and more important matters, might be tempted to describe and tag with so-called subspecific names. These forms are mimetic, and some interesting observations concerning them are contained in Eltringham's work which is cited above.

The vast majority of the specimens were taken at Medje, and mainly in the months of June and July. There are about half a score of specimens which bear other locality labels, but they give no hint whatever of the existence of "local races." All of the varietal forms mentioned above occurred at Medje and were taken at the same dates. Specimens labelled as from Bafwaboli (Munie Katoto), Bafwasende, Batama, Lubila, and Risimu are dated as captured in September; one from Avakubi is dated October, another from Niangara bears the date of November, and one from Gamangui was taken in February. The writer has specimens in his collection taken in Cameroon and the French Congo in March, April, and May, and it is probable that the insect may be found upon the wing more or less commonly all the year round in the regions which it frequents.

(21) 2. **Acræa jodutta** (Fabricius)

Papilio jodutta FABRICIUS, 1793, Ent. Syst., III, part 1, p. 175.

Acraea jodutta AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 249, Pl. LVIII.

There are fifteen males and four females, most of them taken at Medje from June to September. Of the females, two are of the typical white form and two of the form named *dorotheæ* by Miss Emile Sharpe (figured as *A. metaprotea* Butler, in Seitz, XIII, Pl. LVIII) taken at Medje, June 20, 1910.

(22) 3. **Acræa lycoa** Godart

Acræa lycoa GODART, 1819, Enc. Méth., IX, p. 239. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 250.

There are five males and thirty-seven females in the collection. The specimens were mostly taken at Medje from June to September, but there are two females from Batama, two others from Risimu, and a fifth from Bafwaboli (Munie Katoto), which are all dated as captured in September.

(23) 4. **Acræa semivitrea** Aurivillius

Acraea semivitre AURIVILLIUS, 1895, Ent. Tidskr., XVI, p. 111; 1913, Seitz, Gross-Schmett., XIII, p. 253, Pl. LVIII.

Three males taken at Medje, one in June, the other two in August.

(24) 5. **Acræa servona** Godart

Acraea servona GODART, 1819, Enc. Méth., IX, p. 239. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 253, Pl. LVIII.

Twenty-six males and one female, all taken at Medje (June-August), except one male captured at Lubila, September 20, 1909, and the single female caught at Gamangui, June 7, 1910.

(25) 6. *Acræa penelope* Staudinger

Acræa penelope STAUDINGER, 1896, Iris, IX, p. 195. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 254, Pl. LVIIb.

Fifteen males: three from Gamangui, two taken in February and one in June; seven from Medje caught June to August; two from Risimu and three from Munie Katoto taken in September.

(26) 7. *Acræa peneleos* Ward

Acræa peneleos WARD, 1871, Ent. Mo. Mag., VIII, p. 60. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 255, Pl. LVIIb (first figure).

Twenty-nine males mostly taken at Medje, although there are others taken at the same localities and in the same months as those recorded for the preceding species. Lubila, Munie Katoto, Gamangui, Ngayu, Risimu, and Boyulu.

(27) 7a. *Acræa peneleos pelasgius* (Grose-Smith)

Acræa pelasgius GROSE-SMITH, 1900, Nov. Zool., VII, p. 545. SMITH AND KIRBY, 1901, Rhop. Exot., III, *Acræa*, Pl. VII, figs. 9, 10.

Eighteen specimens, all from Medje (April to August), except one caught at Niagara in November.

(28) 8. *Acræa parrhasia* (Fabricius)

Papilio parrhasia FABRICIUS, 1793, Ent. Syst., III, part 1, p. 175.

Acræa parrhasia AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 255, Pls. LVIIa, LIXe.

One male, Munie Katoto, September 10, 1909.

(29) 9. *Acræa orina* Hewitson

Acræa orina HEWITSON, 1874, Ent. Mo. Mag., XI, p. 130; 1875, Exot. Butt., V, *Acræa*, Pl. VII, figs. 43, 48.

There are thirty-one specimens, the majority of which were taken at Medje at dates ranging from May to September. Two are from Gamangui, one caught in February, the other in June; one from Stanleyville, August 1, 1909; one from Isangi, August 11, 1909; one from each of the localities known as Pawa, Munie Katoto, and Avakubi, captured in the month of October.

(30) 10. *Acræa orestia* Hewitson

Acræa orestia HEWITSON, 1874, Ent. Mo. Mag., XI, p. 131; 1875, Exot. Butt., V, *Acræa*, Pl. VII, fig. 47.

One male caught at Medje in September 1910.

(31) 11. ***Acræa quirinalis*** Grose-Smith

Acræa quirinalis GROSE-SMITH, 1900, Nov. Zool., VII, p. 544. SMITH AND KIRBY, 1901, Rhop. Exot., III, *Acræa*, Pl. VII, figs. 5, 6.

Two males and three females captured at Medje (June to August).

(32) 12. ***Acræa vesperalis*** Grose-Smith

Acræa vesperalis GROSE-SMITH, 1890, Proc. Zool. Soc. London, p. 466. SMITH AND KIRBY, 1892, Rhop. Exot., I, *Acræa*, Pl. III, figs. 1, 2.

One female taken in the first week of August 1910, at Medje.

(33) 13. ***Acræa pentapolis*** Ward

Acræa pentapolis WARD, 1871, Ent. Mo. Mag., VIII, p. 60; 1872, Afr. Lep., p. 7, Pl. VI, fig. 2. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 257, Pl. LVIE.

Two captured at Medje in June. This species is ordinarily not common in collections, but we have recently received a very large series, which Mr. A. I. Good informs me were part of a huge swarm which passed a couple of years ago over Efulen in Cameroon, flying from the north toward the south, in such numbers as to call for comment even on the part of the natives.

(34) 13a. ***Acræa pentapolis thelestis*** (Oberthür)

Acræa thelestis OBERTHÜR, 1893, Études d'Entomologie, XVII, p. 17, Pl. III, fig. 33. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 257, Pl. LVIF.

This is a form of the preceding species in which the white patch on the hind wing of *A. pentapolis* is replaced by red. Breeding experiments made at Lagos by Lamborn have shown that the two forms emerge in about equal numbers from the chrysalids reared from the same batch of eggs. The collection contains one specimen taken at Medje, September 1, 1910.

(35) 14. ***Acræa encedon*** (Linnaeus)

Papilio encedon LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 488.

Acræa encedon AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 258, Pl. LVIE.

One male labelled "Pawa, Oct. 20"; two females taken at Niangara, one labelled "Nov. 20, 1910," the other "1911-1912"; and a third female taken at Faradje "1911-1912."

(36) 14a. ***Acræa encedon lycia*** (Fabricius)

Papilio lycia FABRICIUS, 1775, Syst. Ent., p. 464.

Acræa encedon form *lycia* AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 258, Pl. LVIE.

One female labelled "Niangara, Nov. 14-16, 1910."

(37) 14b. ***Acræa encedon fumosa*** Aurivillius

Acræa encedon aberration fumosa AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 258.

One male, Avakubi, November 20, 1909.

(38) 14c. ***Acræa encedon infuscata*** (Staudinger)

Acræa infuscata STAUDINGER, 1885, Exot. Schmett., p. 83.

A male and a female taken at Gamangui in February, and a male taken at Medje in March.

(39) 14d. ***Acræa encedon alcippina*** Aurivillius

Acræa encedon var. *alcippina* AURIVILLIUS, 1898, Rhop. Æthiop., p. 111.

Three females, one caught at Niangara in November, and two at Faradje, "1911-1912."

(40) 15. ***Acræa pharsalus*** Ward

Acræa pharsalus WARD, 1871, Ent. Mo. Mag., VIII, p. 81. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 258, Pl. LVII.

Eighteen males and four females, mostly taken at Medje in the middle months of the year, but a couple were caught at Gamangui in February and several at Niangara in November.

(41) 16. ***Acræa salambo*** Grose-Smith

Acræa salambo GROSE-SMITH, 1887, Ann. Mag. Nat. Hist., (5) XIX, p. 62. SMITH AND KIRBY, 1889, Rhop. Exot., I, *Acræa*, Pl. II, figs. 3, 4.

Thirty-two males, mostly taken at Medje in the middle months of the year, although a few were caught at Gamangui in February and some at Avakubi in October.

(42) 17. ***Acræa rogersi*** Hewitson

Acræa rogersi HEWITSON, 1873, Ent. Mo. Mag., X, p. 57.

Acræa ehmkæi DEWITZ, 1889, Ent. Nachr., XV, Pl. I, figs. 6-8.

There are eleven males, the localities and dates of capture being as follows: two, Kwamouth, July 1909; one, Stanleyville, August 1909; one, Lubila, September 1909; one, Gamangui, February 1910; three, Medje, August 1910; three, Niangara, November 1910.

The test of breeding alone can decide whether *salambo* is a mere race or form of this species. In the shape and location of the dark spots they agree very closely. In the coloration of the upper side of the wings *A. rogersi* very nearly resembles *A. egina*, with which, however, it has nothing to do. The resemblance to the latter is purely superficial.

(43) 18. ***Acræa althoffi rubrofasciata*** Aurivillius*Acræa althoffi* DEWITZ, 1889, Ent. Nachr., XV, p. 102, Pl. I, fig. 5.*Acræa althoffi* var. *rubrofasciata* AURIVILLIUS, 1895, Ent. Tidskr., XVI, p. 111.

Eight males and one female taken at Medje from July to September, and a male caught at Niangara in November.

(44) 19. ***Acræa oberthüri*** Butler*Acræa oberthüri* BUTLER, 1895, Ann. Mag. Nat. Hist., (6) XVI, p. 271. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 262, Pl. LVIC, d.

Seven specimens taken at Medje from May to September.

(45) 19a. ***Acræa oberthüri confluens*** Suffert*Acræa oberthüri confluens* SUFFERT, 1904, Iris, XVII, p. 33. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 262.

Three males, one taken in each of the months of May, August, and September at Medje.

(46) 20. ***Acræa viviana*** Staudinger*Acræa viviana* STAUDINGER, 1896, Iris, IX, p. 204. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 262, Pl. LVIC.

Ten males and seven females, mostly from Medje, taken in the middle of the year, but one is recorded as captured at Gamangui in February, and several were caught at Niangara in November.

(47) 21. ***Acræa bonasia*** (Fabricius)*Papilio bonasia* FABRICIUS, 1775, Syst. Ent., p. 464.*Acræa bonasia* AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 263, Pl. LVIB.

Seventy-three specimens taken mostly at Medje and Niangara at the times when collections were made at those places, but there are also others from various scattered localities: Faradje, Lubila, Risimu. This species is one of the most widely diffused and commonest in the forest-lands of central tropical Africa.

(48) 21a. ***Acræa bonasia supponina*** (Staudinger)*Acræa supponina* STAUDINGER, 1896, Iris, IX, p. 204. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 264, Pl. LVIB.

Of this trifling variety, which has been dignified by a name, there are ten specimens from various scattered localities: Niangara, Faradje, Gamangui, Medje, and Pawa.

(49) 22. *Acræa vinidia* Hewitson

Acræa vinidia HEWITSON, 1874, Ent. Mo. Mag., XI, p. 130. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 264, Pl. LVIIa.

Eighty specimens, representing almost all the localities at which collections were made. Forty-seven were taken at Gamangui in February; thirteen at Medje (June–September); five at Bafwabaka in January; four at Niangara in November; others at Bafwaboli, Batama, Stanleyville, Faradje, Pawa, Kwamouth, and Isangi.

Some of the specimens have dots in the discal area of the fore wings, others do not. Here is an opportunity for a “species-maker” to signalize his acumen by separating the forms and counting the spots, which are variable in number and size. The case might be referred to certain of my friends in Berlin who used, before being otherwise employed, to occupy themselves in making “new species” and advertising them for sale to ardent collectors. When I was younger I often “took the hook,” but now, as I look back, I can fancy Dame Nature smiling at the performance.

(50) 23. *Acræa terpsichore* (Linnæus)

Papilio terpsichore LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 466.
Acræa terpsichore AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 264.

There are forty-three males and eleven females in the collection. Of this number twenty-three were taken at Medje or at localities in the forested lands of the western and central parts of the country, Stanleyville, Avakubi, Munie Katoto, Bafwabaka, Kwamouth, Batama, Gamangui. They all conform more or less exactly to the typical form of the western coast in which the subapical black bar is complete, fully enclosing the light subapical spot. Thirty-one were taken at Niangara and Faradje to the northeast in more open country, and show a tendency toward the obliteration of this band, and two specimens from Faradje, a male and a female, are without it, the subapical spot being confluent with the lighter area of the disk, they being therefore referable to the subspecies *buxtoni*, which is the prevalent form on the eastern coast and the grass-lands of the southeastern parts of the continent.

(51) 24. *Acræa pseudegina abadima* (Ribbe)

Acræa abadima RIBBE, 1889, Iris, II, p. 182, Pl. IV, fig. 2.

This insect is represented in the collection by sixteen males and two females. One was taken at Avakubi, three males and a female at Kwamouth, seven males at Medje, five males and a female at Niangara. It was originally described from the Niam-Niam country, but evidently

ranges far to the westward. The specimens from Kwamouth tend in the darker coloration of the fore wings in the direction of typical *A. pseudogina*.

(52) 25. ***Acræa atergatis*** Westwood

Acræa atergatis WESTWOOD, 1881, Oates' Matabeleland, p. 342, Pl. F, figs. 1, 2.

AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 268, Pl. LVf.

A single male caught at Risimu, September 6, 1909.

(53) 26. ***Acræa cæcilia*** (Fabricius)

Papilio cæcilia FABRICIUS, 1781, Spec. Ins., II, p. 34.

Acræa cæcilia AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 268.

Four males and three females. Three males and two females were caught at Niangara in November; a male and a female at Faradje "1911-1912."

(54) 27. ***Acræa acontias*** Westwood

Acræa acontias WESTWOOD, 1881, Oates' Matabeleland, p. 343, Pl. F, figs. 7, 8.

AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 274, Pl. Lvc (as *atolmis*).

Two males, taken at Kwamouth, July, 1909.

(55) 28. ***Acræa cepheus*** (Linnæus)

Papilio cepheus LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 487.

Acræa cepheus AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 278, Pl. LIVf.

Twenty-six males and eleven females, taken principally at Medje, but other localities, as Kwamouth, Bafwaboli, Avakubi, Niangara, and Gamangui are represented. Captures are recorded in February and from June to November.

(56) 29. ***Acræa abdera*** Hewitson

Acræa abdera HEWITSON, 1852, Exot. Butt., I, *Acræa*, Pl. I, figs. 1, 2. AURIVILLIUS,

1913, Seitz, Gross-Schmett., XIII, p. 278, Pl. LIVf.

Six males and one female, all taken at Niangara in November, except one male, which was caught at Bafwaboli in September.

(57) 30. ***Acræa perenna*** Doubleday and Hewitson

Acræa perenna DOUBLEDAY AND HEWITSON, 1848, Gen. Diurn. Lep., I, Pl. XIX, fig. 4.

AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 279, Pl. LIVE.

Seventy-five males and four females, principally from Medje, but most of the other localities mentioned in this paper are also represented; Niangara, Bafwaboli, Gamangui, Boyulu, Lubila, and Avakubi. The sexes are very much alike, the females being a little duller in color than the males, and the fore wings not quite as arcuate.

(58) 31. *Acræa egina* (Cramer)

Papilio egina CRAMER, 1775, Pap. Exot., I, p. 64, Pl. xxxiii, figs. F, G.

Acræa egina AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 279, Pl. livd.

Eight males and one female. The female was captured at Gamangui in February. The males were taken at Kwamouth, Avakubi, Munie Katoto, Medje, and Niangara. The dates of capture run from July to November.

(59) 32. *Acræa zetes* (Linnæus)

Papilio zetes LINNÆUS, 1750, Syst. Nat., 10th Ed., p. 487.

Acræa zetes AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 280.

There are six males and two females from various localities. One female was taken at Gamangui in February; three specimens were caught at Medje from July to November; and three at Niangara in November. Typical *A. zetes* (Linnæus) with the fore wings almost solidly black is represented by a male taken at Risimu, September 8, 1909. Such specimens are most often found in material from South Africa. All the other specimens in the present collection belong to the varietal forms *A. menippe* (Drury) and *A. jalema* Godart, which are connected by intergrading forms.

I have in my possession a long series of specimens bred at Kangvé on the Ogové River by the late Dr. A. C. Good. He found the larvae feeding gregariously, and, as specimens sent me reveal, these insects in no respect differed from each other either in the larval or pupal stages. The brood consisting of males and females, represented every varietal form running from typical *Acræa zetes* (Linnæus) through *Acræa menippe* (Drury) to *Acræa jalema* Godart. The latter, as has been pointed out by Professor Aurivillius, seems to constitute a connecting link between the West African races and the East African form named *Acræa acara* Hewitson. Some of the specimens of *A. jalema* Godart contained in this brood very closely approximate males of *Acræa acara*, of which I have many from Mombasa, with the difference that no specimens from the French Congo show the white squamation in the middle of the hind wing, which is characteristic of all the males of *A. acara*, and the subapical band of the fore wing is invariably narrower than in the East African form. There is, however, a decided difference between the females from the west coast and the east coast. The females of *A. acara*, of which I possess a considerable number, are smaller in size and not as brilliantly colored as the West African females, and the subapical white band of the fore wings is much broader and more diffuse than in the West African form.

(60) 33. ***Acræa insignis siginna*** Suffert

Acræa insignis siginna SUFFERT, 1904, Iris, XVII, p. 19. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 284, Pl. LIVA.

One female, Niangara, November.

(61) 34. ***Acræa neobule*** Doubleday and Hewitson

Acræa neobule DOUBLEDAY and HEWITSON, 1848, Gen. Diurn. Lep., I, Pl. XIX, fig. 3. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 285, Pl. LIIf.

Two males, Niangara, November.

(62) 35. ***Acræa leucographa*** Ribbe

Acræa leucographa RIBBE, 1889, Iris, II, p. 181, Pl. IV, fig. 1. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 285, Pl. LIIf.

A solitary male, taken at Niangara in November.

Satyridæ**Elymniinæ****ELYMNIOPSIS** Fruhstorfer(63) 1. ***Elymniopsis phegea*** (Fabricius)

Papilio phegea FABRICIUS, 1793, Ent. Syst., III, part 1, p. 132.

Elymniopsis phegea AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 82, Pl. XXVIA.

One male taken at Medje, August 4, and another at Niangara about the beginning of November 1910.

(64) 2. ***Elymniopsis bammakoo*** (Westwood)

Melanitis bammakoo WESTWOOD, 1851, Gen. Diurn. Lep., II, p. 405, Pl. LXVIII, fig. 3.

Elymniopsis bammakoo AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 82, Pl. XXVIA.

Seven specimens, six males and one female, taken at Medje from August 5 to November 1910.

Satyrinæ**MELANITIS** Fabricius(65) 1. ***Melanitis leda africana*** (Fruhstorfer)

Melanitis africana FRUHSTORFER, 1908, Ent. Zeitschr., XXII, p. 84. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 82.

One female taken at Faradje. The only information given by the label is that it was captured in "1911-1912." It belongs to the rainy season form. The separation of this race from typical *M. leda* of India is a rather meticulous refinement.

(66) 2. **Melanitis ansorgei** Rothschild

Melanitis ansorgei ROTHSCHILD, 1904, Nov. Zool., XI, p. 451. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 83.

Two males taken at Medje in the first week of September 1910.

GNOPHODES Westwood(67) 1. **Gnophodes parmeno** Doubleday and Hewitson

Gnophodes parmeno DOUBLEDAY AND HEWITSON, 1851, Gen. Diurn. Lep., II, p. 363, Pl. LXI, fig. 2, ♂. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 83, Pl. xxvib.

One damaged male taken at Stanleyville on September 16 and a better preserved female (lacking antennæ) taken at Medje in the early part of September 1910.

(68) 2. **Gnophodes chelys** (Fabricius)

Papilio chelys FABRICIUS, 1793, Ent. Syst., III, part 1, p. 80.

Gnophodes chelys AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 83, Pl. xxvic.

Two males and five females all captured at Medje, the dates ranging from July 19 to the first week of September 1910.

BICYCLUS Kirby(69) 1. **Bicyclus hewitsoni nanodes** (Grose-Smith)

Idiomorphus nanodes GROSE-SMITH, 1890, Proc. Zool. Soc. London, p. 472.

Mycalesis hewitsoni var. *nanodes* AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 84, Pl. xxvii.

Structurally not capable of being separated from *B. hewitsoni* (Doumet) (cf. Rev. Zool., 1861, (2) XIII, p. 175) but on the upper side the submarginal ocelli are more or less obsolete, and the outer pale area of the wings is laved with violaceous. The latter also holds true of many specimens of typical *B. hewitsoni*, which are not all pale brown on this part of the wings. The line of demarcation between the dark basal area of the hind wing and the light outer area is not quite straight as in the typical form but is bent slightly inwardly basad at a point just beyond the end of the cell.

Ten males, all taken at Medje, except one which is recorded as from Faradje, but without any indication of the day or month. The specimens from Medje, with the exception of one taken on April 4, were captured at dates ranging from July 7 to September 24, 1910.

(70) 2. **Bicyclus medontias obsoletus**, new variety

Plate VII, Figure 1, ♂

On the upper side hardly to be distinguished from typical *B. medontias* (Hewitson) (cf. Exot. Butt., 1874, *Mycalesis*, Pl. ix, figs. 56, 57), except that the ground-color

in both sexes is a little paler. On the under side the median line of both wings is perfectly straight, and not at all curved, as it is in most specimens of *B. medontias* and only half, or even less than half, as wide as it is in the typical form, being reduced to a very narrow, sharp, creamy white line, contrasting strongly against the darker ground-color. All the ocelli are greatly reduced in size, some of them being occasionally obsolete. This may be a wet seasonal form of *B. medontias*.

Types, ♂ and ♀, in The American Museum of Natural History; paratypes in the Holland Collection, Carnegie Museum.

The collection contains twenty-five males and eight females, all taken at Medje, the dates of capture ranging from July 17 to the middle of September 1910.

(71) 3. **Bicyclus iccius** (Hewitson)

Idiomorphus iccius HEWITSON, 1865, Exot. Butt., III, *Idiomorphus*, Pl. I, figs. 4, 5.
Mycalesis iccius AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 85, Pl. xxvii.

Seven males and one female, the latter taken at Medje, July 21, 1910. Of the males three were taken in April, three in August, and one in September.

(72) 4. **Bicyclus sebetus** (Hewitson)

Idiomorphus sebetus HEWITSON, 1877, Exot. Butt., V, Pl. *Mycalesis* and *Idiomorphus*, figs. 6, 7.
Mycalesis sebetus AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 85.

Four males and three females taken at Medje, the dates of capture ranging from June 6 to August 6, 1910.

MYCALESIS Hübner

(73) 1. **Mycalesis xeneas** Hewitson

Mycalesis xeneas HEWITSON, 1865, Exot. Butt., III, *Mycalesis*, Pl. VII, fig. 48.
AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 86, Pl. xxviii.

The figure given by Hewitson is very poor; that given in Seitz is much better.

The collection contains five males and six females taken at Medje from July 9 to the first week in September and one female taken at Gamangui, June 17, 1910.

(74) 2. **Mycalesis analis** Aurivillius

Mycalesis analis AURIVILLIUS, 1895, Ent. Tidskr., XVI, p. 113, fig. 1; 1911, Seitz, Gross-Schmett., XIII, p. 87.

There are fourteen males and three females, all taken at Medje from July 7 to August 24, 1910.

(75) 3. **Mycalesis tænia** Hewitson

Mycalesis tænia HEWITSON, 1877, Exot. Butt., V, Pl. *Mycalesis* and *Idiomorphus*, fig. 66. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 87, Pl. xxviii.

Represented by a single male specimen taken at Niangara and belonging to the lot of insects collected at that place between November 26 and December 2, 1910.

(76) 4. **Mycalesis ignobilis** Butler

Mycalesis ignobilis BUTLER, 1870, Trans. Ent. Soc. London, p. 124; 1871, Lep. Exot., p. 55, Pl. XXI, fig. 4. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 87, Pl. xxviii.

This species, which is quite common in the Ogové valley, is represented in the present collection by five males and a female which were taken at Medje in September 1910.

(77) 5. **Mycalesis asochis** Hewitson

Mycalesis asochis HEWITSON, 1865, Exot. Butt., III, *Mycalesis*, Pl. vii, figs. 46, 47. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 88, Pl. xxviii.

Of this not uncommon species there are four males and one female. One male was captured at Gamangui, June 19, two were taken at Medje in July and August, the female was taken at the same place on August 6, and one male is ticketed as from "Niangara, November to December 4, 1910." From this record it appears that the insect must have at least two broods annually.

(78) 6. **Mycalesis sambulos** Hewitson

Mycalesis sambulos HEWITSON, 1877, Exot. Butt., V, Pl. *Mycalesis* and *Idiomorphus*, figs. 63, 64. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 89, Pl. xxviii.

There are two males in the collection, both taken at Medje, one on July 12, the other on August 24, 1910.

(79) 7. **Mycalesis mandanes** Hewitson

Mycalesis mandanes HEWITSON, 1873, Exot. Butt., V, *Mycalesis*, Pl. ix, figs. 61, 62. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 89, Pl. xxviii.

Professor Aurivillius in his 'Rhopalocera Æthiopica,' p. 53, sank this species as a synonym of *M. auricruda* Butler, but in Seitz, 'Die Gross-Schmetterlinge des Afrikanischen Faunengebietes,' p. 89, he restores it to its rightful place as a distinct species. The outline of the hind wings, which are much more elongate than in *M. auricruda*, is enough, without the many differences in the markings of the under side of the wings, to reveal its distinctness.

Two males taken at Medje in July 1910.

(80) 8. ***Mycalesis auricruda*** Butler

Mycalesis auricruda BUTLER, 1868, Cat. Satyr., p. 131, Pl. III, fig. 6. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 89, Pl. xxviii.

Six males and four females taken at Medje at dates ranging from July 8 to September 6, 1910.

(81) 9. ***Mycalesis uniformis*** Bethune-Baker (?)

Mycalesis uniformis BETHUNE-BAKER, 1908, Ann. Mag. Nat. Hist., (8) II, p. 470. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII., p. 90.

I refer to this species two males and three females before me, which agree better with the description of this species given by Bethune-Baker than with any other known to me. I was at first tempted to describe them as new to science but, after considerable study, have finally decided that they belong here, but cannot be quite positive, as I have not had the opportunity to examine the type of the species, which is a male. The females in the collection agree absolutely with the males in the markings of both the upper and under sides and are only differentiated from them, aside from their sexual characters, by having a greater expanse of wing.

The specimens were taken at Medje, four in August, and one female in September.

(82) 10. ***Mycalesis sandace*** Hewitson

Mycalesis sandace HEWITSON, 1877, Exot. Butt., V, Pl. *Mycalesis* and *Idiomorphus*, fig. 65. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 89, Pl. xxviii.

There is a series of ten males, nine taken at Medje from June 6 to September 20, and one at Gamangui, February 5; and three females, one caught on April 6, the others about the middle of August 1910. None of the specimens are in good condition, all being more or less rubbed and defective.

(83) 11. ***Mycalesis miriam*** (Fabricius)

Papilio miriam FABRICIUS, 1793, Ent. Syst., III, part 1, p. 242.

Mycalesis miriam AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 90, Pl. xxviii.

One female caught at Medje, September 1910, and nine males and another female taken at Faradje, five labelled as taken in December, the rest ticketed "1911-1912."

(84) 12. ***Mycalesis melusina*** (Fabricius)

Papilio melusina FABRICIUS, 1787, Mantissa Ins., II, p. 43.

Mycalesis melusina AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 90, Pl. xxviii.

Eleven males and one female caught at Medje, two in April, the rest from July to September 1910.

(85) 13. **Mycalesis sophrosyne** Plötz

Mycalesis sophrosyne PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 196. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 90.

Three males taken at Medje, one in June, the others in July.

(86) 14. **Mycalesis mollitia** Karsch

Mycalesis mollitia KARSCH, 1895, Ent. Nachr., XXI, p. 281. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 90, Pl. xxviii.

Karsch described the male; the female was described by Wichgraf in the Deutsche Entomologische Zeitschrift, 1914, p. 345. It is somewhat larger than the male, paler in color throughout, with the sub-apical light area of the primaries enlarged and extending along the costa as a light line to a point about opposite the end of the cell. On the under side it does not differ materially in its color and markings from the male.

The collection contains a set of seven males and five females, taken at Medje, one male and three females in April, the rest in July and August.

(87) 15. **Mycalesis obscura** Aurivillius

Mycalesis obscura AURIVILLIUS, 1901, Ent. Tidskr., XXII, p. 114; 1911, Seitz, Gross-Schmett., XIII, p. 91, Pl. xxviii.

I refer to this species a long series of males and several females the general resemblance of which on the under side of the wings to *M. martius* and *M. golo* recalls the remarks of the author of the species, who says that *M. obscura* is very like the two which have been mentioned. There are, however, structural differences which clearly separate this species from *M. martius*. One of these is the absence in *M. obscura* of the tuft of androconia, which is always found in *M. martius* between veins 2 and 3 near the point of their origin on the fore wing, and another is the fact that the hind wing is not produced or angulated at the extremity of vein 4 as is the case in *M. martius*. From *M. golo* they may at once be discriminated by their more uniformly dark color on the under side of the secondaries. The females which I associate with the males have broader wings and are paler in color than the males, but, like the males, strongly recall in the pattern of the markings the corresponding sex of *M. martius*.

Of *M. martius* I have before me, as I write, an enormous series of males and females taken at various localities, ranging from the valley of the Ogové River to Lolodorf in Cameroon and, while superficially the two species are very much alike, so that an untrained investigator

might at first glance easily confound the two, the structural differences which I have pointed out enable them to be easily separated. *M. martius* is not represented by a single specimen in the collection upon which I am reporting.

The seventeen males and six females in the collection were all taken at Medje, a couple in April, the rest from July to September.

(88) 16. ***Mycalesis dubia*** Aurivillius

Mycalesis dubia AURIVILLIUS, 1893, Ent. Tidskr., XIV, p. 270, fig. 4; 1911, Seitz, Gross-Schmett., XIII, p. 92, Pl. xxviii.

There are two males of this species, one taken at Medje in April and another at the same place in September.

(89) 17. ***Mycalesis golo*** Aurivillius

Mycalesis golo AURIVILLIUS, 1893, Ent. Tidskr., XIV, p. 267, fig. 2.

Mycalesis golo var *violascens* AURIVILLIUS, 1898, Rhop. Æthiop., p. 55; 1911, Seitz, Gross-Schmett., XXIII, p. 91, Pl. xxviii.

Mycalesis golo was originally described by Professor Aurivillius from Cameroon. I have in my possession a large series of specimens from that region, which agree exactly with his description and figure. The series taken by the American Museum Congo Expedition are not typical, but may in part be referred to the varietal form *violascens*, in which the limbal area of the wings is more or less suffused with violet and the transverse line of the hind wing is obscured by the outward extension of the dark color of the basal and discal area of the wing. Some of the specimens taken at Medje approach more nearly to the typical form but these differ, nevertheless, by having the upper surface of the wings distinctly brown and not dark blackish brown like the insect from Cameroon. This difference, while it holds good of all the specimens not referable to the variety *violascens*, hardly seems to me to be of sufficient importance to justify the erection of a subspecies.

Of *M. golo violascens* there are in the collection seventeen males, one taken at Niangara in November, the rest caught at Medje from July to September. Of the reddish form there are eight males taken at Medje in August and September.

(90) 18. ***Mycalesis baumanni*** Karsch (?)

Mycalesis baumanni KARSCH, 1894, Ent. Nachr., XX, p. 230. AURIVILLIUS, 1911, Seitz, Gross-Schmett., p. 91, Pl. xxviii.

With a good deal of hesitation I refer to this species five males which are before me. They belong to the Fourth Subgroup of the classification proposed by Professor Aurivillius (cf. Seitz, 'Die Gross-Schmetter-

linge des Afrikanischen Faunengebietes,' p. 91), but they differ from *M. baumanni* in not having the transverse bands on the under side of the fore and hind wings strongly produced on vein 4. This band has its outer margin more or less irregular, and its course recalls that of the band on the under side of *M. sandace* Hewitson, with which the specimens otherwise have nothing to do, as is shown by the sexual brands and the entire absence of ocelli on the upper side of the primaries.

The specimens are not, for the most part, very well preserved, some of them being rather badly rubbed, making the determination of the exact pattern of the markings a little difficult to determine, but I do not feel like hazarding their description as a new species, though eventually they may turn out to be undescribed.

The specimens were taken at Medje, one in April, the others at dates ranging from July to September.

(91) 19. ***Mycalesis milyas*** Hewitson (?)

Mycalesis milyas HEWITSON, 1864, Exot. Butt., III, *Mycalesis*, Pl. VI, fig. 34.
AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 92, Pl. XXVIII.

I refer with great doubt a rubbed male and a rather poorly preserved female to this species. The male was taken at Medje in September 1910, the female in July.

The description and figure of *M. milyas* given by Hewitson (*loc. cit.*) leave much to be desired. The figure given by Aurivillius on Plate XXVII of 'Die Gross-Schmetterlinge des Afrikanischen Faunengebietes' more nearly represents the under side of the specimens under consideration, but his description does not agree either with the figure he gives or the specimens before me. I have in my possession a male taken at Efulen by A. C. Good, and there are in the Carnegie Museum some specimens taken by A. C. Good at Lolodorf, which are identical with the insect taken at Medje. I have assigned all of them to *M. milyas* with a double interrogation mark, as they do not perfectly agree either with the descriptions or figures hitherto given by authors, although they come nearer to that species than to any other.

(92) 20. ***Mycalesis pavonis*** Butler

Mycalesis pavonis BUTLER, 1876, Ann. Mag. Nat. Hist., (4) XVIII, p. 481.
AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 92.

There are seven males and three females of this well-marked species, all taken at Faradje in November and December.

(93) 21. ***Mycalesis desolata*** Butler

Mycalesis desolata BUTLER, 1876, Ann. Mag. Nat. Hist., (4) XVIII, p. 480.

Mycalesis leptoglena KARSCH, 1893, Berl. Ent. Zeit., XXXVIII, p. 208, Pl. v, fig. 7.

Mycalesis desolata AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 93.

Of this species there are five males, four of which agree absolutely with the published descriptions and figure, but the fifth has the submarginal ocelli much larger, with round black centers pupilled with white, contrasting with the dull ground-color of the wings in a very striking manner. In the typical form the ocelli are more or less obsolete. The specimens were all taken at Niangara in November.

(94) 22. ***Mycalesis safitza æthiops*** Rothschild and Jordan

Mycalesis safitza æthiops ROTHSCHILD AND JORDAN, 1905, Nov. Zool., XII, p. 175.

M. safitza was described and figured by Hewitson (cf. Gen. Diurn. Lep., 1851, II, p. 394, note, Pl. LXVI, fig. 3). Of the form *æthiops* there are fifteen males and two females, all of which were taken at Faradje and Niangara in November and December. There are also two males and seven females taken at Medje in the months of July and August, which are so much like the others in their markings that it is impossible to separate them, though they are somewhat larger in size.

(95) 22a ***Mycalesis safitza evenus*** (Hopffer)

Mycalesis evenus HOPFFER, 1855, Monatsber. Akad. Wiss. Berlin, p. 641; 1862, Peters, Reise n. Mossambique, Ins., p. 394, Pl. xxv, figs. 5, 6. AURIVILLIUS, 1911, Seitz, Gross-Schmett., p. 93, Pl. xxvii.

Of this, the dry-season form of *M. safitza*, there are two males and two females. One of the males was taken at Medje in August, the other at Faradje in November. Both of the females were captured at Niangara in November.

(96) 23. ***Mycalesis langi***, new species

Plate X, Figure 10, ♂

♂. The fore wing with a small, but distinct, sexual brand at the middle of vein 1, which at this point is slightly bent costad. The hind wing with a pale yellowish brown pencil of hairs on the upper margin of the cell about the middle and beyond it with a black tuft of hairs on the sixth interspace. The upper side of both wings is totally devoid of all ocelli. The prevalent color is mouse-gray, the discal area of the fore wings being black and velvety, this black area covering the end of the cell and the origin of the submedian nervules, extending to the inner margin from near the outer angle to within one-third of the distance from the base. The hind wings also are black, or very dark brown, except on the outer and inner margins. Both wings have a very fine black marginal line, paralleled inwardly by a similar fine submarginal line, separated from the outer line by a space less than half a millimeter in diameter.

The fringes are obscurely checkered at the ends of the nervules by darker scales, contrasting with the pale mouse-gray color of the rest of the fringes. On the under side the markings recall those of *M. safitza*, but the ground-color is darker. Expanse, 37 mm. (The expanse of the smallest specimen of *M. safitza* before the writer—there are many scores of them—is 45 mm.)

Type from Medje; paratypes, from Faradje. Type and two paratypes in The American Museum of Natural History, New York; two paratypes in the Holland Collection in the Carnegie Museum.

This may prove to be a local or seasonal form of *M. safitza*, but it differs so markedly from all the varieties of that species known to the writer that he does not hesitate to describe it as new. The entire absence of any trace of ocelli on the upper side of the wings, the black velvety color of the central area of the fore wings, the checkered fringes, and the uniformly small size of the specimens, all indicate that we are dealing with what is at all events a marked variety, separable at a glance from *M. safitza* and all the varieties of that species hitherto described.

I have the honor of naming the species after Mr. Herbert Lang, the capable head of the Expedition, to whose enthusiasm we are indebted for the large entomological collections which were returned.

(97) 24. ***Mycalesis chapini***, new species

Plate VII, Figure 9, ♂

♂. On the upper side having a general resemblance to the male of *M. langi* Holland, but considerably larger in size, and having the fringes of the wings more decidedly checkered with dark at the ends of the nervules. On the under side wholly different from *M. langi* and in the disposition of the markings, but not their color, recalling the under side of *M. baumanni* Karsch. The ground-color of the under side is pale sienna sprinkled with minute dark transverse lines and dots, the basal half of both wings and the limbal area of the primaries near the outer angle broadly clouded with purplish brown. A sub-basal and median transverse line, curving outwardly from the costa of the fore wing to the inner margin of the hind wing about its middle, run approximately parallel to each other. The median line is produced somewhat sharply at the origin of vein 4 on each wing, and is more or less waved on the interspaces, the curves bending outwardly. The space between the sub-basal and median lines is a trifle darker than the rest of the wings, partly due to the increase in this field of the minute strigulae with which the wings are strewn. The ocelli are, for the most part, entirely obsolete, at most being represented by minute white dots, except the two nearest the anal angle of the secondaries, which in the type are exceedingly minute black circles, under the glass seen to be pupilled with white and ringed about with pale ochreous. Expanse, 42 mm.

Niangara. Type unique, in The American Museum of Natural History.

This insect is so totally unlike any other in the group to which it belongs that I do not hesitate to describe it as new. I take pleasure in naming it in honor of Mr. J. P. Chapin, one of the leaders of the Expedition.

(98) 25. **Mycalesis vulgaris** Butler

Mycalesis vulgaris BUTLER, 1868, Cat. Satyr., p. 130, Pl. III, fig. 8. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 95, Pl. xxviii.

A single male taken at Niangara, November 26, 1910.

(99) 25a. **Mycalesis vulgaris tolosa** (Plötz)

Mycalesis tolosa PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 197.

This is the dry-season form of this species, and is characterized by having the ocelli well developed and not reduced to mere points, as is the case in typical *M. vulgaris*. It is the prevailing form in the region of the Ogové River, in Cameroon, and in the Belgian Congo. In spite of its name, typical *M. vulgaris* is not very common in collections, so far as my observations show.

Of the variety *tolosa* (Plötz) the collection upon which I am reporting contains three males and eight females. One female was taken at Medje in July, one at Lubila in September, three at Niangara in November, and three at Faradje in December. One of the males was caught at Niangara in November, and the other two at Faradje in December.

(100) 26. **Mycalesis nebulosa** Felder

Mycalesis nebulosa FELDER, 1867, Reise Novara, Lep., III, p. 502. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 95, Pl. xxviii.

There are two poorly preserved males and one female of this species, which were taken at Niangara in November.

(101) 27. **Mycalesis agraphis** Karsch

Mycalesis agraphis KARSCH, 1893, Berl. Ent. Zeit., XXXVIII, p. 207. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 96, Pl. xxviii.

A single male of this common West African species caught at Avakubi in November.

HENOTESIA Butler(102) 1. **Henotesia perspicua** (Trimen)

Mycalesis perspicua TRIMEN, 1873, Trans. Ent. Soc. London, p. 104, Pl. i, fig. 3.
Henotesia perspicua AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 97, Pl. xxviii.

Five males: one was taken at Risimu in September; two at Niangara in November; and two at Faradje, one in December, the other without date.

(103) 2. **Henotesia phæa** (Karsch)

Mycalesis phæa KARSCH, 1894, Ent. Nachr., XX, p. 232.
Henotesia phæa AURIVILLIUS, 1911, Seitz, Gross-Schmett., p. 98, Pl. xxviii.

Four males taken at Faradje, one on December 12, 1912, the other three ticketed "1911-1912."

(104) 3. **Henotesia eliasis** (Hewitson)

Mycalesis eliasis HEWITSON, 1866, Exot. Butt., III, *Mycalesis*, Pl. VII, figs. 44, 45.
Henotesia eliasis AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 99, Pl. xxviii d.

A single damaged male labelled "Kwamouth, July 14, 1909."

(105) 4. **Henotesia peitho** (Plötz)

Mycalesis peitho PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 197.
Henotesia peitho AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 99, Pl. xxviii a.

Four males taken at Medje, one in April, two in August, and one in September.

YPTHIMA Hübner(106) 1. **Ypthima asterope** (Klug)

Hipparchia asterope KLUG, 1832, Symb. Phys., Pl. xxix, figs. 11-14.
Ypthima asterope AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 115, Pl. xxix c.

One male taken at Niagara, November 25, 1910.

(107) 2. **Ypthima simplicia** Butler

Ypthima simplicia BUTLER, 1876, Ann. Mag. Nat. Hist., (4) XVIII, p. 481.
 AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 115.

A poorly preserved male caught at Faradje and labelled "1911-1912."

(108) 3. **Ypthima doleta** Kirby

Ypthima doleta KIRBY, 1880, Proc. Roy. Dublin Soc., (2) II, p. 336. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 115, Pl. xxix c.

Of the fourteen males one is labelled as from Bafwasende, September 23, 1910; all the rest were taken at Medje, two in April, the rest from July to September. Of the two females one was caught at Medje in August, the other at Niagara in November.

(109) 4. **Ypthima itonia** Hewitson

Ypthima itonia HEWITSON, 1864, Trans. Ent. Soc. London, p. 287, Pl. xviii, fig. 13.
 AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 116.

Six males taken at Faradje in November.

Nymphalidæ**Argynnidinæ****LACHNOPTERA** Doubleday(110) 1. **Lachnoptera iole** (Fabricius)

Papilio iole FABRICIUS, 1781, Spec. Ins., II, p. 78.
Lachnoptera iole AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 230, Pl. LI f.

This species is represented in the collection by twelve males and one female of the dimorphic form named *L. hecataea* by Hewitson. All of the specimens are from Medje (June-September) except one male specimen captured at Gamangui in June.

ATELLA Doubleday(111) 1. **Atella columbina** (Cramer)

Papilio columbina CRAMER, 1779, Pap. Exot., III, p. 76, Pl. CCXXXVIII, figs. A, B.

Atella columbina AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 230, Pl. LIIf.

Twenty-six specimens; six taken at Gamangui in February; one at Lubila in September 1909; eight at Niangara in November; and the rest at Medje, one in April, the others from July to September 1910.

(112) 2. **Atella phalantha æthiopica** Rothschild and Jordan

Atella phalantha form *æthiopica* ROTHSCILD AND JORDAN, 1903, Nov. Zool., X, p. 505.

Twenty-eight specimens, two of which were taken at Medje in July, the rest at Niangara in November. The species was originally described from the East Indies, and is figured by Drury (1773, Ill. Exot. Ent., I, p. 41, Pl. XXI, figs. 1, 2). Its range covers the tropical regions of the Eastern Hemisphere and it is one of the most widely distributed insects of the Old World. The separation of the race found in Africa from the oriental varieties is a recent refinement in classification which is justifiable, although founded on differences which are recognizable, but very slight.

Vanessinæ**ANTANARTIA** Rothschild and Jordan(113) 1. **Antanartia delius** (Drury)

Papilio delius DRURY, 1782, Ill. Exot. Ent., III, p. 18, Pl. XIV, figs. 5, 6.

Hypanartia delius AURIVILLIUS, 1898, Rhop. Æthiop., p. 130.

Antanartia delius ROTHSCILD AND JORDAN, 1903, Nov. Zool., X, p. 508.

AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 229, Pl. LIIf.

Fifty-three specimens, mostly males, principally taken at Medje from June to September, but there are a couple caught at Niangara in November and one captured at Munie Katoto in September.

PYRAMEIS Hübner(114) 1. **Pyrameis cardui** (Linnæus)

Papilio cardui LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 475.

Pyrameis cardui AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 227.

This cosmopolitan species is represented in the collection by three examples, two taken at Niangara, and one at Faradje, "1911-1912." It is worthy of note that no specimens were taken at Medje or other localities in the hot, humid tropical forest-lands. The insect does not

appear to turn up in the dense jungle of the hottest parts of Africa, but seems to be confined to the more open lands, where thistles grow. In the more than forty years in which I have been receiving collections from tropical Africa I never have obtained specimens of "The Painted Lady" from such places as the Ogové Valley, or the swampy palm-clad savannas along the big rivers; but, on the other hand, it has often been received from the sandy coastal ridges, and the higher grass-lands of both the western, the eastern, and the southern parts of the continent.

VANESSULA Dewitz

(115) 1. *Vanessula milca* (Hewitson)

Liptena milca HEWITSON, 1873, Exot. Butt., V, *Pentila* and *Liptena*, Pl. II, fig. 17.
Vanessula milca AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 227, Pl. LIIe.

Nine specimens captured at Medje from July to September. This pretty little insect is very common in the valley of the Ogové, and apparently swarms in southern Cameroon.

JUNONIA Hübner

I deem it more natural to associate under the term *Junonia* a number of species which for many years past have been placed in this genus, but which Dr. Aurivillius in his recent writings has incorporated into the genus *Precis*.

(116) 1. *Junonia orithya madagascariensis* Guenée

Junonia orithya var. *madagascariensis* GUENÉE, 1865, Vinson's Voy. Madgr., Lep., p. 37.

Precis orithya AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 226.

This is the African form of the insect originally named from the East Indies by Linnæus (cf. Mus. Ulr., 1764, p. 278). The collection contains thirteen males and one female, all taken at Faradje and Niangara in November 1910, or else labelled "1911-1912."

(117) 2. *Junonia clelia* (Cramer)

Papilio clelia CRAMER, 1775, Pap. Exot., I, p. 23, Pl. XXI, figs. E, F.

Precis clelia AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 226, Pl. LIIa.

Twenty-three males and fifteen females were taken. Two males and one female were caught at Kwamouth in July 1909. Two males and one female were captured at Pawa, October 1910. Eight males and four females are labelled as taken at Medje from April to August 1910. Eleven males and nine females were caught at Niangara in November of the latter year.

(118) 3. *Junonia cebrene* Trimen*Junonia cebrene* TRIMEN, 1870, Trans. Ent. Soc. London, p. 353.*Precis cebrene* AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 226, Pl. LIA.

This is the African race of *J. ænone* (Linnæus) originally described from Asiatic specimens, which do not materially differ from the African form, except that in the latter the large yellow area of the primaries is somewhat more restricted, and the blue spot on the hind wing is rounder, and not oval as in the Asiatic specimens, a long suite of which is before me as I write. Eighteen males, six females, all captured at Niangara and Faradje in November 1910.

(119) 4. *Junonia westermanni* Westwood*Junonia westermanni* WESTWOOD, 1870, Ent. Mo. Mag., VI, p. 278; 1874, Thes.

Ent. Oxon., p. 182, Pl. XXXIV, fig. 7, ♂, fig. 8, ♀.

Precis westermanni AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 225, Pl. LIA.

Of this lovely insect fifty-three males and one female are contained in the collection. Most of them were caught at Medje, the dates of capture ranging from April to August. There are two males taken at Gamangui in February and two others taken at the same place in June. There is one male captured at Ngayu in April. The extreme rarity of the female in collections is illustrated in the present case.

(120) 5. *Junonia sophia* (Fabricius)*Papilio sophia* FABRICIUS, 1793, Ent. Syst., III, part 1, p. 248.*Precis sophia* AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 225, Pl. LIB.

Though very dissimilar in its style of markings from most species of the genus, *sophia* is a true *Junonia*, as is shown by the neururation, the outline of the wings, and the structure of the antennæ and palpi. Of this insect, the smallest of the genus, which superficially on the upper side bears a likeness to the female of the preceding species, there are nine males and five females. One male and the five females were taken at Medje, from June to August 1910. Seven males are ticketed as taken at Niangara and Faradje in November 1910, or else "1911-1912."

PRECIS Hübner

Dr. Aurivillius in his latest account of the butterflies belonging to this group (cf. Seitz, 'Gross-Schmetterlinge der Erde,' XIII, pp. 218-227), has placed in the genus *Precis* a number of forms which for many years past have been by most writers classified in the genus *Junonia* Hübner. The type of the genus *Precis* is *P. octavia* (Cramer). The type

of the genus *Junonia* is *J. lavinia* (Cramer). It requires no effort to detect the fact that the species included by Aurivillius in his "Fifth Group" of the genus *Precis*, except *P. octavia* and allies, viz., *clelia* (Cramer), *orithya* (Linnæus), *westermanni* Westwood, and their allies are in structure, form, and markings more nearly related to *J. lavinia* than to *P. octavia*, the type of the genus, and that they are widely different from the *Kallima*-like insects which, especially in their wet-season forms, show on the under side of their wings close resemblance to dried leaves.

In the present paper I have restored the species of the *clelia-ænone* Group to the genus *Junonia*. I also separate from the genus *Precis* the long-tailed *Kallima*-like insects, which on the under side of the wings show mimetic resemblance to dried leaves, and in which the outer border of the hind wing is evenly curved opposite the end of the cell, not angulated or toothed, and greatly elongated, or tailed at the anal angle. For this group of insects I propose the generic name **Kallimula**.

As restricted in the present paper, the genus *Precis* may be divided into groups as follows.

- A. Hind wings greatly expanded opposite end of cell, not greatly produced at anal angle.
 - 1. Outer margin of hind wing crenulated: *P. octavia* (type of genus) and allies; *P. archesia* and allies.
 - 2. Outer margin of hind wings entire, evenly rounded, not crenulated: *P. artaxia* and allies.
- B. Hind wings angulated and toothed opposite the end of the cell.
 - 1. Anal angle not greatly produced: *P. chorimene* and allies; *P. terea* and allies; *P. ceryne* and allies; *P. rhadama* and varieties.
 - 2. Anal angle greatly produced: *P. andremiaja* and allies.

(121) 1. ***Precis octavia*** (Cramer)

Papilio octavia CRAMER, 1777, Pap. Exot., II, p. 60, Pl. cxxxv, figs. B, C.

Precis octavia AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 224, Pl. Lib.

Thirty-six males and thirty-five females. One male was caught at Kwamouth, July 14, 1909; three females were taken at Medje in August; and all the rest were obtained at Niangara in November 1910, except a solitary individual, which is labelled as caught at Faradje in the same month and year.

This is the rainy-season form of the species in the northwestern part of the range, and the capture of these specimens shows that the region about the headwaters of the Uelle River in the Niam-niam country is faunistically allied to the country of the upper waters of the Niger.

(122) 1a. ***Precis octavia amestris*** (Drury)¹

Papilio amestris DRURY, 1782, Ill. Exot. Ent., III, p. 26, Pl. xx, figs. 3, 4.

Precis amestris AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 224.

There are twenty males and eleven females of this, the dry-season form of *P. octavia*. They were all taken at Niangara in November 1910, except two of the males, which were caught at Medje in August.

In the southern and eastern parts of the range of this insect *amestris* is replaced by the form *sesamus* Trimen, the upper side of the wings of which are much bluer than in this form, and do not have the red spots in the cell of the fore wings, which are always found in the form under consideration. We have specimens of *P. octavia sesamus* from Natal and Mozambique.

(123) 2. ***Precis chorimene*** (Guérin)

Vanessa chorimene GUÉRIN, 1844, Icon. Règne Anim., Ins., p. 476.

Salamis ethyra FEISTHAMEL, 1850, Ann. Soc. Ent. France, (2) VIII, p. 250.

Precis chorimene AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 220, Pl. LIIB.

Four males and two females. One male was taken at Faradje, "1911-1912"; three at Niangara in November 1910; one female was caught at Pawa, October 19, the other at Niangara on November 25, 1910.

(124) 3. ***Precis stygia*** Aurivillius

Precis ethyra STAUDINGER, 1883, Exot. Schmett., I, p. 102, Pl. XXXVIII (*non ethyra* Feisthamel = *chorimene* Guérin).

Precis stygia AURIVILLIUS, 1894, Ent. Tidskr., XV, p. 275; 1898, Rhop. Æthiop., p. 142; 1913, Seitz, Gross-Schmett., XIII, p. 220, Pl. LIIB.

This species is represented in the collection by eighty-seven specimens. We have several hundreds of other specimens in the Carnegie Museum. It evidently is common where it occurs. The female differs from the male in being lighter in color and broader of wing. The females vary in their markings like the males, of which there are three varieties: *P. stygia stygia* Aurivillius, the typical form; *P. stygia gregorii* Butler; and a third, which I believe has not hitherto been described or figured, and to which I apply the name of ***P. stygia fuscata***, new variety.

¹*P. simia* Wallengren and *P. trimeni* are near allies of *P. octavia* (Cram.) and differ from *P. antilope* (Feisthamel). The latter species appears to me to be represented by Aurivillius (Seitz, Gross-Schmett., XIII, Pl. LIC) by a female of *P. trimeni*, to which there is a superficial resemblance upon the upper side, but which differs greatly from *P. antilope* on the lower side of the wings. I am strongly inclined to think that an unintentional error was committed by the author of the plate to which I make reference. *P. antilope* (Feisthamel) falls into the group which I designate as *Kallimuda*.

(125) 3a. ***Precis stygia stygia*** Aurivillius (typical)

Plate VII, Figure 3, ♀

Accepting the figure given by Aurivillius in Seitz, XIII, Pl. vii**b**, as adequately representing the species, and comparing it with his description of the same, it is plain that this form is characterized by the presence of light areas on the under side of the wing, particularly at the apex and outer margin of the primaries and around the outer border of the secondaries. It is also larger in size than the other two forms, though this difference is not so marked in some specimens of *P. stygia gregorii*, many of which approximate *P. stygia stygia* in size.

This is no doubt a dry-season form. Niangara, Medje, and Munie Katoto.

(126) 3b. ***Precis stygia gregorii*** (Butler)

Plate VII, Figure 4, ♂

Precis gregorii BUTLER, 1895, Proc. Zool. Soc. London, p. 726, Pl. XLII, figs. 7, 8.

This form may or may not be marked at the apex of the fore wing and on the outer margin of both wings with the light maculation which characterizes typical *P. stygia*, but it is invariably discriminated from the former and from the third form by the presence in the male of at least one brilliantly white or very light yellow spot on the costa of the secondaries on the lower side, which spot is exactly at the termination of the dark band which in all the three forms runs from the anal angle to about the outer fourth of the upper margin of the wing. In the females this same spot also occurs, but it is frequently accompanied by one or more similar spots on the interspaces lower down on the wing, which spots usually are situated either in the middle of the dark medial band, or slightly beyond it toward the outer border.

This is probably, like the preceding, a dry-season form. Niangara and Medje.

(127) 3c. ***Precis stygia fuscata***, new variety

Plate VII, Figure 5, ♂

This form, which is by far the commonest of the three, is, on the average, appreciably smaller in expanse of wing than the two preceding, lacks almost altogether any light cloudings or spots or marks on the under side of the wings, the only traces of such being the almost microscopic dots which indicate the location of the vanished ocelli, which are more or less visible on the outer third of the wings of *P. stygia stygia* and *P. stygia gregorii*. The prevalent color of the lower side of the wings is brown marked with darker brown or black spots, the most prominent of all these being the transverse band on the secondaries.

This is the wet-season form and is the commonest one on the western coast. The type locality is Medje; also at Munie Katoto.

That the distinction between these forms may be clear I have given figures of them on Plate VII. The females, so far as I can ascertain, have never before been depicted.

Of *P. stygia stygia*, the collection contains six males taken at Niangara in November; two males and one female caught at Medje in July and August; and one female captured at Bafwaboli, September 10, 1909. Of *P. stygia gregorii*, there are eight males caught at Medje, one in April, the rest in July and August; and two males taken at Niangara in November 1910. Of *P. stygia fuscata*, there are sixty-one males and six females, all taken at Medje, except one male captured at Bafwaboli, September 10, 1909; those taken at Medje were caught in July and August, except a few taken in April.

(128)

4. *Precis terea* (Drury)

Papilio terea DRURY, 1773, Ill. Exot. Ent., II, p. 32, Pl. XVIII, figs. 3, 4.

Precis terea AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 220, Pl. LI f.

The collection contains seventy-two males and twenty females of this species. Two of the females were taken at Leopoldville, two at Medje, and sixteen at Niangara. One male was taken at Bafwaboli, September 1909, and eleven at Medje, June to August 1910. The remaining sixty males were taken mostly at Niangara, in November 1910, though a few specimens are labelled as taken at Faradje, in the same month and year, and one or two at Medje. The females are somewhat greater in expanse of wing and lighter in color than the males, but there is no great variation between the sexes.

(129)

5. *Precis ceryne* (Boisduval)

Salamis ceryne BOISDUVAL, 1847, Delegorgue, Voy. Afr. Australe, II, p. 592.

Junonia ceryne TRIMEN, 1862, Rhop. Afr. Austr., I, p. 131; 1866, II, Pl. III, fig. 4.

Precis ceryne AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 223, Pl. LI d.

Four males taken at Faradje and labelled "1911-1912." They are all of the wet-season form of the species.

KALLIMULA, new genus

Allied to *Precis* Hübner and *Junonia* Hübner, but differing in having the fore wings strongly falcate at the apex and deeply excavated on the outer margin below vein 6; the hind wings either strongly produced or evenly rounded opposite the end of the cell, the margins more or less entire and strongly produced, or tailed, at the anal angle; both wings crossed near the middle by light bands, generally some shade of red, pink, or ochreous, though in one form (*K. harpyia*) these bands are shot with blue over the red.

Type, *Kallimula osborni*, new species.

In separating from the genus *Precis*, as constituted by Aurivillius, the *Kallima*-like forms which he has brought together in part in his fourth group, I think I am not doing violence, in spite of the fact that in my arrangement I am compelled to introduce as one of the members of this group the species named *pelarga*, which in its dry-season form shows a resemblance to the species which I have included under *Precis*. However, *K. pelarga*, in its dry-season form, always has the hind wings more or less elongated at the anal angle and thus may be discriminated from *Precis octavia* and its allies, which do not have the anal angle greatly produced. *K. pelarga* marks the transition between the genus *Precis* and the genus *Kallimula*.

The species which I refer to the new genus are the following: *K. osborni*, new species; *eurodoce* (Westwood); *milonia* (Felder); *sinuata* (Plötz); *calestina* (Dewitz); *actia* (Distant); *antilope* (Feisthamel); *antilope*, var. *cuama* (Hewitson); *pelarga* (Fabricius); *pelarga*, var. *leodice* (Cramer); *pelarga*, var. *harpyia* (Fabricius).

(130)

1. ***Kallimula osborni***, new species

Plate VII: Figure 7, ♂; Figure 8, ♀

♂. Palpi black above, brilliantly white below. Upper side of head, thorax, and abdomen black. Pectus white, like the lower side of the palpi. Legs pale yellowish, dorsally shaded with fuscous. Lower side of abdomen pale fulvous. Fore wings with costa strongly arcuate; outer margin at apex very falcate, strongly produced at the end of vein 6; deeply excised below this and then gently rounded to the lower angle. The hind margin of the fore wing is nearly straight. Hind wings with the costal margin gently (flatly) curved from the base to the upper angle; the outer margin regularly curved outwardly to a point opposite the lower angle of the cell and then inwardly toward the anal angle, the curve running to the tip of the long tail-like projection of the anal angle. On the inner margin the hind wings are strongly curved inwardly from the abdomen until a little after the middle, and then the curve is reversed to the tip of the anal projection. The wings are very dark brown on the upper side interrupted on the discal area with a bright rufous mesial band. This band on the primaries is widest at the inner margin, and sweeps upward toward the costa terminating near the origin of vein 6, being externally delimited by an almost regular curve, running from the inner margin from a point about three millimeters behind the outer angle to the origin of vein 6; internally the band is more irregular, being deeply invaded by an outward projection of the dark basal tract on interspace 4. The band has the outline of an inverted cornucopia. There is a sharply defined, small, white spot not far from the apex between veins 5 and 6; and three black spots in the transverse rufous band, one on each of the interspaces 2, 3, and 4, nearer the outer than the inner margin of the band. The transverse band of the hind wing is continuous with the band on the fore wing, narrower at the costa than on the inner margin. It is evenly curved externally, except on interspaces 6 and 7, where the dark outer border invades it by step-like inner projections. The outer band is wider on the secondaries than on the primaries. The inner margin of the light band is somewhat irregular,

where it crosses the middle of the cell, being invaded by a sharp tooth-like projection of the dark basal area of the wing. There is a regular curved series of black circular spots beginning between veins 2 and 3 and running upward to the costa, the spots gradually increasing in size toward the costa, and being located nearer the outer margin of the band than its inner margin. On the lower side of the wings there is a dark narrow line of deep brown or black which runs from the tip of the tail-like projection of the anal angle of the hind wing to about the middle of the costa of the fore wing, simulating the appearance of the mid-rib of a leaf. On either side of this central transverse line the wings are more or less rufous, irregularly mottled with darker brown, and being heavily clouded with dark brown at the apex of the primaries and the anal angle of the secondaries. The fore wings near the apex and the hind wings near the anal angle are marked with lighter marginal and submarginal narrow lines and more or less frosted with light-colored scales. The series of spots which are conspicuous on the upper side reappear on the lower side in the interspaces, but on the lower side are pupilled with white, in most, but not in all cases.

♀. The female is not unlike the male, but the wings are broader, and at the apex of the primaries not so strongly falcate, and the transverse band of the secondaries is more or less creamy white, especially toward the anal angle. Expanse, ♂, 45-50 mm.; ♀, 50-55 mm.

The male type (Medje) is in The American Museum of Natural History, the female allotype (Cameroon) is in the Holland Collection in the Carnegie Museum.

Four males were taken by the Lang-Chapin Expedition at Medje, the dates of capture ranging from July to September.

I have long had this species in my collection, where it is represented by specimens collected for me many years ago in southern Cameroon by the late Dr. A. C. Good. I take pleasure in naming it in honor of my friend, Prof. Henry Fairfield Osborn of The American Museum of Natural History, with whom I have spent many pleasant hours both at home and abroad in the pursuit of pleasure and knowledge.

(131) 2. *Kallimula milonia* (Felder)

Precis milonia FELDER, 1867, Reise Novara, Lep., III p. 403. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 223.

Precis kowara WARD, 1871, Ent. Mo. Mag., VIII, p. 22; 1873, Afr. Lep., p. 6, Pl. v, figs. 5, 6.

The collection upon which I am reporting contains six males and one female. Four of the males were taken at Medje in June and July, the other two at Niangara in November. The female was captured at Medje in September. The transverse band in the female is much lighter than in the males, inclining to yellowish.

(132) 3. *Kallimula sinuata* (Plötz)

Precis sinuata PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 477. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 222, Pl. Lie.

Two males, one caught at Medje in August, the other at Niangara in November.

(133) 4. **Kallimula pelarga** (Fabricius)

Papilio pelarga FABRICIUS, 1775, Syst. Ent., p. 513.

Precis pelarga AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 223.

Of this well-known species there are twenty-three specimens in the collection. One male was caught at Gamangui in February; two males were taken at Medje in August and a female at the same place in July; eight males and eight females were captured at Niangara in November; and there are two males and one female labelled as taken at Faradje "1911-1912."

(134) 5. **Kallimula leodice** (Cramer)

Papilio leodice CRAMER, 1777, Pap. Exot., II, p. 64, Pl. cxxxviii, figs. G, H.

Precis leodice AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 223.

There are eighty-eight specimens of this species or form, nine females and seventy-nine males; all were caught at Niangara in November, except one female, which was taken at Medje in August. Aurivillius regards it as being the dry-season form of *pelarga* (Fabricius).

(135) 6. **Kallimula harpyia** (Fabricius)

Papilio harpyia FABRICIUS, 1781, Spec. Ins., II, p. 104.

Precis harpyia AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 223, Pl. LII.

The collection contains sixty specimens, forty-four males and sixteen females, all of which were captured at Niangara in November, except two males which were caught at Medje in August. According to Aurivillius this is an aberrant dry-season form of *pelarga*.

CATACROPTERA Karsch(136) 1. **Catacroptera cloanthe** (Cramer)

Papilio cloanthe CRAMER, 1781, Pap. Exot., IV, p. 93, Pl. cccxxxviii, figs. A, B.

Catacroptera cloanthe AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 218, Pl. LI.

This insect, formerly included in the genus *Precis*, is indeed very closely related to the latter, but may easily be distinguished by its larger size, its robust form, and somewhat hirsute appearance, not to mention certain other minute anatomical differences which exist in both the imago and the larva. There is but one species, *C. cloanthe* (Cramer), of which two local races have been recognized by authors, one which is spread over the eastern and southern portions of the continent, to which the name given by Cramer strictly applies, the other *C. cloanthe ligata* Rothschild and Jordan, which according to these authorities is the north-western race and extends from Senegal to Togo. The American Museum Congo Expedition brought back a small series of specimens which

show that the two races commingle about the headwaters of the Uelle River and indicate a great eastward extension of the race originally described by Rothschild and Jordan from the northwestern areas of the Ethiopian subregion. This is, however, what might have been expected. *C. cloanthe* (typical) has no dark marginal line on the primaries; *C. cloanthe ligata* has such a line. Both forms have "wet-season" and "dry-season" subvarieties. The "dry seasonal" form in each case is light under the wings, and the "wet seasonal" form is dark.

The specimens, with the solitary exception of the female captured at Medje on August 1, 1910, were taken at Faradje and Niangara in November of that year. Three males and seven females, including the female taken at Medje in August, belong to the form *C. cloanthe ligata* Rothschild and Jordan; five males and six females belong to the "wet-season" form to which Staudinger applied the varietal name *C. obscurior*, in which the under side of both wings is quite dark brown.

SALAMIS Boisduval

(137) 1. ***Salamis parhassus æthiops*** (Palisot de Beauvois)

Papilio æthiops PALISOT DE BEAUVOIS, 1805, Ins. Rec. en Afrique et Amérique, Lép., p. 22, Pl. III.

Salamis parhassus AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 217.

Sixteen specimens. One was taken at Gamangui in February and another at the same place in June. Four were caught at Niangara in November and all the rest were captured at Medje from June to September.

(138) 2. ***Salamis cacta*** (Fabricius)

Papilio cacta FABRICIUS, 1793, Ent. Syst., III, part 1, p. 116.

Salamis cacta AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 218, Pl. Lc.

On the under side of the wings there is displayed a remarkable dissimilarity in color and maculation. No two specimens are exactly alike. This is true also of the very large series which we have from the French Congo and southern Cameroon. It is singular that some "species-maker" has not found pleasant recreation in naming and describing the different individuals which exist in various collections, each of which might give opportunity for the exercise of descriptive powers, especially if use were made of a binocular microscope, which has become such a fashionable adjunct in entomological and ichthyological research in recent years.

Twenty-five specimens, mostly males. One was taken at Bafwabaka in January, several at Niangara in November, but by far the largest number at Medje from May to September.

KALLIMA (Westwood)(139) 1. **Kallima rattrayi** Em. Sharpe

Kallima rattrayi EM. SHARPE, 1904, Entomologist, p. 182. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 211.

The male is very much like that sex in *Kallima rumia*, of which this is probably a local race, but considerably smaller in size. The female is different in that the hind wings are concolorous and entirely without the broad whitish band which is always found in *K. rumia*; and in addition has a conspicuous white mark near the apex of the fore wing on the costal margin. The subapical transverse band is narrower than in *K. rumia*, and is not white, as in the female of that species, but bright straw-yellow.

Three males and a female caught at Medje (July–August), and a male captured at Niangara in November.

(140) 2. **Kallima ansorgei** Rothschild

Kallima ansorgei ROTHSCHILD, 1899, in Ansorge, 'Under the African Sun,' p. 319, Pl., fig. 1. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 211.

This seems to be quite distinct from *K. cymodoce* (Cramer), although it has the same form of the wings. It occurs in the eastern parts of Cameroon also, where *K. cymodoce* is likewise found, and there have been no intergrading varieties discovered thus far, to the best of my knowledge and belief. The species is represented in the collection by seven males taken at Medje.

HYPOLIMNAS Hübner(141) 1. **Hypolimnas misippus** (Linnæus)

Papilio misippus LINNÆUS, 1764, Mus. Lud. Ulr., p. 264.

Hypolimnas misippus AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 213.

There are eleven males and seven females of this common and widely distributed species. Three of the females belong to the varietal form *H. inaria* (Cramer). The specimens were all taken at Niangara in November 1910, except one female captured at Medje, August 11, and one male, which was taken at Faradje, without any indication on the label of the day and month.

(142) 2. **Hypolimnas salmacis** (Drury)

Papilio salmacis DRURY, 1773, Ill. Exot. Ent., II, p. 14, Pl. VIII, figs. 1–2.

Hypolimnas salmacis AURIVILLIUS, 1913, Seitz, Gross-Schmett., p. 214, Pl. XLVIII.

The collection contains one hundred and sixty-two males and two females of this species, all taken at Medje. Of this number a few

are labelled as having been captured in April, the rest were taken at dates ranging from July 8 to September 24, 1910. If collecting went on continuously at Medje this fact would indicate that there may be two broods annually.

There is some variation in the coloring of the upper side of the wings, a few specimens having a purplish tint contrasting with the purer blue of the markings of most of the specimens, and the white spots beyond the end of the cell of the fore wing in an occasional specimen are suffused with blue almost throughout their extent.

The two females in the collection belong to the form to which Suffert has applied the name *H. cissalma*, characterized by having the white of the paler spots replaced by yellow. The collection contains no males corresponding to the form *cissalma* in that sex, which Suffert describes as having all the lighter markings on the upper side, except the subapical spots, blue throughout.

(143) 3. **Hypolimnias monteironis** (Druce)

Diadema monteironis DRUCE, 1874, Cist. Ent., I, p. 286.

Hypolimnias monteironis AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 214, Pl. XLVIIIb.

This species, which has been by some authors regarded as a varietal form of the preceding but which is quite distinct, is represented in the collection by twenty-one males and one female. They all were taken at Medje, except one male which is ticketed "Niagara, November 14-16, 1910." Three of the males taken at Medje were captured in April, all of the other specimens bear dates ranging from July 8 to September 27, 1910. Like the preceding species, this probably has at least two annual broods.

(144) 4. **Hypolimnias mechowii** (Dewitz)

Diadema mechowii DEWITZ, 1884, Berl. Ent. Zeit., XXVIII, p. 187, Pl. I, fig. 2.

Hypolimnias mechowii AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 214, Pl. XLVIIIb.

This species is represented in the collection by a single male, which does not differ at all from specimens in the collection of the writer from the southern parts of Cameroon. It was taken at Bafwaboli, November 11, 1909.

(145) 5. **Hypolimnias bartteloti** Grose-Smith

Hypolimnias bartteloti GROSE-SMITH, 1890, Proc. Zool. Soc. London, p. 468; 1891, Rhop. Exot., I, *Hypolimnias*, Pl. I, figs. 1-2. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 214.

Of this species and its varieties there are twenty-two examples, all of which are males. One specimen was taken at Avakubi, October 1, 1909; one at Lubila, September 20, 1909; all the rest at Medje, one on April 6, the remainder at dates ranging from July 8 to September 27, 1910.

There is considerable variability in the specimens due to the obsolescence of the subapical and submarginal spots. In four of the specimens belonging to this collection, as well as in numerous other specimens taken in Cameroon and which are before me as I write, these spots are wholly obliterated and I propose for this extreme form the varietal name *obliterata*.

(146) 5a. ***Hypolimnias bartteloti obliterata***, new variety

Plate VI, Figure 5, ♂

Distinguished from the typical form by the complete obliteration of the subapical and submarginal spots on the upper side of both the fore and hind wings. Traces of the uppermost subapical and the lowermost submarginal spot are to be found on the lower side of the fore wing in some specimens, but not in all. In typical *H. bartteloti* the submarginal white spots form a continuous series, one in each interspace, though they may vary in size, in some specimens being quite large, in others being reduced to mere points.

The type of *H. bartteloti obliterata* is in The American Museum of Natural History; paratypes are in the same collection and in the Holland Collection in the Carnegie Museum. Medje and Cameroon.

(147) 6. ***Hypolimnias dubia*** (Palisot de Beauvois)

Papilio dubius PALISOT DE BEAUVOIS, 1805, Ins. Rec. en Afrique et Amérique, p. 238, Lep., Pl. VI, figs. 2a, 2b.

Hypolimnias dubia AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 215, Pl. XLVIIIa.

There are ten males and two females of this species. One male was taken at Bafwabaka, December 9, 1909; two males were captured at Niangara in November 1910; the remaining nine specimens were taken at Medje, the dates of capture ranging from June 8 to September 27, 1910. The two females were taken in the first week in August.

There is some variation in the maculation of the specimens, particularly in the extent of the large white discal area of the hind wings, which in one specimen is rather broadly suffused with pale ochreous. This variability is characteristic of the species, as shown by numerous specimens coming from various parts of the continent in the collection of the writer.

(148) 7. **Hypolimnias anthedon** (Doubleday)

Diadema anthedon DOUBLEDAY, 1845, Ann. Mag. Nat. Hist., (1) XVI, p. 181; 1850, Gen. Diurn. Lep., II, p. 281, Pl. XXXVII, fig. 2.

Hypolimnias anthedon AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 215, Pl. XLVIII.

There are twenty-two males and one female in the collection. The latter was taken at Medje in September 1910. One male is ticketed as from Bafwaboli, September 11, 1909; another as from Bafwasende, September 25, 1909; a third from Ngayu, December 11, 1909; a fourth from Niangara, November 9-10, 1910. The remaining specimens were taken at Medje, one on April 6, 1910, the rest at dates ranging from June 6 to October 4, 1910.

There is great uniformity in the specimens, and they differ in no respect from hundreds of others which have passed under the eye of the writer and which have come from all parts of tropical western Africa.

Eurytelinæ**EURYTELA** Boisduval(149) 1. **Eurytela hiarbas** (Drury)

Papilio hiarbas DRURY, 1782, Ill. Exot. Ent., III, p. 17, Pl. xiv, figs. 1, 2.

Eurytela hiarbas AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 209, Pl. XLIXe.

Four males and two females, Medje (July-August).

(150) 2. **Eurytela dryope** (Cramer)

Papilio dryope CRAMER, 1775, Pap. Exot., I, p. 125, Pl. LXXVIII, figs. E, F.

Eurytela dryope AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 210.

One male taken at Niangara, November 14, 1910.

(151) 3. **Eurytela alinda** Mabille

Eurytela alinda MABILLE, 1893, Ann. Soc. Ent. Belgique, XXXVII, p. 50. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 210, Pl. XLIXe.

Six males caught at Medje (July-August).

NEPTIDOPSIS Aurivillius(152) 1. **Neptidopsis ophione** (Cramer)

Papilio ophione CRAMER, 1777, Pap. Exot., II, p. 27, Pl. cxiv, figs. E, F.

Neptidopsis ophione AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 209, Pl. XLIXd.

Eleven specimens (two not expanded) taken at Medje, the dates of capture running from early in July to early in September.

ERGOLIS Westwood(153) 1. **Ergolis enotrea** (Cramer)

Papilio enotrea CRAMER, 1779, Pap. Exot., III, p. 73, Pl. CCXXXVI, figs. A, B.

Ergolis enotrea AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 208, Pl. XLIXc.

Twenty-five specimens, nineteen males and six females, are included in the collection. They were all taken at Medje about the middle of the year, except two specimens which were captured at Niangara in November.

(154) 2. **Ergolis pagenstecheri** Suffert

Ergolis pagenstecheri SUFFERT, 1904, Iris, XVII, p. 125. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 208, Pl. XLIXc.

Ergolis murina BARTEL, 1905, Nov. Zool., XII, p. 135.

Three male specimens taken at Medje in July.

(155) 3. **Ergolis actisanes** Hewitson

Ergolis actisanes HEWITSON, 1875, Ent. Mo. Mag., XI, p. 183. AURIVILLIUS, 1913, Gross-Schmett., XIII, p. 208, Pl. XLIXc.

This species is represented by five male specimens, four from Medje, two taken in July, and one in each of the months, August and September, the fifth being labelled as captured at Niangara in November.

MESOXANTHA Aurivillius(156) 1. **Mesoxantha ethosea** (Drury)

Papilio ethosea DRURY, 1782, Ill. Exot. Ent., III, p. 51, Pl. XXXVII, figs. 3, 4.

Mesoxantha ethosea AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 208, Pl. XLIXb.

A single male captured at Medje, August, 1910. This is a quite common insect on the Ogová River, and the writer has a long series taken by the late Dr. A. C. Good at Kangvé.

BYBLIA Hübner(157) 1. **Byblia crameri** Aurivillius

Byblia crameri AURIVILLIUS, 1894, Ent. Tidskr., XV, p. 279; 1913, Seitz, Gross-Schmett., XIII, p. 208, Pl. XLIXc, figured as "*B. vulgaris* U."

This species or local race of *B. ilithya* is the one which prevails on the western coast from Sierra Leone to northern Angola, penetrating eastward as far as Uganda. It is remarkably constant throughout its range, as extensive series of specimens from many places show.

Eleven males and three females. One female was caught at Kwamouth, July 14, 1909, the other two at Niangara in November, 1910. Three males were taken at Medje in August, all the rest at Faradje and Niangara in November.

Eunicinæ**ASTEROPE** Hübner

Asterope HÜBNER 1816, type *amulia* Cramer, 1779, Pap. Exot., II, Pl. CLXXX, figs. C, D.

Crenis BOISDUVAL 1833, type *madagascariensis*. Cf. Rothschild and Jordan, 1903, Nov. Zool., X, p. 528.

(158) 1. ***Asterope occidentalis*** (Mabille)

Crenis occidentalis MABILLE, 1876, Bull. Soc. Zool. France, I, p. 275. AURIVILLIUS, 1913, Gross-Schmett., XIII, p. 205, Pl. XLVIIIg.

Asterope occidentalis ROTHSCILD AND JORDAN, 1903, Nov. Zool., X, p. 529.

Fourteen specimens: one male taken at Gamangui in February; the rest captured at Medje (July–September).

(159) 2. ***Asterope boisduvali*** (Wallengren)

Crenis boisduvali WALLENGREN, 1857, Rhop. Caffr., p. 30. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 205, Pl. XLVIIIg.

Asterope boisduvali ROTHSCILD AND JORDAN, 1903, Nov. Zool., X, p. 530.

Nineteen specimens, of which one was taken at Gamangui in June, two at Niangara in November, and the rest at Medje (May–September).

(160) 3. ***Asterope natalensis*** (Boisduval)

Crenis natalensis BOISDUVAL, 1847, Delegorgue, Voy. Afr. Australe, II, p. 592. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 206.

Asterope natalensis ROTHSCILD AND JORDAN, 1903, Nov. Zool., X, p. 531.

One male captured at Niangara in November.

Marpesiinæ**CYRESTIS** Westwood(161) 1. ***Cyrestis camillus*** (Fabricius)

Papilio camillus FABRICIUS, 1781, Spec. Ins., II, p. 11.

Cyrestis camillus AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 203, Pl. XLIXb.

Twenty-two specimens, mostly taken at Medje from May to September, though there are a couple captured at Niangara in November and one from Bafwabaka caught in January.

Neptidinæ**NEPTIS** Fabricius

The genus *Neptis* is well represented in the woodlands of Africa. The collection upon which I am reporting contains a number of species which are already more or less well known and some rarities.

(162) 1. **Neptis metella** Doubleday and Hewitson

Neptis metella DOUBLEDAY AND HEWITSON, 1850, Gen. Diurn. Lep., II, p. 272, Pl. xxxv, fig. 2. HOLLAND, 1892, Ent. News, III, Pl. ix, fig. 3.

Nine specimens, all taken at Medje in July and August, except one caught at Gamangui in June.

(163) 2. **Neptis marpessa** Hopffer

Neptis marpessa HOPFFER, 1855, Monatsber. Akad. Wiss. Berlin, p. 640; 1862, Peters, Reise n. Mossambique, Ins., p. 383, Pl. xxiv, figs. 9, 10.

Neptis pasteurii SNELLEN, 1882, Tijd. v. Ent., XXV, p. 221.

Neptis marpessa AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 199.

One specimen was captured at Niangara, November 20, 1910. This is the continental form of the insect which is found in Madagascar and was named *N. saclava* by Boisduval. It is very abundant on the eastern coast and I have long series from Natal and Mombasa.

(164) 3. **Neptis nemetes** Hewitson

Neptis nemetes HEWITSON, 1868, Exot. Butt., IV, *Neptis*, Pl. i, figs. 1, 2. HOLLAND, 1892, Ent. News, III, Pl. ix, fig. 4.

Seven specimens, one taken at Kwamouth, July 15, one from Risimu, taken September 8, 1909, the rest from Medje, June to August.

(165) 4. **Neptis agatha** (Stoll)

Plate VI: Figure 8, Forest Form, ♂; Figure 7, Open Country Form, ♂

Papilio agatha STOLL, 1780, in Cramer's Pap. Exot., IV, p. 76, Pl. cccxxvii, figs. A, B. *Neptis agatha* AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 200, Pl. xlviii.

Of this species the collection contains eighty-seven specimens, including some of the varieties to which discriminating students have given names founded in some cases upon the measurement of the size of the spots and bands. The form *lativittata* Strand, the author of which informs us that the mesial band of the secondaries is eight millimeters wide, is represented. I discover that all of the specimens falling into this category are large and well-developed females, as is also the case with a lot of specimens I have from other parts of Africa. I call into question the specific validity of this so-called "species," which is not even a variety.

I note, however, that there is a distinction, which I do not believe has been previously pointed out, between the specimens which come from the hot woodlands and those from the more open country of the eastern and southern grass-lands. As it happens, most of the specimens representing this species were taken at Niangara and Faradje.

They agree perfectly with specimens taken on the hills back of Mombasa, of which I have a long suite, and with series of specimens coming from Natal and other more southern localities. By selecting from the mass all those which were caught at Medje about the middle of the year, I discover that the latter as a group are not only generally larger but have the transverse mesial band of the primaries a little straighter and narrower than the other lot of specimens. Comparing them with long suites of specimens coming from Cameroon, Sierra Leone, and the valley of the Ogové, I discover that the specimens from Medje are identical in appearance with these, and that there is a slight but constant difference between the whole assemblage of specimens from the wooded tropics and those which come from the steppes of the east and the south. By pinning out fifty of each of the forms selected according to locality, as I have done, the different facies of the two lots becomes very apparent and striking to the eye, even more so than when only two individuals are compared with each other.

(166) 5. ***Neptis seeldrayersi*** Aurivillius

Neptis seeldrayersi AURIVILLIUS, 1895, Ent. Nachr., p. 379; 1898, Rhop. Æthiop., p. 167, Pl. I, fig. 7; 1912, Seitz, Gross-Schmett., XIII, p. 200, Pl. XLVIII.

Eight specimens, all taken at Medje in July and August. There is some individual variability. In one specimen the fourth white spot reckoning from the costa is obsolete in the mesial band and gives the wing a different facies. The species is not uncommon farther west and we have it in some numbers from the region of the Ogové River.

(167) 6. ***Neptis nysiades*** Hewitson

Neptis nysiades HEWITSON, 1868, Exot. Butt., IV, *Neptis*, Pl. I, figs. 3, 4.

Six males and four females, all caught at Medje, the dates of capture including April, July, August, and September.

(168) 7. ***Neptis metanira*** Holland

Neptis metanira HOLLAND, 1892, Ent. News, III, Pl. IX, fig. 6.

Aurivillius, in the 'Rhopalocera Æthiopica,' expresses the opinion that this form is simply an aberration of the preceding species. He may be right but, as the insect has a very different facies from *N. nysiades* on the upper side, though I agree that it closely resembles *nysiades* on the under side, and, as it is constantly turning up and we have quite a good series from Cameroon and other parts, I am inclined to let the matter stand as I originally put it until the test of breeding shall show that Dr. Aurivillius is correct in his surmise.

One male, taken at Medje, August 13, 1910.

(169)

8. *Neptis continuata* Holland*Neptis biafra* var. *continuata* HOLLAND, 1892, Ent. News, III, Pl. ix, fig. 9.

Aurivillius in the 'Rhopalocera Æthiopica' says that this is, like the preceding, an aberration of *N. nysiades* Hewitson. I admit that I was in error in making it a varietal form of *N. biafra* Ward, which is a different insect, though there are resemblances on the under side of the wings which led me to take the step. I have a good series of this thing from various localities, many more than I had when I first named the insect. As it is every now and then being received from different parts of the hot lands of Africa and is quite constant and recognizable, I am inclined to apply the remarks which I made under the preceding species and let the matter stand until we shall receive more light. It is not conspecific with *N. biafra* Ward, as I have already said. The figure of the latter insect, which I gave on the same plate in the Entomological News, is that of a typical *N. biafra*, ♂, and it does not take much effort to see the great difference between the two insects. Twenty-six years of study since I wrote that article on the genus *Neptis* has broadened my knowledge of the subject.

There are four examples of this form, three of which were taken at Medje in July and August, the fourth at Munie Katoto, September 1909.

(170)

9. *Neptis nicomedes* Hewitson*Neptis nicomedes* HEWITSON, 1874, Ent. Mo. Mag., X, p. 205. KIRBY, 1894, Handbook Lep., I, p. 147, Pl. xx, fig. 3.

I refer to this species four specimens which agree both with the description and the figure cited above, except that all of them have the mesial band of the primaries slightly inangulated on its inner margin at vein 4, thus resembling the variety *quintilla* Mabille.¹ The only difference which I am able to affirm definitely between typical *nicomedes* and *quintilla* is the fact that in the latter the longitudinal streak in the cell of the fore wing is reduced and obsolete basad and persists merely as a short bar or curved line near the end of the cell. I have good specimens of *N. quintilla* which were collected in Cameroon, before me as I write, and quite agree with Dr. Aurivillius in regarding the two forms as merely varietal.

The specimens upon which I am reporting were taken at Medje, one in June, one in July, and two in August. There are two males and two females.

¹Kirby's figure is poorly executed and may not be true to type.

(171) 10. **Neptis strigata** Aurivillius

Neptis strigata AURIVILLIUS, 1894, Ent. Tidskr., XV, p. 284, fig. 10; 1913, Seitz, Gross-Schmett., XIII, p. 201, Pl. XLVIII.

There are five specimens of this species, three males and two females, all taken at Medje, except one of the females which was caught at Pawa in October. The dates of capture at Medje cover the months of April, July, August, and September. One of the specimens agrees so closely with the figure given by Aurivillius in the 'Gross-Schmetterlinge' (*loc. cit.*) that it might have served the artist as his model. The rest do not have the longitudinal streak in the cell of the fore wings divided into two parts, but at the point where this division is shown in the figure given by Aurivillius there is a small black spot which, by becoming only a little larger, would cause the band to be interrupted as shown by the author of the species. We have this insect also from Cameroon and the Ogové Valley.

(172) 11. **Neptis biafra** Ward

Plate VIII, Figure 3, ♀

Neptis biafra WARD, 1871, Ent. Mo. Mag., VIII, p. 121; 1874, Afr. Lep., p. 12, Pl. IX, figs. 1, 2. HOLLAND, 1892, Ent. News, III, Pl. IX, fig. 10, ♂.

The collection contains one female caught at Medje, June 30, 1910. In this specimen the two small spots at the basal end of the cell of the fore wing coalesce, while the larger spot at the end of the cell remains free. We have some fine specimens of the male in our collections gathered for us in Cameroon and on the Ogové River. It is one of the most beautiful of the species in the genus and is related to *N. strigata* but is larger and more strikingly marked. I strongly suspect that my valued friend, Dr. Aurivillius, was in some doubt as to the identification of *N. biafra*, both when he queried the identity of my figure of the male with his *N. strigata*, as he does in the 'Rhopalocera Æthiopica,' and when in the 'Gross-Schmetterlinge der Erde' he places *N. biafra* in another group, separate from *strigata*, to which it is allied, and gives a description, which is not at all conformed to the description given by the author of the species. I wish to say that the figure of *N. biafra* given by me in the Entomological News is that of a specimen which conforms absolutely to the description of Ward, and that the insect, while not far removed from *N. strigata*, is totally distinct. With a good series of both species before me for comparison, I am able to affirm this positively.

(173) 12. **Neptis nicotelès** Hewitson

Neptis nicoteles HEWITSON, 1874, Ent. Mo. Mag., X, p. 206. HOLLAND, 1892, Ent. News, III, Pl. IX, fig. 8.

One male, lacking head and antennæ, taken at Medje, July 13, 1910.

(174) 13. **Neptis nicobule** Holland

Neptis nicobule HOLLAND, 1892, Ent. News, III, p. 249, Pl. ix, fig. 7. AURIVILLIUS, 1898, Rhop. Æthiop., p. 168; 1913, Seitz, Gross-Schmett., XIII, p. 202.

One male, taken at Gamangui, June 17, 1910. It agrees perfectly with the type with which it has been compared.

(175) 14. **Neptis lermanni** Aurivillius

Neptis lermanni AURIVILLIUS, 1896, Öfvers. Sv. Vet. Akad. Förh., LIII, p. 431; 1913, Seitz, Gross-Schmett., XIII, p. 202, Pl. XLVIII^f.

Seven males and three females: two males caught at Gamangui in June; all the rest at Medje, from June to August.

(176) 15. **Neptis melicerta** (Drury)

Papilio melicerta DRURY, 1773, Ill. Exot. Ent., II, p. 34, Pl. XIX, figs. 3, 4.

Neptis melicerta HOLLAND, 1892, Ent. News, III, Pl. ix, fig. 5. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 202, Pl. XLVIII^e.

Of this common insect there are thirty-five examples, all taken at Medje from July to September, except two which were captured at Niangara in November.

NEPTIDOMIMA, new genus(177) 1. **Neptidomima exaleuca** (Karsch)

Neptis exaleuca KARSCH, 1894, Berl. Ent. Zeit., XXXIX, p. 9, fig. 5. AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 202.

There is a single specimen of this rare and curious insect, taken at Medje in July. Although it agrees in the neuration of the wings with the genus *Neptis*, I nevertheless think that it should be separated generically from that genus because of the structure of the palpi, which are more robust, porrect, and hirsute than in any species of *Neptis* known to me. Furthermore, the insect is throughout more robust in its structure than is the case in the genus *Neptis*. I propose the generic name **Neptidomima** for the creature, of which genus it is the type.

Nymphalinæ**PSEUDACRÆA** Westwood(178) 1. **Pseudacræa hostilia warburgi** Aurivillius

Pseudacræa hostilia var. *warburgi* AURIVILLIUS, 1892, Ent. Tidskr., XII, p. 200; 1912, Seitz, Gross-Schmett., XIII, p. 194, Pl. XLVII^e.

One male, captured at Medje, August 1910.

(179) 2. ***Pseudacræa semire*** (Cramer)

Papilio semire CRAMER, 1779, Pap. Exot., III, p. 3, Pl. cxciv, figs. B, C.

Pseudacræa semire AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 194, Pl. XLIVa.

Four males: one taken at Gamangui in June, and three caught at Medje in July and August.

(180) 3. ***Pseudacræa lucretia*** (Cramer)

Papilio lucretia CRAMER, 1775, Pap. Exot., I, p. 71, Pl. XLV, figs. C, D.

Pseudacræa lucretia AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 197, Pl. XLVIa.

Represented by fifty-four specimens, nineteen of which are not expanded. The specimens were mainly taken at Medje, though about half a dozen bear other scattering locality labels. The dates of capture range from May into September.

The typical form is well represented, but the majority of the specimens belong to the slight variety named *Pseudacræa protracta* by Butler in which the light discal area of the hind wing is yellowish instead of pure white as in the typical form. But there are intergrades and it is hard to say in the series where one form begins and the other ends.

(181) 4. ***Pseudacræa clarki*** Butler

Pseudacræa clarki BUTLER, 1892, Trans. Ent. Soc. London, p. 201, Pl. x, figs. 1, 1a.

AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 197, Pl. XLVIb.

This lovely butterfly is represented by six males taken at Medje (July to September).

(182) 4a. ***Pseudacræa clarki egina*** Aurivillius

Pseudacræa clarki var. *egina* AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 197.

Four males taken at Medje (May to June) and one at Niangara in November.

(183) 5. ***Pseudacræa gottbergi*** Dewitz

Pseudacræa gottbergi DEWITZ, 1884, Berl. Ent. Zeit., XXVIII, p. 187, Pl. i, fig. 1.

AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 197, Pl. XLVIb.

Five males: four taken at Medje (June to September) and one at Munie Katoto, September 10, 1909.

(184) 6. ***Pseudacræa hobleyi*** Neave

Pseudacræa hobleyi NEAVE, 1904, Nov. Zool., XI, p. 331. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 196.

One female taken at Medje, June 28, 1910. The subapical band of the fore wing is a trifle wider than usual.

PSEUDONEPTIS Snellen(185) 1. **Pseudoneptis cænobita** (Fabricius)

Papilio cænobita FABRICIUS, 1793, Ent. Syst., III, part 1, p. 247.

Pseudoneptis cænobita AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 193, Pl. XLVib.

Thirty specimens, mostly males, a few of which were taken at Gamangui in June, the rest at Medje in the middle months of the year.

CATUNA Kirby(186) 1. **Catuna crithea** (Drury)

Papilio crithea DRURY, 1773, Ill. Exot. Ent., II, p. 29, Pl. xvi, figs. 5, 6.

Catuna crithea AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 192.

Thirty-one specimens, mostly males, taken at Medje from June to September.

(187) 2. **Catuna angustata** (Felder)

Euomma angustatum FELDER, 1867, Reise Novara, Lep., III, p. 425.

Catuna angustata AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 192.

Fifty-seven specimens taken at the same place and times as the foregoing species.

(188) 3. **Catuna oberthüri** Karsch

Catuna oberthüri KARSCH, 1894, Berl. Ent. Zeit., XXXIX, p. 4. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 192, Pl. XLVid, e.

Twenty-two examples to which the remarks made under the two preceding species apply.

In addition to the specimens enumerated above there are in the collection thirty-nine unexpanded specimens representing all of the three species, but which cannot be separated easily without being spread so that the upper side of the wings can be examined.

CYNANDRA Schatz(189) 1. **Cynandra opis** (Drury)

Papilio opis DRURY, 1773, Ill. Exot. Ent., II, p. 33, Pl. xviii, figs. 5, 6.

Cynandra opis AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 191, Pl. XLVie, ♂, ♀.

Of this insect there are five males and eight females, all of which were taken at Medje, except one badly damaged male and one female which were taken at Niangara, in November 1910. The dates of capture at Medje include the months of April, June, July, August, and September.

ATERICA Boisduval(190) 1. **Aterica galene** (Brown)

Papilio galene BROWN, 1776, New Ills. of Zool., p. 94, Pl. xxxvii.

Aterica theophane HOFFFER, 1855, Monatsber. Akad. Wiss. Berlin, p. 641.

Aterica galene AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 191, Pl. XLVIII, b.

There are thirty males and twenty-three females of this species and its varieties. The form *theophane* is an extreme in which the light area of the hind wing is broadly suffused with red, but there are intergrading specimens connecting up these with such specimens as have the light area quite white. One male is labelled as having been captured at Noki in Angola, a few came from Gamangui and were taken in June, but the great majority were captured at Medje in the middle months of the year.

HAMANUMIDA Hübner(191) 1. **Hamanumida dædalus** (Fabricius)

Papilio dædalus FABRICIUS, 1775, Syst. Ent., p. 482.

Hamanumida dædalus AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 191, Pl. XLVI f.

Of this form, which differs from the following by the duller coloring of the lower side of the wings and the partial suppression of the white spots on that side, there are sixteen males and five females taken at Niangara in November.

(192) 1a. **Hamanumida dædalus meleagris** (Cramer)

Papilio meleagris CRAMER, 1775, Pap. Exot., I, p. 102, Pl. XLVI, figs. A, B.

Hamanumida meleagris AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 191, Pl. XLVI f.

This variety is represented by a long series of males and females, all of which were taken at Niangara and Faradje in November, except one taken at Noki in Angola, June 24, 1909, and another caught at Avakubi in November 1909.

The two forms, *H. dædalus* and *H. meleagris*, intergrade and, as both were taken at Niangara in large numbers at the same time of the year, the opinion of Dr. Aurivillius that they represent seasonal forms is open to question. They are mere color varieties, *H. dædalus* having the under surface dull and the white spots for the most part suppressed, and *H. meleagris* having the under surface of the wings brighter and the white spots present.

The writer has a large series of both forms collected for him on the Ogové River and at Gaboon by the late Dr. A. C. Good and these, too,

by the dates of capture seem to confirm the opinion that the two forms are probably the issue of one and the same brood and that they are not "seasonal varieties" in the sense in which that term must be accepted.

EUPHÆDRA Hübner

The genus *Euphædra* is one of the most puzzling genera among the diurnal Lepidoptera of Africa. A vast number of so-called species, or forms, have been distinguished by writers, in many instances based apparently upon solitary individuals coming into their possession without sufficient material at hand to institute broad comparisons. Until in coming years some careful student on the ground shall succeed in breeding these insects from ova laid by individual females there necessarily will remain more or less confusion in certain groups. This is especially true of the forms allied to *E. preussi* Staudinger, *E. ceres* (Fabricius), and *E. xypete* (Hewitson).

Of these I have before me as I write a vast assemblage of specimens, many of which were brought home by the American Museum Congo Expedition. For example, there were collected by this expedition one hundred and eight specimens representing *E. preussi* and varieties, males and females. We have in the collections contained in the Carnegie Museum as many more from various localities. In all this assemblage of specimens it is almost impossible to find two individuals in either sex which are absolutely alike. There are slight differences in the shade of color on both the upper and under sides, in the number of spots in the cells on both sides of the wings, and in the discal and submarginal markings, which may be strongly, feebly, or not at all indicated. In addition to this, a close and accurate study of the literature shows that the descriptions and the figures which have been given by authors represent individuals rather than species; so that it is exceedingly difficult to state in exact terms where one so-called species begins and another ends in this group. The same remarks apply to other so-called "species," in other groups in which almost infinite variety is plainly visible, but appearing to me to have as little real significance as the shape and location of the spots on common cattle. On the other hand, there are certain forms recognized by authors which appear to be quite constant over the entire range in which they occur and which are not difficult to discriminate. In some cases, however, it may well be, as has been suggested, that some of these which are not distantly related to each other may, when the test of breeding is applied, turn out to be

mere color varieties or seasonal forms which have not as yet been recognized as such. The genus as a whole presents as much difficulty to the systematist as the genus *Argynnis* and, in fact, I am disposed to regard it as more difficult than the latter genus. The arrangement and classification of the specimens contained in the collection upon which I am now reporting must, therefore, in certain of the groups be regarded as in a measure provisional.

I. PERSEIS GROUP

(193) 1. *Euphædra imitans* Holland

Plate VII, Figure 2, type, ♀

Euphædra imitans HOLLAND, 1893, Canad. Ent., XXV, p. 3. AURIVILLIUS, 1898, Rhop. Æthiop., p. 185; 1912, Seitz, Gross-Schmett., XIII, p. 190.

Of this well-marked species, which has never before been figured, there are in the collection one male and three females, all taken at Medje, the male on September 27, one of the females in July, and two of the females in August 1910.

II. RUSPINA GROUP

I may say in passing that I assign *E. crowleyi* Kirby to this group. It is a small species, which Aurivillius in error classifies under *Euptera*, but I have both males and females which show that the insect is a true *Euphædra*.

(194) 2. *Euphædra ruspina* (Hewitson)

Romaleosoma ruspina HEWITSON, 1865, Exot. Butt., III, *Romaleosoma*, Pl. II, figs. 6, 7.

Euphædra ruspina AURIVILLIUS, 1898, Rhop. Æthiop., p. 185; 1912, Seitz, Gross-Schmett., XIII, p. 190, Pl. XLIIb. (In error designated on the plate as *E. eleus*.)

Of this well-known species there are eleven males and three females. All of the males and two of the females are labelled as captured at Medje; one female is marked as taken at Gamangui in July.

III. ELEUS GROUP

(195) 3. *Euphædra eleus* (Drury)

Papilio eleus DRURY, 1782, Ill. Exot. Ent., III, p. 14, Pl. XII, figs. 1, 2.

Euphædra eleus AURIVILLIUS, 1898, Rhop. Æthiop., p. 185; 1912, Seitz, Gross-Schmett., XIII, p. 190, Pl. XLIIb. (Middle figure, ♀, erroneously labelled *ruspina* on plate.)

The figure of *E. eleus* given by Drury does not appear to be fortunate. The insect on his plate (*loc. cit.*) is represented as having the hind wing strongly produced at the anal angle. Such a specimen, so

far as my knowledge goes, does not exist, and I think the outline of the wing in his drawing is due to the fancy of the draftsman, who has exaggerated in this respect. The color and markings of the upper side of the wings in all other respects agree with the multitude of specimens before me, which may be accepted as typical *E. eleus*. The color and markings of the lower side of the wings in Drury's figure represent an extreme variety.

Of what I long have determined to be *E. eleus* (Drury) there are in the collection nine males and four females, all taken at Medje at dates ranging from June to September, except one female which was taken at Niangara in November 1910. These specimens all have the transverse subapical band white, relatively narrow, consisting of four spots of which the third, reckoning from the costa, is the largest, and the ground-color of both wings is dark brownish red as shown in Drury's figure.

(196)

3a. ***Euphædra eleus hybrida*** Aurivillius

Euphædra eleus ab. *hybridus* (Staudinger, *in litt.*), AURIVILLIUS, 1898, Rhop. Æthiop., p. 186; ab. *hybrida* AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 190.

This varietal form, or subspecies, is represented in the collection by twenty-five males and thirteen females. The dark apical area and, to some extent, the dark marginal band of the secondaries in these specimens, shows in certain lights a greenish luster. In the males the subapical transverse band is, in almost all cases, composed of only three spots, yellowish white in color, the lowermost of which is the largest. In ten of the specimens in the collection there is, however, a fourth spot indicated as a mere pointlet in the interspace between the second and third submedian nervules. The red ground-color of the wings is much paler than in typical *eleus*, being orange-red and not dark brown.

The specimens were almost all taken at Medje, at dates ranging from June to September, though there are several specimens, both male and female, recorded as captured at Gamangui in June, a male taken at Niangara in November, and a female at Avakubi in October.

This varietal form with the paler ground-color of the wings, the greenish luster of the dark margins, and the yellow subapical bands, when pinned out in a series, contrasts rather strikingly with the darker colored specimens which I refer to *E. eleus* Drury, but when it comes to a comparison of the under side of the wings the difference is so trifling as to make it appear certain that the two forms are merely varietal.

(197) 3b. ***Euphædra eleus coprates*** (Druce)

Romalæosoma coprates DRUCE, 1875, Proc. Zool. Soc. London, p. 411.

Euphædra eleus var. *coprates* AURIVILLIUS, 1898, Rhop. Æthiop., p. 186; 1912, Seitz, Gross-Schmett., XIII, p. 190, Pl. xliia, ♂ (in error *hybridus*), Pl. xliib, ♀.

Of this varietal form, distinguished by the presence of spots in the cell of the fore wings, both on the upper and under side, there are three males taken at Medje, one in June and the other two in August.

(198) 4. ***Euphædra edwardsi*** (Hoeven)

Aterica edwardsi HOEVEN, 1845, Tijd. Nat. Gesch., XII, p. 251, Pl. iv, figs. 1a, 1b.

Romalæosoma pratinas DOUBLEDAY AND HEWITSON, 1850, Gen. Diurn. Lep., II, p. 284, Pl. xxxviii, fig. 3, ♂.

Euphædra edwardsi AURIVILLIUS, 1898, Rhop. Æthiop., p. 186; 1912, Seitz, Gross-Schmett., XIII, p. 189, Pl. xliic (♀, non ♂, as figured on plate).

The collection contains one female taken at Medje on July 29, 1910.

IV. CERES GROUP

As already indicated, the collection contains a great many specimens referable to this group showing innumerable slight variations in color and markings, so that it becomes very difficult to determine by fixed lines specific and varietal distinctions.

(199) 5. ***Euphædra preussi*** Staudinger (?)

Euphædra preussi STAUDINGER, 1891, Iris, IV, p. 119, Pl. i, fig. 1.

To this species I refer, with some doubt, eighteen males and four females, all taken at Medje, at dates ranging from July to September, except one male captured at Niangara in November and one female taken at Bafwasende on January 7, 1910.

Not one of these specimens agrees absolutely on the lower side with the figure given by Staudinger, though the males agree almost perfectly with the figure which he gives of the upper side of the wings. In this connection it is to be observed that the insect figured as *E. preussi* by Aurivillius in Seitz, 'Gross-Schmetterlinge,' XIII, Plate xliid, is not the insect figured by Staudinger in Iris (*loc. cit.*) but represents the variety named *njamnjami* by Staudinger. Staudinger's figure represents an insect which is bright ochraceous on the under side. The insects upon which I am reporting are prevalently greenish on the under side, though some of them are brownish, but almost all are inclined to be more or less ochraceous on the inner margin of the lower side. The number of the spots in the cells of both the fore and hind wings on the lower side is somewhat variable. All have a pale discal spot beyond the

cell, while in some specimens this discal spot forms the lower end of a pale band extending costad to the pale costal marginal border. No two specimens are absolutely alike. The submarginal spots on the upper and under side are also variable, though generally indicated on the upper side, and sometimes quite strongly; in other specimens, particularly on the lower side, these submarginal spots are more or less obsolete. The transverse apical band in the males is, as in Staudinger's figure, narrow and greenish, and the apical region on the upper side in the males is more or less suffused with green. In the females the transverse sub-apical band is white, showing strongly against the black apical area of the fore wings on the upper side, and is composed of four spots. None of the specimens are absolutely typical *E. preussi* Staudinger, but knowing, as I do, how greatly these insects tend to vary, I am not inclined to set up a new species merely basing it upon the slightly different shade of the lower side of the wings.

(200)

5a. ***Euphædra preussi njami*** Staudinger

Euphædra preussi var. *njami* Staudinger, 1891, Iris, IV, p. 125.

I refer to this varietal form erected by Staudinger twenty-one males and six females, all taken at Medje at dates ranging from April to September, except two males taken at Niangara in November and one female captured at Gamangui in June.

Staudinger differentiates this form from his *E. preussi* by stating in his description that the fore wings of the male on the upper side are darker, not laved with green, and that on the under side they are ferruginous and, further, that the submarginal spots on the lower side are distinctly visible. The long series of specimens before me which I refer to this form correspond closely with Staudinger's description, but there is considerable variability in the shading of the upper and under sides of the wings. On the upper side, some are distinctly greenish; in others the ground-color passes into bluish green. On the under side, some are indeed ferruginous, as he states; others, however, are somewhat greenish, and no two are absolutely alike in every minute particular. Almost all have a small light spot on the under side of the secondaries beyond the end of the cell, and in some specimens this light spot is extended costad, forming a light bar which loses itself in the pale costal border. There is extreme variability in this respect. The females are like the females of typical *preussi*, but almost all of them have the pale discal transverse band on the secondaries running from the end of the cell upward toward the costa more distinctly marked than in the males.

(201) 5b. ***Euphædra preussi njamnjami*** Staudinger

Euphædra preussi var. *njamnjami* STAUDINGER, 1891, Iris, IV, p. 125.

Euphædra preussi AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 189, Pl. XLII d.

To this varietal form, characterized by Staudinger as having the upper side of the wings black and not laved with green at the apex as in typical *preussi*, the under side ferruginous, without submarginal markings, I refer twelve males and twenty-one females from Medje and Gamangui. The males and females are all distinctly somewhat larger in size than either of the two foregoing forms. The outer two-thirds of the wings of the males are black, the subapical transverse band narrow, composed of four spots separated by the nervules, and the lower side without submarginal markings save as these may be indicated by small white dots in a few of the specimens. The prevalent color of the under side of the wings is brownish ochraceous, or ferruginous more or less laved with green in the case of the males, but not in the case of the females. As in the two preceding forms, the hind wings beyond the end of the cell may have a discal light spot, or this light spot may be extended costad in the form of a pale transverse discal band, losing itself in the light costal margin.

While I am averse to adding to the apparent interminable confusion which already exists in this species, I am, nevertheless, constrained by facts which are too apparent to be overlooked to set off from among the specimens before me several varietal forms which are quite as worthy of being discriminated as those which have already been mentioned.

(202) 5c. ***Euphædra preussi notata***, new variety

Plate XI, Figure 1, ♂

I apply this name to two males and three females before me. The males and females are relatively smaller than any specimens of the varieties *njami* Staudinger and *njamnjami* Staudinger, which they resemble on the upper side of the wings, save that at the end of the cell on the upper side of the secondaries they all have a distinct black spot. On the under side the ground-color of the wings is chocolate-brown, with a more or less bluish suffusion, and the spots in the cell of both the fore and hind wings are large and distinct, and the submarginal spots are also well indicated, having an inner dark nucleus accentuated externally by light spots. The transverse subapical band in the males is pale whitish green; in the females pure white. Expanse, ♂, 65-67 mm.; ♀, 70-80 mm.

The type ♂ and allotype ♀ are in the The American Museum of Natural History; two paratypes in the Holland Collection in the Carnegie Museum. All are from Medje.

(203) 5d. ***Euphædra preussi subviridis***, new variety

Plate XI, Figure 4, ♂

Closely resembling *E. preussi*, but with the upper outer two-thirds of the fore wings in the case of the male velvety black, the postapical transverse band diffuse, greenish, and toward the apex fading into a lustrous green subapical area which, in certain lights, shows as a brilliant green tract covering the apical area from near the apex to the outer end of the cell; the hind wings and the posterior margin of the fore wing for some distance iridescent greenish blue, this area on the fore wings reaching the lower margin of the cell near the base, but not reaching the outer angle. The posterior wings broadly bordered with dark green, accentuated with a submarginal series of black velvety spots. On the under side in the male the wings are more or less grass-green, tinged with chocolate-brown, the transverse subapical band of the primaries being whitish. The spots in the cells of the primaries and the secondaries are variable in number and size, as is true of all the varieties, and this is also true of the submarginal series of dark spots. The female is marked on the upper side like the male except that the transverse subapical band is pure snow-white. The outer margins, as in all the forms of *E. preussi*, have the fringes dark, interrupted on the interspaces with white, and the fore wings are at the apex tipped with white.

There are two males and one female from Medje which I refer to this form. The male and female types are in The American Museum of Natural History; the second male, a paratype, is in the Holland Collection in the Carnegie Museum.

This form, which is near typical *preussi*, may be at once distinguished from it by the velvety black band which crosses the fore wings from the base to the outer margin, leaving the diffuse paler subapical transverse band and the elongated brilliantly green apical area in striking contrast with the rest of the wing, and by the brilliantly deep green color of the under side of the wing.

(204) 5e. ***Euphædra preussi fulvofasciata***, new variety

Plate XI, Figure 6, ♂

This variety differs from the preceding in having the transverse subapical band on the upper sides of the primaries bright orange in both sexes; the band on the under side is paler, inclining to white, though in a few specimens in the series before me the orange color of the upper side reappears. There is a considerable variety in the shape of this band, especially in the female sex. There are seven females before me, and in none of them is the band absolutely the same in outline, and in some of them it is much broader than in others. The markings on the under side are more or less variable, as in *E. njamnjami* and the other varietal forms which have been mentioned.

I assign to this varietal form three males taken at Medje, one in April, one in July, and one in August, and seven females, all taken at the same place, two in April and the others from July to September. In size and in all other respects, except the color and shape of the sub-

apical band, the form agrees rather closely with *E. njamnjami* Staudinger, from which, however, it may easily be discriminated.

(205) 5f. ***Euphædra preussi latefasciata***, new variety

Plate XI, Figure 8, ♂

This form is very much like the preceding but differs in having the transverse subapical band of the fore wing broader, and by the great reduction, amounting to almost a complete suppression on the under side of the black markings in the cells, especially in the case of the female. The submarginal markings on the under side of the secondaries on the other hand are very distinct, inwardly black, margined externally by light blue.

This variety is represented by a male captured at Medje in April and a female taken at the same place in July.

(206) 5g. ***Euphædra preussi angustior***, new variety

Plate XI, Figure 7, ♂

I apply this name to four males and two females which are characterized by having the transverse postapical band orange on the upper side of the fore wings and greatly reduced in width, being much narrower than in any of the other forms in this group. On the under side the spots in the cell of the fore wing are much enlarged and very conspicuous, much more so than in any other of the varieties hereinbefore mentioned. The transverse postapical band in what I take to be the female is not yellow in this form, as it is in the case of the male, but white.

There are four males, one taken at Medje in April and three captured at the same place in August. The two females which I associate with the males because of the markings on the under side of the wings were also captured at Medje, one in July and the other in August.

Whether the forms which I have mentioned in the foregoing paragraphs are all really referable to *Euphædra preussi* and are to be regarded as mere varieties of that insect can only be decided by the test of breeding. They all agree in having on the anterior margin of the hind wing a broad white band extending from the base in cell 7 almost to its outer extremity. This pale band is generally tinged with bluish, but sometimes inclines to greenish or greenish yellow. There is a general resemblance among these insects and, if not varietal forms of the same insect, they represent species which are wonderfully closely related to each other.

(207) 6. ***Euphædra inanoides***, new species

Plate XI: Figure 2, ♂, type; Figure 3, ♀, allotype (under side)

On the under side of the wings like *Euphædra inanum* Butler, but with the white transverse bands not nearly as distinctly defined, especially in the male, and differing on the upper side from *E. inanum* by having the postapical transverse band of the fore wings blue, as in *E. cærulescens* Grose-Smith, and not pale yellowish white as in

E. inanum, specimens of which I have from Sierra Leone, the type locality. In the female sex the postapical band inclines to whitish or paler blue than in the male sex. On the upper surface this form so closely resembles *E. caerulea* Sharpe that at first glance it might be mistaken for it, but the bluish median band of the fore wing does not extend as far costad as in *E. caerulea*, being restricted to a narrow longitudinal stripe bordering the hind margin of this wing, and of course the markings of the lower side of the wings are totally different.

There are eight males, which were taken at Medje (type locality) from June to September, and two females, one captured at Medje in September and another at Bafwaboli on September 10, 1909. The types ♂ and ♀ are in the American Museum of Natural History; paratypes in the Holland Collection in the Carnegie Museum.

(208) 7. ***Euphædra afzelii*** (Felder)

Romalæosoma afzelii FELDER, 1867, Reise Novara, Lep., p. 430.

Euphædra afzelii AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 187, Pl. XLIIb, ♀.

I refer to this species a single male captured at Medje, April 6, 1910. The specimen agrees most nearly with Felder's species, but the reference is doubtful. In view of the great variability of the forms under discussion, I do not care to erect a new species upon a single individual, but it differs almost enough from what I have determined to be typical *E. afzelii* to justify its separation as a valid variety or subspecies.

(209) 8. ***Euphædra phaethusa*** (Butler)

Romalæosoma phaethusa BUTLER, 1865, Proc. Zool. Soc. London, p. 670, fig. 4.

Euphædra phaethusa AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 188.

There are two specimens of this form, both taken at Medje, one in April, the other in August. It is characterized by the obliteration of the dark markings on the under side of the wings.

(210) 9. ***Euphædra ravola*** (Hewitson)

Romalæosoma ravola HEWITSON, 1864, Exot. Butt., III, *Romalæosoma*, Pl. IV, figs. 19-20.

Euphædra ravola AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, p. 188, Pl. XLIIb.

There are two males and two females which I refer with some uncertainty to this species. They do not agree perfectly with specimens from the western coastal regions of which I have a long suite. They are much brighter green upon the lower side of the wings, and the dark spots and markings are greatly reduced in size imparting to the under side of the wings a different facies from that of typical *E. ravola*. However, I do not think it expedient to bestow a new varietal name upon them. They are from Medje.

(211) 10. **Euphædra rezioides**, new species

Plate XI, Figure 5, ♀

I am constrained to describe as new two females, which it is impossible to refer to any of the hitherto described forms belonging to this group. On the upper side they resemble *E. rezia*, ♀, and have the postapical band narrow and straight as in that species. This band is pale orange in the specimens before me, as is also the case in about half of the females of typical *E. rezia*, the other half, however, in *E. rezia* having this band white. On the under side there is a marked difference. The submarginal spots of the fore wing, which are invariably present in *E. rezia*, are obsolete, except the one near the inner angle. The cell of the hind wing has one or two black spots in it and is closed at its extremity by a black bar, which is not found in *E. rezia*, and beyond the cell in interspaces 3, 4, 5, and 6 there are inwardly pointing sagittate dark spots arranged in a straight series, after which is a transverse series of pale markings; of these the one in space 7 is the longest and immediately follows the longitudinal black streak which partly fills the interspace basad, but does not reach the basal end of this interspace. The other pale spots of the series, which I am describing, diminish rapidly in size in the direction of the lower margin of the wing. The species at first glance recalls the pale spots on the under side of *E. eberti* (cf. Aurivillius, Seitz, XIII, Pl. XLIVd), but differs by the existence of the strongly defined dark spots in the cell of the fore wing and the dark markings of the hind wings which have been described. Expanse, 80–85 mm.

The two specimens were both taken at Medje in August. The type is in The American Museum of Natural History. The paratype is in the Holland Collection in the Carnegie Museum.

THEMIS GROUP

(212) 11. **Euphædra adonina** (Hewitson)

Romalæosoma adonina HEWITSON, 1865, Exot. Butt., III, *Romalæosoma*, Pl. III, figs. 11, 12.

Euphædra adonina AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 187, Pl. XLIVb.

Six males and three females, one male caught at Gamangui in June, the rest at Medje from July to September.

(213) 12. **Euphædra vetusta** (Butler)

Romalæosoma vetusta BUTLER, 1871, Lep. Exot., p. 82, Pl. XXXI, fig. 5, ♀.

Euphædra vetusta AURIVILLIUS, 1912, Seitz, Gross-Schmett., III, p. 187, Pl. XLIVa, ♀.

With a measure of hesitation I refer to this species three males taken at Medje in July and August. Butler's figure is that of a female, and so also is that given by Aurivillius. The specimens correspond more nearly with what is known of Butler's species than with any other, and I leave them here subject to query.

(214) 13. **Euphædra gausape** (Butler)

Romalæosoma gausape BUTLER, 1865, Proc. Zool. Soc. London, p. 671, fig. 5.

Euphædra gausape AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 186.

There are five males and eleven females before me, not any two of which exactly agree with each other in all respects, but they are so closely related to each other that it seems impossible to separate them. They come nearer to the insect named *E. (Romalæosoma) gausape* by Butler than to any other form known to me, and I place them here provisionally. The males and females have the postapical band of the fore wing orange in color; in the case of the females it is wider than in the case of the males, and varies somewhat in form and breadth. One female has this band pure white, but otherwise I am unable to distinguish it by its markings from the other females.

The specimens were all taken at Medje, a male and a female in April, the rest in July and August.

XYPETE GROUP

(215) 14. ***Euphædra xypete maxima***, new variety

There are three males and three females, which are referable to *Romalæosoma xypete* Hewitson (cf. Exot. Butt., 1865, III, *Romalæosoma*, Pl. II, figs. 8-10), but which differ from specimens in my collection received from Sierra Leone, Cameroon, and Gaboon, in being much larger in size, by the prevalently bluish (not greenish) cast of the lighter portions of their wings on the upper side, and by having the spots which define the inner margin of the postapical band on the under side of the primaries much narrower and less strongly developed than is the case in specimens from the localities named. The form may be designated as var. *maxima*, the specimens averaging fully fifteen per cent more in expanse of wing than specimens taken on the west coast, of which I have many scores before me as I write.

Male type, Medje; female allotype, Ngayu; paratypes, ♂ ♀, Ngayu.

(216) 15. ***Euphædra cyanea***, new species

Plate IX: Figure 1, ♂; Figure 2, ♀

Related to *E. cærulescens* Grose-Smith, but differing markedly on both the under and the upper side of both wings. In *E. cærulescens* the basal portion of the fore wing on the upper side is black throughout, except for a few greenish blue scales along the edge of the inner margin. In *E. cyanea* the basal area is bright blue from the base to the middle of the cell and thence outwardly to nearly the inner angle of the wing. Beyond this bright blue area, the outer line of which is quite straight, the remainder of the wing is rich velvety black, interrupted, however, by a sharply defined postapical band of bright blue, which is much more sharply defined than is the case in *E. cærulescens*, and does not extend as far downward toward the inner margin as is the case in the latter species. In *E. cærulescens* this band, which is greenish blue, passing into yellowish toward the costa, reaches vein 2 near the outer border, but in *E. cyanea* the band never extends beyond vein 3. The white spots of the cilia, which are present in both species, differ, being wider in *E. cærulescens*, forming little lunules at the end of the interspaces, but in *E. cyanea* they are mere pointlets, or dots at the middle of the interspaces on the outer margin. The middle of the

upper side of the hind wings in *E. cyanea* is bright blue, while in *E. cærulescens* this area is dull greenish blue. On the under side in *E. cærulescens* the cell of the fore wing is solidly blue at the base, in *E. cyanea* this region is green or greenish ochraceous. The dark spots in *E. cyanea* which appear in the cell of the fore wing are much smaller than the corresponding spots in the wing of *E. cærulescens*, and this holds good also of the spots of the hind wings on the under side. Below the red costal band of *E. cærulescens* (*Vide* Aurivillius, 1912, Seitz, Gross-Schmett., XIII, Pl. XLIVa, where the under side of *E. cærulescens* is shown, in error named *E. gausape*) large dark spots intervene between the red costal band and the rest of the wing. This is not the case in *E. cyanea*. There are no such spots, or they are at most feebly indicated by a faint dark shade near the basal end of interspace 7. The spots in the cell of the secondaries are also very greatly reduced or disappear and the discal spots beyond the cell in *E. cyanea* are smaller and the red of the costal border in some specimens spreads downward into the discal area of the wing, as a faint reddish shade. The females in *E. cyanea* are marked exactly as are the males, but have much greater expanse of wing, and the postapical band of the primaries on the upper side is paler blue. The postapical band of the primaries is less prominent on the under side in both sexes of *E. cyanea* than it is in *E. cærulescens*, and in some specimens scarcely appears. Expanse, ♂, 60–65 mm.; ♀, 70–85 mm.

Types in The American Museum of Natural History; paratypes in Holland Collection in the Carnegie Museum.

The Expedition brought back fourteen males and five females of this species, which I have carefully compared with a series of male specimens of *E. cærulescens* which I have in my collection from the lower banks of the Ogové River. The specimens were all captured at Medje, two males in April, the rest from July to September. Two of the males are aberrant in that they show a tendency in the postapical band of the primaries on the upper side to become whitish towards the costa.

(217)

16. ***Euphædra karschi* Bartel**

Euphædra karschi BARTEL, 1905, Nov. Zool., XII, p. 141. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 186.

The collection contains four males of this well-defined species which were taken at Medje, two in June, one in July, and one in August. The specimens agree perfectly with a series in the possession of the writer, which were collected for him many years ago by Mrs. Reutlinger at Benito, Spanish Guinea.

MEDON GROUP

(218)

17. ***Euphædra medon innotata*, new variety**

Plate IX, Figure 6, type, ♂

Papilio medon LINNÆUS, 1763, Cent. Ins., p. 19; 1767, Syst. Nat., 12th Ed., v., 753.

Euphædra medon AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 184, Pl. XLVa.

Euphædra medon is represented in the collection by a series of seven males. All belong to a varietal form, long known to me but not hitherto described, to which I venture to apply the varietal or subspecific name *innotata*.

The form is characterized by being paler on the upper side than typical *E. medon*, the coloration being glaucous and less inclined to greenish than in the typical form, and the dark markings less pronounced, harmonizing more thoroughly with the ground-color of the wings. The differences on the under side are pronounced and may be summed up in the statement that the submarginal spots on both the fore and hind wings are either entirely obliterated or so greatly reduced as to be almost invisible, and the transverse median light band of the hind wing, which is characteristic of the typical form, is either wanting entirely or survives merely as a small light-colored quadrate spot on the costal border.

I have a small series of this form collected upon the Ogové River by the late Dr. A. C. Good, and they have long been standing in my collection awaiting a name. On the under side, because of the suppression of the markings noted above, they are strikingly different from the typical form. The specimens returned by the American Museum Congo Expedition were all taken at Medje in June, July, and August. No other representatives of *E. medon* are in the collection. The type a male, and several paratypes are in The American Museum of Natural History, paratypes are also in the Holland Collection in the Carnegie Museum.

(219) 18. ***Euphædra spatiosa*** (Mabille)

Romalæosoma spatiosa MABILLE, 1877, Bull. Soc. Zool. France, I, p. 278.

Euphædra spatiosa AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 183, Pl. XLVc.

There are thirty-six males and thirteen females of this species, all taken at Medje, except one male captured at Niangara in November. A few were taken in April, but the majority were caught in June, July, and August, several bearing the later date of September.

(220) 19. ***Euphædra losinga*** (Hewitson)

Romalæosoma losinga HEWITSON, 1864, Exot. Butt., III, *Romalæosoma*, Pl. I, fig. 5.

Euphædra losinga AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 183, Pl. XLVb, c.

There are two males and two females taken at Medje, one male in April, the rest in July and August 1910.

EURYPHENE Westwood

This is a large genus. There is great dissimilarity between the sexes in many of the species. A clue to the relationship between the males and females is, however, generally found by a close examination

of the markings on the under side of the wings. The females in many of the groups are wonderfully alike on the upper surface, and it is only by a careful study of the bandings and markings on the under side of the wings that it is possible to make a correct reference of the females to the corresponding males. Many of the females have not yet been figured in any work, although verbal descriptions of a number of them have been recently given by Dr. Aurivillius in the latest revision of the genus, which is contained in Seitz's 'Gross-Schmetterlinge der Erde,' Vol. XIII.

(221) 1. **Euryphene carshena** Hewitson

Euryphene carshena HEWITSON, 1871, Exot. Butt., IV, *Euryphene*, Pl. VII, figs. 31, 32, ♂. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 171, Pl. XLId, f.

This species is characterized in both sexes by the presence on the under side of the wings, above the outer upper angle of the cell of the hind wing, of a broad, very conspicuous brown spot, which shows itself even more conspicuously in the case of the females than in the case of the males.

The collection contains four males; two taken in April and two in September, and four females taken in July and August. All the specimens were captured at Medje.

(222) 2. **Euryphene subtentyris** Strand

Euryphene subtentyris STRAND, 1911, Fauna Exot., I, p. 37; 1912, Archiv f. Naturg., LXXVII, Suppl., 4, p. 118. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 172.

This insect, which may be only a seasonal variety of *E. tentyris* Hewitson, differs from the latter in the entire absence of the brilliant blue-green coloration of the costal area of the fore wing in the male sex. In indirect light there is a faint violet sheen discernible upon the disc of the fore and the hind wings. On the under side of the wings this form is absolutely like typical *tentyris*. We have large numbers of this form collected for us in southern Cameroon.

The species is represented in the Congo Collection by a single male specimen captured at Niangara, November 26, 1910.

(223) 3. **Euryphene abesa** Hewitson

Euryphene abesa HEWITSON, 1869, Trans. Ent. Soc. London, p. 84; 1871, Exot. Butt., IV, *Euryphene*, Pl. VII, figs. 29, 30, ♂. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 172, Pl. XLId, e.

This species is represented by a pair caught at Medje on April 6, 1910.

(224) 4. **Euryphene absolon** (Fabricius)

Papilio absolon FABRICIUS, 1793, Ent. Syst., III, part 1, p. 56.

Euryphene absolon AURIVILLIUS, 1898, Rhop. Æthiop., p. 201, Pl. III, fig. 5, ♂.

There are six males and one female of this species in the collection. The female was taken at Medje about the middle of August 1910, and two males were likewise captured at the same place, one in May, the other in July. One male was taken at Avakubi, on October 20, 1909, and two males were caught at Niangara in November 1910.

(225) 5. **Euryphene entebiaë** Lathy

Euryphene entebiaë LATHY, 1906, Trans. Ent. Soc. London, p. 5, Pl. II, fig. 1, ♂.

AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 172.

Dr. Aurivillius regards this as a varietal form of *E. absolon*. I differ from him, however, for the reason that the female which I associate with the form (the male of which has been very accurately depicted by Lathy) is more like the female of *zonara* than the female of *absolon*; in fact, in my preliminary arrangement of the species I had referred the specimens of the suite before me to *zonara*, marking them as "dark var." Typical *zonara* from the west coast of Africa is a somewhat smaller insect, the prevalent color of the upper side of the wings being bright reddish fulvous. The specimens of *E. entebiaë* before me are most of them larger than typical *zonara*, much darker in color, warm brown, banded with very dark brown, almost black, and they are all absolutely alike on the under side in having on the hind wings on either side of vein 6, just beyond the upper outer angle of the cell, a dark shade, accentuated, as is well shown in Lathy's excellent figure, by two small light points, arranged vertically, one on either side of vein 6. The solitary female before me has a dark shade located at exactly the same spot, with indications of the lighter points. If designated as a variety of any of the well-known species already described, it seems to me it should be of *zonara* rather than of *absolon*. For the present I recognize it as a distinct species.

The specimens vary a little in size. Held in a very oblique position, they reveal a very slightly purplish blue iridescence, in this respect being somewhat like *E. absolon* var. *micans* Aurivillius, though in the latter the blue iridescence is much more evident.

The collection contains twelve males and one female, which were all taken at Medje, the dates of capture including the months of April, July, August, and September.

(226) 6. **Euryphene zonara** (Butler)

Aterica zonara BUTLER, 1871, Proc. Zool. Soc. London, p. 81; 1871, Lep. Exot., p. 72, Pl. xxviii, figs. 1, 2.

There are three males, all taken at Medje, one in April, the other two in September, and one female caught in the month of July. The figure of the under side of the wings of a male given by Aurivillius in his 'Rhopalocera Æthiopica,' Pl. III, is that of a specimen in which the characteristic markings are not as strongly accentuated as in the specimens upon which I am reporting.

(227) 7. **Euryphene lucasi**, new species

Plate IX: Figure 4, ♂, type; Figure 5, ♀, allotype

♂. Upper side of both wings reddish fulvous marked with bands and spots of dark brown. FORE WING: a dark spot filling the base of the cell, succeeded by a narrow angulated line, which in turn is followed by a large spot having the outline of the figure 8, succeeded by a second narrow angulated line, and this in turn followed at the end of the cell by a large spot, which has its inner margin straight, but is sinuate on its outer margin; below the cell the basal area as far as the first mesial outer band of light spots is dark brown; the dark spot at the end of the cell and the dark area below the cell are succeeded by a mesial band of light spots, which, beginning on the costa beyond the end of the cell, runs first transversely toward the outer margin as far as vein 6, then turns abruptly and sweeps backward and downward to the inner margin of the wing which it reaches less than half its distance from the base. Beyond this series of light spots is a series of dark subquadrate spots gradually increasing in width from the costa as far as the first submedian nervule, and then rapidly diminishing toward the inner margin. This band is succeeded by a series of light lunate spots convex basad as far as vein two, and continued to the inner margin in a narrow curved line parallel to the line of the lower part of the first median series of light spots. This last line of light spots is followed by a series of subcircular dark spots on the interspaces extending from vein 6 to vein 1, below which the last spot of the series is quadrate. Beyond these spots there is another series of light sublunate spots convex marginad. The effect of the arrangement of the last-mentioned two series of light lines with their reversed curvatures is to produce the appearance of eyelike markings, with a dark pupil partly surrounded by red. The marginal border of the wing is dark, but not as dark as the inner series of dark bands and spots. At the apical extremity of the wing there is a general dark suffusion in which the spots and bands lose themselves. The cilia are dark brown, checked at the middle of each interspace with white. HIND WING: fuscous on the inner margin, with the area below the cell for a short distance, and the base of the cell dark brown; the middle of the cell is reddish, marked with a figure 8 and a thin dark line at its end, both darker; beyond the cell is a dark shade or band, interrupted by a mesial band of bright reddish brown, which, beginning as a point in interspace 7, rapidly widens to vein 1, where it ends abruptly. The two bands of light lines enclosing circular dark spots, found on the primaries, are continued upon the secondaries and the marginal borders and cilia of the latter are much as on the former. The head, thorax, and abdomen are blackish above, as are the palpi; on the lower

side they are grayish. The under side of both wings is pale gray, and all the markings of the upper side are reproduced with modifications, most of them being greatly reduced in size, and those of the cells and the discal areas being pale but sharply defined externally by fine dark lines.

♀. The female is larger than the male, as is always the case in this genus, and has greater expanse of wing. The arrangement of the spots and lines is substantially the same as in the male sex, with this difference that the light red spots of the upper side are prevalently light gray, except the inner mesial and the two succeeding series of light spots, which in this sex are light lemon-yellow, and the former of which on the secondaries is greatly expanded, forming a large diffuse yellow band occupying the middle of the wing. On the under side the markings near the end of the cell are compacted to form a very irregular dark band sharply defined externally, and having as one of its characteristic marks a narrow projection at the origin of the second and third submedian nervules. This is also to be detected in the male sex, and is a clue to the relationship of the two sexes. Expanse: ♂, 50–55 mm.; ♀, 60–65 mm.

Types in The American Museum of Natural History; paratypes in the Holland Collection in the Carnegie Museum.

The species may easily be distinguished from all hitherto described by the narrow band of light yellow spots which crosses the primaries of the female, as stated in the description, and which corresponds in its location to the inner band of fulvous spots in the male.

I take pleasure in naming this species in honor of my friend of many years, Dr. F. A. Lucas, the Director of The American Museum of Natural History.

The collection before me contains three males and three females, all captured at Medje, one female in April, the rest from June to September.

(228) 8. **Euryphene mandinga** Felder

Euryphene mandinga FELDER, 1860, Wien. Ent. Monatschr., IV, p. 108. AURIVILLIUS, 1898, Rhop. Æthiop., p. 201, Pl. III, fig. 7, ♂.

Of this well known species there are four males and three females, all taken at Medje in August, except one female taken on September 1, 1910.

(229) 9. **Euryphene oxione** Hewitson

Euryphene oxione HEWITSON, 1866, Exot. Butt., III, *Euryphene*, Pl. v, text; 1871, loc. cit., IV, *Euryphene*, Pl. VIII, figs. 36, 37, ♂. DEWITZ, 1866, Berl. Ent. Zeit., XXX, Pl. VII, figs. 1, 2, ♀. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 172, Pl. XLIC.

The collection contains two males and five females of this well-marked species, all taken at Medje, the dates of capture including the months of April, June, August, and September.

(230) 10. **Euryphene partita** Aurivillius

Euryphene partita AURIVILLIUS, 1895, Ent. Nachr., XXI, p. 380.

Euryphene aurivillii STAUDINGER, 1896, Iris, VIII, p. 371, Pl. VIII, fig. 3, ♂.

Euryphene partita AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 172, Pl. XLIC, ♀.

Of this easily recognized species the collection contains four males and eleven females, all taken at Medje, a couple of females captured in April, and all the remainder taken in the months of July and August.

It may be worthy of note that the two females captured in April differ from the females taken later in the year in that they are without the bluish iridescence which is found upon the fore wings of the latter, indicating a seasonal variation in this respect.

(231) 11. **Euryphene iturina** Karsch

Euryphene iturina KARSCH, 1894, Ent. Nachr., XX, p. 215. AURIVILLIUS, 1898, Rhop.

Æthiop., p. 200, Pl. III, fig. 1, ♀; 1912, Seitz, Gross-Schmett., XIII, p. 173, Pl. XLIB, ♂, ♀.

The collection contains twenty-two males and seventeen females. The specimens were all taken at Medje, except two males which are ticketed as captured at Gamangui in June. The labels attached to the specimens taken at Medje show that a few were captured in April, but by far the greater number were taken in August and September.

(232) 12. **Euryphene fulgurata** Aurivillius

Plate X, Figure 11, ♀

Euryphene fulgurata AURIVILLIUS, 1904, Ent. Tidskr., XXV, p. 95, fig. 35; 1912, Seitz, Gross-Schmett., XIII, p. 173.

Two females taken at Medje, one in July, the other in August.

(233) 13. **Euryphene congolensis** Capronnier

Euryphene congolensis CAPRONNIER, 1889, Ann. Soc. Ent. Belgique, XXXIII, Bull., p. cxxii. AURIVILLIUS, 1898, Rhop. Æthiop., p. 200, Pl. III, figs. 8, 9, ♂, ♀.

This species is represented in the collection by thirty-five males and thirty-three females, all of which appear to have been taken at Medje, except one female caught at Stanleyville on August 18, 1909, and two females taken at Gamangui on June 17, 1910. The dates attached to the specimens captured at Medje show that a few were caught in April, but the great majority were taken in the months of July, August, and September.

(234) 14. **Euryphene phranza** Hewitson

Euryphene phranza HEWITSON, 1865, Exot. Butt., III, *Euryphene*, Pl. II, figs. 7, 8.

AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 173, Pl. XLIB.

This species is represented by a male and female, the former captured at Medje on May 25, the latter taken at the same place on June 21.

(235) 15. **Euryphene severini** Aurivillius

Euryphene severini AURIVILLIUS, 1897, Öfvers. Sv. Vet.-Akad. Förh., LIV, part 1, p. 280, fig. 2, ♀; 1898, Rhop. Æthiop., p. 200, Pl. III, fig. 10, ♂.

Of this species there are thirteen males, all labelled as captured at Medje in June, July, and August. With these males I associate five females, taken at Medje in the same months, which agree almost absolutely with the figure of this sex given by Aurivillius (*loc. cit.*), save that in the specimens before me the apex of the fore wing is somewhat more pointed and not of precisely the shape given in the wood cut supplied by Aurivillius. I can see no difference in other respects; the markings are identical and, in spite of the fact that the fore wing of these females is somewhat more like the female of *E. sophus* in showing a tendency to become falcate at the tip, I am reasonably certain that my reference is correct. It is to be observed that, while the fore wings are, as I have said, falcate, they are rounded at the extreme apex and not sharply acuminate as in *sophus*.

(236) 16. **Euryphene lætitia** Pløetz

Euryphene lætitia PLØETZ, 1880, Stett. Ent. Zeit., XLI, p. 192. AURIVILLIUS, 1898, Rhop. Æthiop., p. 200, Pl. II, fig. 2; 1912, Seitz, Gross-Schmett., XIII, p. 174, Pl. XLIC, ♂, ♀.

I refer to this species two males taken at Medje on May 6, 1910. While agreeing pretty thoroughly on the upper side with the figure of the male given by Aurivillius, there are some minor discrepancies on the under side of the wing but, without more material before me, I do not feel justified in differentiating the insect from *E. lætitia*, with which it agrees more closely than with any other species hitherto described.

In passing, I must call attention to the fact that Dr. Aurivillius is quite in error in sinking my *E. castanea* (cf. Canadian Entomologist, 1893, XXV, p. 1) as a synonym of *E. lætitia*. It is totally distinct and, had Dr. Aurivillius known it other than by the verbal description I published, he would not have included it under *E. lætitia*.

(237) 17. **Euryphene sophus** (Fabricius)

Papilio sophus FABRICIUS, 1793, Ent. Syst., III, part 1, p. 46.

Euryphene sophus AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 174, Pl. XLIC.

Two males and two females captured at Medje are referable to this species. One of the males was caught on August 1, the other on Sep-

tember 27. One of the females was taken on August 13, the other on July 29. The latter female, which has the pre-apical band white, is referable to the varietal form named *phreone* Feisthamel. Except for the difference in the color of the transverse postapical band there is no difference whatever between this form and true *E. sophus* (Fabricius).

(238) 18. **Euryphene phantasia** Hewitson

Euryphene phantasia HEWITSON, 1865, Exot. Butt., III, *Euryphene*, Pl. II, figs. 9-11.
AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 176, Pl. XLIA.

Three males and three females. One female which has the post-apical band of the primaries yellowish instead of white, as is the case with the other two, was taken at Ngayu in December, 1909. All the other specimens were captured at Medje, one male in April, the rest in July and August.

(239) 19. **Euryphene flaminia** Staudinger

Euryphene flaminia STAUDINGER, 1891, Iris, IV, p. 110, Pl. I, fig. 4. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 176, Pl. XLE.

I refer to this species two males and a female taken at Medje, the female in April, the males in July and August.

(240) 20. **Euryphene maximiniana** Staudinger

Plate VII, Figure 10, ♀

Euryphene maximiniana STAUDINGER, 1891, Iris, IV, p. 112. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 176.

Four males and three females are referable to this species, which hitherto has only been reported from Cameroon. Six specimens were taken at Medje in June, July, and August, and one at Gamangui.

(241) 21. **Euryphene mardania** (Fabricius)

Papilio mardania FABRICIUS, 1793, Ent. Syst., III, part 1, p. 249.

Euryphene mardania AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 177, Pl. XLC, d.

Of this common species there are six males and four females. Two of the males and one of the females were taken at Medje in July and August, the rest were captured at Niangara in November 1910.

(242) 22. **Euryphene plistonax** Hewitson

Euryphene plistonax HEWITSON, 1874, Exot. Butt., V, *Euryphene*, Pl. IX, figs. 38, 39.
AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 177, Pl. XLC.

Of this large and striking species there are two males and five females taken at Medje, the dates of capture ranging from June to August.

(243) 23. **Euryphene barce** (Doubleday)

Aterica barce DOUBLEDAY, 1847, Proc. Zool. Soc. London, p. 59.

Euryphene lesbonax HEWITSON, 1864, Exot. Butt., III, *Euryphene*, Pl. I, figs. 5, 6, ♂.

Euryphene barce var. *achillæna* Bartel, AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 179, Pl. XLb, ♀.

This species is represented in the collection by a single female, belonging to the varietal form named *achillæna* by Bartel. It was caught at Medje, May 6, 1910.

(244) 24. **Euryphene chloëropis** Bethune-Baker

Euryphene chloëropis BETHUNE-BAKER, 1908, Ann. Mag. Nat. Hist., (8) II, p. 474.

AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 178.

I refer a single male captured at Medje in the early part of April to this species, with the description of which it appears to agree very closely, except in the expanse of wing. Baker records 72 mm. for the spread of the specimen he described, while the individual before me has a spread of only 58 mm.

(245) 25. **Euryphene luteola** Bethune-Baker

Euryphene luteola BETHUNE-BAKER, 1908, Ann. Mag. Nat. Hist., (8) II, p. 474.

AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 179.

There are two males which agree very closely with the description given by Bethune-Baker and which I accordingly refer to this species. There are also two females which appear to me to be undoubtedly that sex of this species. As the female of *E. luteola* awaits description, I may briefly point out that, as is always the case in this genus, they exceed the males in expanse of wing. The prevalent colors of the wings are paler on the upper side, the light areas inclining to blue and not to green as in the male. On the under side both wings are pale reddish brown, the base of the costal margin blue as in the male, and the other spots and markings as in the male but more diffuse and expanded. As in the species listed just before this, there is a discrepancy in the matter of the expanse of wing between the individuals before me and the male described by the author of the species. Bethune-Baker gives 77 mm. as the expanse, but the two males before me measure not more than 57 mm., while the females have a spread of from 68 to 70 mm.

The specimens are from Medje.

(246) 26. **Euryphene rubrocostata** Aurivillius

Euryphene rubrocostata AURIVILLIUS, 1897, Öfvers. Sv. Vet.-Akad. Förh., LIV, 5, p. 279, fig. 1, ♀; 1898, Rhop. Æthiop., p. 197, Pl. II, fig. 5, ♂.

The collection contains fifty males and four females, all taken at Medje, a couple in April, and all the rest including all the females, from July to September.

DIESTOGYNA Karsch

(247) 1. ***Diestogyna camarensis*** (Ward)

Euryphene camarensis WARD, 1871, Ent. Mo. Mag., VIII, p. 35.

Diestogyna camarensis AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 159, Pl. xxxixd.

A single male taken at Medje, in September 1910.

(248) 2. ***Diestogyna goniogramma*** Karsch

Diestogyna goniogramma KARSCH, 1894, Berl. Ent. Zeit., XXXIX, p. 5, fig. 1.

AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 160, Pl. xxxixd.

Of this species there are thirteen males and four females, all taken at Medje, a pair in April, all the rest from July to September.

(249) 3. ***Diestogyna mawamba*** Bethune-Baker

Diestogyna mawamba BETHUNE-BAKER, 1908, Ann. Mag. Nat. Hist., (8) II, p. 476.

AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 163, Pl. xxxviii.

To this comparatively recently described species I refer a male taken at Medje on August 11, 1910 and a female taken at the same place on July 17, 1910. While the specimens slightly differ from the description given by Bethune-Baker, they nevertheless agree so thoroughly with the figures given by Aurivillius that I think I am right in my determination.

(250) 4. ***Diestogyna tadema*** (Hewitson)

Aterica tadema HEWITSON, 1866, Exot. Butt., III, Pl. *Aterica* and *Harma*, figs. 10-12, ♂, ♀.

I refer to this species a male taken at Medje, on August 1, and a female taken on July 21, 1910.

(251) 5. ***Diestogyna saphirina*** Karsch

Diestogyna saphirina KARSCH, 1894, Ent. Nachr., XX, p. 220. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 166, Pl. xxxvii.

I refer to this species a series of eighteen males and fourteen females, taken at Medje, a few in April, the rest from July to September.

(252) 6. ***Diestogyna melanops*** Aurivillius

Diestogyna melanops AURIVILLIUS, 1897, Öfvers. Sv. Vet.-Akad. Förh., LIV, 5, p. 282; 1912, Seitz, Gross-Schmett., XIII, p. 168, Pl. xxxviii.

This species is represented in the collection by three males, all taken at Medje, one in April, one in August, and one in September.

(253) 7. **Diestogyna doriclea infusca** (Capronnier)

Euriphene (sic) infusca CAPRONNIER, 1889, Ann. Soc. Ent. Belgique, XXXIII, Bull., p. cxlv.

Diestogyna doriclea infusca AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 168.

This variety of *D. doriclea* (Drury) (cf. Ill. Exot. Ent., 1782, III, p. 50, Pl. xxxvi, figs. 5, 6), which occurs sporadically in collections which we have received from the tropical western coast, appears to be, as Aurivillius has already pointed out, the dominant form in the interior of the Congo Basin. It is represented in the collection by eight males and two females, all taken at Medje, a couple in April, the rest in August and September 1910.

(254) 8. **Diestogyna amaranta** Karsch

Diestogyna amaranta KARSCH, 1894, Berl. Ent. Zeit., XIX, p. 6, fig. 2. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 169, Pl. xxxviii f.

There are two males of this species which agree perfectly with the figure and description given by Karsch. They were both captured at Medje in September 1910.

(255) 9. **Diestogyna gambiæ** (Feisthamel)

Euryphene gambiæ FEISTHAMEL, 1850, Ann. Soc. Ent. France, (2) VIII, p. 251, Pl. ix, fig. 2.

Diestogyna gambiæ AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 169, Pl. xxxviii a.

Of this well-known and widely distributed species there are eight males and nine females, all taken at Medje, a pair in April, the rest in August 1910.

(256) 10. **Diestogyna atossa** (Hewitson)

Euryphene atossa HEWITSON, 1865, Exot. Butt., III, *Euryphene*, Pl. iii, figs. 1, 2, ♀. *Aterica amaxia* HEWITSON, 1865, Exot. Butt., III, *Aterica* and *Euryphene*, Pl. vi, figs. 8, 9, ♀.

Diestogyna atossa AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 169, Pl. xxxviii, b.

Of this familiar species there are five males and three females, all taken at Medje in August and September.

In addition to the ten foregoing species which are referable to forms already known and described, I find in the collection two specimens which have given me a good deal of trouble and which I can not refer to any species the descriptions and figures of which are known to me.

They belong apparently to what Dr. Aurivillius designates as his "Second Group" in this great genus. While I dislike very much to found a specific description upon single individuals, I nevertheless am constrained to do so in this case, as the insects are so evidently distinct from all other forms which have been described.

(257)

11. ***Diestogyna kahli***, new species

Plate XII, Figure 13, ♂

♂. Closely allied to *D. amaranta* Karsch, but having the hind wing somewhat narrower than in the species described by Karsch, and differing totally in the distribution and shade of the blue color on the upper side of the wings. In *D. amaranta* the blue color is evenly distributed over the entire surface of the fore wing and shows in certain lights a tendency to play into green. In *D. kahli* the blue of the wings on the upper side is deep pavonine blue, or intense cobalt, confined on the anterior wing to a broad patch above the lower margin near the lower angle, and not invading the cell; the cell and the remainder of the wing being dark velvety brown. There is also in the type no indication of the presence of the small subapical pale dots which are shown in the figure given by Karsch as characterizing his species. On the under side of the wings there is a resemblance in the markings to those of *amaranta* Karsch, and *mawamba* Bethune-Baker, but in *D. kahli* the outer area of the fore wing is much lighter and is sharply contrasted with the darker basal area which sends forth tooth-like projections in a regular series on each nervule from the costa to vein 2. The hind wing is marked very much as in *amaranta*, but is richer and redder in tone, the basal and inner areas being laved with dark maroon. The fringes of both the fore and the hind wings are narrowly pure white on the upper sides, not so conspicuous on the lower side. In *D. amaranta* Karsch the white border of the hind wing seems to be restricted to small white dots at the middle of each interspace. Expanse, 45 mm.

The type, which is unique, was taken at Medje and is in The American Museum of Natural History.

I take pleasure in naming this beautiful species after my friend and associate, Mr. Hugo Kahl, who has assisted me in arranging the collection upon which I am reporting.

(258)

12. ***Diestogyna rotundata***, new species

Plate XII, Figure 14, ♂

♂. This species in the matter of form is distinguished by the relatively great expanse of the hind wings, which, in their rounded outline and breadth, suggest the outlines of the females of this genus, rather than the males. The species in the outline of the wings comes nearer *D. tadema* in this respect, but the wings are relatively much broader and more fully rounded in outline than is the case even in that species. The wings on the upper side are brown, shot with pale lilacine blue over most of the surface of the primaries and upon the inner half of the secondaries, which have the costal area very broadly pale brown, shading on the costal margin into pale fuscous. The inner margin, as far as vein 1, is also fuscous. In the fore wings there are the usual

dark transverse markings in the cell. An obscure dark band runs from the costa to the end of the cell outwardly and downwardly to near the lower angle of the cell, and then passes perpendicularly downward toward the inner margin, which it does not reach, being lost in the general ground-color of the wing. This dark band is followed outwardly by a paler bluish band succeeded by a dark shade extending from the costa toward the inner margin. Beyond this there are five or six light points, one on each interspace, these points are succeeded externally by a series of dark quadrate spots on the interspaces. There is a deep, dark brown submarginal band running evenly from just before the apex to the lower angle of the wing. The fringes are concolorous. The hind wing on the upper side is traversed by three bands of darker color, which are most strongly accentuated on the inner half of the wing and which fade out toward the costal area. The dark submarginal band which is found on the primaries reappears upon the secondaries, being most intense opposite the end of the cell. The wings on the lower side are pale reddish brown, variegated with darker brown spots and bands. The fore wings are paler in color than the hind wings; the basal area is pale chestnut-brown with an oval brown spot near the base of the cell and two transverse, quite broad, dark spots, one near the middle of the cell and the other at its end. All of these spots in the cell are defined outwardly by very narrow pale lines. A very pale light transverse band marks the division between the darker basal area and the lighter outer area of the wing. The series of small light-colored points near the apex of the wing on the upper side reappear on the lower side, where they are much more distinct than on the upper side, and are accentuated externally by deep brown shades. The submarginal band of the upper side appears quite faintly on the lower side, and the outer margin from vein 2 to vein 7 is laved with dark chestnut-brown.

The hind wings on the lower side have the basal area darker than is the case in the fore wing, and are distinctly defined externally by a band of pale lilac. There is a minute dark spot in the middle of the cell, pupiled with lighter color and surrounded by yellowish scales. The outer half of the hind wing is more or less deep chestnut-brown, with a regular evenly curved row of six sharply defined white spots located at the middle of the interspaces from just behind the costa, terminating before vein 2. The submarginal dark band of the secondaries reappears on the lower side in a series of dark lunulate markings parallel to the outer border but not quite reaching the inner border.

The palpi on the upper side are dark, on the lower side pale brown. The thorax and the abdomen on the lower side are pale brownish white; on the upper side they are dark brown.

The lower side of the wings recalls in some respects the markings of the under side of the species named *umbrina* by Aurivillius, but in the outline of the wings, the color and shape of the markings, it is very different, and assuming that the figure of the species given by Aurivillius in Seitz's work is adequate, I cannot reconcile myself at all to refer the insect before me to that species. Expanse, 53 mm.

The type, which is unique, was taken at Medje. It is deposited in The American Museum of Natural History.

EURYPHURA Staudinger

This genus is but poorly represented in the collection, as is usually the case, for the insects do not appear to be common. It is a difficult genus, both because of the dissimilarity of the sexes and the variability of the females, which are polymorphic in some species.

(259) 1. **Euryphura achlys** (Hopffer)

Harma achlys HOIFFER, 1862, Peters, Reise n. Mossambique, Ins., p. 390, Pl. xxii, figs. 5, 6.

There is one female, taken at Niangara in November, which agrees well with the figure given by Hopffer, and with specimens in my collection from Zanzibar.

(260) 2. **Euryphura chalcis** (Felder)

Harma chalcis FELDER, 1860, Wien. Ent. Monatschr., IV, p. 234.

Euryphura chalcis AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 157, Pl. xxxvii.

To this species I refer four males and an aberrant female. One male and the female were taken at Medje in August, the other three males were captured at Niangara in November.

(261) 3. **Euryphura plautilla albofasciata** Staudinger

Euryphura albofasciata STAUDINGER, 1896, Iris, IX, p. 213.

I refer to this form a single female taken at Bafwabaka, January 7, 1910. It agrees quite thoroughly with the description given by Staudinger.

CYMOTHOË Hübner

The genus *Cymothoë* is characteristic of the hot, wooded lands of the Ethiopian subregion, to which it is confined. It offers a number of difficulties to the student because of the great dissimilarity of the sexes in most of the species and the further fact that many species in the female sex are known to be polymorphic. Until the test of breeding the various species shall have been made, there will necessarily remain a measure of uncertainty as to the true relationship of various forms, some of which have been already named and described in one or the other sex and some of which prudent students have been holding in the hope of obtaining more light.

The genus is rich in species, some of which are among the most beautiful insects found in the region they inhabit. The American Museum Congo Expedition returned good series of a number of the commoner forms and, in addition, three species which I believe hitherto undescribed, the males of *C. angulifascia* Aurivillius and of *C. aramis* (Hewitson), of which hitherto only the females have been known, and other material which helps to confirm conclusions, already reached by the writer with the help of collections made for him in other parts of the general region, which in some respects are at variance with the pub-

lished opinions of some of his friends, among them Dr. Aurivillius, who has given us in Seitz, 'Gross-Schmetterlinge', Vol. XIII, the latest revision of the genus. These things will be touched upon in what I shall have to say in regard to the several species in the following pages.

(262) 1. **Cymothoë theobene** (Doubleday and Hewitson)

Harma theobene DOUBLEDAY AND HEWITSON, 1850, Gen. Diurn. Lep., II, Pl. XL, fig. 3.
Cymothoë theobene AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 144, Pl. xxxivd.

There are one hundred males and twenty-four females of this species in the collection. Most of them were taken at Medje, a few in April, the rest from June to October. A number are from Niangara, captured in November, and there are other individuals labelled as coming from Ngayu, Gamangui, and Munie Katoto.

This is one of the commonest species of the genus, and almost every collection from tropical Africa contains at least a few examples. There is considerable variation in the size and marking of individuals, especially in the case of the females. I find, however, no female as large and as darkly colored as some I have from the Ogové River, the outer third of the wings in these specimens from the Congo being paler and the dark spots smaller in size than is the case with the material from nearer the western coast. There are several male specimens from Niangara and one from Medje which come near to the form named *C. blassi* by Weymer in which the transverse light band on the primaries of the males is not sharply defined outwardly near the costa but fades insensibly into the general ground-color. The form is scarcely worthy of a varietal name, though it can easily be discriminated and, in fact, is the prevalent form on the eastern coast, whence I received a series some years ago, which were collected for me by the late William Doherty on the hills back of Mombasa.

(263) 2. **Cymothoë reinholdi** (Plötz)

Harma reinholdi PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 194 (♂).
Cymothoë reinholdi AURIVILLIUS, 1894, Ent. Tidskr., XV, p. 305 (♀); 1898, Rhop. Æthiop., p. 211, Pl. iv, figs. 6, 7 (♂ and ♀).

There are three males and one female, all taken at Medje, a pair in July and two males in August.

(264) 3. **Cymothoë theodosia** Staudinger

Cymothoë theodosia STAUDINGER, 1889, Stett. Ent. Zeit., L, p. 416. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 146, Pl. xxxvii, ♀.

Of this beautiful insect, stated by Staudinger to be a local race of *C. beckeri* Herrich-Schäffer, there are thirty-two males and eleven fe-

males. They were all taken at Medje, except a pair caught at Munie Katoto and a male taken at Risimu in September 1909. One rather dwarfed specimen is recorded as taken in April, the rest from July to September, but by far the larger number in the month of August. The insect is not a race of *C. beckeri* Herrich-Schäffer, but undoubtedly a valid species.

(265) 4. ***Cymothoë confusa*** Aurivillius

Cymothoë confusa AURIVILLIUS, 1887, Öfvers. Sv. Vet.-Akad. Förh., XLIV, p. 310; 1912, Seitz, Gross-Schmett., p. 146, Pls. xxxiva, b, and xxxvii.

One male taken at Niangara, November 20, 1910.

(266) 5. ***Cymothoë colmanti*** Aurivillius

Cymothoë colmanti AURIVILLIUS, 1898, Ent. Tidskr., XIX, p. 180, fig. 6; 1912, Seitz, Gross-Schmett., XIII, p. 147.

A single male captured at Gamangui, February 4, 1910, is referred to this species. It corresponds very closely to the description and figure given by Aurivillius, and the very slight differences may be due to the fact that the specimen is a trifle worn and the marginal borders of the wings are not quite as distinctly marked as in the published figure.

(267) 6. ***Cymothoë cyclades*** (Ward)

Plate VII, Figure 6, ♂

Harma cyclades WARD, 1871, Ent. Mo. Mag., VIII, p. 119; 1874, Afr. Lep., p. 14, Pl. XI, figs. 4, 5.

Cymothoë cyclades AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 147, Pl. xxxivb, ♂.

One male taken at Medje, July 8, 1910. I refer this specimen to Ward's species in spite of some minor, apparently individual, differences. It agrees very closely with specimens which I have from the tropical western coast and which I do not hesitate to identify with *C. cyclades*.

(268) 7. ***Cymothoë diphysia*** Karsch

Plate VI, Figure 6, ♀

Cymothoë diphysia KARSCH, 1894, Ent. Nachr., XX, p. 211. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 149, Pl. xxxva, ♂.

Ten males caught at Medje, one in April, the rest in July and August, and one female, which I believe I am right in associating with the males, though it does not quite agree with the brief characterization of the female given by Aurivillius (*loc. cit.*). As no figure of the female of *C. diphysia* has thus far been published and all we know about

that sex is contained in the couple of lines printed by Aurivillius, it seems to me fitting that I should give a figure of the insect which I have determined to be the female of this species. The female assigned to *C. diphyia* by Karsch is unmistakably the female of *C. theodosia*, as has already been pointed out by Aurivillius. The species is closely related to *C. fumana* (Westwood). It differs in the male sex in having the outer third of the fore wing on the upper side tinged with ochreous (in *C. fumana* the apical third is creamy white) and in having the outline of the dark inner basal area of the fore wing straight or concave costad, while in *C. fumana* this area is strongly convex on the margin toward the costa.

(269)

8. ***Cymothoë herminia*** Grose-Smith

Plate VIII: Figure 1, ♂; Figure 4, ♀

Cymothoë herminia GROSE-SMITH, 1887, Ann. Mag. Nat. Hist., (5) XIX, p. 63.
AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 149, Pl. xxxva, ♂.

There are eighteen males of this species, all taken at Medje in July and August. With these I associate a female, which I believe to be that sex of the species, and which I cause to be figured, as no description or figure of the female has heretofore been published.

(270)

8a. ***Cymothoë herminia poënsis***, new variety

Plate VIII, Figure 2, ♂

All the specimens of *C. herminia* taken by the American Museum Congo Expedition conform to the figures and descriptions of this species, which have been published by Grose-Smith and by Aurivillius, and are typical, having the dark band which outwardly defines the pale middle band of the primaries incomplete at its upper extremity, thus leaving the costal margin broadly of the same color as the middle of the wing, except at the tip, on which the outer marginal border is continued. There is, however, in my possession a male specimen of this species which was taken on Fernando Po for me by the late Dr. A. C. Good, in which the black band above mentioned extends all the way to the costa, and in which the dark submarginal markings are heavier than in the specimens from the Congo upon which I am reporting. To this varietal (insular) form I propose to give the name *poënsis*, and take the opportunity to figure it. Type in Holland Collection, Carnegie Museum.

(271)

9. *Cymothoë langi*, new species

Plate VIII: Figure 7, ♂; Figure 8, ♀

♂. This species, which is closely allied to *C. weymeri*, *C. staudingeri*, and *C. johnstoni*, is easily distinguished from all of them by the fact that the light sagittate markings which cap internally the black dart-shaped submarginal spots on the interspaces are entirely suppressed on the hind wings, and also on the fore wings except in space 2, where the lower limb of one of these markings survives as a narrow line pointing downwardly and outwardly, and on space 5, where there is an oblong light spot, slightly bifid at its outer extremity, and on space 6, where there is a faint linear streak of lighter scales on the dark ground of the broad outer margin. On the under side the mesial white band, which is much whiter than on the upper side, is narrower, and tapers from the costa of the fore wing to nearly the anal angle of the hind wing, being sharply defined outwardly by a thin almost straight dark line. Expanse, 60–63 mm.

♀. With the males I associate, I believe correctly, a female, which rather closely resembles that sex of *C. hewitsoni* Staudinger. It differs from *C. hewitsoni* ♀ in not having the white bar at the outer end of the cell of the fore wing and in not having the small black bar which occurs in *C. hewitsoni* at the end of the cell of the hind wing. On the under side a difference presents itself in the fact that the inner dark area is defined outwardly by a straight line in *C. langi*, while in *C. hewitsoni* it is inwardly curved or concave on the secondaries, and at the point where this dark area terminates abruptly on the lighter ground of the fore wings in *C. hewitsoni* there is in *C. langi* a thin dark line, which extends forward until it reaches the costal margin, about one-third of the distance from the apex of the fore wing. Expanse: ♂, 60 mm.; ♀, 70 mm.

The type ♂, and allotype ♀, are in The American Museum of Natural History, together with a number of male paratypes. There are also several male paratypes in the Holland Collection in the Carnegie Museum. Type locality, Medje.

The American Museum Congo Expedition took eleven males and the single female above described, one male having been captured at Gamangui in June, the female, which is the allotype, at Medje in June, and all the other specimens at the latter place in July and August. We also have two males taken by Mr. A. I. Good at Lolodorf, Cameroon, in November 1914.

(272)

10. *Cymothoë staudingeri* Aurivillius*Cymothoë staudingeri* AURIVILLIUS, 1898, Rhop. Æthiop., p. 212, Pl. iv, fig. 5, ♂.

Two somewhat defective males which I refer without doubt to this species, in spite of the fact that the light mesial band tends to coalesce with the light sagittate submarginal markings about the middle of the fore wing, the dark lunate lines which define these inwardly in the present specimens being fainter than in the figure given by the author of the species. In all other respects the specimens agree perfectly, both on the upper and lower sides, with the descriptions and figures of Aurivillius. The specimens were taken at Medje, one in July, and the other in September.

(273) 11. **Cymothoë jodutta** (Westwood)

Harma jodutta WESTWOOD, 1850, Gen. Diurn. Lep., p. 289.

Harma cyriades WARD, 1871, Ent. Mo. Mag., VIII, p. 120.

Cymothoë aralus MABILLE, 1890, Ann. Soc. Ent. France, (6) X, p. 22, Pl. II, fig. 8.

Cymothoë jodutta AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 152, Pl. xxxvc, ♂.

Four males and one female taken at Medje in August and September, and one female caught at Niangara in November.

(274) 12. **Cymothoë ehmkkei** Dewitz

Cymothoë ehmkkei DEWITZ, 1886, Berl. Ent. Zeit., XXX, p. 302, Pl. VII, figs. 3, 4.

AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 152, Pl. xxxvd, ♂, ♀.

Of this form, which is no doubt merely a local race of *C. jodutta*, there are twenty-two males and six females. All were captured at Medje from May to September, except one male which was taken at Niangara in November.

(275) 13. **Cymothoë capellides**, new species

Plate VIII: Figure 6, *C. capella* Ward, ♂; Figure 5, *C. capellides* Holland, ♂

Allied to *C. capella* Ward, but smaller in size, and easily discriminated from the latter species by the paler gray of the basal areas of both wings on the upper side and the outward extension of this darker area on both wings as well as by the presence of the characteristic dark markings of the genus in the cell and beyond it on the upper side of the fore wings, these dark markings being suppressed in *C. capella*, the end of the cell and the apical third of the fore wing in Ward's species being immaculate, except for the marginal series of spots. Expanse, ♂, 50-55 mm.

There are four males in the collection, all taken at Medje, one in May, the others in August. They show no variation among themselves. The type is in The American Museum of Natural History. Paratypes are in the Holland Collection in the Carnegie Museum.

To make the distinction between the two species plain to the student I give a figure of a typical male specimen of *C. capella* Ward and of the type of the new species.

(276) 14. **Cymothoë cænis** (Drury)

Plate IX: Figure 3, *C. conformis* Aurivillius, ♀; Figure 7, *C. rubida* Holland, ♀

Papilio cænis DRURY, 1773, Ill. Exot. Ent., II, p. 33, Pl. XIX, figs. 1, 2.

Cymothoë cænis AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 151, Pl. xxxvc, ♂, ♀.

There are fifty-six males and three females in the collection. Two of the females belong to the form named *conformis* by Aurivillius and one to the reddish form which I described many years ago in Psyche, VI, p. 215, without giving it a name. *C. cænis* was bred for me in large numbers at Kangvé in the valley of the Ogové River and later at

Efulen in Cameroon by Dr. A. C. Good. The female is polymorphic, and at least four well-defined varieties in this sex are known. The commonest is that named *althea* by Cramer. The prevalent color of this variety is black, with the wings crossed by a white mesial band. Closely allied to it is the form called *euthalioides* by Kirby, in which the white mesial band is broader and more irregular than in *althea*. Our plate gives accurate representations of the other two varieties to which reference has been made and a verbal description is not called for. I take pleasure in designating the single specimen obtained by the American Museum Congo Expedition at Medje as the type of *C. cænis* form **rubida**, new form, ♀, but have selected a more perfect specimen from my own collection taken at Kangvé for representation on the plate. I have many *ex larva*.

The specimens of *C. cænis* brought back by the Expedition were almost all taken at Medje from June to September 1910, but there are a couple ticketed as taken at Gamangui in June, one is labelled as from Munie Katoto, September 1909, a few from Avakubi caught in October of that same year, and several from Niangara captured in November 1910.

(277)

15. *Cymothoë adelina* (Hewitson)

Plate VIII: Figure 9, ♂; Figure 10, ♀

Harma adelina HEWITSON, 1869, Exot. Butt., IV, *Harma*, Pl. III, figs. 9, 11, ♀.*(Non Cymothoë adelina, ♂)* AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 152, Pl. xxxvd.

Aurivillius in his 'Lepidoptera Æthiopica,' p. 215, makes *C. (Harma) altisidora* (Hewitson) a synonym of *C. adelina*, regarding the former as being the male of the latter, which has priority. In Seitz, Gross-Schmetterlinge, XIII, Pl. xxxvd, he depicts a male of the following species as that sex of *adelina*, and also gives a figure of a female which certainly does not conform to Hewitson's type of *C. adelina*. However, this species is wonderfully variable in the female sex, as I have pointed out. I am convinced that Dr. Aurivillius is in error. I give on Plate VIII, fig. 9, a representation of the true male of *C. adelina* (Hewitson). It is an insect closely allied to *C. cænis*, from which it consistently differs in always having the ground-color of the wings on the upper side deep Naples yellow and not white or creamy white, as is the case with *C. cænis*. With some hundreds of *C. cænis* before me as I write, and a good series of *C. adelina* both males and females, the difference is plainly visible and strikingly constant. The females of *C. adelina* are exceedingly variable in the ground-color or tint of the wings, although the black spots

and bands are quite uniform in all specimens I have seen, and I have examined many scores of this sex. I do not possess a female as light in color as the one figured by Aurivillius, but some which come very near to it. Most specimens are some shade of orange-red, from that passing into dark sienna and even deep umber. Two bred specimens received some years ago from Dr. A. C. Good are almost black, the maculation being almost lost on the darkly colored ground of the wings. With these dark female specimens there emerged some females which are much lighter.

The specimens belonging to the collection upon which I am reporting were taken at Medje from June to September, except one pair, which was taken at Niangara in November.

(278) 16. **Cymothoë angulifascia** Aurivillius

Plate X, Figure 9, ♂

Cymothoë angulifascia AURIVILLIUS, 1897, Öfvers. Sv. Vet.-Akad. Förh., LIV, 5, p. 285, fig. 3, ♀; 1912, Seitz, Gross-Schmett., XIII, p. 153, Pl. xxxvib, ♀.

This species, of which hitherto only the female has been recognized, is represented in the collection before me by eight males and two females. I also have a fine pair collected for me more than twenty years ago by Dr. A. C. Good at Kangvé on the Ogové River. The females agree perfectly with the description and figures given by Dr. Aurivillius. The males, by the markings on the under side of the wings, disclose their specific identity with the females. Aurivillius has provisionally placed *C. angulifascia* in the same group with *C. sangaris* (Godart) and its allies. Now that we know the male sex of the species, it seems to me better to put it into what Aurivillius terms the "*Cænis* Group."

I do not think it necessary to give a detailed verbal description of the male, as the excellent figure on the plate will enable any one to recognize the insect. It is, in fact, so far as the wings show, almost exactly like the male *C. adelina* in Seitz, XIII, Pl. xxxvd, but the markings on the under side agree with those of *C. angulifascia* Aurivillius and are reddish throughout.

The specimens were all captured at Medje, three of the males in April, the rest from July to September. One of the females was caught in August, the other in September.

(279) 17. **Cymothoë sangaris** (Godart)

Nymphalis sangaris GODART, 1823, Enc. Méth., IX, p. 384, ♂.

Harma uselda HEWITSON, 1869, Exot. Butt., IV, *Harma*, Pl. III, figs. 13, 14, ♀.

Two male specimens, one taken at Munie Katoto, September 10, 1909, the other at Medje, June 10, 1910.

(280) 18. **Cymothoë aramis** (Hewitson)

Plate X: Figure 1, ♂; Figure 2, ♀

Euryphene aramis HEWITSON, 1865, Exot. Butt., III, *Euryphene*, Pl. IV, figs. 16, 17, ♀.*Adolias fulvomacula* CAPRONNIER, 1889, Ann. Soc. Ent. Belgique, XXXIII, Bull., p. cxliv, ♀.*Cymothoë aramis* AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 153, Pl. xxxvic, ♀.

This species has hitherto only been known by the female sex, except by myself. For many years a series of males has been standing in my cabinets awaiting the coming of a favorable opportunity to describe them, which now fortunately arrives. Instead, however, of giving a long verbal description, I shall rely more upon the figure on the plate to aid the student in the identification of the species. The male is in outline and in the shape and location of the markings very much like *C. anatorgis* (Hewitson) (see Plate X, fig. 7, ♂; fig. 8, ♀; specimens in Holland Coll.) but may be discriminated from that species at a glance by the quite different color of the upper side of the wings. In *C. anatorgis* the ground-color of the wings is deep blood-red, as in *C. sangaris*; in *aramis* the ground-color is dark ochraceous, the tint being very much the same as the ground-color of the wings in *C. lurida* or *C. cyclades*.

The American Museum Congo Expedition brought back two males, which were taken at Medje, September 27, 1910. I have a series of males and females taken at Kangvé on the Ogové River more than twenty years ago.

(281) 19. **Cymothoë coccinata** (Hewitson)*Harma coccinata* HEWITSON, 1874, Exot. Butt., V, *Harma*, Pl. VI, figs. 24-26, ♂.*Cymothoë coccinata* AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, Pl. xxxvic, ♂; xxxvid, ♀.

Of this species the Expedition returned seventy-four males, all captured at Medje, except two which are labelled as taken at Gamangui in June. A few were taken in April, the remainder were caught from June to September.

(282) 20. **Cymothoë Reginæ-Elizabethæ**, new species

Plate X: Figure 5, ♂, type; Figure 6, ♀, allotype

♂. The males are without the light spot about the middle of the costa of the secondaries on the upper side, which is a marked feature in *C. aramis*, *anatorgis*, and *coccinata*. The edge of the costa towards the base is simply narrowly laved with pale yellowish, which cannot be seen except by parting the fore and hind wings. The prevalent color of the upper side of the wings is warm vermillion, somewhat paler than in the case of *C. coccinata*, and much lighter in tone than in *C. sangaris* and *C. ogova*.

The wings are crenulate, slightly concave about the middle of the margin of the primaries and truncated at their lower angle thus resembling in outline the wings of *C. sangaris*, which is a much larger species. The hind wings are somewhat produced at the anal angle, but not more so than is the case in *C. aramis* and *C. anatorgis*. Both wings are defined outwardly by very fine black lines, except on their inner margins; both have a submarginal series of quite small black dots on the interspaces, those of the fore wing tending in a number of specimens before me to become obsolete, those on the hind wings, which are larger and more conspicuous than those of the fore wings, in some specimens tending to become arcuate or sagittate toward the anal angle.

♀. The female in general appearance is not unlike the female of *C. ogova* (Plötz), but the white transverse band on the upper side of the secondaries lies much nearer the base than in that species, and the dark basal area, which succeeds it inwardly is correspondingly reduced in extent. The differences between the two sexes as shown by the upper side of the wings is clearly revealed in the figures given upon Plate X.

Expanse, ♂, 52 mm.; ♀, 65 mm.

There are thirteen males and two females of this beautiful species in the collection. They were all taken at Medje (type locality) in July and August, except one male which is labelled as caught at Niangara in November.

On the occasion of the visit to the Carnegie Institute by their Majesties, the King and the Queen of the Belgians, and of His Royal Highness, the Crown Prince Leopold, Duke of Brabant, on October 23, 1919, I had the honor of showing to Her Majesty, the Queen, a proof of Plate X of this paper, which was lying upon my desk. I requested Her Majesty to accord to me the privilege of naming this lovely butterfly in her honor, and she most graciously acceded to my request, expressing pleasure at the thought. It therefore bears the name of the Queen of the Belgians.

The types are in The American Museum of Natural History; paratypes in the Holland Collection.

(283) 21. **Cymothoë ogova** (Plötz)

Plate X: Figure 3, ♂; Figure 4, ♀

Härma ogova PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 193, ♀.

Cymothoë ogova AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 154, Pl. xxxvib, ♀.

The male of this species has never hitherto been described or figured. I possess a series of eighteen males and twenty-two females bred for me more than twenty years ago by Dr. A. C. Good at Kangvé on the Ogové River. On Plate X, Fig. 3, I give a figure of the upper side of the wings of the male and in Fig. 4 a representation of the wings of the female. The male has a small shining white spot, girdled with black, at the very base

of the hind wing, where it joins the body. In the general color of the wings it closely approaches *C. sangaris*, from which, however, it may at once be discriminated by the different form of the outline of the primaries, which are not as much excavated on the margin and truncated at the lower angle as is the case in *C. sangaris*. In the fine suite of females in my possession I detect some variation, and one female has the apical third of the wing not white, but reddish. For this slight variety the name **rubescens** may be proposed, if such things deserve to be discriminated nomenclatorially. Expanse, ♂, 52–60 mm.; ♀, 60–75 mm.

Messrs. Lang and Chapin did not take any specimens of this species, but I atone for the lack by donating to The American Museum of Natural History a pair taken from my cabinet. I have no doubt that it occurs on the Upper Congo, as well as in the valley of the Ogové.

EUPTERA Staudinger

(284)

1. **Euptera pluto** (Ward)

Euryphene pluto WARD, 1873, Ent. Mo. Mag., X, p. 59.

One male taken at Medje the first week in August.

PSEUDATHYMA Staudinger

(285)

1. **Pseudathyma sibyllina** (Staudinger)

Pseudacræa sibyllina STAUDINGER, 1890, Iris, III, p. 338, Pl. III, fig. 8.

Pseudathyma sibyllina STAUDINGER, 1891, Iris, IV, p. 90. Aurivillius, 1912, Seitz, Gross-Schmett., XIII, p. 156, Pl. XLIXe.

One male taken at Medje the first week in August 1910.

The specimen differs slightly from the descriptions and figures of this species which have been given by both Staudinger and Aurivillius. It would, however, be a mistake to attempt to describe it as a different species without more material at hand. There is before me a good specimen of *Pseudathyma neptidina* from the Ogové Valley, which the specimen somewhat closely resembles on the under side, but the absence on both sides of the long white bar in the cell of the fore wing, which is one of the diacritical marks of *P. neptidina*, forces me to assign it to *P. sibyllina*, with which it agrees better than with any other species which has been described. The specimens representing this genus in the collections of the world are thus far very few, and, beside the individual I am reporting upon and a few in my own collection, there are no others in America, and only half a dozen in the museums of Europe. No doubt the insect is common enough, but its mimetic resemblance to other forms which are so common as to make them almost unworthy of notice by collectors, has led to its having been overlooked.

EUXANTHE Hübner(286) 1. **Euxanthe trajanus** (Ward)

Godartia trajanus WARD, 1871, Ent. Mo. Mag., VIII, p. 36.

Euxanthe trajanus AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 123, Pl. xxixf.

One male, Medje, September 1910.

(287) 2. **Euxanthe ansellica** (Butler)

Godartia ansellica BUTLER, 1870, Trans. Ent. Soc. London, p. 525.

Euxanthe ansellica AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 124, Pl. xxixf,
by error on plate there given as *eurinome*.

Four males, one taken at Bafwabaka, December 3; the others captured at Medje, one in each of the months, May, August, and September.

(288) 3. **Euxanthe crossleyi** (Ward)

Godartia crossleyi WARD, 1871, Ent. Mo. Mag., VIII, p. 36.

Euxanthe crossleyi AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 124.

Three males caught at Medje, July 1910.

CHARAXES Ochseneheimer(289) 1. **Charaxes epijasius** Reiche

Charaxes epijasius REICHE, 1849, in Ferret and Galinier, Voyage en Abyssinie, Entomologie, p. 469, Pl. xxxii, figs. 1, 2. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 126, Pl. xxxa.

The species is represented by two males, one taken at Faradje, and simply ticketed "1911-1912," the other labelled "Niangara, November 20-25, 1910." The latter is the more perfect specimen.

This is the first record of this species from the Belgian Congo and extends the known range. It has been recorded from Senegal, Nigeria, and the Togo country and eastward to Abyssinia and Unyoro.

(290) 2. **Charaxes brutus angustus** Rothschild and Jordan

Papilio brutus CRAMER, 1779, Pap. Exot., III, p. 82, Pl. ccxli, figs. E, F.

Charaxes brutus angustus ROTHSCHILD AND JORDAN, 1900, Nov. Zool., VII, p. 432.

Charaxes angustus AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 126, Pl. xxxa.

Without exception the specimens before me belong to the form to which Rothschild and Jordan have given the above name. This is also true of all the specimens which I have received from Cameroon and the valley of the Ogové River. It is the prevailing form in the hot, wooded lands of the central Ethiopian region, and is easily distinguished from typical *C. brutus* from Sierra Leone and adjacent parts.

The collection contains ninety-six males, of which twenty-one are not as yet expanded. With the exception of one example taken at Bafwaboli, September 11, and another taken at Bafwasende, September 27, 1909, all of the specimens were captured at Medje, a few in the first week in April, the rest from early in July to about the middle of September.

(291) 3. **Charaxes castor** (Cramer)

Papilio castor CRAMER, 1775, Pap. Exot., I, p. 61, Pl. xxxvii, figs. C, D.

Charaxes castor AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 127, Pl. xxxa.

There are ten males of this well-known insect belonging to the characteristic West African form, which has the basal spots of the under side black instead of chestnut. Professor Aurivillius has proposed the subspecific name *C. godarti* for this form. One specimen was captured at Niangara on November 8, 1910. The other examples were all taken at Medje, two in the month of May, the rest in July and August.

(292) 4. **Charaxes pollux** (Cramer)

Papilio pollux CRAMER, 1775, Pap. Exot., I, p. 61, Pl. xxxvii, figs. E, F.

Charaxes pollux AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 127, Pl. xxxb.

One male taken at Bafwasende, October 23, 1909.

(293) 5. **Charaxes eudoxus** (Drury)

Papilio eudoxus DRURY, 1782, Ill. Exot. Ent., III, p. 44, Pl. xxxiii, figs. 1, 4.

Charaxes eudoxus AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 128.

There are three males which I refer to this species. They were taken at Medje, one in May, one in July, and another in August. They are absolutely alike and may be distinguished at once from the following species by the great reduction in width of the silvery bands on the lower side of the hind wings, as well as by the prolongation costad of the median fulvous band of the fore wings on the upper side.

The species is rare in collections.

(294) 6. **Charaxes mechowii** Rothschild and Jordan

Charaxes eudoxus mechowii ROTHSCHILD AND JORDAN, 1900, Nov. Zool., VII, p. 419; 1899, loc. cit., VI, Pl. viii, fig. 3.

Charaxes mechowii AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 128, Pl. xxxc, name *eudoxus* on plate an error.

There are seven males of this species, agreeing throughout with others which we have from Cameroon. The figure given by Aurivillius (cf. Seitz, 'Die Gross-Schmetterlinge des Afrikanischen Faunengebietes,' Pl. xxx) does not agree with the specimens before me in not having the

dark markings of the outer angle of the fore wings accentuated, as they are in these specimens, by a short dark submarginal bar extending from vein 1 and vein 3, and defining the median band outwardly.

Like the preceding form this is a rare species, the female of which has never, I believe, been found or described.

(295) 7. **Charaxes etesipe** (Godart)

Nymphalis etesipe GODART, 1823, Enc. Méth., IX, p. 355.

Charaxes etesipe AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 128, Pl. xxxc.

This seems to be a very common species, judging from the number of specimens taken. Curiously, all of them are males. There are one hundred and thirty-three examples, all taken at Medje, a number in the early part of April, the rest from the beginning of July to the early part of September.

(296) 8. **Charaxes protoclea** Feisthamel

Charaxes protoclea FEISTHAMEL, 1850, Ann. Soc. Ent. France, (2) VIII, p. 260.

Charaxes æson HERRICH-SCHÄFFER, 1850, Aussereur. Schmett., figs. 9, 10, ♀.

Charaxes protoclea AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 129, Pl. xxxiia.

The collection includes one hundred and twelve males and four females. One male is labelled "Niangara, November 8-9, 1910," another is from Faradje, captured in 1911. All the rest were taken at Medje, a number early in April, the remainder from the beginning of July to the middle of September.

(297) 8a. **Charaxes protoclea marginepunctata**, new variety

A number of specimens of this species have a well-developed series of submarginal black spots located on the cadmium-orange border of the hind wings. The vast majority of specimens of *C. protoclea* have only one such spot on the interspace between veins 7 and 8. For this form with the submarginal spots I propose the above varietal name. The type is in the Holland Collection from Gaboon, paratypes are in the present collection, belonging to The American Museum of Natural History, and in the Holland Collection from various localities in tropical Africa.

(298) 9. **Charaxes cynthia** Butler

Charaxes cynthia BUTLER, 1865, Proc. Zool. Soc. London, p. 626, Pl. xxxvii, fig. 3.

AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 130, Pl. xxxia.

Of this species there are in the collection seven unexpanded and thirty-four expanded males. They were collected at Medje, a few in April, the rest from the end of June to the beginning of September.

(299) 10. **Charaxes lucretius** (Cramer)

Papilio lucretius CRAMER, 1777, Pap. Exot., I, p. 129, Pl. LXXXII, figs. E, F.

Charaxes lucretius AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 130, Pl. xxxd.

Of this well-known and common species there are before me in the collection forty-two males. One is labelled "Ngayu, December 14, 1909," another "Niagara, November 20-25, 1910," and a third "Bafwasende, September 23, 1909." All the others were taken at Medje, a couple in April, the rest from early in June to the middle of September.

(300) 11. **Charaxes smaragdalis** Butler

Charaxes smaragdalis BUTLER, 1865, Proc. Zool. Soc. London, p. 630, Pl. xxxvi, fig. 5.

AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 131.

There are twenty-two males in the collection, one labelled "Munie Katoto, September 10, 1909," another "Niagara, November 20-25, 1910." The rest were taken at Medje, two in April, the remainder from July to the middle of September, most of them, however, in August.

(301) 12. **Charaxes numenes** (Hewitson)

Nymphalis numenes HEWITSON, 1859, Exot. Butt., II, *Nymphalis*, Pl. II, figs. 9, 10, 11.

Charaxes numenes AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 132, Pl. xxxic.

The collection includes ninety-eight males and one female, all of which were taken at Medje, a few in April, the rest from July to September 1910.

(302) 13. **Charaxes tiridates** (Cramer)

Papilio tiridates CRAMER, 1777, Pap. Exot., II, p. 100, Pl. CLXI, figs. A, B.

Charaxes tiridates AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 132, Pl. xxxib.

There are one hundred and seventy-six males and one female of this species in the collection. They were all taken at Medje, quite a large number in April, the rest in July and August, except a few captured in the early part of September.

(303) 14. **Charaxes bipunctatus** Rothschild

Charaxes bipunctatus ROTHSCHILD, 1894, Nov. Zool., I, p. 536. AURIVILLIUS, 1911,

Seitz, Gross-Schmett., XIII, p. 132.

Seven males, one not expanded. All were taken at Medje, six in August, and one in September.

(304) 15. **Charaxes imperialis** Butler

Charaxes imperialis BUTLER, 1874, Trans. Ent. Soc. London, p. 531, Pl. XI, fig. 3.

AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 132.

Ten males, all taken at Medje, one in April, one in July, and four in each of the months of August and September.

(305) 16. **Charaxes ameliae** Doumet

Charaxes ameliae DOUMET, 1861, Rev. Zool., (2) XIII, p. 171, Pl. v, fig. 1. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 133, Pl. xxxib.

There are one hundred and ninety-two specimens of this species in the collection, forty-one of which have not been expanded. They are all males. They were taken at Medje, a number early in April, the rest from July to the middle of September.

(306) 17. **Charaxes hadrianus** Ward

Charaxes hadrianus WARD, 1870, Ent. Mo. Mag., VIII, p. 120. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 133, Pl. xxxid.

Represented by twenty-seven males, six not expanded, all taken at Medje. One was caught in April, the rest from July to September, but the greater number were taken in August.

(307) 18. **Charaxes nobilis** Druce

Charaxes nobilis DRUCE, 1873, Ent. Mo. Mag., X, p. 13. AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 133, Pl. xxxiic.

A single male specimen of this rare species was taken at Medje on May 29, 1910. It lacks one antenna and is slightly rubbed.

(308) 19. **Charaxes anticlea** (Drury)

Papilio anticlea DRURY, 1782, Ill. Exot. Ent., III, p. 36, Pl. xxvii, figs. 5, 6.

Charaxes anticlea AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 134, Pl. xxxiii d.

Six males captured at Medje, the dates varying from July to September.

(309) 20. **Charaxes hildebrandti** (Dewitz)

Nymphalis hildebrandti DEWITZ, 1879, Nov. Act. Acad. Nat. Cur., XLI, p. 28, Pl. ii, fig. 16.

Charaxes hildebrandti AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII p. 134, Pl. xxxiiic.

Nine males taken at Medje from July to September.

(310) 21. **Charaxes etheocles** (Cramer)

Papilio etheocles CRAMER, 1777, Pap. Exot., II, p. 34, Pl. cxix, figs. D, E.

Charaxes etheocles AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 135, Pl. xxxiib.

Of this polymorphic and decidedly puzzling species there is a large series of males and a solitary female. The female, which was taken at Medje, June 28, 1910, does not agree absolutely with any form of the female figured by authors, but comes nearest to that given by Staud-

inger (Iris, 1896, IX, Pl. III, fig. 4), which Rothschild and Jordan in their revision of the genus accept as the typical female of *C. etheocles* (cf. Nov. Zool., 1900, VII, p. 486).

The males, of which there are one hundred and twenty-one specimens, belong principally to the form described by Butler as *Charaxes hollandi* (cf. Ann. Mag. Nat. Hist., 1893, (6) XII, p. 266), and the form described by Staudinger under the name *Charaxes catochrous* (cf. Iris, IX, 1896, p. 216), in which the basal two-thirds of the wings are whitish on the under side. There is one male taken at Niangara in September which fits the description given by Rothschild and Jordan of the form to which they have applied the name *picta*. There are some intergrading forms which are not exactly referable to any of those just mentioned. As is well known to students, the species with which we are dealing is excessively variable and it is not wise to attempt without the test of breeding to decide what are the exact relationships of the variant forms which every new collection from Africa reveals.

The specimens, with the exception of the example of *C. etheocles picta* taken at Niangara, as mentioned above, and a male of *C. etheocles hollandi* taken at Faradje, were all collected at Medje or near by. The dates of capture are early in April in the case of a few specimens, but the majority are labelled as having been taken from July to September. but principally in August.

(311) 22. **Charaxes candiope** (Godart)

Nymphalis candiope GODART, 1813, Enc. Méth., IX, p. 353.

Charaxes candiope AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 138, Pl. XXXIIa.

Of this species there are in the collection ninety-two males. With the exception of two taken at Niangara in November and one captured at Gamangui in June, they were all collected at Medje, a few early in April, the rest from July to September, principally from the middle of July to the end of August.

(312) 23. **Charaxes kahldeni** Homeyer and Dewitz

Charaxes kahldeni HOMEYER AND DEWITZ, 1882, Berl. Ent. Zeit., XXVI, p. 381, Pl. VII, figs. 1, 2. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 139.

Of this pretty little species there are thirty-eight males, all taken at Medje from June to early September 1910.

(313) 24. **Charaxes eupale** (Drury)

Papilio eupale DRURY, 1782, Ill. Exot. Ent., III, p. 7, Pl. VI, fig. 3.

Charaxes eupale AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 140, Pl. XXXIIC

One hundred and sixteen males, two taken at Niangara in November, one at Gamangui in June, and the rest at Medje, a few early in April, the rest from June to September, but principally in July and August. Of the "washed out" form named *C. dilutus* by Rothschild and Jordan there are several examples. It is hardly worthy of a subspecific name, being connected with the more strongly marked form by intergrades.

(314) 25. **Charaxes nichetes** Grose-Smith

Charaxes nichetes GROSE-SMITH, 1883, Ent. Mo. Mag., XX, p. 58.

Charaxes ogoensis HOLLAND, 1886, Trans. Amer. Ent. Soc., XIII, p. 330, Pl. VIII, fig. 2.

Charaxes nichetes AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 140, Pl. XXXIIB.

One male taken at Medje in September 1910.

(315) 26. **Charaxes porthos** Grose-Smith

Charaxes porthos GROSE-SMITH, 1883, Ent. Mo. Mag., XX, p. 57. SMITH AND KIRBY, 1887, Rhop. Exot., I, *Charaxes*, p. 2, Pl. I, figs. 4, 5.

One male taken at Medje in the beginning of August.

(316) 27. **Charaxes zelica** Butler

Charaxes zelica BUTLER, 1869, Ent. Mo. Mag., VI, p. 28. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 141, Pl. XXXIIB.

One male captured at Medje early in August.

(317) 28. **Charaxes laodice** (Drury)

Papilio laodice DRURY, 1782, Ill. Exot. Ent., III, p. 34, Pl. XXVI, figs. 1, 2.

Charaxes laodice AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 141, Pl. XXXIIC.

An expanded male taken at Medje, April 6, 1910, and another not expanded.

(318) 29. **Charaxes doubledayi** Aurivillius

Charaxes doubledayi AURIVILLIUS, 1899, Kongl. Sv. Vet.-Akad. Handl., XXXI, p. 244; Seitz, Gross-Schmett., XIII, p. 141, Pl. XXXIIC.

A series of twenty-one males taken at Medje, a few in April, the rest from July to September.

(319) 30. **Charaxes mycerina** (Godart)

Nymphalis mycerina GODART, 1835, Enc. Méth., IX, p. 369.

Charaxes mycerina AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 141.

One male taken at Medje in the first week of September 1910.

The separation of the form *C. doubledayi* Aurivillius from *C. mycerina* (Godart) made by Prof. Aurivillius on the basis of the absence of the marginal blue spots on the fore wing of the latter form appears

to the writer justifiable, but with long series of specimens before him from all parts of tropical west and central Africa, he finds that a regular intergradation in this character occurs, and a regular series running from spotless *C. mycerina* to much-spotted *C. doubledayi* can be arranged.

PALLA Hübner

(320) 1. **Palla vologeses** Mabille

Palla vologeses MABILLE, 1876, Bull. Soc. Zool. France, I, p. 280.

Charaxes vologeses AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 139, Pl. xxxiId.

A solitary male specimen taken at Niangara about the middle of November.

(321) 2. **Palla fulvescens** Aurivillius

Palla fulvescens AURIVILLIUS, 1891, Ent. Tidskr., XII, p. 216.

Charaxes fulvescens AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 139, Pl. xxxiId.

There are seventy-four specimens of this species before me, all of them being males. With the exception of one specimen which is ticketed "Niangara, XI, 20-23, 1910," all were taken at Medje. A few were captured in the month of April, and bear no later date than the 6th of that month. One is stated to have been taken on June 11. All the rest were taken at dates ranging from July 3 to September 6, 1910.

From the evidence of the labels it would appear that the species is at least double-brooded, and there may be three broods during the year.

(322) 3. **Palla decius** (Cramer)

Papilio decius CRAMER, 1777, Pap. Exot., II, p. 26, Pl. cxiv, figs. A, B.

Palla decius AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 141, Pl. xxxiId.

There are three males before me, two of which were taken at Medje about the middle of July, and one at the same place near the end of August.

(323) 4. **Palla ussheri** Butler

Palla ussheri BUTLER, 1870, Trans. Ent. Soc. London, p. 124; 1871, Lep. Exot., p. 52, Pl. xxi, fig. 3. AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 141, Pl. xxxiId.

This species seems to be vastly more common at the places where collections were made than the preceding. There are fifty-seven males. With the exception of one specimen, labelled "Risimu, September 8, 1909," all were taken at Medje, a few early in April, the rest from the first week of July to the middle of September.

PHILOGNOMA Westwood(324) 1. **Philognoma lichas bebra** (Rothschild)

Charaxes lichas bebra ROTHSCILD, 1900, Nov. Zool., VII, p. 507.

Charaxes bebra AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 139.

The collection contains thirty-four males and one female referable to this form. The males differ markedly from the typical form which occurs on the Gold Coast, the dark area of the apical portion of the wing being invaded internally by the lighter color of the body of the wing, as pointed out by Rothschild. The female, however, does not differ at all from females of the typical form in the collection of the writer from Sierra Leone and Cameroon.

They were all collected at Medje, except one labelled as taken at Gamangui on February 6, 1910. The dates of capture run through the months of July and August, with the foregoing exception.

(325) 2. **Philognoma paphianus** (Ward)

Charaxes paphianus WARD, 1871, Ent. Mo. Mag., VIII, p. 120.

Philognoma falcata BUTLER, 1872, Lep. Exot., p. 101, Pl. xxxviii, fig. 1.

Charaxes paphianus AURIVILLIUS, 1912, Seitz, Gross-Schmett., XIII, p. 139, Pl. xxxiii.

There are in the collection sixty-five males, of which nine are not expanded. With the exception of a single specimen labelled as taken at Gamangui, June 6, 1907, all were captured at Medje, the dates ranging from early in June to about the middle of September. The specimens show very little variation.

MONURA Mabille(326) 1. **Monura zingha** (Cramer)

Papilio zingha CRAMER, 1780, Pap. Exot., IV, p. 53, Pl. cccxv, figs. B, C.

Charaxes zingha AURIVILLIUS, 1911, Seitz, Gross-Schmett., XIII, p. 128, Pl. xxxii.

This species is represented by one hundred and thirty-one males and three females. With the exception of one male which is labelled as having been taken at Niangara on September 26, all of the specimens were captured at Medje. A few were taken in the first week of April. The greater number were captured in July and August, the earliest date being June 30, and the latest September 9, 1910.

Libytheidæ**LIBYTHEA** Fabricius(327) 1. **Libythea labdaca** Westwood

Libythea labdaca WESTWOOD, 1851, Gen. Diurn. Lep., II, p. 413, note, Pl. lxxviii, fig. 6.

Dichora labdaca SCUDDER, cf. *infra*.

Libythea labdacæ AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, Pl. LXIA.

Of this interesting insect, for which the late Dr. S. H. Scudder proposed the generic name *Dichora* (cf. Report U. S. Geol. Survey, VIII, part 1, p. 470) there are nineteen specimens: six taken at Medje, four in June, one in August, and one in September 1910; three collected at Basoko in July, 1909; three taken at Isangi and one at Stanleyville in August 1909; four collected at Avakubi in September 1909; and two badly worn examples taken at Lubila in the same month and year.

This butterfly in some years is quite scarce and only occasional examples are taken; and again it appears in enormous numbers, fairly swarming, as I have been informed by collectors resident in Cameroon and on the Gold Coast.

Lemoniidæ

ABISARA Felder

(328) 1. **Abisara rogersi** Druce

Abisara rogersi DRUCE, 1878, Ent. Mo. Mag., XV, p. 101.

Abisara geryon DEWITZ, 1889, Ent. Nachr., XV, p. 105, Pl. I, figs. 3, 4.

A solitary male, captured at Niangara in November 1910.

(329) 2. **Abisara intermedia** Aurivillius

Abisara intermedia AURIVILLIUS, 1895, Ent. Nachr., XXI, p. 381.

There are two males of this form, both taken at Medje, one in April, the other in September. With these I associate three females, one taken in each of the months April, July, and September at the same place. They agree with the males on the under side of the wings.

(330) 3. **Abisara rutherfordi** Hewitson

Abisara rutherfordii HEWITSON, 1874, Ent. Mo. Mag., XI, p. 56.

Abisara rutherfordi AURIVILLIUS, 1913, Seitz, Gross-Schmett., XIII, Pl. LXIB.

There are three males and two females of this species captured at Medje, one female in June, all the others in August.

Lycænidæ

The genera and species of this family known to occur in the region of the Congo are not only very numerous, but of the highest interest. The Ethiopian Subregion is the metropolis of some of the most aberrant forms of this great family, which display to a wonderful degree the phenomena of "mimicry." Many species are gorgeously beautiful and bizarre in their coloring, and in their habits are no less wonderful, quite a large number of them being in their larval state carnivorous, or entomophagous, and many being myrmecophilous.

The collection assembled by the American Museum Congo Expedition is very limited both in the number of specimens and species, and is by no means representative of this portion of the fauna. Nevertheless, it possesses the highest interest, and it is to be regretted that the gentlemen in charge had not the opportunity to devote more time to careful collecting in the parts which they visited. Small as is the collection, it contains a number of novelties, thus showing how much might have been ascertained had the native collectors been induced to turn their attention to this particular group. In proportion to the number of specimens brought back, the number of species new to science is considerable. There are also some species which, until the present time, have been very inadequately represented in the collections of the world and which it has been a pleasure to the writer to study and examine.

Lipteninæ

TELIPNA Aurivillius

(331) 1. **Telipna rothioides**, new species

Plate XII, Figure 7, ♀

♀. Near *T. rothi* Grose-Smith, but may be distinguished from that species by the facts that on the upper side of the primaries the transverse reddish yellow band does not reach the costa, as it does in *T. rothi*, that the black marginal border on the upper side of the secondaries is broader than in *T. rothi*, and by the further fact that on the under side of the secondaries the marginal row of white spots surrounded by black terminates abruptly at vein 5, and does not completely encircle the wing as is the case in *T. rothi*. There are other minor differences, but those stated will enable the student to discriminate this form from *T. rothi*, to which, until I had made a critical examination, I was inclined to refer it, and which it otherwise superficially resembles.

The collection contains two females, both captured at Medje, one in April, the other in July. The latter is designated as the type and is in The American Museum of Natural History in New York; the former, which is the paratype, is in the Holland Collection in the Carnegie Museum in Pittsburgh.

(332) 2. **Telipna medjensis**, new species

Plate XII, Figure 8, ♀

♀. Near *T. nyanza* Neave (cf. *Novitates Zoologicae*, 1904, XI, p. 335, Pl. 1, fig. 19). It differs, however, from the species described and figured by Neave in important particulars. The subapical white spot of the primaries is much larger than in *T. nyanza*, extending from vein 4 to vein 8, and reappears conspicuously on the under side of the wing, which is not the case in Neave's species. On the under side this spot is bordered inwardly by a heavy black bar, running from the costa to vein 4, and on the under side this spot is not defined outwardly by dark markings, and the entire apical region beyond it, save immediately on the costa, is immaculate yellowish

red, like the ground-color of the rest of the wing. The under side of the secondaries also differs from *T. nyanza* in that there are five, instead of three black bars on the costa, as in the latter species, the third from the base running downward across the end of the cell. There are also two minute black dots, one above the other, in the cell beyond its middle, and in interval 5 there is a conspicuous squarish black spot. Furthermore the black outer border of the secondaries on the lower side terminates abruptly at the extremity of vein 5, as in the preceding species, the pale yellowish red ground-color between veins 5 and 7 extending outwardly quite to the border of the wing, separated from the cilia only by a very narrow black marginal line. The cilia are broadly checkered with white between the extremities of the nervules where they are black. Succeeding the fine black marginal line there is a row of subclinate white spots sharply defined upon the deep black border, extending from the anal angle as far as the interval between veins 3 and 4. At a remove of about two millimeters from this row of spots basad there is another row of similar larger white spots, each spot totally surrounded by the deep black of the border, which terminates inwardly just above them. Expanse, 50 mm.

The type, which is from Medje and is unique, is in the American Museum of Natural History.

(333)

3. *Telipna bimacula* (Plötz)

Pentila bimacula PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 199.

The species is represented by but one female specimen, which is in The American Museum of Natural History. It was taken at Niangara about the middle of November 1910, and does not differ in the least from long suites of the species which we possess from the valley of the Ogové and from Cameroon.

PENTILA Westwood

(334)

1. *Pentila clarensis* Neave

Plate XII, Figure 11 upper side ♂, from Faradje; Figure 12 upper side ♂, from Basoko
Pentila clarensis NEAVE, 1903, Ent. Mo. Mag., XXXIX, pp. 136-137.

There are two specimens taken at Faradje, "1911-1912," which agree so closely with the description of this species that I have no doubt that they represent it. There are four other specimens, one taken at Basoko in July 1909, two captured at Gamangui in June, and one taken at Medje in July 1910, which in the main agree with those taken at Faradje and which cannot be separated from them specifically. These four appear to me to be at most representatives of a seasonal or local variety, the only difference being the increased size and therefore more prominent appearance of the spots on the upper and lower sides of the wings. In the specimens from Faradje the discal spots are much reduced in size, and some are almost obsolete, as Neave points out to have been the case with some of the specimens before him when he wrote his

description. The specimens from Gamangui, Basoko, and Medje agree very closely with each other in every particular and have a facies which is somewhat different from the specimens taken at Faradje. When an analysis of the facts is made, however, it clearly appears that the only real difference is due to the uniform enlargement of the various spots upon the wings. As Neave points out, this insect is a close mimic of *Pardopsis punctatissima*. This is particularly true of the specimens with the enlarged spots. From *P. pauli* Staudinger the insect may be discriminated by the fact that the elongated marginal spots, one in each interval of the upper and lower wings, do not entirely reach to the margin, as they do in *P. pauli* (cf. Rhop. Æthiopica, p. 261, where Aurivillius has given us a figure of that species), but constitute a distinct and regular submarginal series, separated from the thin marginal line by an appreciable interval. Many of the spots are, as Neave points out, "moniliform,"—I should say having the shape of a dumb-bell, especially in the apical region of the fore wing. The species is in my judgment valid and not to be confounded with *P. pauli*, which in size and general appearance it somewhat resembles. I discover that we have a series of finely preserved specimens of the species from the interior of Cameroon, collected some years ago by Mr. A. I. Good and awaiting a convenient season for its study, which the arrival of the Lang-Chapin material has created.

(335) 2. *Pentila clætensi* Aurivillius (?)

Plate XII, Figure 9, ♂

Pentila clætensi AURIVILLIUS, 1897, Ent. Tidskr., XVIII, p. 214, fig.

In the markings of the fore wing agreeing entirely with the description and figure of *P. clætensi* given by Aurivillius, but quite different in the form and arrangement of the spots on the outer border of the hind wing. In the specimens before me the marginal row of spots on the secondaries are located at the tips of the veins and are quite large, sagittate, pointing inwardly and running for some distance along the nervules basad, much as in *P. auga* Karsch, or in some heavily marked specimens of *P. abraxas* Doubleday and Hewitson. I refer the specimens provisionally to *P. clætensi* Aurivillius, with which they agree more closely than with any other species, realizing that there is in this genus more or less variability in the number and size of some of the markings, as is shown by long suites of many of the species in my possession. It is a doubtful procedure to erect species in the genus *Pentila*, basing them upon the presence or absence of some of the spots, or their size.

The collection contains two males taken at Medje, one in August, the other in September.

PSEUDERESIA Butler(336) 1. **Pseuderesia libentina** (Hewitson)

Liptena libentina HEWITSON, 1866, Exot. Butt., III, Pl. *Liptena* and *Pentila*, figs. 8, 9.
Pseuderesia libentina AURIVILLIUS, 1898, Rhop. Æthiop., p. 267.

A somewhat poorly preserved female taken at Medje about the middle of August is referable to this species. The type of *P. (Liptena) libentina* (Hewitson) is lost, and some years ago, when I consulted the collection of Hewitson in the British Museum, it had been replaced by two specimens of other species. The specimen from Medje, however, agrees so well with Hewitson's figure and other specimens referred to this species in the collections at Pittsburgh that there seems to be no doubt of the correctness of the determination.

Epitolinæ**EPITOLA** Westwood(337) 1. **Epitcla langi**, new species

Plate XII, Figure 10, ♂

♂. The fore wing acuminate at apex, slightly concave below the apex and a little rounded at the lower angle. Hing wing rounded externally, a trifle elongated. Thorax and abdomen black above, pale brown below. On the upper side both wings are dark brown, almost black, feebly revealing in certain lights a deep violet-blue sheen, especially on the disk of the primaries and the inner half of the secondaries. This color only reveals itself in a strong lateral light; in direct vision the wings appear to be almost uniformly dark brown or black. The cilia are concolorous. On the under side both wings are pale smoky brown, except on the inner margin of the primaries near the angle, where they are pale bluish gray, a shade or two lighter than the ground-color of the wings. About the end of the cell of the fore wing there is a vertical row of four small pale spots extending from the costa to the lower angle of the cell, and in the apical area of this wing there is a row of four or five similar spots just before the outer margin extending from the apex to the interval between veins 3 and 4, at the furthest. The hind wings on the lower side have a row of pale basal spots, three in number, quite small and faint. These are followed by a series of similar subbasal spots, which are also not conspicuous, but clearly defined. In the middle of the cell is a quadrate darker spot defined before and behind by thin pale lines, which I reckon as belonging to the subbasal series. Crossing the wing from the costa to the inner margin is a curved and twice dislocated line of small pale spots, two of which just at the end of the cell are the most conspicuous. This median row of small light spots is succeeded by a postmedian row, quite regularly curved and extending from the costa to the inner margin, a spot in each intraneural space. This row is in turn succeeded just before the margin by a regular row of submarginal spots somewhat crescentic in form. The cilia on the underside are dark as on the upper side. Expanse, 29 mm.

The type, which lacks antennæ and is in this respect defective, is unique. It was taken at Medje, August 19, 1910 and belongs to The American Museum of Natural History.

I dislike to found a new species upon a solitary defective specimen, but, after examining every picture of an *Epitola* which has been published and reading carefully every description which has been printed, I am convinced that the little butterfly before me has never been described or figured, at least not in such manner as to make either figure or description recognizable. The insect most nearly approaches *E. mangoënsis* Bethune-Baker (cf. Proc. Zool. Soc. London, 1908, Pl. VIII, fig. 6). The outline of the wings is the same, but the markings below differ. It is odd that the only specimen of the genus *Epitola* brought back from the Congo by the expedition should turn out to be hitherto nondescript. There are now nearly fifty species of the genus known from the region of which the Belgian Congo forms a part.

Lycæninæ

MEGALOPALPUS Röber

The separation of the African species under the generic name *Megalopalpus* Röber from the Asiatic forms, which have been described under the generic names *Gerydus* Boisduval and *Paragerydus* Distant is in the opinion of the writer a rather unnecessary refinement, based upon structural differences which are so microscopic as hardly to be worthy of regard. We are reaching a time when the discriminating instincts of authors, who carry on their labors with the help of compound microscopes, will demand the erection of a genus for every species, not only in entomology, but all the other zoological sciences.

The so-called "species" of *Megalopalpus* found in tropical Africa seem to the writer to be in a state of confusion at the present time. Aurivillius in his 'Rhopalocera Æthiopica,' p. 300, recognizes three species. The first is *M. zymna* (Westwood), originally figured in Doubleday and Hewitson's 'Genera of Diurnal Lepidoptera,' who in their plate represent a rather small insect, apparently belonging to the female sex, in which the posterior border of the secondaries is broadly margined with black. The second species recognized by Aurivillius is *M. simplex* Röber, in which the hind wings are more narrowly bordered with black and in which the markings of the under side of the wings are as described by Aurivillius in his analytical key. This species Aurivillius regards as having been redescribed by Capronnier under the name *bicoloraria*, and also redescribed by Kirby and refigured by Smith and Kirby under the specific name *similis*. The third species admitted by Aurivillius is *M. metaleucus* Karsch, which, according to Professor Aurivillius, is the insect figured as *M. zymna* by Smith and Kirby.

It happens that the present writer has before him a very large series of specimens of the genus from various parts of Africa where it is found. Over this mass of specimens he has long pored in the attempt to bring order out of what seems chaos. Every one of the forms admitted by Aurivillius to have specific rank is to be found in this series, but there are so many intergrading forms that it is impossible to decide where one species begins and the other ends. Of course, by selecting those which tally with the forms already named and described and destroying the rest, a semblance of specific security for these forms might apparently be produced. But such a procedure would not be scientifically honest. In the first place, there is great variability in size among specimens marked alike. Some are only 22 mm. in expanse, and they range through various measurements up to 45 mm. in expanse. Some have the outer margins of the secondaries heavily bordered with black; in other specimens the hind margins are altogether free from black on the margins; and there are intergrades between the two extremes. Some are absolutely free from markings of any kind whatever on the lower side of both primaries and secondaries; others are heavily marked, as described and figured by authors; and there is every grade of difference from those which are plain white on the under side to those which are figured as is the insect named *M. zymna* by Smith and Kirby and figured by them as such. Those with the light hind margins have the same maculation on the under side as those which have the heavy hind margins. Nothing is absolutely fixed, and there is no key to the puzzle, if regard be had to the maculation and markings of the wings. The fact is, I am convinced, that we are dealing here with a species characterized by great variability, both in size and markings. We have over one hundred specimens collected at one locality in the Cameroons during one summer. All of the so-called species are represented in the bunch, and the writer, if he were disposed to do so, might describe several others from the same catch, if he were willing to select some of the intergrading forms and dwell upon the presence or absence of this or that spot, or the slight variations in shade which occur. Differences are plainly and clearly distinguishable, but to the mind of the writer they do not show specific diversity. They represent merely individual variation, and he is inclined to the belief that the whole congeries of variant specimens are after all only referable to *M. zymna* (Westwood), a protean species. There are vastly more females than males in the collection and, strangely enough, a multitude of the females are greatly dwarfed, most of the specimens only measuring 22 mm. in expanse of

wings, though some females, identically marked, are greatly hypertrophied. The insects are myrmecophilous, and perhaps some peculiarity in their mode of nutrition in the larval state, the relative ease or difficulty with which they secure their sustenance in this stage of their existence, may account for the very abnormal difference in the size of individuals. Until some observer carefully works out their life-history by breeding we shall not have a solution of the problem with which the present writer feels himself confronted.

(338) 1. **Megalopalpus zymna** (Westwood)

Miletus zymna WESTWOOD, 1852, in Doubleday and Hewitson, Gen. Diurn. Lep., II, p. 503, Pl. LXXVI, fig. 7.

(? *M. simplex* RÖBER, *M. bicoloraria* CAPRONNIER, *M. similis* KIRBY, *M. metaleucus* KARSCH, *M. zymna* SMITH and KIRBY.)

The collection contains three specimens, all females, taken at Medje, no two of which are exactly alike, though each of which can be matched in any large collection such as that in the possession of the writer. They are as follows.

a. ♀. Dwarfed, expanse 24 mm., markings of the under side as in *M. simplex*, but almost obsolete and so pale as only to be detected by close scrutiny. Like a score of specimens before the writer from Loldorf, Cameroon. Taken at Medje, June 27, 1910.

b. ♀. Expanse 43 mm. Combining on under side characteristics of *M. simplex*, as defined by Aurivillius and shown in Röber's photograph, and characteristics of *M. zymna*, as depicted by Smith and Kirby = *M. metaleucus* Karsch, *fide* Aurivillius. On the upper side of the secondaries dark border reduced to a mere trace. Taken at Medje, September 27, 1910. Can be matched by numerous specimens in collection of writer, some with black hind borders on upper side of hind wings, some without such borders, some light on the under side, some dark, some fulvous, some slaty gray, as in Smith and Kirby's figure ('Afr. Lycænidæ,' Plate XII, figs. 1, 2).

c. ♀. Smaller than the preceding specimen. Expanse, 33 mm., with the hind margins of the secondaries much broader and darker than in that specimen, but the markings of the under side much paler, though closely resembling those of specimen *b*. Taken at Medje, August 1910.

LACHNOCNEMA Trimen

This is another myrmecophilous genus which stands in much need of intelligent revision. The writer has a mass of material at his command, collected in tropical East Africa and in tropical West Africa, as

well as material received in the past from the late Dr. Roland Trimen, collected in the Transvaal. The study of this shows that there are either a number of closely related forms which have not been hitherto discriminated or that the species are remarkably variable. This is not, however, the place to take up the discussion of this subject.

(339) 1. **Lachnocnema reutlingeri** Holland

Lachnocnema reutlingeri HOLLAND, 1893, Ann. Mag. Nat. Hist., (6) X, p. 286.

AURIVILLIUS, 1898, Rhop. Æthiop., p. 302, ♀.

Arrugia umbra SMITH AND KIRBY, 1901, Rhop. Exot., III, Afr. Lycenidæ, p. 128, Pl. xxvii, figs. 5, 6, ♂.

The American Museum Congo Expedition brought back two males, neither very well preserved, which represent this species. We have in the Carnegie Museum fifty-five males and ten females, including the type of the species. The two specimens taken at Medje in July and August have been compared with these and they agree absolutely.

The writer has a suspicion that *L. luna* H. H. Druce (Proc. Zool. Soc. London, 1910, p. 368, Pl. xxxiv, fig. 5) is only a slight varietal form of this species, and that *L. magna* Aurivillius may only be an albinic female of the same insect. In fact, he has a specimen of a female in which the yellow color of the upper side is so pale that it might almost be termed white and which seems rather closely to agree with the description given by Dr. Aurivillius.

DEUDORIX Hewitson

(340) 1. **Deudorix elealodes** Bethune-Baker

Deudorix elealodes BETHUNE-BAKER, 1908, Proc. Zool. Soc. London, p. 112, Pl. ix, fig. 6.

There are two somewhat imperfect male specimens of this pretty species taken at Medje, one in June, the other in August. As the author points out, the species is near to *D. eleala* Hewitson, from which, however, upon comparison it may be distinguished at a glance by the heavenly ultramarine blue of the upper surface, which strongly contrasts with the greenish blue ground-color of its ally, by the almost complete obsolescence of the lobe-spot on the under side of the hind wing, and by the much reduced width of the transverse lines on the under side of both wings.

(341) 2. **Deudorix batikelides**, new species

♂. Closely resembling *D. batikeli* Boisduval on the upper side, but with dark markings near the anal angle of the secondaries less prominent. On the under side lacking altogether the three basal spots which are conspicuous upon the secondaries

of Boisduval's species, and with the wings throughout evenly pale warm gray, with the tranverse lines and markings only a little lighter than the ground-color. These markings recall in their disposition those of certain oriental *Lycænidæ* belonging to the genus *Lampides*.

♀. Like the male, but with the blue of the discal areas of both wings reduced in extent, due to the widening of the dark costal and outer marginal areas of black on both wings.

Type ♂ taken at Niangara, November 1910; allotype ♀ taken at Mombasa, E. Africa by William Doherty, and in Holland Collection, Carnegie Museum.

I am under the impression that this is the form which has in the past been referred by some authors to the species *D. batikeli*, and reported as such from various points on the East African mainland. *D. batikeli* is found on the island of Madagascar.

I have for a number of years had a small but very fine series of this insect collected for me on the hills about twelve miles up from the coast back of Mombasa by the late William Doherty. They have puzzled me, because, while resembling *D. batikeli*, they could not be found to agree with either figures or descriptions or actual specimens from Madagascar and were labelled "*? batikeli* Bsd." The occurrence in the collection upon which I am reporting of a good male specimen, picked up at Niangara in November 1910, brings matters to a focus, and I venture to give a name to this insect, which I am sure is not the same as the insect named by Boisduval and which apparently has been overlooked by other students.

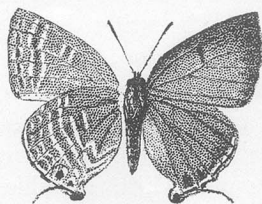


Fig. 1. *Deudorix batikelides* Holland. ♀ (Nat. size). Drawn from specimen taken at Mombasa.

(342)

3. *Deudorix antalus* (Hopffer)

Dipsas antalus HOPFFER, 1855, Monatsber. Akad. Wiss. Berlin, p. 641.

Sithon antalus HOPFFER, 1862, Peters, Reise n. Mossambique, Ins., p. 400, Pl. xxxv, figs. 7-9.

Deudorix antalus AURIVILLIUS, 1898, Rhop. Æthiop., p., 309.

One female of this widely distributed species taken at Faradje, January 11, 1912.

OXYLIDES Hübner

(343)

1. *Oxylides homeyeri* (Dewitz)

Plate XII, Figure 5, ♀

Hypolycæna homeyeri DEWITZ, 1879, Nov. Act. Acad. Nat. Cur., XLI, part 2, p. 206, Pl. xxvi, fig. 13.

Oxylides homeyeri AURIVILLIUS, 1898, Rhop. Æthiop., p. 313.

There is one female specimen in moderately good condition, taken at Medje, July 20, 1910. As this sex of the insect has never heretofore been described, unless, as Aurivillius suggests, *O. melanomitra* Karsch be it, I venture to briefly give its characteristics.

♀. On the under side apparently agreeing completely with the description and figure given by Dewitz (*loc. cit.*). On the upper side the ground-color is gray laved with lilac, especially on the cells and discal areas of both wings. The costa and outer margin of the front wings are darker, and on the hind wings there is just below the upper angle a dark spot or band of limited size, which is darker than the rest of the wing. The lower end of the hind wing is broadly white on this side, with the three marginal spots standing out conspicuously upon the light ground. On the under side the anal angle and the adjacent parts of the wing are somewhat broadly laved with yellow, which is also the case in the male.

HYPOLYCÆNA Felder

(344) 1. **Hypolycæna hatita** Hewitson

Hypolycæna hatita HEWITSON, 1865, Ill. Diurn. Lep., Lycenidæ, p. 51, Pl. xxxiii, figs. 21-24. AURIVILLIUS, 1898, Rhop. Æthiop., p. 315.

There are eighteen males and one female of this insect, all in more or less damaged condition, as is usually the case with them when received from collectors. It appears to be almost impossible to preserve the long narrow tails with which the hind wings of the species of this genus are adorned. I have hundreds of them, and none seem to be absolutely perfect. All of the specimens returned by the expedition were taken at Medje on dates ranging from March to September, except two, one of which was caught at Risimu in September 1909, and the other at Gamangui on June 14, 1910.

(345) 2. **Hypolycæna antifaunus** (Doubleday and Hewitson)

Iolus antifaunus DOUBLEDAY AND HEWITSON, 1852, Gen. Diurn. Lep., II, p. 481, Pl. LXXV, fig. 1.

Hypolycæna antifaunus AURIVILLIUS, 1898, Rhop. Æthiop., p. 315.

There are four damaged specimens of this species all captured at Medje, one in April, the other three in July.

(346) 3. **Hypolycæna dubia** Aurivillius

Hypolycæna dubia AURIVILLIUS, 1895, Ent. Tidskr., XIV, p. 211.

This is indeed a very dubious species, as its name implies. It is probably only a seasonal variety, or local race of *H. lebona* Hewitson, characterized by being a somewhat brighter blue on the upper side of the fore wings, and having a wider inward extension toward the cell of the light color of the inner margin. It is a very common insect in Cameroon and on the Ogové River, and I have hundreds of specimens, both males

and females, of *H. lebona* and *H. dubia*, and while the diacritical points emphasized by Aurivillius hold well enough in many cases, so that it is possible to make up a good series of both forms, there are many intergrading forms which suggest that we may well be in doubt as to the validity of the species as such.

The collection contains a male and female in fairly good preservation taken at Medje.

(347) 4. **Hypolycæna liara** H. H. Druce

Hypolycæna liara H. H. DRUCE, 1890, Ann. Mag. Nat. Hist., (6) V, p. 27. AURIVILLIUS, 1898, Rhop. Æthiop., p. 316.

A male and a female were captured, the former at Niangara in November, the latter at Medje in June.

APHNÆUS Hübner

(348) 1. **Aphnæus orcas** (Drury)

Thecla orcas DRURY, 1782, Ill. Exot. Ent., III, p. 46, Pl. xxxiv, figs. 2, 3.

Aphnæus orcas HOLLAND, 1893, Ent. News, IV, Pl. I, fig. 13. AURIVILLIUS, 1898, Rhop. Æthiop., p. 327.

Six males, one taken at Lubila, September 1909, four at Medje from April to September, and one at Niangara in November 1910.

SPINDASIS Wallengren

(349) 1. **Spindasis natalensis** (Hewitson)

Aphnæus natalensis HEWITSON, 1865, Ill. Diurn. Lep., Lycenidæ, p. 62, Pl. xxv, figs. 1, 2.

Apnnæus caffer TRIMEN, 1868, Trans. Ent. Soc. London, p. 88.

The specimens have been compared with others named *Aphnæus caffer* and obtained from Mr. Trimen himself in exchange. They agree perfectly with these. Aurivillius sinks the name *caffer* as a synonym of *mozambica* Bertolini, but I am unable to identify the reference given by Aurivillius in the 'Rhopalocera Æthiopica,' though I have made diligent search.

The expedition brought back five specimens, a male caught at Medje in August, a pair taken at Niangara in November, and two males captured at Faradje, one in December 1910, the other in "1911-1912."

(350) 2. **Spindasis crustaria** (Holland)

Aphnæus crustaria HOLLAND, 1890, Psyche, V, p. 420; 1893, Ent. News, IV, p. 28, Pl. I, fig. 10.

Spindasis crustaria AURIVILLIUS, 1898, Rhop. Æthiop., p. 332.

There is one somewhat damaged female taken at Medje about the middle of July.

(351) 3. **Spindasis aderna** (Plötz)

Plate XII, Figure 4, ♂

Zeritis aderna PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 203, ♂ and ♀.

Zeritis latifimbriata E. SHARPE, 1890, Ann. Mag. Nat. Hist., (6) VI, p. 105; 1890, Trans. Ent. Soc. London, Pl. xvii, fig. 5, ♀.

Spindasis aderna AURIVILLIUS, 1898, Rhop. Æthiop., p. 332.

One male in not very good condition taken at Niangara about the middle of November 1910. It agrees on the under side with a female long in my possession, which was captured by the late Dr. A. C. Good on the Ogové River thirty years ago. I once took this specimen with me to London and it was examined by Miss Sharpe, who agreed with me in my identification of it as her species *latifimbriata*. Aurivillius sinks *S. (Zeritis) fallax*, ♂, (Sharpe), as synonym of *aderna* Plötz. I am quite sure he is in error. *Z. fallax* Sharpe is bright blue on the upper side of the wings, while *S. aderna* in the male sex resembles *Axiocerses perion (harpax)*, as Plötz, the author of the species, points out in his description. The specimen before me accords with what Plötz says and might easily be mistaken by a novice for a specimen of *A. harpax* upon casual inspection. Plötz states in his paper that he had male and female before him. The male of *S. aderna* on the upper side is dark red and not blue, and Miss Sharpe's blue species is distinct, in spite of the superficial resemblance of the insect on the under side to that named by Plötz.

(352) 4. **Spindasis chapini**, new species

Plate XII, Figure 6, ♂

♂. Frons reddish; a tuft of white hairs at the base of each antenna; antennæ black, short, with a moderately long spindle-shaped club, as in other species of the genus; eyes dark brown, completely encircled with a ring of white scales; terminal joint of palpi black, second and third joints heavily clothed with long vermilion colored scales. Thorax and abdomen black above, deep orange-red inclining to vermilion below. Legs with the femora and tibiæ dark brown dorsally, pale red below, at their point of union with the thorax surrounded by a ring of tuft-like white hairs, which is again encircled outwardly by a ring of long jet-black hairs. The fore wing on the upper side is uniformly dark brown or sepia, except for a few dark orange-red scales just before the hind angle, arranged to form a subtriangular spot, more or less ill-defined. The hind wings above are of the same ground-color as the fore wings, but about the middle of the discal area they are darker, being clothed with black velvety scales. The entire inner margin is laved with deep orange-red, and this color is extended over the whole posterior extremity of the wing, and along the outer margin upward as a narrowing line to the extremity of vein 3. The dark brown cilia

define this pale area as a fine marginal band. The anal lobe is black at the end; the two tails, one at the end of vein 1, which is twice as long as the one at the end of vein 2, are very slender, and appear under the microscope to be dark red, heavily dusted with black scales. On the under side the ground-color of both wings is very deep orange-red or vermillion. The fore wings on their posterior margin are pale fuscous from the base, as far upward as the first submedian nervule and as far outward as a point about two millimeters from the lower angle, where this dark shade vanishes and is replaced by pale yellow. There is a small sharply defined black spot in the cell of the fore wing at its base, followed about the middle by two similar spots, one above the other, and succeeded immediately at the end of the cell by three such spots fused together to form a moniliform dark bar closing the cell. The hind wings on this side are devoid of dark markings, except on the inner margin a little above the anal lobe, where there is an elongated subtriangular spot of small size, which is deep black, ornamented in the middle by a narrow streak of silvery white scales. The anal lobe is black ornamented with a few metallic scales. On this, as on the upper side of the wings, the cilia are dark brown and define the wings outwardly as a narrow marginal line. Expanse, 28 mm.

There are two males, both captured at Niangara in November 1910. One, the type, is in The American Museum of Natural History; the other, the paratype, is in the Holland Collection in the Carnegie Museum. I take pleasure in naming the species in honor of one of the leaders of the expedition.

AXIOCERSES Hübner

(353)

1. **Axiocerses harpax** (Fabricius)

Papilio harpax FABRICIUS, 1775, Syst. Ent., App., p. 829, ♀.

Chrysophanus perion HOPFFER, 1862, Peters, Reise n. Mossambique, Ins., p. 403, Pl. XXVI, figs. 1-3.

Axiocerses harpax AURIVILLIUS, 1898, Rhop. Æthiop., p. 335.

There are three males taken at Medje which are clearly referable to this species. One was captured in June, the other two in July.

I confess with Dr. Aurivillius my inability to distinguish clearly specimens of so-called *A. perion* (Cramer) which we now and then receive from correspondents in South and Eastern Africa from *A. harpax* (Fabricius). Except that they are darker on the under side, so far as my specimens show, there is no difference which should cause them to be regarded as a distinct species. They seem to me at best to be a mere local race. However, the whole genus is in need of revision, as a number of species have recently been described.

CUPIDESTHES Aurivillius(354) 1. **Cupidesthes thyrsis** (Hewitson)

Lycænesthes thyrsis HEWITSON, 1878, Ill. Diurn. Lep., Lycænidae, p. 224, Pl. xcii, figs. 42-44. AURIVILLIUS, 1898, Rhop. Æthiop., p. 349.

Cupidesthes thyrsis BETHUNE-BAKER, 1910, Trans. Ent. Soc. London, p. 10, Pl. iv, fig. 3, genitalia.

One male of this species, which is very common in Cameroon and the valley of the Ogové, was captured at Niangara toward the end of November 1910.

LYCÆNESTHES Moore(355) 1. **Lycænesthes musagetes** Holland

Lycænesthes musagetes HOLLAND, 1893, Ent. News, IV, p. 25. AURIVILLIUS, 1898, Rhop. Æthiop., p. 349. BETHUNE-BAKER, 1910, Trans. Ent. Soc. London, p. 21.

Seven males, one taken at Avakubi, October 3, 1909, the rest at Medje, the dates of capture ranging from April to August.

(356) 2. **Lycænesthes ituria** Bethune-Baker

Lycænesthes ituria BETHUNE-BAKER, 1910, Trans. Ent. Soc. London, p. 22, Pl. i, fig. 4; Pl. v, fig. 6.

I refer one badly damaged male taken at Medje, June 26, to this species, with the figure and description of which it agrees closely, though somewhat under the size of the specimen figured by the author of the species.

(357) 3. **Lycænesthes lunulata** Trimen

Lycænesthes lunulata TRIMEN, 1894, Proc. Zool. Soc. London, p. 51, Pl. vi, fig. 12.

(For synonymy consult Bethune-Baker, 1910, Trans. Ent. Soc. London, p. 40.)

One male captured at Faradje in December 1912.

(358) 4. **Lycænesthes silvanus** (Drury)

Papilio silvanus DRURY, 1773, Ill. Exot. Ent., II, p. 5, Pl. iii, figs. 2, 3.

(For synonymy consult Bethune-Baker, 1910, Trans. Ent. Soc. London, p. 43.)

The collection contains eight males, one taken at Lubila in September 1909, one at Niangara in November, and the rest at Medje from May to August 1910.

All of the specimens differ from examples from tropical West Africa (Sierra Leone, Cameroon, the valley of the Ogové) with which I have compared them in the fact that the dark markings on the under side of the wings do not contrast as strongly with the ground-color as in the specimens from the west coast. It is true that none of the specimens are in the best condition, and all are somewhat rubbed, but in spite of

this it is evident that they all show a tendency on the under side to a loss of the distinctness of the maculation and a toning down in the direction of uniformity of surface which causes them to stand in contrast to a series of specimens from farther west. The markings are identical, in their form, but the dark bands and spots are only a few shades darker than the ground-color. The fact is worthy of note.

(359) 5. **Lycænesthes larydas** (Cramer)

Papilio larydas CRAMER, 1780, Pap. Exot., III, p. 160, Pl. CCLXXXII, fig. 6.

(For further synonymy consult Bethune-Baker, 1910, Trans. Ent. Soc. London, p. 44.)

The collection comprises twelve males, one taken at Stanleyville in September 1909, the rest at Medje from June to September 1910.

(360) 5a. **Lycænesthes larydas kersteni** Gerstæcker

Lycænesthes larydas var. *kersteni* GERSTÆCKER, 1871, Archiv f. Naturg., XXXVII, p. 359; idem, 1873, Von der Decken's Reise, III, p. 373, Pl. xv, fig. 5.

Three males of this form taken at Faradje in December 1912. There is a marked difference between the specimens of *L. larydas* coming from the hot valleys and woodlands of the western part of its range and those from the eastern parts of the African continent. The latter, to which Gerstæcker gave the name cited above, are always paler blue on the upper side, and distinctly paler below. The difference is hardly specific, but is an illustration, one of many, showing that climatic and other influences are at work in producing variations on the two sides of the continent.

(361) 6. **Lycænesthes lachares** Hewitson

Lycænesthes lachares HEWITSON, 1878, Ill. Diurn. Lep., Lycænidæ, p. 225, Pl. xci, figs. 33, 34.

(For synonymy consult Bethune-Baker, 1910, Trans. Ent. Soc. London, p. 47.)

One female taken at Medje, July 5, 1910.

(362) 7. **Lycænesthes rufomarginata** Bethune-Baker

Lycænesthes rufomarginata BETHUNE-BAKER, 1910, Trans. Ent. Soc. London, p. 54, Pl. II, fig. 14; Pl. IX, fig. 26.

One male captured at Medje, April 5, 1910.

(363) 8. **Lycænesthes makala** Bethune-Baker

Lycænesthes makala BETHUNE-BAKER, 1910, Trans. Ent. Soc. London, p. 58, Pl. II, fig. 16; Pl. IX, figs. 27, 28.

One male taken at Medje about the middle of July.

(364) 9. **Lycænesthes scintillula** Holland

Lycænesthes scintillula HOLLAND, 1891, Psyche, VI, p. 50. SMITH AND KIRBY, 1893, Rhop. Exot., Afr. Lycænidæ, p. 98, Pl. XXII, figs. 3, 4. BETHUNE-BAKER, 1910, Trans. Ent. Soc. London, p. 60, Pl. III, fig. 3; Pl. x, figs. 30, 31.

Three males taken at Medje, one in each of the months, May, June, and July.

(365) 10. **Lycænesthes pyroptera** Aurivillius

Lycænesthes pyroptera AURIVILLIUS, 1895, Ent. Nachr., XXI, p. 382; 1899, Rhop. Æthiop., p. 352, Pl. VI, fig. 3. BETHUNE-BAKER, 1910, Trans. Ent. Soc. London, p. 61.

One male taken at Stanleyville, September 5, 1909. The specimen agrees absolutely with the description and figure given by Aurivillius.

TRICLEMA Karsch(366) 1. **Triclema lutzi**, new species

Plate XII, Figure 2, ♂

♂. Near *T. rufoplagata* Bethune-Baker (cf. Trans. Ent. Soc. London, 1910, p. 72, Pl. III, fig. 8) but considerably smaller in size, and differently marked. The thorax and abdomen are black above, pale chestnut below. The chestnut area of the fore wings, which in *rufoplagata* is small and confined to the immediate region about the origin of veins 2 and 3, is in *T. lutzi* extended so as to cover the greater part of the discal area, only the base, the costa, and a broad marginal band remaining dark in color. At the end of the cell, which in its lower half is distally invaded by the chestnut color, there is a narrow black vertical bar, which merges into the dark costal area. The secondaries are very dark brown (sepia) almost black, with a fine light line followed by a very thin black line on the outer border, the fine dark line showing against the light line within, and the paler cilia. There is an imperfect ocellus at the anal angle and a more regularly formed ocellus in the space between veins 2 and 3 at their extremities. These eye-spots are defined inwardly by a few scales slightly lighter than the rest of the wing. On the under side the ground-color of the wings is moderately dark brownish fuscous, crossed by darker lines and bands, which are defined more or less clearly on either side by lighter lines. The costa of the primaries at the base is black for a short distance, there is a light line following, and distally a rather prominent black triangular spot with its apex pointing toward the costa; there is a dark vertical bar near the end of the cell, defined inwardly and outwardly by paler lines; the median transverse line is curved somewhat irregularly, and widens and grows blacker as it approaches the inner margin; the postmedian macular band is widest and darkest between veins 3 and 5; the submarginal band is accentuated by black spots before the apex in spaces 6 and 7; there is a thin light line just before the equally thin dark marginal line which latter is clearly defined against the rather light colored cilia. The hind wings below have several dark basal and subbasal short transverse spots. At the end of the cell is a double bar of dark color defined by paler lines before and behind; the median band, which runs from the costa to the inner margin in an irregular curve is accentuated at the middle of the costa by a dark quadrate spot

and terminates on the inner margin in the usual V-shaped spot; the postmedian macular band is darkest and broadest opposite the end of the cell, and is edged inwardly and outwardly by lighter lines; the submarginal line which is somewhat irregularly curved is thinner and not as conspicuous as the other lines; it is succeeded just before the margin by a series of semilunate darker spots in the interspaces from the upper angle as far down as vein 3; between veins 2 and 3 there is a conspicuous ocellus, defined above and on the sides, but not outwardly, by red. The pupil is deep black irrorated with a few bright metallic blue scales; at the inner angle there is an imperfectly formed ocellus, red above, pupilled with black, and dusted with a few bright scales. The marginal line is thin and dark and contrasts against the paler shade within and the lighter cilia without. Expanse, 16–20 mm.

The collection contains three specimens, all caught at Medje, one in April, one in June, and one in July. They are males. The type and a paratype are in The American Museum of Natural History, one paratype is in the Holland Collection in the Carnegie Museum. I take pleasure in naming this species in honor of the amiable curator of the entomological collections of the American Museum.

PHLYARIA Karsch

(367) 1. **Phlyaria cyara** (Hewitson)

Lycæna cyara HEWITSON, 1876, Exot. Butt., V, *Lycæna*, Pl. I, figs. 9, 10.

Phlyaria cyara KARSCH, 1895, Ent. Nachr., XXI, p. 303.

Cupido phlyaria AURIVILLIUS, 1898, Rhop. Æthiop., p. 358.

There are two males, one caught at Risimu in September 1909, the other at Medje in July 1910. The insect is not uncommon in the interior of Cameroon, but I have never seen a female and this sex seems, so far as I can now recall, never to have been thus far described.

(368) 2. **Phlyaria heritsia** (Hewitson)

Lycæna heritsia HEWITSON, 1876, Exot. Butt., V, *Lycæna*, Pl. I, figs. 11, 12.

Hyreus virgo BUTLER, 1896, Proc. Zool. Soc. London, p. 121, Pl. VI, fig. 1, ♀.

Cupido heritsia AURIVILLIUS, 1898, Rhop. Æthiop., p. 359.

Five males, one taken at Bafwasende, September 23, 1909, the rest at Medje from April to September.

URANTHAUMA Butler

(369) 1. **Uranthauma falkensteini** (Dewitz)

Plebeius falkensteini DEWITZ, 1879, Nov. Act. Acad. Nat. Cur., XLI, part 2, p. 205, Pl. XXVI, fig. 5.

Cupido falkensteini AURIVILLIUS, 1898, Rhop. Æthiop., p. 360.

Four males captured at Medje, June, August, and September.

CASTALIUS Hübner(370) 1. **Castalius carana** (Hewitson)

Lycæna carana HEWITSON, 1876, Exot. Butt., V, *Lycæna*, Pl. 1, fig. 6.

Cupido carana AURIVILLIUS, 1898, Rhop. Æthiop., p. 364.

This species, which is quite common in Cameroon and the valley of the Ogové, was taken in some numbers by the expedition at Medje, where twenty-three specimens were taken, the dates of capture ranging from July to September. There is also a specimen taken at Bafwabaka, January 7, and one caught at Gamangui on February 1, 1910. Some of the females are tinged with yellowish.

The species must not be confounded with *C. margaritaceus* Em. Sharpe, paratypes of which are in the writer's collection, and which it superficially resembles.

(371) 2. **Castalius isis** (Drury)

Papilio isis DRURY, 1773, Ill. Exot. Ent., II, p. 6, Pl. III, figs. 4, 5.

Cupido isis AURIVILLIUS, 1898, Rhop. Æthiop., p. 365.

The female of this pretty insect seems not to have been described hitherto. As there is one example of this sex in the collection I may say that there is no difference in the form of the markings to distinguish it from the males but that all the bands and spots instead of being brilliant blue as in the male, are blackish in the female, there being only a faint trace of the blue color in this sex at the bases of the fore and hind wings.

The collection contains twenty-four males and one female. Most of them were taken at Medje from April to September, but two or three were captured at Gamangui in February and June, and several at Niangara in November 1910.

TARUCUS Moore(372) 1. **Tarucus telicanus** (Lang)

Papilio telicanus LANG, 1789, Verzeichniss meiner Schmetterlinge, part 2, p. 47.

Hesperia (Rurales) plinius FABRICIUS, 1793, Ent. Syst., III, part 1, p. 284.

Cupido telicanus var. *plinius* AURIVILLIUS, 1898, Rhop. Æthiop., p. 364.

There are three males and one female. One of the males was caught at Niangara, the rest were taken at Medje in July and August.

AZANUS Moore(373) 1. **Azanus mirza** (Plötz)

Lycæna mirza PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 203.

Cupido mirza AURIVILLIUS, 1898, Rhop. Æthiop., p. 366.

The species is represented in the collection by thirty-one specimens, twenty-six taken at Gamangui in February, three at Medje, one in each of the months, June, July, and September, one at Bafwabaka in December 1909, and one at Faradje, labelled "1911-1912."

NACADUBA Moore

(374) 1. **Nacaduba æthiops** (Mabille)

Kharsanda æthiops MABILLE, 1877, Bull. Soc. Zool. France, II, p. 219.

Nacaduba stratola HOLLAND, 1891, Psyche, VI, p. 52.

Cupido æthiops AURIVILLIUS, 1898, Rhop. Æthiop., p. 367.

There are thirteen males, eleven caught at Gamangui in February, the other two at Medje in July 1910.

POLYOMMATUS Moore

(375) 1. **Polyommatus bæticus** (Linnæus)

Papilio bæticus LINNÆUS, 1767, Syst. Nat., 12th Ed., p. 789.

Cupido bæticus AURIVILLIUS, 1898, Rhop. Æthiop., p. 367.

Two males, one caught at Medje in August 1910, the other labelled "Faradje, 1911-1912."

CUPIDO Schrank

(376) 1. **Cupido asopus** (Hopffer)

Lycæna asopus HOPFFER, 1855, Monatsber. Akad. Wiss. Berlin, p. 642.

Cupido asopus AURIVILLIUS, 1898, Rhop. Æthiop., p. 373. (As synonym of *C. malathana* Boisduval.)

Two damaged specimens, a male taken at Bafwabaka, December 1909, and a female caught at Medje, July 1910.

Aurivillius sinks *asopus* Hopffer as a synonym of *C. malathana* Boisduval, but I cannot bring myself to agree with him, in the light of the material before me, which I believe to be correctly identified. As species go in this group, there seem to be reasons for regarding the two as distinct. But I will not discuss the matter except to say that the form *malathana* from Madagascar is in my opinion at least a well-marked insular variety and easily separable from the continental form *asopus*.

(377) 2. **Cupido osiris** (Hopffer)

Lycæna osiris HOPFFER, 1855, Monatsber. Akad. Wiss. Berlin, p. 622.

Cupido osiris AURIVILLIUS, 1898, Rhop. Æthiop., p. 374.

There are four males, all taken at Faradje, one without date, one caught in December 1912, and two labelled "1911-1912." Besides, there is a dwarfed female captured, according to the label, at Bumba, July 1909.

(378) 3. **Cupido patricia** (Trimen)*Lycæna patricia* TRIMEN, 1881, S. Afr. Butt., II, p. 20.*Cupido patricia* AURIVILLIUS, 1898, Rhop. Æthiop., p. 374.

There are eight specimens, one male, and seven females; one female taken at Kwamouth, July 1909, the rest at Niangara in November 1910. They have been carefully compared with specimens of *C. (Lycæna) patricia* (Trimen), received from Mr. Trimen, the author of the species, and appear to agree with them. I may say, in passing, that I think that the species represents a varietal form of *C. parsimon* (Fabricius) and it is hard to define the difference between the two forms without very carefully scrutiny.

CUPIDOPSIS Karsch(379) 1. **Cupidopsis hippocrates** (Fabricius)*Hesperia (Rurales) hippocrates* FABRICIUS, 1793, Ent. Syst., III, part 1, p. 288.*Cupido hippocrates* AURIVILLIUS, 1898, Rhop. Æthiop., p. 376.*Cupidopsis hippocrates* NEAVE, 1910, Proc. Zool. Soc. London, p. 601.

Two males taken at Medje in August 1910.

I follow Neave in referring this species to the genus *Cupidopsis* Karsch, the type of which is *C. jobates*. It might as well be placed here as anywhere, unless a new genus be erected for its reception. In its markings it shows little resemblance to *C. jobates*, but structurally it is very close to that species. The female is figured in Mabille's work on the Lepidoptera of Madagascar, included in Grandidier's magnificent series of volumes on the natural history of that island. It differs from the male in lacking the white at the apices of the fore wings, and in having the hind border of the secondaries narrowly margined with white upon which the marginal ocelli are conspicuous. I have an extensive series of this species from various parts of Africa, west, east, and south.

EVERES Hübner(380) 1. **Everes togara** (Plötz)*Lycæna togara* PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 202.*Cupido micylus* var. *togara* AURIVILLIUS, 1898, Rhop. Æthiop., p. 377.

This species, which is common in Cameroon and the valley of the Ogové, is represented in the collection by three tattered specimens, a male taken at Medje in September and two females caught at Medje, one in April, the other in August.

Aurivillius regards this insect as a varietal form of *E. micylus* (Cramer) but Mr. Bethune-Baker informs me that a careful study of the genitalia made by him reveals that *togara* (Plötz) is specifically distinct from *micylus* (Cramer).

ZIZERA Moore(381) 1. **Zizera antanossa** (Mabille)

Lycæna antanossa MABILLE, 1877, Ann. Soc. Ent. France, (3) VII, Bull., p. 72.

Cupido antanossa AURIVILLIUS, 1898, Rhop. Æthiop., p. 378.

Zizera antanossa BUTLER, 1900, Proc. Zool. Soc. London, p. 100, Pl. XI, figs. 14, 15.

Two poorly preserved males taken at Faradje, one without date, the other labelled "1911-1912."

(382) 2. **Zizera gaika** (Trimen)

Lycæna gaika TRIMEN, 1862, Trans. Ent. Soc. London, p. 403.

Cupido gaika AURIVILLIUS, 1898, Rhop. Æthiop., p. 378.

Zizera gaika BUTLER, 1900, Proc. Zool. Soc. London, p. 109.

One male taken at Bumba, July 29, 1909.

(383) 3. **Zizera lysimon** (Hübner)

Papilio lysimon HÜBNER, 1798-1803, Europæische Schmett., figs. 534, 535.

Cupido lysimon AURIVILLIUS, 1898, Rhop. Æthiop., p. 379.

Zizera lysimon BUTLER, 1900, Proc. Zool. Soc. London, p. 108, Pl. XI, fig. 9.

Two specimens captured at Freetown, Sierra Leone, July 14, 1909.

OBORONIA Karsch(384) 1. **Oboronia plurilimbata** (Karsch)

Thermoniphys plurilimbata KARSCH, 1895, Ent. Nachr., XXI, p. 303.

Cupido plurilimbata AURIVILLIUS, 1898, Rhop. Æthiop., p. 380.

Three males taken at Medje, one in April, one in August, and one in September. They agree completely with the description given by Karsch, and I refer them to his species, of which no figure has been published, so far as I can recall.

(385) 2. **Oboronia punctata** (Dewitz)

Plebeius punctatus DEWITZ, 1879, Nov. Act. Acad. Nat. Cur., XLI, part 2, p. 205, Pl. XXVI, fig. 15.

Cupido punctatus AURIVILLIUS, 1898, Rhop. Æthiop., p. 381.

One male caught at Munie Katoto, September 10, 1909.

This is a very common species in southern Cameroon and the valley of the Ogové.

(386) 3. **Oboronia ornata** (Mabille)

Lycæna ornata MABILLE, 1890, Ann. Soc. Ent. France, (6) X, p. 24, Pl. II, fig. 6.

Cupido ornatus AURIVILLIUS, 1898, Rhop. Æthiop., p. 381.

Three specimens taken at Medje, two in April, one in June.

Like the foregoing, this is a very common insect in southern Cameroon and the valley of the Ogové River. We have in the Museum at Pittsburgh more than one hundred examples, including the slight varietal form named *vestalis* by Aurivillius, in which the hind marginal band of the secondaries is broader than in the type figured by Mabille, and several specimens in which the white areas of the wings are broadly beautiful straw-yellow. To this yellow form, which has not heretofore been described or figured, I apply the varietal name **flava**. The type is in the Holland Collection in the Carnegie Museum and, with several cotypes, was taken at Benito, Spanish Guinea, by the late Dr. A. C. Good.

In this connection I may state that this insect is the one to which the Fabrician name *elorea* has in the past been applied by authors. The Fabrician description, like many of those given by early authors, is too brief and concise to enable a student to reach a proper conclusion. The only figure of *elorea* is given by Donovan in the 'Naturalist's Repository,' Pl. LIII, in reference to which Aurivillius makes the comment that it may be "*species fictitia*." I confess that among the hundreds of specimens of this genus I have had in my hands I have never found one to agree with Donovan's figure, and that I share in the view of Aurivillius that if it is *elorea* Fabricius, the species is now probably extinct, if indeed it ever existed.

Papilionidæ

Pierinæ

LEPTOSIA Hübner

(387) 1. **Leptosia medusa** (Cramer)

Papilio medusa CRAMER, 1777, Pap. Exot., II, p. 86, Pl. CL, fig. F.

Leptosia medusa AURIVILLIUS, 1898, Rhop. Æthiop., p. 387.

Eight specimens, one taken at Bafwasende in January, one at Gamangui in February, the rest at Medje in July and August.

(388) 1a. **Leptosia medusa immaculata** (Aurivillius)

Nychitona medusa immaculata AURIVILLIUS, 1895, Ent. Tidskr., XVI, p. 257.

Leptosia medusa ab. *immaculata* AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 31, Pl. xa.

Three examples, one taken at Ngayu in April, one at Medje in August, and one at Niangara in November.

(389)

2. **Leptosia nupta** (Butler)*Nychitona nupta* BUTLER, 1873, Cist. Ent., I, p. 175.*Leptosia nupta* AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 31, Pl. xb.

Twenty-two specimens, of which all were captured at Medje except two caught at Gamangui in February and one in June. The specimens from Medje were mostly taken in June, but there are individuals labelled as captured there in every month from March to August inclusive.

MYLOTHRIS Hübner

(390)

1. **Mylothris chloris** (Fabricius)*Papilio chloris* FABRICIUS, 1775, Syst. Ent., p. 473.*Mylothris chloris* AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 32, Pl. xd.

A male and a female taken at Niangara in November, and another female caught at Faradje "1911-1912."

(391)

2. **Mylothris sjöstedti** Aurivillius*Mylothris sjöstedti* AURIVILLIUS, 1895, Ent. Tidskr., XVI, p. 260, Pl. III, fig. 2; 1910, Seitz, Gross-Schmett., XIII, p. 33, Pl. xia.

I refer to this species a single male, taken at Medje, August 24, 1910. It differs somewhat from the type, in that the blue-gray color extends from the base of the fore wing almost entirely over the wing, and is not restricted to its basal area. In other respects it agrees entirely with the figures and descriptions given by the author of the species.

(392)

3. **Mylothris spica** (Mæschler)*Tachyris spica* MÆSCHLER, 1883, Verh. zool.-bot. Ges. Wien, XXXIII, p. 277, ♂.*Papilio rhodope* DONOVAN, 1824, Naturalist's Repository, III, Pl. LXXXVI (*non rhodope* Fabricius), ♀.*Mylothris spica* AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 33, Pl. xd, ♂.

There has existed some confusion as to this species. I have in my possession a long series of males and females collected for me by the late Dr. A. C. Good in the valley of the Ogové River. A number of pairs were taken *in coitu*. This series shows clearly that the insect, which was in 1883 described by Mæschler under the name *spica*, is the male of the butterfly which Donovan in 1824 figured as the female of *P. rhodope* Fabricius, which it is not. For the form figured by Donovan I now propose the name **donovani** to distinguish it from other female forms of the same species. Besides the females belonging to this varietal form there are numerous other females, also taken *in coitu* with males of *M. spica*, in

which the marginal borders more nearly resemble those of *M. poppea* (Cramer). In these, however, the fore wings are either white or very faintly laved with yellow. The females of this species are therefore polymorphic.

In the Lang-Chapin Collection there is only one female which belongs to the form *M. donovani* Holland. It was taken at Niangara in November. There are twenty-seven males of typical *spica*, one captured at Kwamouth in July 1909, another at Avakubi in October 1909, a couple at Gamangui in June, and the rest at Medje in June, July, and August 1910.

(393) 4. ***Mylothris sulphurea*** Aurivillius

Mylothris sulphurea AURIVILLIUS, 1895, Ent. Tidskr., XVI, p. 259, Pl. III, fig. 3; 1910, Seitz, Gross-Schmett., XIII, p. 33, Pl. xf.

Six males and two females, all taken at Medje, except one male caught at Munie Katoto in September. The specimens from Medje were taken from June 20 to August 24, 1910.

(394) 5. ***Mylothris rubricosta*** (Mabille)

Pieris rubricosta MABILLE, 1890, Ann. Soc. Ent. France, (6) X, p. 28.

Mylothris rubricosta AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 35, Pl. xic.

Six males and two females taken at Medje in June, July, and August. This species is not very far removed from *M. bernice* (Hewitson), from which it differs in having the marginal border and spots of both wings smaller, and the female not suffused so broadly with fuscous upon the lighter areas of the fore and hind wings. I have a long series of *M. bernice* from the Ogové, from which this form differs in the respects noted, but I am not convinced that they are specifically distinct.

APPIAS Hübner

(395) 1. ***Appias rhodope*** (Fabricius)

Papilio rhodope FABRICIUS, 1775, Syst. Ent., p. 473.

Appias rhodope AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 37, Pl. xid, ♂; xie, ♀.

Seventeen males and four females. One male was taken at Batama in September 1909; one female at Risimu in September of the same year; one female at Niangara in November 1910; and the rest at Medje from June to August inclusive.

(396) 2. ***Appias phaola*** (Doubleday)

Pieris phaola DOUBLEDAY, 1847, Ann. Mag. Nat. Hist., (1) XX, p. 63.

Appias phaola AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 37, Pl. xic, ♂; xid, ♀.

A single male taken at Medje, August 20, 1910.

(397) 3. **Appias sabina** (Felder)

Pieris sabina FELDER, 1865, Reise Novara, Lep., III, p. 165.

Appias sabina AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 38, Pl. xif, ♂; xie, ♀.

The collection contains twenty-three males and two females. One male was taken at Kwamouth in July 1909. One female from Lubila, two males from Risimu, and another from Munie Katoto are, according to the labels, captures made in September 1909. One male was taken at Bafwasende in January, and four at Gamangui in February 1910. All the rest were caught at Medje at dates running through June, July, and August.

(398) 4. **Appias epaphia** (Cramer)

Papilio epaphia CRAMER, 1779, Pap. Exot., III, p. 26, Pl. ccvii, figs. D, E.

Appias epaphia AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 38, Pl. xif, ♂.

One male taken at Kwamouth, July 15, 1909.

(399) 5. **Appias** sp. (?)

There is a single female taken at Gamangui, February 1, 1910, which agrees with that sex of *A. epaphia* with the exception that the base of the primaries and the limbal area of the secondaries lack the dark markings which are characteristic of this sex in that species. As the female of *A. epaphia* is somewhat variable, I hesitate to describe this even as a new variety, though it differs widely in appearance from anything the figures and descriptions of which are known to me. It evidently is a very near ally of the foregoing species. The apical markings on both sides of the fore wing are identical with those found in the females of that species, but the fact that the remaining areas of both the fore and hind wings are white, except for a little dark squamation near the base, makes the specimen contrast markedly with the long series of *A. epaphia* in my collection, with which I have compared it.

PIERIS Godart(400) 1. **Pieris creona** (Cramer)

Papilio creona CRAMER, 1776, Pap. Exot., I, p. 148, Pl. xcv, figs. C, F.

Pieris creona AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 40, Pl. xiiib.

Two males taken at Faradje in November, one female caught at Niangara in the same month, and a female captured at Medje, August 24, 1910, constitute the only representatives of this species in the collection.

(401) 2. ***Pieris infida*** Butler

Pieris infida BUTLER, 1888, Proc. Zool. Soc. London, p. 77. AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 41, Pl. XIIIb.

There are two males and two females of this species in the collection. The males were taken at Faradje and the females at Niangara. One male bears the date "November 1910"; the rest of the specimens are simply marked "1911-1912."

(402) 3. ***Pieris calypso*** (Drury)

Papilio calypso DRURY, 1773, Ill. Exot. Ent., II, p. 30, Pl. XVII, figs. 3, 4, ♀.

Belenois (Pieris) welwitschii ROGENHOFER, 1889, Ann. K. K. Hofmuseums Wien, IV, p. 548, Pl. XXIII, fig. 2, ♀.

Pieris calypso AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 42, Pl. XIIId.

Of this common and well-known species there are forty-two males, two females of the typical form with white hind wings, and four females of the variety named *welwitschi* by Rogenhofer, in which the hind wings are orange. The specimens were mostly taken at Medje, a few at Gamangui, some at Niangara, and others at scattered localities. The dates of capture are those associated with these localities on all of the labels.

(403) 4. ***Pieris theora*** Doubleday

Pieris theora DOUBLEDAY, 1846, Ann. Mag. Nat. Hist., (1) XVII, p. 25. AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 43, Pl. XIIIe.

Five males, one taken at Basoko in July 1909, one at Bafwasende in September of the same year, and three captured at Medje, one in each of the months, June, July, and September.

(404) 5. ***Pieris theuszi*** Dewitz

Pieris theuszi DEWITZ, 1889, Ent. Nachr., XV, p. 107, Pl. II, figs. 6-9. AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 44, Pl. XIVa.

Nine males and one female. The female, which is in not very good condition, was taken at Batama in September 1909; one male was caught at Bafwasende in the same month and year; a couple were taken at Niangara in November; and the remaining six were captured at Medje in June, July, and August.

(405) 6. ***Pieris solilucis*** Butler

Pieris solilucis BUTLER, 1874, Trans. Ent. Soc. London, p. 433. AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 44, Pl. XIVa.

All of the seventeen specimens are males. One was taken at Medje in August, the remaining sixteen were caught at Niangara in November.

TERACOLUS Swainson

(406)

1. **Teracolus evippe** (Linnæus)*Papilio evippe* LINNÆUS, 1764, Mus. Lud. Ulr., p. 239.*Teracolus evippe* AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 57, Pl. xviii.

I refer a specimen without abdomen and with badly tattered wings to this species. It was taken at Matadi, June 20, 1909. It is singular that this specimen should be the only representative of this great genus, which has its metropolis in Africa and which should be represented by a number of species in the eastern parts of the region visited by the expedition, the land of the "White Rhinoceros." It is absent from the densely wooded jungles of the great river-valleys, but appears in the grass-lands, wherever they occur south of the Sahara.

TERIAS Swainson

This genus, owing to the seasonal and local variations which occur in every species, presents many puzzling problems, some of which still await satisfactory solution. A multitude of so-called species, some of which are of doubtful validity, have been erected upon slight but apparently more or less constant differences. The test of breeding will alone serve to decide finally what is the exact relationship of some of the forms. The writer has had in his hands at various times, and still possesses, vast numbers of specimens representing the various forms occurring in Africa, but within certain limits has been hitherto unable to satisfy himself as to the proper classification of some of the varieties. The species appear to run into each other, and to be subject to great variation both in size, coloration, and markings. The following account of the specimens brought home by the American Museum Congo Expedition represents the results of very careful study and comparison with other specimens, many of which had been originally determined by direct comparison with the types in European collections, but nevertheless it leaves something to be desired, especially in the case of *T. senegalensis* and its varieties, which is extremely variable.

(407)

1. **Terias brenda** Doubleday and Hewitson*Terias brenda* DOUBLEDAY AND HEWITSON, 1847, Gen. Diurn. Lep., II, p. 79, Pl. ix, fig. 6. AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 64, Pl. xxii.

Seventy-six males and two females, taken at almost every place where collections were made. The dates of capture represent every month in the year.

(408) 1a. ***Terias brenda maculata*** Aurivillius

Terias brenda var. *maculata* AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 64, Pl. xxiiic.

Two males taken at Gamangui in February, and an aberrant female caught at Bafwasende in January. This is the winter form of the species.

(409) 2. ***Terias senegalensis*** Boisdual

Terias senegalensis BOISDUVAL, 1836, Spec. Gén. Léop., I, p. 672. AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 64, Pl. xxiiic.

The specimens which I refer to this species fall into two groups, one in which the marginal band of the primaries at the outer angle is broad and strongly produced on vein 2 as an inwardly projecting tooth, the other in which it is narrow and only slightly angulated on vein 2. Of the first group there are in the present collection twenty-two males, the majority taken at Faradje in November. One is labelled as from Munie Katoto, one from Kwamouth, one from Gamangui, and one from Basoko. The four last mentioned were taken in the months of June and July.

Of the second group there are twenty-six males and six females. Of these, thirteen males and two females were taken at Medje, one male and one female in January, one male in September, all the rest in June and July. Two males and a female are labelled as from Gamangui, taken in February, the remainder at Niangara and Faradje in November, so far as the labels indicate the date of capture.

(410) 2a. ***Terias senegalensis bisinuata*** (Butler)

Terias bisinuata BUTLER, 1876, Ann. Mag. Nat. Hist., (4) XVIII, p. 485. AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 64, Pl. xxiiid.

This, which is claimed to be the winter form of *T. senegalensis* and is characterized by heavy markings on the under side of the wings, is represented in the collection by fifteen males, twelve taken at Faradje in November, so far as the labels are dated, though many of the labels lack any indication of the month. One was captured at Niangara in the month named, one at Kwamouth on July 15, 1909, and one at Medje in August. Most of the specimens have the marginal band of the primaries broad at the outer angle and strongly toothed inwardly, but there are several in which it is narrow and only slightly angulated on vein 2, in this respect resembling the specimens in the second group referred to under the preceding form.

(411) 3. ***Terias floricola ceres*** (Butler)

Terias floricola BOISDUVAL, 1833, Faune Ent. Madagr., p. 21.

Terias ceres BUTLER, 1875, Ann. Mag. Nat. Hist., (5) XVII, p. 218, Pl. v, fig. 3.

AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 64, Pl. xxiiid.

There are two specimens, a male caught at Faradje, "1911-1912," and a female taken at Niangara in November.

(412) 4. ***Terias hapale*** Mabilie

Terias hapale MABILLE, 1882, Le Naturaliste, II, p. 99. AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 65, Pl. xxiiid.

Of this species there are four males and one female, all taken at Faradje. There is no clue to the month, the specimens being simply labelled "1911-1912."

(413) 5. ***Terias desjardinsi*** Boisduval

Terias desjardinsi BOISDUVAL, 1833, Faune Ent. Madagr., p. 22, Pl. II, fig. 6. AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 65, Pl. xxiiie.

Of this species there are four typical males, all taken at Niangara in November. There are nineteen other males taken at Niangara and Faradje, which are mostly smaller in size and with broader marginal bands, marking a transition in the direction of the following form, *T. regularis*, and intermediate between it and typical *desjardinsi*.

(414) 6. ***Terias regularis*** Butler

Terias regularis BUTLER, 1876, Ann. Mag. Nat. Hist., (4) XVIII, p. 486. AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 65, Pl. xxiiie.

This is regarded by Professor Aurivillius as an extreme summer form of the preceding, and is characterized by the great enlargement of the width of the marginal bands.

There are in the collection thirty-seven males and four females. Some, including all the females, were taken at Medje in June and July, some are labelled as taken at Niangara in November, one at Bafwabaka in January, another at Gamangui in February, and a number at Faradje, "1911-1912."

(415) 7. ***Terias brigitta*** (Cramer)

Papilio brigitta CRAMER, 1780, Pap. Exot., IV, p. 82, Pl. cccci, figs. B, C.

Terias brigitta AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 65, Pl. xxiiif.

One damaged male taken at Matadi, June 24, 1909.

(416) 8. **Terias zoë** Hopffer

Terias zoë HOPFFER, 1855, Monatsber. Akad. Wiss. Berlin, p. 640. AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 65, Pl. xxii f.

One male taken at Niangara in November, and five males and two females caught at Faradje, "1911-1912."

ERONIA Boisduval(417) 1. **Eronia pharis** (Boisduval)

Pieris pharis BOISDUVAL, 1836, Spec. Gén. Léop., I, p. 443.

Eronia pharis AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 62, Pl. xxii c.

Twelve males and six females, two of the former taken at Niangara in November, and one of the latter at Gamangui in June. All the other specimens were captured at Medje, the dates ranging from early in June to the end of August.

(418) 2. **Eronia thalassina** (Boisduval)

Pieris thalassina BOISDUVAL, 1836, Spec. Gén. Léop., I, p. 443.

Eronia thalassina AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 62, Pls. xvc, xxie.

Twenty-five males, one of which was taken at Bafwasende in September, all the rest at Medje, a few in April, and the others from June to September.

(419) 3. **Eronia argia** (Fabricius)

Papilio argia FABRICIUS, 1775, Syst. Ent., p. 470.

Eronia argia AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 62, Pl. xic, d.

Twenty-two males and one female, all taken at Medje, except one male caught at Boyulu in September 1909, and another at Niangara in November 1910. Of the specimens captured at Medje a few are dated as of April, the remainder as of June to September.

CATOPSILIA Hübner(420) 1. **Catopsilia florella** (Fabricius)

Papilio florella FABRICIUS, 1775, Syst. Ent., p. 479.

Catopsilia florella AURIVILLIUS, 1910, Seitz, Gross-Schmett., XIII, p. 63.

Sixty-nine males and six females. Most of the specimens, including all of the females, were caught at Niangara in November. There are a few taken at Gamangui in February and at Stanleyville and Medje in July and August.

Papilioninæ**PAPILIO** Linnæus

There are about sixty species and subspecies of this genus which are recorded from the African continent. Of these, twenty-three are represented in the collection upon which I am reporting.

(421) 1. **Papilio antimachus** Drury

Papilio antimachus DRURY, 1782, Ill. Exot. Ent., III, p. 1, Pl. i. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 11, Pl. 1a.

One good and two somewhat damaged males. One is labelled as from Batama, taken in September 1909, another from Avakubi, May 1910, the third from Bafwasende, September 1910.

(422) 2. **Papilio zalmoxis** Hewitson

Papilio zalmoxis HEWITSON, 1864, Exot. Butt., III, *Papilio*, Pl. vi, fig. 18. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 12, Pl. 1b.

There are five males, one caught at Avakubi, October 4, 1909, a second taken at Gamangui in February, two captured at Bafwasende in September, and the fifth caught at Niangara in November 1910.

(423) 3. **Papilio dardanus** Brown

Papilio dardanus BROWN, 1776, New Ill. Zool., p. 52, Pl. xxii. AURIVILLIUS, 1909, Seitz, Gross-Schmett., XIII, p. 13, Pl. 11a, ♂.

Papilio hippocoön FABRICIUS, 1793, Ent. Syst., III, part 1, p. 38, ♀. HEWITSON, 1868, Exot. Butt., IV, *Papilio*, Pl. xii, fig. 38. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 13, Pl. 11b.

Twenty-eight males of this form, most of them taken at Medje, a few in April and a few in September, but most of them in July and August; one is labelled "Stanleyville, August 23, 1909," another "Munie Katoto, November 1909," and a third is marked as caught at "Niangara, November 1910."

One specimen of the female form *hippocoön* was taken at Niangara, November 17, 1910.

(424) 4. **Papilio cynorta** Fabricius

Papilio cynorta FABRICIUS, 1793, Ent. Syst., III, part 1, p. 3. WESTWOOD, 1843, Arcana Ent., I, p. 15, Pl. xl, figs. 3, 4, ♂.

Papilio boisduvalianus WESTWOOD, 1843, Arcana Ent., I, p. 151, Pl. xl, figs. 1, 2.

There are twelve males and two females. One greatly dwarfed male was caught at Niangara in November; all the rest are from Medje, two males taken in April, the rest in August and September.

(425) 5. ***Papilio zenobia*** Fabricius

Papilio zenobia FABRICIUS, 1775, Syst. Ent., p. 503. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 16, Pl. iib.

Thirty-one specimens, including a couple of females. One male is somewhat aberrant, having the pale bands yellowish, not white as is usual. The specimens were mostly taken at Medje, a few in April, the rest from July to September inclusive, although several are ticketed as caught both at Medje and Niangara in November.

A number of the males have a small white spot at the end of the cell of the fore wing, as is always the case with the females, and therefore belong to the so-called "variety," to which Suffert has given the name *Papilio nobicea* (*Nomen vix conservandum*).

(426) 6. ***Papilio mechowianus*** Dewitz

Papilio cypraefila var. *mechowiana* DEWITZ, 1885, Ent. Nachr., XI, p. 305, fig., ♂. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 16, Pl. iia, ♀.

Papilio mechowianus AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 16, Pl. iia.

There are four specimens, one caught at Medje in July, the others at Niangara in November. They are all more or less defective, rubbed, and lacking antennæ.

(427) 7. ***Papilio gallienus*** Distant

Papilio gallienus DISTANT, 1879, Proc. Zool. Soc. London, p. 649.

There is a small army of specimens which I refer to this species, although the males have the transverse light bands of the wings on the upper side narrower than is shown in the figure given by Aurivillius (cf. Seitz, XIII, Pl. i). The females agree more nearly with the figure cited, and indeed this figure may represent the female. The author has unfortunately failed to indicate in the text or on the plate what sex his figure represents.

I count one hundred and twelve specimens of this species, mostly taken at Medje, or near by, at Gamangui, Bafwasende, and Bafwaboli. A few were caught in April, but the great majority were captured in July, August, and September.

(428) 8. ***Papilio hesperus*** Westwood

Papilio hesperus WESTWOOD, 1843, Arcana Ent., I, p. 189, Pl. XLVIII.

There are nine males taken at Medje from July to September.

(429) 9. ***Papilio nireus*** Linnæus

Papilio nireus LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 464. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, Pl. va, vb.

This species is represented by sixty-six males, some of which by the reduction in width of the blue transverse band on the upper side of the wings approach in appearance the form *lyæus* Doubleday, which is prevalent in southern and eastern Africa.

A couple of the specimens are labelled as taken at Gamangui in February, a few as caught at Avakubi and Niangara in November, but by far the greater number were collected at Medje, some in April, the rest from June to September.

(430) 10. ***Papilio bromius*** Doubleday

Papilio bromius DOUBLEDAY, 1845, Ann. Mag. Nat. Hist., (1) XVI, p. 176. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, Pl. vb, vc.

There are fifty-three males of this species in the collection. One was taken at Matadi, the rest at Medje, several in April, the rest in the mid-summer months.

(431) 11. ***Papilio demodocus*** Esper

Papilio demodocus ESPER, 1798, Ausländische Schmett., p. 205, Pl. LI, fig. 1.

This is the African race of *P. demoleus* Linnæus, which latter is common in the Asiatic tropics and also occurs in Arabia. It principally differs by being somewhat larger and darker and having the ocellus at the anal angle of the hind wing less conspicuously marked with red scales.

There are thirty-one males and six females. Twenty-seven of the specimens were taken at Niangara in the month of November, five at Medje in June and July, two at Stanleyville in August, one at Risimu in September, and one at Ngayu in December.

One of the males taken at Niangara on November 9, 1910, is remarkable because all the light spots on the upper side of the wings are brilliant lemon-yellow, and not creamy white, as is usually the case. One female belongs to the varietal form to which Capronnier gave the name *nubila* (cf. Aurivillius, Seitz, *loc. cit.*, Pl. iva) in which the light spots on the upper side of the wings are ochreous. Aurivillius suggests that this so-called subspecies is based upon discolored ("verfärbte") specimens. I find it, however, difficult to agree with him, inasmuch as I have before me as I write, quite a long series of such specimens, coming from many different localities from all over the continent, and all in such state of preservation as to militate against the idea that the color is other than natural. In every larger series of this species which has come into my hands I have found a few specimens which have the pale markings ochreous and, therefore, belong to the form *nubila*. Though

merely a color-variety, it occurs constantly, and I should say that it is no exaggeration to affirm that at least two per cent of the specimens collected belong to it.

(432) 12. ***Papilio menestheus lormieri*** Distant

Papilio menestheus DRURY, 1773, Ill. Exot. Ent., II, p. 15, Pl. ix, figs. 1, 2.

Papilio menestheus var. *lormieri* DISTANT, 1874, Ent. Mo. Mag., XI, p. 129. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 20, Pl. viii b.

All of the specimens in the collection belong to the varietal form described by Distant, which differs from typical *P. menestheus* in having the transverse band of pale spots on the fore wing nearly straight, and not curving inwardly near the costa in the direction of the base of the wing. The typical form occurs in Sierra Leone and the northern parts of the range of the insect, but the variety *lormieri* is most prevalent from southern Cameroon and the valley of the Ogové eastward into the hot wooded interior of the continent and reaches as far south as Mashonaland.

There are seventy-five specimens of this insect in the collection, including a couple of females. Most of them were taken at Medje, a few in April, the rest from June to September, but chiefly in the months of July and August. A small number are labelled as having been taken at Niangara in November.

(433) 13. ***Papilio ridleyanus*** White

Plate VI, Figure 3, typical ♂

Papilio ridleyanus WHITE, 1843, Ann. Mag. Nat. Hist., (1) XII, p. 262, fig. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 21, Pl. Ia.

Twenty-three male specimens. Of these nine are labelled as having been taken at Gamangui in February, six at Medje in June and July, three at Bafwasende in September, four at Niangara in November, and one "near Barumbu, July 31, 1909."

(434) 13a. ***Papilio ridleyanus fumosus***, new variety

Plate VI, Figure 4, ♀

P. ridleyanus is dimorphic. Two males from Medje and two from Bafwasende belong to a variety in which the red color of both wings disappears and is replaced by dull smoky gray. This is true also of a certain proportion of the females of the species. I have before me as I write a number of females taken by Antisdell in the Belgian Congo not far from Leopoldville, some of which are colored like the typical males and are

marked with bright red spots, but one of which is precisely like the smoky-winged males from Medje and Bafwasende. For this form I propose the subspecific name given above.

Type ♂ from Bafwasende in The American Museum of Natural History; allotype ♀ in Carnegie Museum (Coll. Antisdel). Paratypes in The American Museum of Natural History and Holland Collection in the Carnegie Museum.

(435) 14. **Papilio pylades** Fabricius

Papilio pylades FABRICIUS, 1793, Ent. Syst., III, part 1, p. 34. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 21, Pl. viic.

There are seventy-eight specimens, a'most all of which are males. They were mostly taken at Niangara in Hovember. Six are labelled as from Faradje, one of which bears date as of November, and the rest are without designation of day or month. Only one specimen is recorded as from Medje, and is dated August 1, 1910.

There is not much to be remarked about the specimens, except that they run very small in size, which suggests that they represent the wet-season form.

(436) 15. **Papilio angolanus** Gœze

Papilio angolanus GœZE, 1779, Ent. Beitr., III, part 1, p. 87. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 21, Pl. viib.

A solitary male, taken at Matadi, June 1909, represents this species.

(437) 16. **Papilio tyndaræus** Fabricius

Papilio tyndaræus FABRICIUS, 1793, Ent. Syst., III, part 1, p. 35. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 22, Pl. viia.

There are nine males, one of which is discolored. One was taken at Bafwabaka, January 7; two at Gamangui in February; five at Medje, two of these in April, the other three one each in June, August, and September; one was captured at Niangara in November.

(438) 17. **Papilio theorini** Aurivillius

Papilio theorini AURIVILLIUS, 1881, Ent. Tidskr., II, p. 45; 1908, Seitz, Gross-Schmett., XIII, p. 21, Pl. iiid.

Represented by four males captured at Medje, two in April, one in July, and one in August 1910.

(439) 18. **Papilio ucalegonides** Staudinger

Papilio ucalegonides STAUDINGER, 1884, Exot. Schmett., I, p. 10, Pl. v (as *P. ucalegon*).
Papilio ucalegonides AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 23.

Two males taken at Medje in September.

(440) 19. **Papilio charcedonius** Karsch

Papilio charcedonius KARSCH, 1895, Ent. Nachr., XXI, p. 285. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 24, Pl. ixc.

Two males, one caught at Medje in August, the other at Niangara in November.

(441) 20. **Papilio leonidas** Fabricius

Papilio leonidas FABRICIUS, 1793, Ent. Syst., III, part 1, p. 35. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 22, Pl. viid.

Eleven specimens caught at Medje, two in April, the rest from July to September; nine captured at Niangara in November; one at Risimu, September 8, 1909; one at Avakubi in November; and two at Faradje in December.

(442) 21. **Papilio antheus** Cramer

Papilio antheus CRAMER, 1779, Pap. Exot., III, p. 72, Pl. ccxxxiv, figs. B, C. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 25, Pl. ixa.

There are thirty-seven specimens, one caught at Medje in April, two taken at the same place in July, and all the rest captured at Gamangui in February.

(443) 22. **Papilio policenes** Cramer

Papilio policenes CRAMER, 1775, Pap. Exot., I, p. 61, Pl. xxxvii, figs. A, B. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 25.

There are one hundred and six examples of this common species in the collection. Most of them were taken at Gamangui in February, but a score or more are labelled as from Medje, a few taken in April, the rest in the mid-summer months. A few were caught at Niangara in November, and one is labelled "Ngayu, December."

(444) 23. **Papilio illyris** Hewitson

Papilio illyris HEWITSON, 1873, Ent. Mo. Mag., IX, p. 232. AURIVILLIUS, 1908, Seitz, Gross-Schmett., XIII, p. 26, Pl. viiia.

A single male taken at Medje in the first week of September.

Hesperiidæ

In view of the large number of species, nearly three hundred, belonging to the family Hesperiidæ, which are already known to occur in the region of the Congo, the collection brought home by the Lang-Chapin Expedition is somewhat disappointing. Like the collection of the Lycænidæ reported upon on preceding pages, it shows that the native collectors who were employed to gather insects concentrated their

attention upon the larger and showier species in other families. In comparison with the really splendid collection of Nymphalidæ, the Hesperiidæ make a rather poor showing. Nevertheless, some excellent things turn up, as for instance a specimen of *Procampa rara* Holland, hitherto only known by the type, which until now was unique, and two new species, *Abantis rubra* and *Leptalina niangarensis*. The collection contains ninety-four specimens of the Hesperiidæ, representing thirty-seven species, belonging to twenty-three genera. Many species are represented by but one specimen.

Hesperiinæ

SARANGESA Moore

Subgenus HYDA Mabilles

(445) 1. *Sarangesa (Hyda) grisea* (Hewitson)

Pterygospidea grisea HEWITSON, 1878, Ann. Mag. Nat. Hist., (5) I, p. 344.

Hyda micacea MABILLES, 1889, Ann. Soc. Ent. France, (6) IX, Bull., p. clxviii.

MABILLES AND VUILLOT, 1893, Novit. Lep., p. 93, Pl. XIII, fig. 3.

Hyda grisea HOLLAND, 1896, Proc. Zool. Soc. London, p. 6. MABILLES, 1904, Gen. Ins., XVII, p. 55.

The species is represented by a single male specimen captured at Medje, July 19, 1910.

Subgenus SAPE Mabilles

(446) 2. *Sarangesa (Sape) maculata* (Mabilles)

Sape maculata MABILLES, 1891, C. R. Soc. Ent. Belgique, p. lxviii. HOLLAND, 1896, Proc. Zool. Soc. London, p. 10. MABILLES, 1904, Gen. Ins., XVII, p. 55.

There are two somewhat worn male specimens from Niangara which agree so closely with a series of finely preserved examples collected for me at Mombasa by Doherty and which are undoubtedly referable to *S. maculata* Mabilles, that I do not hesitate to place them here. In 1896 at the time I prepared my 'Synonymic Catalogue of the Hesperiidæ of Africa' I only knew *S. maculata* by the description published by Mabilles. The species is well defined and thoroughly valid, as shown by the material before me.

CELÆNORRHINUS Hübner

(447) 1. *Celænorrhinus galenus* (Fabricius)

Hesperia galenus FABRICIUS, 1793, Ent. Syst., III, part 1, p. 350.

Hesperia galena DONOVAN, 1800, Ins. India, Pl. I, fig. 3, ♀.

Plesione uragalenus STAUDINGER, 1888, Exot. Schmett., part 1, p. 300; part 2, Abbild., Pl. C, ♂.

Celænorrhinus galenus HOLLAND, 1896, Proc. Zool. Soc. London, p. 12. MABILLE, 1904, Gen. Ins., XVII, p. 51.

The species is represented in the collection by four males and two females, all of which were taken at Medje, the dates of capture ranging from April to August 1910.

(448) 2. **Celænorrhinus rutilans** (Mabille)

Pardaleodes rutilans MABILLE, 1877, Bull. Soc. Zool. France, p. 235, ♀. MABILLE AND VUILLOT, 1893, Novit. Lep., p. 96, Pl. XIII, fig. 7, ♂.

Pterygospidea tergemira HEWITSON, 1877, Ann. Mag. Nat. Hist., (4) XX, p. 323.

Tagiades wærmanni PLÆTZ, 1879, Stett. Ent. Zeit., XL, p. 362, ♀.

Celænorrhinus rutilans HOLLAND, 1896, Proc. Zool. Soc. London, p. 12. MABILLE, 1904, Gen. Ins., XVII, p. 51.

Four males and one female of this species were taken at Medje in the months of July and August 1910.

(449) 3. **Celænorrhinus boadicea** (Hewitson)

Pterygospidea boadicea HEWITSON, 1877, Ann. Mag. Nat. Hist., (4) XX, p. 323.

Celænorrhinus atratus HOLLAND, (part), 1894, Ent. News, Pl. III, fig. 5.

Celænorrhinus boadicea HOLLAND, 1896, Proc. Zool. Soc. London, p. 14, Pl. III, fig. 1. MABILLE, 1904, Gen. Ins., XVII, p. 51.

One male specimen was caught at Medje in August 1910.

(450) 3. **Celænorrhinus chrysoglossus** (Mabille)

Ancistrocampta chrysoglossa MABILLE, 1891, C. R. Soc. Ent. Belgique, XXXV, p. cvii.

Celænorrhinus chrysoglossa HOLLAND, 1896, Proc. Zool. Soc. London, p. 14, Pl. III, fig. 5. MABILLE, 1904, Gen. Ins., XVII, p. 51.

There is a male in somewhat damaged condition caught at Medje, April 6, 1910.

TAGIADES Hübner

(451) 1. **Tagiades fesus** (Fabricius)

Papilio fesus FABRICIUS, 1771, Spec. Ins., II, p. 135, No. 621.

Papilio ophion DRURY, 1782, Ill. Exot. Ent., III, Pl. XVII, figs. 1, 2.

Nisoniades fesus BUTLER, 1869, Cat. Fabr. Diurn. Lep., p. 286.

Nisoniades ophion TRIMEN, 1866, Rhop. Afr. Austr., II, p. 313.

Tagiades fesus WATSON, 1893, Proc. Zool. Soc. London, p. 54. HOLLAND, 1896, Proc. Zool. Soc. London, p. 16. MABILLE, 1904, Gen. Ins., XVII, p. 53.

There are two males and four females of this well-known and widely distributed species; the males taken at Niangara in November; two females at Medje, one in July, the other in August; a third female at Niangara in November 1910; and a fourth at Stanleyville, in March 1915.

EAGRIS Guenée(452) 1. **Eagris lucetia** (Hewitson)

Leucochitonea lucetia HEWITSON, 1875, Ill. Exot. Butt., V, July, *Leucochitonea*, Pl. II, fig. 21.

Eagris lucetia HOLLAND, 1896, Proc. Zool. Soc. London, p. 19. MABILLE, 1904, Gen. Ins., XVII, p. 54.

There are four males of this well-defined species, all taken at Medje, one in April, two in June, and one in August 1910. Hewitson originally described the insect from Angola.

PROCAMPTA¹ Holland(453) 1. **Procampta rara** Holland

Procampta rara HOLLAND, 1892, Ann. Mag. Nat. Hist., (6) X, p. 293. WATSON, 1893, Proc. Zool. Soc. London, p. 59. HOLLAND, 1894, Ent. News, Pl. III, fig. 7; 1896, Proc. Zool. Soc. London, p. 19.

There is a single specimen of this scarce insect, which is labelled as taken at Medje, August 24, 1910. It has been compared with the type, and agrees with it in every particular. So far as I know, it is the second specimen which has thus far turned up. The type came from the valley of the Ogové River. The butterfly seems to have been overlooked by collectors, probably because of its small size and obscure coloration.

CAPRONA Wallengren(454) 1. **Caprona pillaana** Wallengren

Caprona pillaana WALLENGREN, 1857, Kongl. Sv. Vet.-Akad. Handl., N. S., II, No. 4, p. 51.

Stethotrix heterogyna MABILLE, 1889, Ann. Soc. Ent. France, (6) IX, Bull., p. clxxxiv. *Caprona adelica* KARSCH, 1892, Ent. Nachr., XVIII, p. 242; 1893, Berl. Ent. Zeit., XXXVIII, p. 243, Pl. VI, fig. 2.

Caprona pillaana HOLLAND, 1896, Proc. Zool. Soc. London, p. 19. MABILLE, 1904, Gen. Ins., XVII, p. 76.

There is one ragged male specimen of this species which, according to the label, was taken at "Faradje 1911-1912."

¹Mabille in the 'Genera Insectorum,' Fasc. XVII, in the Index gives the genus *Procampta* Holland and refers to "p. 59"; he also cites in the Index the specific name *rara* "sp. gen. *Procampta*," and refers to p. 131. Neither of these pages contains the slightest allusion either to the genus or the species. On page 43, in one of the keys to the genera he cites *Procampta* as belonging to Section 11. I am curious to know how the Index of the work was fabricated, so as to cite the genus and species and the pages on which they are recorded, without their being there at all. I may say in passing that while I have the warmest personal regard for the author of this work, which must be constantly referred to, it so abounds in typographical errors and omissions as to make its use exceedingly trying. It is the "despair" of working hesperidologists. So far as the Hesperiidæ of temperate and boreal North America are concerned, it completely ignores everything of importance which had been done by students in the United States and Canada during the quarter of a century which had elapsed prior to its appearance.

ABANTIS¹ Hopffer(455) 1. **Abantis elegantula** (Mabille)

Sapæa elegantula MABILLE, 1890, Ann. Soc. Ent. France, (6) X, p. 32. MABILLE AND VUILLOT, 1891, Novit. Lep., p. 23, Pl. III, fig. 6.

This species is represented by a solitary male taken at Medje, March 8, 1910.

(456) 2. **Abantis efulensis** Holland

Abantis efulensis HOLLAND, 1896, Proc. Zool. Soc. London, p. 21, Pl. v, fig. 12.

There is a single male specimen from Medje which differs from the type, with which it has been compared, only in the fact that the outer border of the hind wings on the upper side is clouded with dark scales to a greater extent than is the case in the individual which I originally described and figured. In this respect, however, it does not differ from other individuals collected since my first description was published.

(547) 3. **Abantis rubra**, new species

Plate XII, Figure 1, ♂

♂. Frons and inner margins of palpi reddish orange; outer margins of palpi deep black with a white spot at the base of each just below the eye. Thorax and patagia dark brown, the patagia, so far as the specimen reveals, without light markings (the patagia are in bad case). Abdomen dark brown, with a black median longitudinal line above, and the edges of the segments on the sides adorned with pale reddish vertical spots; lower side of abdomen paler brown than above. The primaries on the upper side are pale semitranslucent fuscous, with all the veins dark brown and clearly defined against the paler ground-color. There is a small subcircular blackish spot at the base, defined outwardly by a few orange-red scales. The ground-color of the secondaries on the upper side is orange-red, the veins are black and clearly defined against the ground-color. At the end of the cell about the middle of the wing is a sharply defined velvety black spot, from which through the middle of the cell there runs to the base a narrow black ray of the same color as the spot at the end of the cell. The outer margin of the secondaries on the upper side is bordered by fuscous, defined inwardly by a narrow band of darker brown which widens a little towards the anal angle. The inner margin is shaded with fuscous. On the under side both wings are pale reddish inclining to fuscous, with all the markings of the upper side reproduced, but in paler tints than on the upper side. Expanse, 33 mm.

¹Fairmaire in the Annals of the Entomological Society of Belgium, XXXVIII, 1894, p. 395, announces that he has been informed by his learned colleague, Dr. Berg, that the generic name *Abantis* Hopffer should be replaced by the generic name *Abantiades* Herrich-Schaeffer, and states that he hastens to make announcement of the fact. Unfortunately for this supposed correction I discover that the generic name *Abantiades* was proposed by Herrich-Schaeffer for one of the large Australian Hepialids, and he makes *Epiolus* (Pielus Walker) *argenteus* Donovan the type of the genus. As the Hepialidae and the Hesperidae are rather far apart in any system of classification, which has thus far been proposed (about as far apart as tigers and squirrels among mammals), the correction provokes a smile. The name *Abantis* Hopffer stands in spite of the discovery of Doctors Berg and Fairmaire. The type of the genus is *A. tellensis* Hopffer, as pointed out by Scudder (Proc. Amer. Acad. Arts and Sciences, X, 1875, p. 99).

The type, which is in The American Museum of Natural History, is unique. It was taken at Medje, April 6, 1910.

The genus *Abantis* is thus far known to include eighteen species, all of which are found in the Æthiopian subregion. They are the following:

1. *Abantis tettensis* HOPFFER, 1855, Monatsber. Akad. Wiss. Berlin, p. 643; 1862, Peters, Reise n. Mossambique, Ins., p. 415, Pl. xxvi, figs. 16, 17.
Eastern tropical Africa.
2. *Abantis paradisea* (BUTLER), 1870, Trans. Ent. Soc. London, p. 499; 1874, Lep. Exot., p. 167, Pl. LIX, fig. 8.
Abantis namaquaana (WESTWOOD), 1874, Thes. Ent. Oxon., p. 183, Pl. xxxiv, fig. 10, ♀.
Southern Africa.
3. *Abantis zambsiaca* (WESTWOOD), 1874, Thes. Ent. Oxon., p. 183, Pl. xxxiv, fig. 9.
Abantis zambezina TRIMEN, 1889, S. Afr. Butt., III, p. 344.
Abantis trimeni (BUTLER), 1895, Proc. Zool. Soc. London, p. 264, Pl. xv, fig. 5.
Southern tropical Africa.
4. *Abantis bismarcki* KARSCH, 1892, Ent. Nachr., XVIII, p. 228; 1893, Berl. Ent. Zeit., XXXVIII, p. 242, Pl. vi, fig. 1.
Togoland.
5. *Abantis bicolor* (TRIMEN), 1864, Trans. Ent. Soc. London, (3) II, p. 180; 1866, Rhop. Afr. Austr., II, p. 307, Pl. vi, fig. 1.
South Africa.
6. *Abantis venosa* TRIMEN, 1889, S. Afr. Butt., III, p. 339; 1891, Proc. Zool. Soc. London, p. 105, Pl. ix, fig. 24.
Abantis umvulensis (E. Sharpe), 1890, Ann. Mag. Nat. Hist., (6) VI, p. 348.
Southern tropical Africa, Transvaal.
7. *Abantis elegantula* (MABILLE), 1890, Ann. Soc. Ent. France, (6) X, p. 32.
MABILLE AND VUILLOT, 1891, Novit. Lep., p. 24, Pl. iii, fig. 6.
Sierra Leone, Cameroon, Belgian Congo.
8. *Abantis efulensis* HOLLAND, 1896, Proc. Zool. Soc. London, p. 21, Pl. v, fig. 12.
Cameroon, Belgian Congo.
9. *Abantis plerotica* KARSCH, 1896, Ent. Nachr., XXII, p. 374.
German East Africa.
10. *Abantis leucogaster* (MABILLE), 1890, Ann. Soc. Ent. France, (6) X, p. 32.
MABILLE AND VUILLOT, 1891, Novit. Lep., p. 22, Pl. iii, fig. 5.
Sierra Leone.
11. *Abantis nigeriana* BUTLER, 1901, Ann. Mag. Nat. Hist., (6) VIII, p. 59.
Nigeria.
12. *Abantis arctomarginata* LATHY, 1901, Trans. Ent. Soc. London, p. 34, Pl. iii, fig. 7.
Zomba, British Central Africa.
13. *Abantis ja* H. H. DRUCE, 1909, Proc. Zool. Soc. London, p. 408, Pl. LXVII, fig. 2.
Interior of Cameroon.

14. *Abantis lucretia* H. H. DRUCE, 1909, Proc. Zool. Soc. London, p. 409, Pl. LXVII, fig. 3.
Interior of Cameroon.
15. *Abantis lofu* NEAVE, 1910, Proc. Zool. Soc. London, p. 72, Pl. III, figs. 4, 5.
Northern Rhodesia.
16. *Abantis levubu* (WALLENGREN), 1857, Kongl. Sv. Vet.-Akad. Handl., N. S., II, No. 4, p. 72.
17. *Abantis amneris* REBEL AND ROGENHOFER, 1894, in O. Baumann's 'Durch Masailand zur Nilquelle,' p. 338.
Umbugwe.
18. *Abantis rubra* HOLLAND, new species.
Belgian Congo.

HESPERIA Fabricius

(458) 1. **Hesperia dromus** (Plötz)

- Pyrgus dromus* PLÖTZ, 1884, Mitth. nat. Ver. Neu-Vorpomm. u. Rüg., p. 6.
TRIMEN, 1889, S. Afr. Butt., III, p. 283.
Hesperia dromus WATSON, 1893, Proc. Zool. Soc. London, p. 65. HOLLAND, 1896, Proc. Zool. Soc. London, p. 23. MABILLE, 1904, Gen. Ins., XVII, p. 81.

Five specimens, three males and two females, were collected. Two were captured at Medje in the first week of April; one was taken at Faradje, December 5, 1912; the other two specimens were captured at Niangara in the second week of November 1910.

(459) 2. **Hesperia plötzii** Aurivillius

- Syrictus spio* PLÖTZ, 1884, Mitth. nat. Ver. Neu-Vorpomm. u. Rüg., p. 21.
Pyrgus spio MABILLE, 1890, Ann. Soc. Ent. France, (6) X, p. 30.
Hesperia plötzii AURIVILLIUS, 1891, Ent. Tidskr., p. 227. KARSCH, 1893, Berl. Ent. Zeit., XXVIII, p. 245. HOLLAND, 1896, Proc. Zool. Soc. London, p. 23. MABILLE, 1904, Gen. Ins., XVII, p. 81.

There are two specimens in the collection, one taken at Gamangui, February 5, the other at Medje, April 6, 1910.

Pamphilinæ

ACLEROS Mabille

(460) 1. **Acleros plötzii** Mabille

- Apauustus leucopygus* PLÖTZ, 1879, Stett. Ent. Zeit., XL, p. 360.
Acleros plötzii MABILLE, 1889, Ann. Soc. Ent. France, (6) IX, Bull., p. clxxiii. HOLLAND, 1896, Proc. Zool. Soc. London, p. 29, Pl. II, fig. 7. MABILLE, 1904, Gen. Ins., XVII, p. 96.

This rather common species is represented in the collection by one tattered male taken at Medje, June 26, 1910.

OSMODES Watson(461) 1. **Osmodes laronia** (Hewitson)

Hesperia laronia HEWITSON, 1868, Descript. Hesper., p. 35.

Plastingia laronia PLÄTZ, 1879, Stett. Ent. Zeit., XL, p. 356; 1884, idem, XLV, pp. 145-146.

Osmodes laronia WATSON, 1893, Proc. Zool. Soc. London, p. 78. HOLLAND, 1896, Proc. Zool. Soc. London, p. 40, Pl. iv, figs. 3, 5. MABILLE, 1904, Gen. Ins., XVII, p. 102.

Represented by a male and female captured at Medje in August 1910.

HYPOLEUCIS Mabille(462) 1. **Hypoleucis cretacea** (Snellen) (?)

Goniloba cretacea SNELLEN, 1872, Tijd. v. Ent., p. 27, Pl. II, figs. 4-6.

Hesperia gonessa HEWITSON, 1877, Ann. Mag. Nat. Hist., (4) XIX, p. 76. HERON, 1898, Ann. Mag. Nat. Hist., (7) I, p. 256.

Hypoleucis cretacea HOLLAND, 1896, Proc. Zool. Soc. London, p. 47 (where further synonymy is given).

There is a single somewhat damaged female which I refer with caution to this species, from typical examples of which it apparently differs only by a reduction in size of the translucent white spots of the primaries. The specimen was captured at Medje, July 17, 1910.

LEPTALINA Mabille

M. P. Mabille, in his Revision of the Family Hesperiidæ in the 'Genera Insectorum,' published by P. Wytsman, has erected the genus *Leptalina* for the reception of *Cyclopides unicolor* Bremer and Gray, which is found in China and Japan, and the three African species, *lepeletieri* (Latreille), *tsita* (Trimen), and *inornatus* (Trimen), which hitherto have been commonly regarded as belonging to the genus *Cyclopides*. I am quite familiar with the Asiatic species, having personally collected it in quantity when engaged in research work in Japan in 1887. I am somewhat dubious as to the propriety of removing it from the genus *Cyclopides*. There seems to me to be more propriety in separating the three African forms from their former association. I propose to add to the genus *Leptalina* Mabille another species the description of which is given herewith.

(463) 1. **Leptalina niangarensis**, new species

Plate XII, Figure 3, ♂

♂. Palpi dark fuscous, upper side of thorax and abdomen blackish, lighter on the under side, inclining to ochraceous, the terminal segments on their posterior edges marked laterally with pale scales. Both fore and hind wings on the upper side uni-

formly dark brown, without any traces of translucent spots or other maculation. Cilia concolorous. On the under side both wings are colored as on the upper side, but are slightly paler in their ground-color, and near the base are clothed with ochraceous scales. The hind wings on this side reveal a dark subcircular and somewhat diffuse spot in the cell at its extremity and this is followed externally by a postmedian dark band, which corresponds in its curvature to the outer margin. Expanse, 32 mm.

Two specimens were taken by the Lang-Chapin Expedition at Niangara in November 1910. One of these, which I designate as the type, is in The American Museum of Natural History; the other, which I designate as the paratype, I have the pleasure of retaining for the Holland Collection in the Carnegie Museum.

I append a brief key for the determination of the four species of the genus *Leptalina* now known to occur in Africa.

- A. Hind wings marked on the under side by light longitudinal lines.
 - 1. Hind wings marked by two conspicuous silvery white lines, running through the cell from the base to the outer margin, the upper line broader and most conspicuous. *lepeletieri* (Latreille).
 - 2. Hind wings having the nervules, especially in the outer half of the wing covered with white scales, causing the veins to stand out clearly against the darker ground-color. *tsita* (Trimen).
- B. Hind wings not marked on the under side by light lines, running from the base toward the outer margin.
 - 1. Fore wings with three minute translucent subapical spots. *inornatus* (Trimen).
 - 2. Fore wings without translucent spots; hind wings on the under side with an obscure dark subcircular spot at the end of the cell, followed by a cloudy dark postmedian transverse band *niangarensis* Holland.

CHAPRA Moore

- (464) 1. **Chapra mathias** (Fabricius)

Hesperia mathias FABRICIUS, 1798, Ent. Syst., Suppl., p. 436.

(For synonymy cf. Holland, 1896, Proc. Zool. Soc. London, p. 60.)

One male caught at Boma, June 15, 1915.

PARNARA Moore

- (465) 1. **Parnara borbonica** (Boisduval)

Hesperia borbonica BOISDUVAL, 1833, Faune Ent. Madgr., p. 65, Pl. ix, figs. 5, 6.

(For additional synonymy cf. Holland, 1896, Proc. Zool. Soc. London, p. 62.)

There are two specimens of this common insect in the collection, one taken at Faradje, December 6, 1912, and another at the same place, labelled "1911-1912."

(466)

2. **Parnara alberti** (Holland)

Baoris alberti HOLLAND, 1896, Proc. Zool. Soc. London, p. 67, Pl. II, fig. 21.

Parnara alberti MABILLE, 1904, Gen. Ins., XVII, p. 136.

Of this species there are three specimens, one taken at Medje, June 27, 1910; one at Matadi, August 24, 1910; and one at Faradje, labelled "1911-1912." They all agree with specimens taken on the Ogové River and in southern Cameroon.

M. Mabilie has transferred this species and several others which I classified under *Baoris* Moore to the genus *Parnara* Moore. The distinction between the two genera, as is pointed out by Mabilie, is rather fine, based principally upon the length of the antennæ and the sexual brands, which do not always afford good grounds for generic separation. I follow Mabilie provisionally, though feeling that the whole group needs a more careful revision than it has thus far received and that a systematic examination of the vast number of species now lumped under the name *Parnara* will disclose that the group, as made up, contains a good many incongruous elements.

SEMALLEA¹ Holland

(467)

1. **Semalea pulvina** (Pløetz)

Hesperia pulvina PLØETZ, 1879, Stett. Ent. Zeit., XL, p. 353.

Cobalus carbo MABILLE, 1889, Ann. Soc. Ent. France, (6) IX, Bull., p. clxix.

Trichosemeia pulvina WATSON, 1893, Proc. Zool. Soc. London, p. 53.

Semalea pulvina HOLLAND, 1896, Proc. Zool. Soc. London, p. 65, fig. and Pl. II, fig. 14.

MABILLE, 1904, Gen. Ins., XVII, p. 138.

One male specimen caught at Medje, August 24, 1910.

PLATYLESCHES Holland

(468)

1. **Platylesches batangæ** Holland

Parnara batangæ HOLLAND, 1894, Ent. News, V, p. 92, Pl. III, fig. 10.

Platylesches batangæ HOLLAND, 1896, Proc. Zool. Soc. London, p. 73. MABILLE, 1904, Gen. Ins., XVII, p. 138.

There is one dwarfed and also somewhat damaged specimen of this species which I have carefully compared with the type and find to be identical. It is ticketed as taken at "Basoko, July 3, 1909."

¹The genus *Semalea* Holland is omitted from the Index in Mabilie's work, *loc. cit.*, but occurs on p. 138, with notes and comments thereon by M. Mabilie.

PARDALEODES Butler

(469)

1. **Pardaleodes edipus** (Cramer)*Papilio edipus* CRAMER, 1782, Pap. Exot., IV, p. 146, Pl. CCCLXVI, figs. E, F, ♂.*Pamphila* (?) *sator* DOUBLEDAY AND HEWITSON, 1852, Gen. Diurn. Lep., II, p. 523, Pl. LXXIX, fig. 4, ♀.

(For further synonymy cf. Holland, 1896, Proc. Zool. Soc. London, p. 75.)

There are three males and one female referable to this species. All of them were taken at Medje in the months of July and August 1910.

(470)

2. **Pardaleodes incerta** (Snellen)*Pamphila incerta* SNELLEN, 1872, Tijd. v. Ent., p. 29, Pl. x, figs. 10-12, ♂.*Hesperia coanza* PLÆTZ, 1883, Stett. Ent. Zeit., XLIV, p. 232, ♀.*Pardaleodes incerta* HOLLAND, 1896, Proc. Zool. Soc. London, p. 75.

Four males; three taken at Medje, two in July, the other in August; the fourth specimen caught at Niangara, November 26, 1910.

(471)

3. **Pardaleodes bule** Holland*Pardaleodes bule* HOLLAND, 1896, Proc. Zool. Soc. London, p. 76, Pl. III, fig. 21.

Two specimens from Medje, one collected in April, the other in August 1910.

(472)

4. **Pardaleodes fan** (Holland)*Osmodes* (?) *fan* HOLLAND, 1894, Ent. News, V, p. 91, Pl. III, fig. 8.*Pardaleodes fan* HOLLAND, 1896, Proc. Zool. Soc. London, p. 79.

Two specimens caught at Medje, August 1910.

CERATRICHIA Butler

(473)

1. **Ceratrachia ialemia** H. H. Druce*Ceratrachia ialemia* H. H. DRUCE, 1909, Proc. Zool. Soc. London, p. 413, Pl. LXVII, fig. 10.

One male taken at Medje, August 13, 1910, which agrees closely with the description and figure given by Druce. The species is very near to *C. nothus* (Fabricius) and is probably only a form of that.

(474)

2. **Ceratrachia phocion** (Fabricius)*Papilio phocion* FABRICIUS, 1781, Spec. Ins., II, p. 138.*Ceratrachia phocion* BUTLER, 1870, Cat. Fabr. Diurn. Lep., p. 274, Pl. III, fig. 14.

HOLLAND, 1896, Proc. Zool. Soc. London, p. 79.

Apaustus argyrosticta PLÆTZ, 1879, Stett. Ent. Zeit., XL, p. 358, ♀.

Four males and one female of this common insect, all taken at Medje from July to September 1910. The females are variable in the number and size of the small light markings on the wings, as are also the males to a less extent. There are before me as I write several hundreds of speci-

mens of the species, representing both sexes, some pairs taken *in copula*, and a quite considerable series of females from the Ogové and southern Cameroon, which conform absolutely to the description of *argyrosticta* given by Plötz. I am now convinced that I was in error in 1896 in regarding *C. (Apaustus) argyrosticta* as the female of the succeeding species, *C. flava* Hewitson = *C. charita* (Plötz).

(475) 3. ***Ceratricchia flava*** Hewitson

Ceratricchia flava HEWITSON, 1878, Ann. Mag. Nat. Hist., (5) I, p. 343. HOLLAND, 1896, Proc. Zool. Soc. London, p. 79, Pl. III, fig. 14.

Plastingia charita PLÖTZ, 1879, Stett. Ent. Zeit., XL, p. 356.

One male taken at Batama, September 18, 1909.

(476) 4. ***Ceratricchia wollastoni*** Heron

Ceratricchia wollastoni HERON, 1909, Trans. Zool. Soc. London, XIX, p. 174, Pl. v, figs. 13, 14.

There are three specimens referable to this species which were taken at Medje, two in April, and one in September 1910. It is distinguished from *C. flava* Hewitson by the outline of the inner edge of the terminal black band of the primaries, which curves regularly from the inner margin before the lower angle to about the middle of the costa, whereas in *C. flava* it is angulated at vein 4, running inwardly for some distance along that vein towards the cell, which in most specimens it reaches and the outer extremity of which it covers somewhat diffusely. The insect was originally described from Ruwenzori; we also have specimens from the interior of Cameroon.

Before dismissing the consideration of the few species of this genus brought before us by the present collection, it is proper to state that it seems to the writer that it is much in need of a careful revision, inasmuch as the material constantly accumulating in his custody seems to indicate that some at least of the so-called species are of questionable validity.

ACROMECIS Mabille

Mabille, in the 'Genera Insectorum,' separates the species named *neander* Plötz from the genus *Andronymus* Holland, to which I assigned it in 1896, and erects the genus *Acromecis* for its reception.

(477) 1. ***Acromecis neander*** (Plötz)

Apaustus neander PLÖTZ, 1884, Stett. Ent. Zeit., XLV, p. 154.

Ancyloxypha producta TRIMEN, 1889, S. Afr. Butt., III, p. 334.

Andronymus neander HOLLAND, 1896, Proc. Zool. Soc. London, p. 82, Pl. II, fig. 23.

Acromecis neander MABILLE, 1904, Gen. Ins., XVII, p. 172.

There are ten specimens, eight males and two females. All were taken at Medje, except one female which is ticketed "Stanleyville, I, 27, 1915." Six of the specimens taken at Medje were captured in June, one in May, and one in September.

CÆNIDES Holland

(478)

1. **Cænides cænira** (Hewitson)

Hesperia cænira HEWITSON, 1867, Exot. Butt., IV, *Hesperia*, Pl. II, figs. 15, 16.

Pamphila cænira KIRBY, 1871, Syn. Cat., p. 606.

Hesperia calpis PLÆTZ, 1879, Stett. Ent. Zeit., XL, p. 354; 1882, idem, XLIII, p. 328, ♀.

Hidari cænira HOLLAND, 1896, Proc. Zool. Soc. London, p. 82, Pl. II, fig. 3, ♀ (*calpis* Plætz).

Cænides cænira (sic) MABILLE, 1904, Gen. Ins., XVII, p. 182.

One typical male collected at Medje, July 8, 1910.

In my catalogue of the African Hesperiidæ, 1896, I referred the foregoing and two other species to the genus *Hidari* Distant, with which they seemed to agree better than with any other genus at that time described. M. Mabille in his later work relegates them to my genus *Cænides*, of which he says they form a section. I cannot take the time at the moment of writing this to go fully into the matter, which might involve some detailed investigation of structures under the microscope and bleaching of wings, but I know that the *Hesperia cænira* of Hewitson is certainly very doubtfully congeneric with *Hesperia dacela* Hewitson, which is the type of the genus *Cænides* Holland.

(479)

2. **Cænides cylinda** (Hewitson)

Hesperia cylinda HEWITSON, 1876, Ann. Mag. Nat. Hist., (4) XVIII, p. 449.

Pamphila calpis KARSCH (nec Plætz), 1893, Berl. Ent. Zeit., XXXVIII, p. 252, Pl. VI, fig. 4 (♀ non ♂).

Cænides cylinda HOLLAND, 1896, Proc. Zool. Soc. London, p. 89, Pl. I, fig. 12 (♀ non ♂). MABILLE, 1904, Gen. Ins., XVII, p. 182.

Two males, one taken at Leopoldville, July 4, 1909, the other at Niangara, November 20, 1910.

The figures of this insect given both by Karsch and myself do not represent the male but the female, which has a postmedian translucent spot on the hind wing, while the male is destitute of such a spot, as is shown by numerous specimens which have come into my possession or custody since 1896.

RHOPALOCAMPTA Wallengren(480) 1. **Rhopalocampta bixæ** (Linnæus)

Papilio bixæ LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 485. CLERCK, 1764, Icones, Pl. XLII, fig. 4.

Ismene bixæ KIRBY, 1871, Syn. Cat., p. 582 (part).

Rhopalocampta bixæ WATSON, 1893, Proc. Zool. Soc. London, p. 129. HOLLAND, 1896, Proc. Zool. Soc. London, p. 101. MABILLE, 1904, Gen. Ins., XVII, p. 88.

One good specimen taken at Medje, July 13, 1910.

(481) 2. **Rhopalocampta unicolor** (Mabille)

Ismene unicolor MABILLE, 1877, Ann. Soc. Ent. France, (5) VII, Bull., p. xxxix.

Hesperia unicolor TRIMEN, 1889, S. Afr. Butt., III, p. 375.

Rhopalocampta unicolor HOLLAND, 1896, Proc. Zool. Soc. London, p. 97. MABILLE, 1904, Gen. Ins., XVII, p. 88.

Six specimens: two taken at Gamangui in February; three captured at Medje in July; and one caught at Faradje, ticketed "1911-1912."

(482) 3. **Rhopalocampta forestan** (Cramer)

Papilio forestan CRAMER, 1782, Pap. Exot., IV, p. 210, Pl. CCCXCI, figs. *E*, *F*.

Ismene florestan TRIMEN, 1866, (part), Rhop. Afr. Austr., II, p. 318.

Hesperia florestan TRIMEN, 1889, S. Afr. Butt., III, p. 368.

Rhopalocampta forestan WATSON, 1893, Proc. Zool. Soc. London, p. 129. HOLLAND, 1896, Proc. Zool. Soc. London, p. 98.

Eight specimens are included in the collection; one taken at Gamangui in February, one at Medje in June, and six at Niangara in November 1910.

M. Mabille has omitted this species from his list given on page 88 of his work.

HETEROCERA**Amatidæ** Hampson

(Syntomidæ of authors)

Myopsyche Hampson(483) 1. **Myopsyche langi**, new species

♂. Head and thorax black with a faint bluish gloss; antennæ black at the base (tips wanting in the type); frons black; a tuft of orange-red hairs behind each eye; patagia orange-red with a minute black spot at the base of each; first three segments of abdomen orange-red, the succeeding segments blue-black, except the last, which is pale reddish; the ventral surface of the thorax and the first three abdominal segments are pale fawn-colored, and the legs are of the same color, becoming slightly darker upon the femora. Fore and hind wings hyaline. The costa of the fore wing is narrowly blackish, as is also the posterior margin; the border of the external margin

of the fore wing is broadly black at the apex, but rapidly decreases in width to the extremity of the second median nervule, and then suddenly widening inwardly and again diminishing to the inner angle, forms a subtriangular spot on the outer margin from the second submedian nervule to the angle. This black spot is ornamented by a minute white or hyaline spot between veins 2 and 3 near their extremities. At the end of the cell of the fore wing there is a subtriangular black spot. The black outer margin of the hind wing is relatively wide, and the costal margin is broadly black. The outer margin has an inwardly projecting tooth-like prolongation on vein 2. In consequence of the width of the black borders of the hind wing the inner hyaline area is much reduced, and restricted to the lower half of the cell, a small space beyond it, and the basal portion of the space between the cell and vein 1. Expanse ♀, 27 mm.

This species comes nearest *M. ochsenheimeri* (Boisduval) but is totally distinct, differing both in the markings of the wings and the abdomen. I name it in honor of the leader of the expedition upon the Lepidoptera collected by which I am reporting. The type, which is unique, was collected at Medje, August 6, 1910, and is in The American Museum of Natural History.



Fig. 2.

Myopsyche langi, ♂.†.

TRICHÆTA Swinhoe

(484) 1. *Trichæta bivittata* (Walker)

Syntomis bivittata WALKER, 1864, List Lep. Het. B. M., XXXI, p. 66.

Trichæta bivittata HAMPSON, 1898, Cat. Lep., Phal., I, p. 55.

One specimen taken at Malela, July 8, 1915.

AMATA Fabricius

(*Syntomis* Ochsenheimer and others)

(485) 1. *Amata cerbera* (Linnæus)

Sphinx cerbera LINNÆUS, 1764, Mus. Lud. Ulr., p. 363.

Syntomis cerbera HAMPSON, 1898, Cat. Lep., Phal., I, p. 83.

One poor specimen, labelled as taken at Stanleyville, but without date.

(486) 2. *Amata marina* (Butler)

Syntomis marina BUTLER, 1876, Journ. Linn. Soc. London, Zool., XII, p. 348.

Syntomis ogoensis HOLLAND, 1893, Psyche, VI, p. 374.

One defective specimen caught at Gamangui, June 17, 1910.

MEGANACLIA Aurivillius

(487) 1. *Meganaclia perpusilla* (Walker)

Anace perpusilla WALKER, 1856, List Lep. Het. B. M., VII, p. 1720, ♂.

Metarctia perpusilla HAMPSON, 1898, Cat. Lep., Phal., I, p. 144, Pl. v, fig. 19.

Meganaclia carnea HAMPSON, 1898, Cat. Lep., Phal., I, p. 136, Pl. vi, fig. 27.

Meganaclia perpusilla HAMPSON, 1914, Cat. Lep., Phal., Suppl., I, p. 61.

One female, taken at Matadi, June 24, 1909.

METARCTIA Walker(488) 1. **Metarctia invaria** (Walker)

Anace invaria WALKER, 1856, List Lep. Het. B. M., VII, p. 1720.

One male, labelled as taken at Stanleyville, but without date.

(489) 2. **Metarctia erubescens** Walker

Metarctia erubescens WALKER, 1864, List Lep. Het. B. M., XXXI, p. 315.

A pair taken at Medje, July 1910.

(490) 3. **Metarctia lutea** Holland

Metarctia lutea HOLLAND, 1893, Psyche, VI, p. 396.

A male caught in August and a female captured in June 1910, both at Medje.

Sir George F. Hampson in his Catalogue treats the last two forms here listed as being merely varieties of *M. invaria* (Walker). I find it difficult to agree with him. There are before me, as I write, some hundreds of specimens of Walker's species, representing numerous localities, and they all agree very closely; there are also some scores of each of the other two forms from widely separated localities, and these also agree closely and are easily distinguishable at a glance from typical *M. invaria* and from each other. Until the test of breeding shall have demonstrated the fact that these three forms are derived from one and the same batch of eggs, it appears to me preferable to distinguish them as species, instead of "lumping" them under Walker's name.

(491) 4. **Metarctia hæmatica** Holland

Metarctia hæmatica HOLLAND, 1893, Psyche, VI, p. 396. HAMPSON, 1898, Cat. Lep., Phal., I, p. 147, Pl. v, fig. 26.

One male caught at Gamangui, February 5, 1910.

(492) 5. **Metarctia chapini**, new species

Plate XIII, Figure 4, ♀, type

♀. Antennæ and eyes black; frons, head, and thorax on the upper side black; abdomen on the upper side with the first six segments very pale pinkish, margined terminally with deep black, the remaining segments deep black; thorax and abdomen on the under side pale fuscous, the banding which is very conspicuous on the upper side being only faintly indicated on this side in the case of the anterior segments of the abdomen; legs dorsad pale pinkish, ventrad black. Fore wings on the upper side sooty black, without any trace of paler markings, on the under side pale fuscous, slightly darker near the apex, and at the base near the inner margin passing into pale pinkish. Hind wings on the upper side pale pink, the nervules and outer margin being slightly clothed with pale fuscous squamation, on the under side dark fuscous, except along the inner margin, where they are pale pink. Expanse, 45 mm.

The type, which is unique, was taken at Medje, June 26, 1910, and is in The American Museum of Natural History. I take pleasure in naming the species in honor of Mr. J. P. Chapin, one of the leaders of the expedition.

The species comes near *M. rubripuncta* Hampson, but may be easily distinguished from that species by the entire absence of the pale spots and markings of the upper side of the primaries, the very strongly contrasting banding of the upper side of the abdomen, and the pale color of the hind wings on the upper side.

(493) 6. **Metarctia** species

There are two specimens representing a very small species of the genus, which may possibly be new to science, and which were taken at Faradje, November 22, 1912. The specimens are, however, too badly rubbed to permit either of identification or description.

(494) 7. **Metarctia** species

There is a single specimen bearing the label "Avakubi, Lieut. Boyton, 1908," which I find difficulty in referring to any species hitherto described or figured. It is a male. Inasmuch, however, as the specimen does not appear to be in prime condition, I refrain from attempting to name or describe it, further than to say that the prevalent color of the primaries is pale fawn, with obscure lighter discocellular and postmedian markings on the primaries, and that it is a rather small species, less than 40 mm. in expanse of wings.

BALACRA Walker

(495) 1. **Balacra ehrmanni** (Holland)

Automolis ehrmanni HOLLAND, 1893, Psyche, VI, p. 535.

One female, labelled as taken at Bafwabaka in January 1910.

(496) 2. **Balacra pulchra** Aurivillius

Balacra pulchra AURIVILLIUS, 1892, Ent. Tidskr., XIII, p. 200.

Balacra glagoessa HOLLAND, 1893, Psyche, VI, p. 396.

Pseudapiconoma glagoessa HAMPSON, 1898, Cat. Lep., Phal., I, p. 151, Pl. VI, fig. 14.

One female caught at Medje, July 1910.

EUCHROMIA Hübner

(497) 1. **Euchromia lethe** (Fabricius)

Zygana lethe FABRICIUS, 1775, Syst. Ent., p. 553.

Euchromia lethe HAMPSON, 1898, Cat. Lep., Phal., I, p. 296.

The collection contains twenty-one specimens, mostly males, taken as follows: Kwamouth, 1, July 1909; Stanleyville, 7, August 1909; Risimu, 1, September 1909; Avakubi, 1, October 1909; Medje, 2, July–August 1910; Niangara, 5, November 1910; Faradje, 4, November 1911.

(498) 2. **Euchromia guineënsis** (Fabricius)

Zygæna guineënsis FABRICIUS, 1775, Ent. Syst., p. 551.

Sphinx sperchia CRAMER, 1777, Pap. Exot., II, Pl. cXLVI, fig. C.

Euchromia sperchia HAMPSON, 1898, Cat. Lep., Phal., I, p. 296; 1914, idem, Suppl., I, p. 197.

There are three examples captured as follows: Stanleyville, 1909; Faradje, November 1912; Niangara, March 1913.

Arctiidae

Nolinæ

NOLA Leach

(499) 1. **Nola banana**, new species

♀. Frons, tegulæ, and patagia pure snowy white; upper side of thorax and abdomen a shade darker, very pale gray; lower side of abdomen and thorax much darker gray; legs concolorous. On the upper side the fore wing is pale gray, growing



Fig. 3.

Nola banana, ♂. ♀.

slightly darker externally towards the outer margin; a dark gray spot of raised scales near the end of the cell; beyond it on the costa a larger dark gray subtriangular spot; a postmedian transverse, slightly curved line, composed of black dots on the interspaces, runs from the costa to the inner margin, followed by a submarginal row of smaller spots. The hind wings on the upper side are evenly pale fuscous. Both wings on the under side are uniformly gray, of a darker shade than on the upper side, but both have their inner margins narrowly lined with white. Expanse, 16 mm.

The type, which is unique, was taken at Banana, June 21, 1909.

Lithosiinæ

CHIONÆMA Herrich-Schæffer

(500) 1. **Chionæma delicata** (Walker)

Bizone delicata WALKER, 1854, List Lep. Het. B. M., II, p. 550.

Chionæma delicata HAMPSON, 1900, Cat. Lep., Phal., III, p. 325, Pl. xxvii, fig. 28.

One female taken at Medje in June.

ASURA Walker

(501) 1. **Asura atricraspeda** Hampson (?)

Asura atricraspeda HAMPSON, 1914, Cat. Lep., Phal., Suppl., I, p. 766.

A specimen taken at Medje, July 17, 1910, is referred to this species with reasonable certainty, but it is too badly rubbed to make the identification positive.

Arctiinae**DIACRISIA** Hübner(502) 1. **Diacrisia aurantiaca** (Holland)*Alpenus aurantiacus* HOLLAND, 1893, Psyche, VI, p. 397.*Diacrisia aurantiaca* HAMPSON, 1901, Cat. Lep., Phal., III, p. 275, Pl. XLIV, fig. 19.

One male, minus antennæ, caught at Medje, July 24, 1910.

(503) 2. **Diacrisia maculosa** (Stoll)*Bombyx maculosa* STOLL, 1781, Pap. Exot., IV, Pl. CCCLXX, fig. B.

Four males and three females of this common species, all taken at Medje in June and July, except a male and a female caught at Faradje in December.

(504) 3. **Diacrisia curvilinea** (Walker)*Spilosoma curvilinea* WALKER, 1855, List Lep. Het. B. M., III, p. 671.*Diacrisia curvilinea* HAMPSON, 1901, Cat. Lep., Phal., III, p. 275, Pl. XLIV, fig. 4.

A female caught at Medje, September 27, 1910.

(505) 4. **Diacrisia** species (?)

A single male caught at Stanleyville, April 2, 1915, which agrees with specimens in my collection which are labelled *æqualis* Walker, which Hampson has sunk as a synonym of *maculosa* (Stoll). I compared my specimens with Walker's type, and do not regard them as being the same as *maculosa* (Stoll), but for the present do not wish to dogmatize and leave the insect unnamed.

(506) 5. **Diacrisia lutescens** (Walker)*Spilosoma lutescens* WALKER, 1855, List Lep. Het. B. M., III, p. 672.*Diacrisia lutescens* HAMPSON, 1901, Cat. Lep., Phal., III, p. 295.

One male of the almost white variety taken at Leopoldville, July 4, 1909.

ESTIGMENE Hübner(507) 1. **Estigmene pura** (Butler)*Alpenus purus* BUTLER, 1878, Proc. Zool. Soc. London, p. 382.*Estigmene pura* HAMPSON, 1901, Cat. Lep., Phal., III, p. 343, Pl. XLVII, fig. 3.

A single female specimen, taken at Faradje in December 1912. is referred to this species.

RHODOGASTRIA Hübner(508) 1. **Rhodogastria luteibarba** Hampson*Rhodogastria luteibarba* HAMPSON, 1901, Cat. Lep., Phal., III, p. 502, Pl. L, fig. 18.

A single female caught at Medje, August 3, 1910.

(509) 2. **Rhodogastria vidua** (Cramer)*Noctua vidua* CRAMER, 1779, Pap. Exot., III, p. 127, Pl. cclxiv, fig. C.*Noctua mauritia* STOLL, 1781, Pap. Exot., IV, Pl. cccxlv, fig. B.*Rhodogastria vidua* HAMPSON, 1901, Cat. Lep., Phal., III, p. 503.

A solitary female in rather poor case collected at Medje, July 30.

Callimorphinæ**AMPHICALLIA** Aurivillius(510) 1. **Amphicallia pactolica** (Butler)

Plate XIII, Figure 2, ♀

Pleretes pactolicus BUTLER, 1888, Proc. Zool. Soc. London, p. 82.*Amphicallia pactolicus* AURIVILLIUS, 1899, Ent. Tidskr., XX, pp. 235, 238.

Two specimens, one taken at Ngayu, December 11, 1910, the other at Faradje, "1911-1912."

Aganainæ**DEILEMERA** Hübner(511) 1. **Deilemera leuconoë** (Hopffer)*Nyctemera leuconoë* HOPFFER, 1857, Monatsber. Akad. Wiss. Berlin, p. 422; 1862,

Peters, Reise n. Mossambique, V, p. 430, Pl. xxviii, fig. 3.

Deilemera leuconoë SWINHOE, 1903, Trans. Ent. Soc. London, LI, p. 65.

Twenty-five specimens: one taken at Munie Katoto, September 10, 1909; three at Bafwabaka, January 1910; nine at Medje, one in March, the rest from June to August; ten at Niangara, November 1910.

(512) 2. **Deilemera fallax** (Holland)*Nyctemera fallax* HOLLAND, 1893, Ent. News, IV, p. 59, Pl. iii, fig. 10.*Deilemera fallax* SWINHOE, 1903, Trans. Ent. Soc. London, LI, p. 65.

Thirty specimens, ten males and twenty females: one taken at Lubila and one at Risimu, in October 1909; one at Bafwabaka in January; two at Gamangui in February; the rest at Medje from June to August 1910.

(513) 3. **Deilemera (?) anomala**, new species

♂. Frons white, with a circular black spot in the middle; palpi, eyes, and antennæ black; a fine white line behind the eyes; some orange hairs on the anterior portion of the collar; tegulæ black, margined with white; patagia black, broadly margined with white; top of thorax whitish, traversed with a dark median longitudinal band; anterior segments of abdomen on the upper side whitish, the posterior segments more or less pale orange, a dorsal series of black spots; under side of thorax and abdomen yellowish orange, the legs black, bordered on the femora and tibiæ with fine white lines. Fore wings on the upper side white, narrowly black on the costa

near the base, the black border rapidly widening about the middle of the costa and passing into the broad black outer margin, which covers the outer half of the wing, leaving the inner white area as a large outwardly evenly rounded spot, marked by a few dark rays upon the nervules near the base, and defined below by a fine black line upon vein 1. The upper side of the hind wing is similar in coloration to the fore wing, the broad black outer border beginning on the costa at a point about three-fourths of its length from the base, and extending to the anal angle, the white area projecting into it beyond the cell, and giving it at this point a somewhat angulated appearance. On the under side the wings are much as on the upper side.

♀. The female is like the male but the antennæ are not heavily pectinate but filiform, the wings are relatively broader, and the black outer margins of both wings are much reduced in width, and in some specimens on the hind wings are absent or only represented by a few marginal spots beyond the cell, though the part of the outer band at its beginning on the costa of the hind wing invariably persists. Expanse ♂, 35 mm.; ♀, 40 mm.

I have a long series of this insect which has stood in my cabinet for a quarter of a century awaiting description; there are numerous males and many females, taken at Benito and at Kangvé in the valley of the Ogové River. The presence of a single specimen of the aberrant form of the female, in which the outer margin of the hind wing is reduced to a few black spots, induces me at least to give it a name. I have little doubt of the correctness of the reference to the genus *Deilemera*. The types, from Benito, are in the Holland Collection in the Carnegie Museum, and I designate the female returned by the Lang-Chapin Expedition from Medje as a paratype.

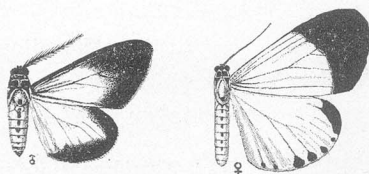


Fig. 4. *Deilemera anomala* Holland. ♀. The female is aberrant, not having the margin of the hind wing broadly black as is usually the case.

ARGINA Hübner

(514)

1. *Argina amanda* (Boisduval)

Euchelia amanda BOISDUVAL, 1847, Delegorgue, Voy. Afr. Australe, II, p. 597.

Argina amanda KIRBY, 1892, Cat. Lep. Het., p. 350. HAMPSON, 1910, Proc. Zool. Soc. London, p. 461.

Three specimens caught at Niangara, November 1910.

CARPOSTALAGMA Mabille

(515)

1. *Carpostalagma viridis* (Plötz)

Caryatis (?) *viridis* PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 80.

One specimen of this common insect taken at Medje in the first week of August 1910.

PHÆGORISTA Boisduval

(516)

1. **Phægorista similis** Walker

Phægorista similis WALKER, 1869, Proc. Nat. Hist. Soc. Glasgow, I, p. 332, Pl. v, fig. 5.
Phægorista helcitoides DEWITZ, 1879, Mitth. München. Ent. Ver., III, p. 32, Pl. II, fig. 4.

Seventeen specimens, mostly males, all taken at Medje or at Gamangui, the dates ranging from April to August.

Agaristidæ**XANTHOSPILOPTERYX** Wallengren

(517)

1. **Xanthospilopteryx poggei** (Dewitz)

Eusemia poggei DEWITZ, 1879, Mitth. München. Ent. Ver., III, p. 31, Pl. II, fig. 3.
Xanthospilopteryx poggei HAMPSON, 1901, Cat. Lep., Phal., III, p. 562. JORDAN, 1913, Seitz, Gross-Schmett., XV, p. 2, Pl. II.

Fourteen specimens, all females, twelve captured at Medje from June to August; one taken at Gamangui in June, and one at Niangara in November 1910.

(518)

2. **Xanthospilopteryx flaviventris** Jordan

Xanthospilopteryx flaviventris JORDAN, 1913, Seitz, Gross-Schmett., XV, p. 2, Pl. II.

Two males taken at Medje, one in July, the other in August.

(519)

3. **Xanthospilopteryx æmulatrix** (Westwood)

Eusemia æmulatrix WESTWOOD, 1881, Oates' Matabeleland, p. 355.
Xanthospilopteryx æmulatrix JORDAN, 1913, Seitz, Gross-Schmett., XV, p. 4, Pl. IV (as *mabillei*).

One specimen taken at Munie Katoto in October 1909. I have a long series of this species taken on the Ogové River and in Spanish Guinea.

(520)

4. **Xanthospilopteryx batesi** Druce

Xanthospilopteryx (sic) batesi DRUCE, 1910, Ann. Mag. Nat. Hist., (8) V, p. 395.
Xanthospilopteryx batesi JORDAN, 1913, Seitz, Gross-Schmett., XV, p. 5, Pl. IVf.

The species is represented by two males and two females in fairly good condition, all taken at Medje, the females in July, the males in August. The type of the species described by Druce was a female, and the two females before me agree exactly with the description given by the author, but the males differ in that the hind wings on the under side are solidly black and without the "wide yellow band along the costal margin extending from near the base almost to the apex." The species was originally described from a specimen captured on the Ja River, Cameroon.

(521) 5. **Xanthospilopteryx medjensis**, new species

Plate XIII, Figure 1, ♂

♂. Somewhat closely resembling the insect figured in Seitz, Gross-Schmett., XV, Pl. 11b, and designated on the plate as *X. vittalbata*. I have been unable to discover any reference to this figure in the text written by Dr. Karl Jordan to accompany the plates. He apparently has made no reference to it unless he means to refer to it as *X. paucicolor*, where he speaks on page 3, under *X. gruenbergi* of such a species as figured on Pl. 11b. The insect before me differs, however, from that figured as *vittalbata* in having on the upper side of the primaries on the posterior margin behind the middle a large white subtriangular spot, divided by a deep black narrow line on vein 1. There are also a number of small and less clearly defined spots near the base on this wing.

The collection contains three specimens, a male and two females, taken at Medje, the male in April, the females in July. The type, ♂, and allotype, ♀, are in The American Museum of Natural History. A female paratype is in the Holland Collection in the Carnegie Museum.

POLACANTHOPODA Hampson(522) 1. **Polacanthopoda tigrina** (Druce)

Hespagarista tigrina DRUCE, 1882, Proc. Zool. Soc. London, p. 778, Pl. LX, fig. 4.

Polacanthopoda tigrina HAMPSON, 1901, Cat. Lep., Phal., III, p. 573, fig.

Two defective specimens caught at Niangara in November.

CHARILINA Walker(523) 1. **Charilina amabilis** (Drury)

Ægocera amabilis DRURY, 1773, Ill. Exot. Ent., II, Pl. XIII, fig. 3.

Charilina amabilis HAMPSON, 1901, Cat. Lep., Phal., III, p. 587, fig.

One male taken at Niangara, May 29, 1913.

METAGARISTA Walker(524) 1. **Metagarista triphænoides** Walker

Metagarista triphænoides WALKER, 1854, List Lep. Het. B. M., I, p. 61. HAMPSON, 1901, Cat. Lep., Phal., III, p. 592, fig.

One specimen taken at Medje, August 1910.

ÆGOCERA Latreille(525) 1. **Ægocera rectilinea** Boisduval

Ægocera rectilinea BOISDUVAL, 1836, Spec. Gén. Lép., I, Pl. XIV, fig. 5.

One male, Ngayu, April 16, 1910.

(526) 2. **Ægocera latreillei** Herrich-Schæffer

Ægocera latreillei HERRICH-SCHÆFFER, 1853, Ausserer. Schmett., fig. 19.

One example caught at Niangara, March 21, 1913.

(527) 3. **Ægocera obliqua** Mabille

Ægocera obliqua MABILLE, 1893, Ann. Soc. Ent. Belgique, XXXVII, p. 56. JORDAN, 1913, Seitz, Gross-Schmett., XV, Pls. III f, III g.

Four examples: two rubbed females taken at Medje, one in May, the other in September; two males, one caught at Munie Katoto, September 10, 1909, the other at Niangara, March 21, 1913.

SCHAUSIA Karsch(528) 1. **Schausia transiens** (Jordan ?)

In the copy of Seitz, Gross-Schmett., XV, Pl. II e, there is figured a form of *Schausia* to which the specific name *transiens* is applied on the plate. Unfortunately in my copy of the work so far as received the text only extends to and includes page 14. I have therefore no means of running down the author of this specific name and have failed to detect it by a close search of the Zoological Record. The Lang-Chapin Collection contains one specimen of this form taken at Medje in August. I have other specimens taken in Cameroon, which have been awaiting determination or description. It is very near *S. gladiatoria* Holland, but larger and the basal white spot on the primaries on the upper side is different in form and location.

MASSAGIDIA Hampson(529) 1. **Massagidia hesperia** (Cramer)

Geometra hesperia CRAMER, 1775, Pap. Exot., I, Pl. LVI, fig. C.

Massagidia hesperia HAMPSON, 1901, Cat. Lep., Phal., III, p. 645, fig. ♂.

There is a male which I refer to this species. It was taken at Medje in the first week of September 1910. The white mesial band of the secondaries is a trifle broader than in Hampson's figure.

Noctuidæ**Hadeninæ****CIRPHIS** Walker(530) 1. **Cirphis prominens** (Walker) (?)

Leucania prominens WALKER, 1856, List Lep. Het. B. M., IX, p. 102.

Cirphis prominens HAMPSON, 1905, Cat. Lep., Phal., V, p. 487.

With considerable doubt I refer to this species a specimen taken at Boma, June 23, 1909. It is very near *C. prominens*, but shows differences which might justify its description as an hitherto undescribed species, but with only one individual before me, and that not in the best of case, I do not feel justified in describing it as new.

(531) 2. **Cirphis polyrabda** Hampson (?)

Cirphis polyrabda HAMPSON, 1905, Cat. Lep., Phal., V, p. 507.

There is one specimen, caught at Matadi, June 24, 1909, which agrees better upon the whole with the figure and description of *C. polyrabda* Hampson than with any other species in the literature of the subject. I am not, however, absolutely sure of the correctness of this reference.

BOROLIA Moore(532) 1. **Borolia apparata** (Wallengren)

Leucania apparata WALLENGREN, 1875, Öfvers. Sv. Vet.-Akad. Förh., XXXII, p. 105.
Borolia apparata HAMPSON, 1905, Cat. Lep., Phal., V, p. 557, fig.

A solitary specimen caught at Matadi, June 24, 1909, agreeing well with the figure and description given by Hampson.

(533) 2. **Borolia** species (?)

There is a single specimen taken at Boma, June 23, 1909, which seems to be nearer the species named *B. acrapez* by Hampson than any other. It does not, however, exactly fit either the description or figure, the latter to be found on Pl. xcv, fig. 3. Hampson speaks of the insect as being "pinkish," but I cannot detect any trace of "pink" on the specimen before me. Upon the whole, it otherwise agrees very closely with the figure given by Hampson, except that the "postmedian series of black points" in the fore wing seem to be lacking or excessively indistinct in the specimen upon which I am reporting.

BRITHYS Hübner(534) 1. **Brithys pancratii** (Cyrillo)

Noctua pancratii CYRILLO, 1787, Ent. Neapol., Pl. xii, fig. 4.
Brithys pancratii HAMPSON, 1905, Cat. Lep. Phal., V, p. 447 (*q. v.* for synonymy).

One male example caught at Niangara, March 22, 1913. The insect is common on the tropical West Coast and we have many specimens from Cameroon and the French Congo, some *ex larva*.

Acronyctinæ**PRODENIA** Guenée(535) 1. **Prodenia litura** (Fabricius)

Noctua litura FABRICIUS, 1775, Syst. Ent., p. 601.
Prodenia litura HAMPSON, 1909, Cat. Lep., Phal., VIII, p. 245.

Two specimens, one caught at Boma, June 23, 1909, the other at Medje, April 6, 1910.

Euteliinæ**CALIGATUS** Wing(536) 1. **Caligatus angasi** Wing

Caligatus angasii WING, 1849, Proc. Zool. Soc. London, p. 104, Pl. *Annulosa* xiv, figs. 2, 3.

Pacidara venustissima WALKER, 1865, List Lep. Het. B. M., XXXIII, p. 830.
HAMPSON, 1912, Cat. Lep., Phal., XI, p. 3, fig. 2.

One female taken at Avakubi in May 1914.

EUTELIA Hübner(537) 1. **Eutelia subrubens** (Mabille)

Penicillaria subrubens MABILLE, 1890, Ann. Soc. Ent. France, (6) X, p. 40.

Eutelia subrubens HAMPSON, 1912, Cat. Lep., Phal., XI, p. 50, fig.

Two specimens, one labelled "Basoko, VII, 21, '09," the other "Faradje, 1911-1912."

(538) 2. **Eutelia nigricans**, new species

Plate XIII, Figure 8, ♂

♂. Antennæ black; head and thorax dark plumbeous; abdomen the same color, inclining on the upper side to reddish and on the lower side becoming distinctly redder; legs brown, tarsi annulated with pale gray; fore wings with basal half dark brown or blackish; a V-shaped flesh-colored mark on the costa about the end of the cell, and a short bar of the same color on the inner margin a little beyond the middle, these two marks indicating the outer limits of the darker basal area of the wing; a dark suborbicular shade follows the V-shaped mark on the costa; the outer half of the wing is paler plumbeous, lightest on the outer margin below the apex, and clouded with blackish on the outer margin near the extremity of vein 4; hind wing blackish, darkest externally; on the under side the wings are grayish, on the fore wing paler near apex; the hind wing with the upper margin at the base narrowly whitish; a diffuse discal spot in the cell, succeeded by three or four indistinct transverse bands made up of minute dark spots. Expanse, 27 mm.

The type, which is unique, was taken at Bolengi, July 20, 1909, and is in The American Museum of Natural History.

Sarrothripinæ**RISOBA** Moore(539) 1. **Risoba lunata** (Mœschler)

Lycoselene lunata MÆSCHLER, 1888, Abhandl. Senck. Nat. Ges., XV, p. 88, Pl. fig. 19.

One badly rubbed specimen taken at Medje, August 2, 1910.

Gonopterinae**PSEUDOGONITIS** Hampson

(540)

1. ***Pseudogonitis variabilis***, new species

Plate XIII: Figure 5, ♂; Figures 6 and 7, ♀ ♀

♂, ♀. Palpi porrect, ascending, the third joint moderately long and slender; the fore wing rounded on the costa before the apex, slightly incurved about the middle, strongly produced at the extremity of vein 4 and deeply excavated between tip of apex and this point; fringes of fore wing crenulate from apex to tornus; eyes dark brown; palpi dark brown, lighter below; frons, vertex, tegulae, patagia and upper side of thorax varying from rufous to gray; tegulae always marked externally by a paler line defined inwardly by a darker line; the upper side of the abdomen ranging from pale reddish or gray to dark fuscous in some specimens. Lower side of thorax and abdomen concolorous with the upper side; legs concolorous, tarsi darker brown, marked at the end of the joints with minute white spots. The fore wing indicates the presence of transverse basal, subbasal, median, postmedian, and submarginal bands, more or less obliterated upon the disc of the wing, but always persisting on the costal margin, where these bands are represented by five spots, the first three of which may or may not be continued downward across the wing in the form of macular bands. The submarginal band in all specimens which I have examined persists in the form of a subtriangular dark, spot on the costa, its outer margin being about 4 mm. from the apex, whence it is continued downward across the wing in a very irregular sinuate band composed of dark more or less sagittate spots, which sometimes fuse with each other and form a solid band. The upper or costal end of this submarginal band is in all specimens before me defined externally by a fine white line extending from the costa as far as vein 6, the space between this line and the apex being in most specimens lighter. Near the extremity of vein 4 the outer margin is obscured by dark spots and shades. In one specimen before me the entire outer third of the wing is almost solidly dark brown. The hind wing on the upper side has the inner two-thirds paler and the outer third banded with a darker shade varying from pale gray in some specimens to deep black, with the region of the anal angle always somewhat lighter. On the under side the wings are some shade of pale brown or gray, except on the inner margin of the fore wing, which from the base below the cell to the outer angle is paler, whitish or pale testaceous; at the end of the cell there is invariably a dark spot, and on the costa the spots which on the upper side indicate the location of the transverse bands may or may not faintly reappear on the lower side. Before the apex, near the costa, there is a small dark spot, indicating the point at which on the upper side the submarginal band appears; below this spot, from vein 2 to vein 5, in all specimens examined by me there is a broad black ferruginous spot, suboval in form, beyond which the outer margin is paler, marked with small pepper-and-salt maculations, the marginal line being regularly looped, dark in color with minute white points at the end of the nervules, the fringes being pale, tipped at their extremities with dark brown or blackish. The hind wing on the under side invariably has a minute discal spot at the end of the cell followed by two parallel very fine more or less irregularly curved postmedian and submarginal bands, which in some specimens become diffuse, and in some specimens as they approach the inner margin of the hind wing—which none of them reach—become intensified or are indicated by patches of minute black spots. The marginal line on the hind wing is like that on the fore wing,

very fine, composed of regularly curved brown lines interrupted with white points at the tips of the nervules, beyond which the fringes are lighter, becoming a little darker toward their tips near the anal angle, but not near the upper angle, where they appear to be concolorous.

The foregoing description is based upon two male specimens, each of which has an expanse of 45 mm., and five female specimens, which expand from 43 to 48 mm., and which are contained in the Carnegie Museum. The male type was taken at Lolodorf, Cameroon, December 17, 1914, by J. A. Reis; the female allotype was taken at Banza Manteka, Belgian Congo, by A. L. Bain. Of the paratypes, three were taken at Lolodorf, two by J. A. Reis and one by H. L. Weber, at various dates; the fourth taken at Duala, Cameroon, on June 13, 1913, by A. I. Good.

Of this insect there are in the Lang-Chapin Collection five ragged and rubbed specimens taken at Medje in July and August, and I have several equally poor and defective specimens in my own collection coming from the region of the Ogové River, which I took with me to the British Museum in 1905 for determination, and one of which bears the mark "not in B. M." I have long known this insect by defective specimens, unfit for description, but it is only comparatively recently that we received from Cameroon a number of beautifully perfect specimens which have enabled me to prepare the foregoing diagnosis of the species, which I refer without hesitation to the genus *Pseudogonitis* Hampson, with which, according to the figures and description given by Hampson, it agrees perfectly. The insect is evidently exceedingly variable, the variation being due to the difference in the intensity of the bands and markings, which may become almost obsolete, or may become very deep and pronounced in color, or melt into each other. There is, however, more or less uniformity shown in the markings on the under side of the wings.

Acontiinae

METALEPTINA Holland

(541) 1. *Metaleptina digramma* (Hampson)

Westermannia digramma HAMPSON, 1905, Ann. Mag. Nat. Hist., (7) XVI, p. 592.

Metaleptina digramma HAMPSON, 1912, Cat. Lep., Phal., XI, p. 623, fig.

One specimen taken at Bolengi, July 20, 1909.

LEOCYMA Guenée

- (542) 1.
- Leocyma congoënsis**
- , new species

Plate XIII, Figure 13, ♂

♂. Head and body pale reddish yellow; legs concolorous; traces of an indistinct median line and of a discal spot on the fore wing; both fore and hind wings on the upper side broadly shaded with light brown, this brown area separated from the light yellow inner area by two fine parallel dark brown lines between which there appear a few lighter reddish scales. The dark outer area of the fore wing is interrupted at the apex by a white sublunulate spot defined inwardly by a thin dark brown line; there are a few white punctulations opposite the end of the cell and near the tornus on this dark outer marginal area in the fore wing. Expanse, 30 mm.

The type, which is unique, was taken at Ukaturaka, on July 24, 1909, and is in The American Museum of Natural History.

Catocalinæ**COCYTODES** Guenée

- (543) 1.
- Cocytodes maura**
- (Holland)

Arcte maura HOLLAND, 1894, *Psyche*, VII, p. 50, Pl. II, fig. 2.*Cocytodes maura* HAMPSON, 1913, *Cat. Lep.*, Phal., XII, p. 261, fig.

Seven specimens were taken at Medje, two in June and five in August.

EGYBOLIS Boisduval

- (544) 1.
- Egybolis vaillantina**
- (Stoll)

Bombyx vaillantina STOLL, 1790, *Supp. to Cramer*, Pl. xxxi, fig. 3.

One specimen labelled "Ukaturaka, July 24, 1909."

NYCTIPAO Hübner

- (545) 1.
- Nyctipao walkeri**
- (Butler)

Patula walkeri BUTLER, 1875, *Ann. Mag. Nat. Hist.*, (4) XVI, p. 406. SAALMÜLLER, 1891, *Lep. Madag.*, II, p. 450, Pl. IX, fig. 137.*Nyctipao valceri* HAMPSON, 1913, *Cat. Lep.*, Phal., XII, p. 283.

Five examples of this common insect; one taken at Stanleyville, January 1909; another at Avakubi, June 1914; the rest at Medje, August 1910.

Cyligramma Boisduval

- (546) 1.
- Cyligramma latona**
- (Cramer)

Noctua latona CRAMER, 1779, *Pap. Exot.*, I, p. 20, Pl. XIII, fig. B.*Cyligramma latona* HAMPSON, 1913, *Cat. Lep.*, Phal., XII, p. 303.

Two males, one caught at Medje in September, the other at Avakubi in October.

(547) 2. **Cyligramma magus** (Guérin)*Erebus magus* GUÉRIN, 1842, Icon. Règne Anim., Ins., p. 521.*Cyligramma magus* HAMPSON, 1913, Cat. Lep., Phal., XII, p. 305, Pl. ccv, figs. 6, 7.

One specimen caught at Munie Katoto in September 1909 and five captured at Medje from July to September 1910.

ENTOMOGRAMMA Guenée(548) 1. **Entomogramma pardus** Guenée*Entomogramma pardus* GUENÉE, 1852, Noct., III, p. 205. HAMPSON, 1913, Cat. Lep., Phal., XII, p. 315, fig.

One female caught at Niangara toward the end of November. It is paler and yellower than specimens from the West Coast, but, except for the lighter color, does not differ at all from other specimens, of which I have many before me.

THERMESIA Hübner(549) 1. **Thermesia** species (?)

A single specimen taken at Bolengi, July 21, 1909, which I do not find any description to fit. I have several of the same species in my collection, one of which is marked "In B. M. but unnamed." This note was made in 1905, since which time Sir George F. Hampson may have given a name to the insect, which will appear in future volumes of his 'Catalogue of the Phalænæ,' and I am not inclined to "steal his thunder."

ENMONODIA Walker(550) 1. **Enmonodia occidentalis** Hampson*Enmonodia occidentalis* HAMPSON, 1913, Cat. Lep., Phal., XII, p. 322, Pl. ccviii, figs. 2, 3.

Three males, one taken at Gamangui in June, one at Medje in August, and one at Niangara in November.

SPEIRIDONIA Hübner(551) 1. **Speiridonia plicata** Hampson*Speiridonia plicata* HAMPSON, 1910, Proc. Zool. Soc. London, p. 429, Pl. xxxvii, fig. 25.

One specimen caught at Medje, August 24, 1910.

DERMALEIPA Saalmüller(552) 1. **Dermaleipa nubilata**, new species

Plate XIII, Figure 15, ♂

♂. Head, thorax, and abdomen on the upper side pale reddish brown. The palpi are a little darker. The pectus and the lower side of the thorax and abdomen are paler than the upper side. The legs are reddish brown, darker in color than the adjacent parts of the body. On the upper side the fore wing is reddish brown of the

same shade and intensity as the thorax with darker markings. There is a minute dark point in the middle of the cell; at the end of the cell there is a sublunate paler spot, surrounded by a very fine outer dark line, most distinct basad; at a point a little beyond the middle of the costa there arises a transverse straight postmedian pale line, which runs from this point to the inner margin, which it reaches a little behind the lower angle of the wing; there is no evidence of a basal or subbasal line, and there is a mere suggestion of a premedian line running from the costa to the inner margin; an inwardly curved submarginal line is suggested by a row of small dark dots; all of these lines are very obscure and poorly defined. Behind the postmedian line and below the lower outer angle of the cell there is a dark brown diffuse subtriangular spot, and beyond this line on the apical area there is a much larger spot of the same dark shade, the boundaries of which are not sharply defined, but which has the general outline of a triangle with its base on the costa from the point of origin of the postmedian line to the tip of the wing, and its apex on vein 5. The hind wing on the upper side is ochreous, and has on its inner margin a large tuft of long hairs, which are a trifle darker than the rest of the wing. On the under side both wings are uniformly ochreous a trifle deeper in shade than the upper side of the hind wing. The only dark marking on this side of the wings is a vaguely defined short band of dark scales at the end of the cell of the fore wing. Expanse, 45 mm.

The type, which is unique, was taken at Avakubi, August 30, 1910, and is in the American Museum of Natural History.

This small species may be easily distinguished from *D. arcifera* Hampson, which it comes nearest, by the absence of the subbasal line of the fore wing, its smaller size, the peculiar dark spots and the generally clouded and diffuse character of the markings of the fore wings.

(553) 2. ***Dermaleipa parallelipeda*** (Guenée)

Ophiodes parallelipeda GUENÉE, 1852, Noct., III, p. 230.

Dermaleipa parallelipeda HAMPSON, 1913, Cat. Lep., Phal., XII, p. 412, fig.

One damaged female taken at Medje, April 6, 1910.

ANUA Walker

(554) 1. ***Anua producta*** (Holland) (*nec* Hampson)

Minucia producta HOLLAND, 1894, Psyche, VII, p. 70, Pl. III, fig. 2.

One male specimen taken at Gamangui, February 11, 1910. It agrees perfectly with the type of the species, with which I have compared it.

Sir George F. Hampson, in his 'Catalogue of the Phalænæ,' XII, p. 453, gives a good description and a fine figure of an insect, which he determined to be the one to which I applied the specific name *producta*, as above cited. I am quite positive that he is in error. Neither his description nor his figure agree with the type of *Anua* (*Minucia*) *producta* Holland, which is before me as I am writing these lines. I have

specimens of the insect described and figured by Hampson under the name *producta*, and have compared them with the type of *producta* and find them not to be the same. As the insect which Hampson dealt with evidently is not the same as *Anua producta* Holland and does not seem to have been named by any subsequent writer, I propose to call it **Anua hampsoni** and so have labelled the specimens in our collections. The synonymy will be as follows:

Anua hampsoni HOLLAND, new name.

Anua producta HAMPSON, 1913, Cat. Lep., Phal., XII, p. 453.

(555) 2. **Anua david** (Holland)

Minucia david HOLLAND, 1894, Psyche, VII, p. 70.

Anua david HAMPSON, 1913, Cat. Lep., Phal., XII, p. 456, fig.

The collection contains a rather poorly preserved specimen of this species which agrees with the type. It was taken, according to the label, at "Faradje, 1911-1912."

HELIOPHISMA Hampson

(556) 1. **Heliophisma catocalina** (Holland)

Ophiodes catocalina HOLLAND, 1894, Ent. News, V, p. 58.

Heliophisma catocalina HAMPSON, 1913, Cat. Lep., Phal., XII, p. 462, Pl. ccxvi, fig. 1.

One specimen taken at Medje, July 17, 1910, which agrees with the type.

TOLNA Walker

(557) 1. **Tolna eximia** (Holland)

Methorasa (?) *eximia* HOLLAND, 1894, Psyche, VII, p. 7; 1893, idem, VI, Pl. xxi, fig. 7.

There is a single specimen of this species, which I originally referred to *Methorasa* but which would better be referred to the genus *Tolna*. It was taken at Medje, July 30, 1910.

(558) 2. **Tolna bolengensis**, new species

Plate XIII, Figure 9, ♂

♂. Antennæ very slightly, if at all, pectinate; eyes dark brown; frons pale; tegulae and patagia dark brown, the latter bordered posteriorly with fine white lines; metathoracic tuft dark brown; upper side of abdomen fuscous; palpi dark brown, minutely tipped with white at the end of the third joint; pectus dark brown, legs pinkish brown. Lower side of abdomen pale pinkish. Fore wing on the upper side pinkish brown, broadly margined externally with dark brown; near the base of this wing, below the cell, are some obscure dark transverse lines margined externally by paler brown; the reniform at the end of the cell is light in color, in one specimen white, in the other pale yellow, with a small black dot at the upper end and a minute U-shaped mark at the lower end; from the reniform to the inner margin there runs

an irregular dark line, defined outwardly by a paler line, bounding a light postmedian area which extends as an irregular band from the costa to the inner area, but is interrupted just beyond the reniform at the end of the cell by a dark brown quadrate blotch. This transverse band is bounded externally by an irregularly curved postmedian line running from a point about 3 mm. behind the apex almost directly to vein 2, where it turns outwardly and terminates on the inner margin about 2 mm. from the tornus. This line constitutes the inner boundary of the dark external margin of the wing, and is defined inwardly by a few light scales. The fringes are separated from the body of the wing by an exceedingly fine black marginal line, the interspaces being punctated by very minute white dots, more distinct toward the tornus. On the upper side the hind wings toward the outer margin are sooty, paler toward the base; the fringes concolorous. On the under side both wings are prevalently tawny ochraceous sprinkled with very small brown dots; the fore wing has a whitish point near the base; a larger whitish spot corresponding to the reniform in its location, punctated above by a black dot. Beyond this light spot the dark blotch which appears on the upper side is faintly reproduced on the lower side, and externally is continued to the costa by a fine evenly curved dark line; the lower portion of the cell and the area included by the interspaces from the inner margin as far upward as vein 7 are fuliginous, except on the outer border, which is lighter. There is a small blackish dot between veins 7 and 8 behind the apex. The hind wing on the lower side is colored like the fore wing. There is a small black dot at the end of the cell, followed by an irregularly curved fine dark brown line; a dark subterminal fuliginous band runs from the upper angle toward the anal angle, which it does not quite reach. The anal angle and the inner margin are pale stramineous; the outer border is pale fuscous irrorated with brown, the division between the subterminal dark band and the outer area of the wing being marked by an irregularly curved row of light spots. In the cotype the dark subterminal band is not as heavy as in the type and is more or less broken up into small salt-and-pepper dots. Expanse, 43 mm.

The species is represented in the collection by two specimens, the type taken at Bolengi, July 20, 1909, and deposited in The American Museum of Natural History; the paratype taken at Poko, July 19, 1913, and reserved for the Holland Collection in the Carnegie Museum.

ERCHEIA Walker

(559)

1. *Ercheia subsignata* (Walker)

Achæa subsignata WALKER, 1865, List Lep. Het. B. M., XXXIII, p. 959. HOLLAND, 1894, Psyche, VII, Pl. II, fig. 9.

There is one rubbed female specimen of this species which on the under side (the upper side is too badly rubbed to be well identified) agrees absolutely with specimens originally compared with Walker's types and in my collection. The insect was captured at Gamangu on June 27, 1910.

Hampson, in his 'Catalogue of the Phalænæ,' XII, p. 495, sinks *Ercheia periploca* Holland as a synonym of *E. subsignata* (Walker). Hampson may be right, though the two insects look wonderfully distinct.

It is true that on the upper side there is considerable variation in specimens. I have in my collection a specimen of *E. subsignata* in which the light area of the fore wings is not glaucous gray, as in Walker's type, but bright yellowish ochraceous, giving the insect a totally different appearance at first glance.

In this connection it may be proper to call attention to the fact that we have in our possession a female specimen of *Ercheia multilinea* Swinhoe, originally described from Perak and also found in New Guinea. The specimen we have came from Sierra Leone and was donated to the Carnegie Museum by Mr. Schaus, having been collected by Mr. Clements. The geographic range of this species is thus extended from the Indo-Malayan region to tropical West Africa.

ACHÆA Hübner

(560) 1. **Achæa mormoides** Walker

Achæa mormoides WALKER, 1858, List. Lep. Het. B. M., XIV, p. 1393. HAMPSON, 1913, Cat. Lep., Phal., XII, p. 502, figure of ♂.

Achæa mania FELDER, 1874, Reise Novara, Lep., Pl. cxvi, fig. 16.

I refer one rubbed and faded female specimen to this somewhat variable species, of which I possess a long series representing both sexes. A female from the Ogové River agrees absolutely with the insect upon which I am reporting and which is labelled "Bolengi, VII, 20, '09."

(561) 2. **Achæa ezea** (Cramer)

Phalæna ezea CRAMER, 1779, Pap. Exot., III, p. 78, Pl. ccxxxix, fig. D.

Achæa ezea HAMPSON, 1913, Cat. Lep., Phal., XII, p. 510. (Hampson gives further synonymy.)

One specimen taken at Avakubi, August 30, 1913.

(562) 3. **Achæa catocaloides** Guenée

Achæa catocaloides GUENÉE, 1852, Noct., III, p. 245. HAMPSON, 1913, Cat. Lep., Phal., XII, p. 514, Pl. ccxvii, fig. 13.

One example labelled "Bolengi, VII, 20, '09."

(563) 4. **Achæa albifimbria** (Walker)

Ophiura albifimbria WALKER, 1869, Char. Undescrib. Lep. Het., p. 53.

Naxia apiciplaga HOLLAND, 1894, Ent. News, V, p. 59, Pl. II, fig. 3.

Achæa albifimbria HAMPSON, 1913, Cat. Lep., Phal., XII, p. 531, Pl. ccxviii, fig. 14.

Two specimens, one caught at Medje in April 1910, the other at Stanleyville in March 1915.

(564) 5. **Achæa** species (?)

There is a single specimen taken at Medje, September 11, 1910, which I refer with considerable doubt to the genus *Achæa* because of the somewhat angulated outer margin of the fore wing. It does not agree with any species the figure and description of which I can recall, but I hesitate to describe it as new.

PARALLELIA Hübner(565) 1. **Parallelia algira** (Linnæus)

Noctua algira LINNÆUS, 1767, Syst. Nat., 12th Ed., p. 836.

Parallelia algira HAMPSON, 1913, Cat. Lep., Phal., XII, p. 596 (*q. v.* for synonymy).

One specimen caught at Niangara, November 17, 1910.

GRAMMODES Guenée(566) 1. **Grammodes stolida** (Fabricius)

Noctua stolida FABRICIUS, 1775, Syst. Ent., p. 599.

Grammodes stolida HAMPSON, 1913, Cat. Lep., Phal., XIII, p. 21 (*q. v.* for synonymy).

One female caught at Faradje, December 6, 1913.

PARACHALCIOPE Hampson(567) 1. **Parachalciope benitensis** (Holland)

Grammodes benitensis HOLLAND, 1894, Psyche, VII, p. 85, Pl. II, fig. 25.

Parachalciope benitensis HAMPSON, 1913, Cat. Lep., Phal., XIII, p. 37, fig. p. 38.

Five specimens taken at Medje from April to August 1910.

MOCIS Hübner(568) 1. **Mocis repanda** (Fabricius)

Noctua repanda FABRICIUS, 1794, Ent. Syst., III, p. 49.

Mocis repanda HAMPSON, 1913, Cat. Lep., Phal., XIII, p. 84. (See Hampson, *loc. cit.*, for full synonymy.)

Two specimens, one caught at Medje, April 6, 1910, the other at Faradje in "1911-1912."

(569) 2. **Mocis frugalis** (Fabricius)

Noctua frugalis FABRICIUS, 1775, Syst. Ent., p. 601.

Mocis frugalis HAMPSON, 1913, Cat. Lep., Phal., XIII, p. 87.

One typical specimen taken at Banana, June 21, 1909. Four specimens with the blackish suffused streak near the posterior margin of the primaries (Var. 1 of Hampson). Three of these were taken at Banana as the same date as the typical specimen, the fourth at Matadi four days afterwards.

(570) 3. **Mocis undata** (Fabricius)*Noctua undata* FABRICIUS, 1775, Syst. Ent., p. 600.*Mocis undata* HAMPSON, 1913, Cat. Lep., Phal., XIII, p. 91.

One specimen taken at Kwamouth, July 15, 1909.

(571) 4. **Mocis inornata** (Holland)*Trigonodes inornata* HOLLAND, 1894, Psyche, VII, p. 86, Pl. II, fig. 19.*Mocis inornata* HAMPSON, 1913, Cat. Lep., Phal., XIII, p. 99, Pl. CCXXIII, fig. 26.

Three poor specimens, all more or less rubbed and torn, one taken at Ngayu on December 24, 1909, the other two at Medje in August 1910.

(572) 5. **Mocis** species (?)

A solitary specimen taken at Banana, June 21, 1909, does not belong to any of the four above-mentioned species but is in too poor condition to permit of exact determination.

Mominæ**ELÆODES** Hampson(573) 1. **Elæodes virescens** (Butler)*Eremobia virescens* BUTLER, 1879, Ann. Mag. Nat. Hist., (5) IV, p. 243.*Elæodes virescens* HAMPSON, 1913, Cat. Lep., Phal., XIII, p. 357, fig.

A single rubbed specimen, which is undoubtedly referable to this species, was taken at Medje, August 24, 1910.

Plusiinae**PHYTOMETRA** Haworth

(Plusia of authors)

(574) 1. **Phytometra acuta** (Walker)*Plusia acuta* WALKER, 1857, List Lep. Het. B. M., XII, p. 922.*Phytometra acuta* HAMPSON, 1913, Cat. Lep., Phal., XIII, p. 490.

One specimen caught at Medje in August 1910 agrees with specimens in my collection which were compared with Walker's type of this species.

(575) 2. **Phytometra orichalcea** (Fabricius)*Noctua orichalcea* FABRICIUS, 1775, Syst. Ent., p. 607.*Phytometra orichalcea* HAMPSON, 1913, Cat. Lep., Phal., XIII, p. 580.

One specimen was caught at Faradje, December 6, 1912.

Noctuinae**OPHIDERES** Boisduval(576) 1. **Ophideres fullonica** (Linnæus)*Phalæna-Attacus fullonica* LINNÆUS, 1767, Syst. Nat., 12th Ed., I, part 2, p. 812.*Ophideres fullonica* HAMPSON, 1894, Moths of India, II, p. 560.

One specimen was caught at Medje, July 6, 1910.

(577) 2. **Ophideres materna** (Linnæus)

Phalæna-Noctua materna LINNÆUS, 1767, Syst. Nat., 12th Ed., I, part 2, p. 840.

Ophideres materna HAMPSON, 1894, Moths of India, II, p. 561.

Three examples, one taken at Medje in June 1910, one at Faradje on January 1, the third at Niangara in May 1913.

(578) 3. **Ophideres princeps** Boisduval

Ophideres princeps BOISDUVAL, 1832, Voy. de l'Astrolabe, Lép., p. 245. WALKER, 1857, List Lep. Het. B. M., XIII, p. 1223.

Three specimens, which agree well with the figure given by Guenée (Noct., Pl. xvi, fig. 3). Originally described as from New Guinea, but this was probably a mistake of locality. I observe that Swinhoe in his 'Catalogue of Eastern Lepidoptera Heterocera' does not cite the species from the Indo-Malayan Region. Two of the specimens were caught at Medje in June and July, while one is labelled "Panga, IX, 16, 1914." We have many specimens in our collections from West Africa.

(579) 4. **Ophideres divitiosa** Walker

Ophideres divitiosa WALKER, 1869, Proc. Nat. Hist. Soc. Glasgow, I, p. 356, Pl. vii, fig. 11.

Three specimens taken at Medje in July and August not differing from others in our collections from other localities in tropical Africa.

SPHINGOMORPHA Guenée(580) 1. **Sphingomorpha chlorea** (Cramer)

Phalæna-Noctua chlorea CRAMER, 1779, Pap. Exot., II, Pl. civ, fig. C.

Sphingomorpha chlorea SWINHOE, 1900, Eastern Lep. Het., II, p. 132.

Nineteen specimens, all taken at Niangara, except two taken at Medje. The examples from Niangara were caught in March and April 1913; those from Medje in April and in July.

(581) 2. **Sphingomorpha pudens** Holland

Sphingomorpha pudens HOLLAND, 1894, Ent. News, VII, p. 57, Pl. ii, fig. 7.

Of this species there are four specimens, two males and two females. One female was caught at Matadi in June 1909, the other at Ngayu in April 1910. The two males were taken at Medje in July 1910.

(582) 3. **Sphingomorpha aliena**, new species

Plate XIII, Figure 14, ♂

♂. In the outline of the primaries this species agrees with *S. chlorea*, the type of the genus, the outer margins being evenly rounded and not produced or slightly angulated at the extremity of vein 4, as is the case in *S. pudens*.

The prevalent color is reddish brown, moderately dark. The vertex and inner edges of the tegulae are very pale warm gray, which color extends backward on the thorax between the patagia, and is continued as a pale dorsal line on the abdomen. The under side of the palpi, the pectus, the thorax, and the abdomen are pale fawn-color. The fore wings have a few minute dark basal points, a very fine, dark, outwardly curved subbasal line, a fine, dark, straight median line running obliquely from the middle of the costa to about the middle of the inner margin. At the end of the cell is a minute dark spot, surrounded by a few lighter scales. There is a trace of a faint postmedian line, only visible near the costa, and terminating about vein 5. Beyond this is a fine dark submarginal line running from the apex to the inner margin, slightly curved at its upper end, and terminating upon the inner margin at a point about one-fourth the length of this margin behind the inner angle of the wing. The hind wings on the upper side are similar in color to the fore wings, but a little darker in tone, except at the anal angle, where they become paler and are marked by three incomplete dark bands running inwardly towards the middle of the wing, before reaching which they become obsolete. The two lower bands are close to each other, but the one above them is separated by a wider interval than that which parts the two nearest the outer margin. There is a fine dark submarginal line, near the anal angle composed of very minute lunules, accentuated externally by lighter scales. The fringes are concolorous, and not checkered with lighter color. On the under side both wings are pale fawn, with the lower half of the cell and the inner margin of the primaries darker, the scales long and closely appressed on these areas. There are a few dark punctulations on the limbal area of both wings, and the dark incomplete bands seen on the upper side of the secondaries reappear on the lower side, but are fainter and shorter. Expanse, 50 mm.

The type is a quite perfect specimen in the Carnegie Museum taken at Banza Manteka by A. L. Bain, the paratype is a much less perfect specimen in the collection brought back by the Lang-Chapin Expedition, and belongs to The American Museum of Natural History. This latter specimen is labelled "Medje, VII, 6, 1910."

ABURINA Mœschler

(583) 1. **Aburina infirma** (Holland)

Naxia infirma HOLLAND, 1894, Psyche, VII, p. 52, Pl. III, fig. 5.

A single specimen was caught at Avakubi, August 30, 1913.

My reference of this species to the genus *Naxia* was, at the time I made it, quite provisional. Hampson sinks *Naxia* Guenée as a synonym of *Parallelia* Hübner. The insect certainly does not fall into *Parallelia*, though it accorded, at the time I studied it, with a number of species which then (1892) were classified under *Naxia* in the British Museum. Upon the whole, I am inclined to regard it as perhaps best referred to Mœschler's genus *Aburina*, in which Sir George F. Hampson tells me he has placed it.

POLYDESMA Boisduval(584) 1. **Polydesma umbricola** Boisduval

Polydesma umbricola BOISDUVAL, 1834, Faune Ent. Madagr., Lep., p. 108, Pl. XIII, fig. 5. HAMPSON, 1894, Moths of India, II, p. 468.

Three specimens, two taken at Medje in April 1910, one at Stanleyville, in the same month, 1915. A common insect in the tropics of the Eastern Hemisphere.

RHYNCHODES¹ Guenée(585) 1. **Rhynchodes avakubi**, new species

Plate XIII, Figure 10, ♀

♀. Upper side of both wings moderately dark purplish brown; body on the upper side concolorous; the body and wings on the lower side a shade lighter; the fore wing is crossed by a fine dark median line, curving inwardly and running from about two-thirds of the length of the costa from the base downwardly to the middle of the inner margin, cutting diagonally across the end of the cell. Beyond this there is a heavy black, or dark brown line, which runs perpendicularly from a point on the costa a little before the apex to the inner margin, which it reaches about one millimeter beyond the inner angle of the wings. This band is accentuated both on the inner and outer sides by a few faint reddish scales; the fringes at the apex and in the excavated portion of the outer margin below the apex are dark brown. Expanse, 32 mm.

The type was taken at Avakubi on August 30, 1913, and is in The American Museum of Natural History. A paratype taken at Efulen, Cameroon, by Dr. H. L. Weber, is in the Carnegie Museum.

AMPHIGONIA Guenée(586) 1. **Amphigonia complex** (Holland)

Episparis complex HOLLAND, 1894, Psyche, VII, p. 103, Pl. iv, fig. 14.

Two examples taken at Matadi, June 24, 1909, agree with the type.

¹There is another species of this genus known to the writer, which apparently has not been described and which he takes the present opportunity to diagnose.

Rhynchodes efulensis, new species

♂, ♀. Resembling *R. avakubi*, but differing in having the ground-color on the upper side bright castaneous; in the males the median line in the three specimens before me is almost obsolete upon the fore wings; in the two females representing the species it is visible, but very fine, and differs from the median line in *R. avakubi* in not being curved inwardly, but running more nearly vertically from the middle of the costa to the middle of the inner margin. The outer line crossing the wing in the males is heavier and darker than in *R. avakubi*; on the under side of the fore wings the costa is bright orange with the cell at its end and the region immediately beyond the cell clouded with dark fuscous; the inner margin of the fore wing on the lower side inclines to whitish. The lower side of the hind wing is orange-red and there is a prominent black spot at the end of the cell of the hind wing on the lower side. Expanse, 25-30mm. Types in Carnegie Museum. Several paratypes. Habitat Cameroon.

Closely related to *avakubi*, but easily distinguished by the brighter color and the orange costa of the under side of the fore wing.

(587) 2. **Amphigonia simplex** (Holland)

Episparis simplex HOLLAND, 1894, Psyche, VII, p. 104, Pl. iv, fig. 11.

One badly damaged specimen taken at Medje, July 6, 1910. It agrees with the type, with which it has been compared.

(588) 3. **Amphigonia costalis** Walker

Amphigonia costalis WALKER, 1865, List Lep. Het. B. M., XXXIII, p. 1031.

Four specimens agree absolutely with others in the Holland Collection which were compared in 1892 with Walker's type and found to be his species. The examples were all taken at Medje from June to August.

(589) 4. **Amphigonia hyalinata**, new species

Plate XIII, Figure 11, ♂

♂. Antennæ testaceous; eyes black; vertex, frons, and palpi pale reddish brown; tegulæ, patagia, and upper side of thorax darker reddish brown; upper side of abdomen paler than thorax, and inclining to ashen gray; at the union of the thorax and abdomen on the upper side of the first segment of the latter a number of whitish hairs, presenting the appearance of a lighter colored annulus. Pectus, lower side of thorax, and abdomen pale fawn-color, almost white in certain lights; legs fawn-colored externally, white internally, the tibiæ of the fore legs marked inwardly with two deep black linear spots. Fore wing on the upper side reddish brown from the base to about the middle, on the outer third plumbeous; crossed by fine transverse lines as follows: a basal outwardly curved line; an irregularly curved median line running obliquely from the inner margin to the end of the cell, which it does not surpass, but in which it displays a retrorse hook-like prolongation; two parallel irregularly curved and crenulate postmedian lines. The space beyond the outermost of these lines to the margin is uniformly moderately dark plumbeous. On the costa there are five small light spots, the one near the base minute and circular, the remaining four linear. The most conspicuous marking of the fore wing is a large trapezoidal pale yellowish translucent spot beyond the end of the cell, its longer outline on the costa, the parallel side resting on vein 4. The hind wing on the upper side is of the same color and shade as the fore wing. There is a small discal dark dot near the end of the cell, and the two parallel curved postmedian lines of the fore wing are continued on the hind wing, sweeping in a rather even curve to the inner margin, being only inangulated on vein 3. On the under side both wings are pale yellowish white at the base, gradually becoming suffused outwardly with brown, which is deepest at the margins. Opposite the cell on the outer margin of the primary is a dark lunulate spot of deeper brown, and the outermost of the two postmedian dark lines of this wing is reproduced on the lower side by a regularly curved series of blackish spots on the interspaces. On the under side of the hind wing the discal spot is reproduced and the two postmedian bands of the upper surface reappear, being represented by two rows of small dark spots on the interspaces, which are wider apart than the lines on the upper surface. Expanse, 42 mm.

The type, which is unique, was captured at Stanleyville, August 6, 1909, and is deposited in The American Museum of Natural History.

Erastriniæ**AMYNA** Guenée(590) 1. **Amyna punctum** (Fabricius)*Noctua punctum* FABRICIUS, 1794, Ent. Syst., III, part 2, p. 47.

(For the voluminous synonymy see Hampson, Cat. Lep., Phal., X, 1910, p. 472.)

Two specimens which I take to be a variety of this species were taken at Stanleyville, April 9, 1915.

The species is variable and the specimens appear to represent one of its protean forms. The whole genus is in more or less of a "mess." Hampson has straightened things out to some extent, but there remains more to be done. According to Hampson *A. punctum* has had no less than eleven specific names applied to it, and *A. octo* is blessed with twenty specific names and has been located in no less than twelve genera.

OZARBA Walker(591) 1. **Ozarba** species (?)

A single, somewhat damaged specimen, which I am unable to refer to any species which thus far has been described and figured, but which I do not wish to name without more and better material, was caught at Banana, June 21, 1909.

HETEROSPILA Guenée(592) 1. **Heterospila** (?) **rubida**, new species

Plate XIII, Figure 12, ♂

♂. Antennæ two-thirds length of fore wing, feebly pectinate except at tip, which is simple. Palpi porrect, third joint minute. Eyes moderately large, black; head and upper side of thorax bright orange-red; upper side of abdomen pale fuscous; tibiae, which are heavily clothed with hair, orange-red; tarsi fuscous, annulated with white. Both wings on the upper side prevalently purplish red, variegated with bright red and pale yellowish spots. The costa of the fore wing is red with three dark transverse spots near the base; the inner half of the wing is reddish, crossed by a dark sub-basal and a dark median band, which are parallel to each other; the reniform is dark, pupilled with light red, and the space before and after it is lighter, in the type yellowish, in the paratype pale reddish; the outer half of the fore wing is clouded with purplish brown, interrupted on the interspaces by an irregularly curved row of submarginal spots, which are yellowish in the type, and pale reddish in the paratype. The hind wing on the upper side is prevalently reddish purple, paler toward the base, and crossed by obscure median and postmedian dark lines, and marked in the region of the anal angle with scattered pale reddish spots. On the under side the wings are pale yellowish shading into fuscous externally. There is a small dark dot in the cell of the fore wing, followed by a larger dark spot at its end; a similar spot occurs at the end of the cell of the hind wing. Both wings are crossed from their costæ to near their inner margins by similarly curved parallel postmedian and submarginal bands composed of dark spots upon the interspaces. Expanse, 34 mm.

The collection contains two specimens: the type, taken at Medje, April 6, 1910, which is in The American Museum of Natural History; and the paratype, a ragged specimen, taken at Avakubi, August 30, 1913, which is in the Holland Collection in the Carnegie Museum.

The species is strictly congeneric with the insect to which I provisionally gave the name *Heterospila* (?) *calescens* (see Psyche, 1894, VII, p. 177, Pl. v, fig. 13). The generic reference is open to question, as I well know, and it is almost certain to my mind that a new genus will ultimately have to be erected for the reception of the species, but as Sir George F. Hampson is at present working up the insects of this group, I do not now feel called upon to do more than I have here done.

Hypheninæ

SIMPLICIA Guenée

(593) 1. **Simplicia** (?) species (?)

A single specimen taken at Bolengi, August 20, 1909, which seems to come into this genus but which I have been unable to determine upon comparison with the literature and which I do not wish to venture to describe as new, though it probably is nondescript. We have a number of species which belong to this genus, but, until there is an opportunity to study them more closely and compare with the material upon which others are at present working, it would be unwise to attempt to describe them.

ELYRA Walker

(594) 1. **Elyra** (?) **gabunalis** Holland

Elyra (?) *gabunalis* HOLLAND, 1894, Psyche, VII, p. 126, Pl. IV, fig. 17.

A rubbed and defective specimen of this insect was taken at Medje, June 26, 1910. I referred the species to Walker's genus *Elyra* at the time I described it, but this reference is merely provisional and based upon the fact that the insect seems to be congeneric with the African species to which Walker applied the name *Elyra* (?) *cachrusalis* (cf. Walker, List Lep. Het. B. M., XVI, p. 204). I think a new genus will have to be erected for the reception of this insect, as to my mind it is not congeneric with the Bornean insect *Elyra phlegeusalis*, which is the type of the genus. There is a very marked difference in the structure of the palpi, etc., between *E. phlegeusalis*, and the two African species.

HYPENA Schrank

(595)

1. **Hypena** species (?)

A single specimen, in rather poor condition, which I am unable to refer to any species at present known to me but which I hesitate to describe without better material was taken at Medje, August 5, 1910.

DEINYPENA Holland

The genus *Deinypena*, the type of which is *D. lacista* Holland, is divisible into two sections. The first is represented by *D. lacista* Holland, *D. lathetica* Holland, and *D. margine-punctata* Holland, in which the antennæ of the males are heavily pectinate almost to the tip, the antennæ of the females being simple. The second section is composed of the species *geometroides* Holland, *apicata* Hampson, and the species described in the following paragraphs in which the antennæ of the males are less heavily pectinated for three-quarters of their length, the setæ being shorter and curving downwardly and inwardly, the antennæ of the females being simple. In the neuration of the wings there is no great difference; the palpi are remarkably long, in the first section the third joint being more heavily clothed with hair than in the second section. I have not seen *Deinypena triangularis* Bethune-Baker, and cannot, therefore, determine into which of the two sections of the genus that species falls.

(596)

1. **Deinypena morosa**, new species

Plate XIII, Figure 18, ♂

♂. Head, palpi, upper side of thorax and abdomen obscure chocolate-brown; fore wings and hind wings chocolate-brown, darker at the base and slightly illuminated on the outer half by a purplish iridescence; crossed by an irregularly curved median dark line, followed immediately by a parallel postmedian line, both of these lines curving backward basad near the costa; an obscure light point in the middle of the cell, and an obscure reniform at the end of the cell outlined by light scales; there is a submarginal series of fine white points extending from the apex to the inner margin; the margins are defined by a very fine black line, accentuated inwardly by minute white lines on the interspaces; the fringes are uniformly dark, not checkered. On the under side the wings are pale brown; the legs and the under side of the body concolorous; the fore wing is crossed by a dark vertical antemedian line, a median line, angulated at the end of the cell, and by a pale submarginal line which runs from the apex somewhat diagonally toward the inner margin, which it does not quite reach. The apex broadly whitish. The hind wing is crossed by three dark curved bands: a median band crossing the end of the cell, a postmedian band, and a broader submarginal band, all three of which are somewhat diffuse. Expanse, 45-50 mm.

The type, which was taken at Medje on July 17, 1910, is in The American Museum of Natural History. The paratype, which was taken at Gamangui on June 18, 1910, is in the Holland Collection in the Carnegie Museum.

(597) 1a. **Deinypena morosa pallidior**, new variety

♂. There is a specimen which I am inclined to regard as merely a variety of the foregoing species. It differs in being very much paler on the upper surface of both the fore and hind wings and in having the parallel transverse lines which cross both wings more distinctly defined.

This insect may represent a different species, but I do not think it is more than a variety of the foregoing. It was taken at Ukaturaka on July 24, 1909 and is in The American Museum of Natural History.

(598) 2. **Deinypena fulvida**, new species

Plate XIII, Figure 16, ♂

♂. Allied to the foregoing species; the upper side of the thorax and abdomen pale fawn; palpi and antennæ dark brown; fore wings fawn; obscure traces of a pale reniform at end of cell; very faint postmedian crenulated fine darker line bent backward basad from vein 6 to costa; on the costa marked just before the apex by a dark brown shade, darkest externally; a series of submarginal sagittate points extending from vein 5 to the inner margin, gradually increasing in size, deepening in intensity of color. Hind wings with the basal third delimited from the outer two-thirds by a dark narrow line between which and the base the wing is deeper reddish brown; beyond this delimiting line the outer two-thirds of the wing is pale purplish fawn, traversed externally by a submarginal series of dark spots, increasing in size and intensity from the region of the costa toward the inner margin, which they reach a little above the angle. Both wings have a fine dark brown marginal line; fringes darker brown. On the under side both wings are pale reddish fulvous, crossed by a curved postmedian dark line, which does not quite reach the inner margins. Apex of fore wing broadly white with traces of a faint light submarginal line extending from the white space as far as vein 3; fringes on the under side, except at the apex, dark brown. Expanse, 47 mm.

The type is unique and is in The American Museum of Natural History. It was taken at Medje, June 30, 1910.

(599) 3. **Deinypena multilineata**, new species

Plate XIV, Figure 5, ♂

♂. Palpi on the upper side dark brown; head, upper side of thorax hoary gray; upper side of abdomen pale fawn; lower side of thorax and abdomen pale fuscous ochraceous; legs somewhat darker; the prevalent color of both the fore and the hind wings is grayish fawn, tending to fuscous toward the external margins. The fore wing has a pale grayish spot in the middle of the cell, accentuated externally by a minute black dot; reniform obscure, suborbicular; above it on the costa a dark shade. The fore wing is traversed by an irregularly curved dark subbasal line, festooned

just below the costa and on vein 1. There is a dark median line which runs from the dark shade on the costa above the reniform outwardly to beyond the cell on vein 5, and then returns diagonally across the wing toward the inner margin, which it reaches about 2 mm. beyond the subbasal line. This median line is followed by a very fine subparallel postmedian line, sharply crenulate, or produced on the veins. Beyond the postmedian line there is a very dark subapical brown shade and a submarginal series of minute white points located on the veins and accentuated both externally and internally by dark black scales. There is a fine marginal dark line accentuated internally and on the interspaces with fine white lines. The fringes are dark brown, becoming blackish externally. Upon the hind wings the subbasal and median lines of the fore wing are continued as fine dark subparallel lines. The postmedian line of the fore wing is not continued upon the hind wing; the submarginal series of light spots accentuated inwardly and outwardly by dark brown scales is continued from the fore wing upon the hind wing, becoming most prominent toward the inner margin; the outer marginal line and the fringes of the hind wing are as on the fore wing. On the under side both wings are pale reddish ochraceous, with the submarginal and median lines of the upper side reproduced, but broader and more diffuse. The apex of the fore wing is broadly whitish and there is a faint pale submarginal band extending from this light patch toward the inner margin, which it does not quite reach. The submarginal series of spots found on the upper side of the hind wing on the lower side is represented by a broad diffuse band of blackish sagittate spots, fusing into each other and defined externally by paler sagittate markings. The fringes on the lower side are very dark brown or black. Expanse, 48 mm.

The type is unique and is in The American Museum of Natural History. It was taken at Medje, August 5, 1910.

(600)

4. *Deinypena transversata*, new species

Plate XIII, Figure 17, ♂

♂. Upper side of thorax, abdomen and wings moderately dark fawn to plumbeous; traces of a fine externally rounded subbasal line, a faint lighter-colored discal spot in the cell of the fore wing, and traces of a larger reniform spot at the end; a dark postmedian line runs outwardly from a little beyond the middle of the costa as far as vein 6, and then returns abruptly and runs in a straight line backward continuously toward the inner margin of the hind wing, which it does not quite reach; this line is sharply defined externally, but is diffuse internally. There are traces of a submarginal waved line near the tornus of the fore wing, and this is continued more distinctly upon the hind wing, being accentuated externally by some minute pale light spots; the margin in both wings is defined by a very fine brown line punctated on the interspaces by minute paler dots; the fringes are uniformly dark brown. On the under side the fore wings are whitish at the apex, and light testaceous on the inner margin. The fore wings are crossed by a median, postmedian, and submarginal dark band running from the costa as far as vein 1, the outer band being somewhat diffuse and broadest just before the apex; these three transverse bands are continued upon the secondaries as curved bands, the outermost being produced upon the nervules and accentuated by paler spots on the interspaces; the fringes on the under side are not much darker than the body of the wing. The female is marked much as the male, but

there is some variation,—in one female the dark line on the upper side of the secondaries being succeeded outwardly by a band of pale sagittate spots forming a submarginal series. Expanse, male, 42–48 mm.; female, 38–50 mm.

The foregoing description is based upon a single defective specimen brought home by the Lang-Chapin Expedition, and four males and six females in the Holland Collection, collected by the late Dr. A. C. Good at Kangvé. The insect has long been standing in the cabinet awaiting description, and I avail myself of the present opportunity to give it a name. The type is a well-preserved male specimen contained in the Holland Collection, taken at Kangvé, on the Ogové River. The paratype is a somewhat defective specimen, taken at Medje on April 6, 1910, and is in The American Museum of Natural History.

(601)

5. ***Deinypena obscura***, new species

Plate XIV, Figure 11, ♂

♂. General color of the upper surface pale wood-brown, the under side lighter; the fore wings near the base clouded with darker brown; two small black spots succeed each other in the cell and are followed by an obscure reniform, which is lost in a dark brown oblique median shade which runs from the costa to the inner margin and is succeeded externally by a finely waved somewhat irregular denticulate dark band; the apex and the tornus are clouded with dark brown; the outer margin is defined by a very fine brown line within which on the interspaces run fine transverse brown lines, darker than the rest of the wing. The fringes are dark brown, not checkered. The dark transverse brown shade of the fore wing is continued across the cell of the secondaries, and beyond toward the anal angle are a few fine black denticulate lines; the termen is darker than the rest of the wing, especially near the upper angle; on the lower side the costal area of the wing is lighter than the rest of the wing; there is a minute black dot in the middle of the cell and at the end of the cell a whitish point accentuated before and behind by black scales, followed by a faint postmedian dark denticulate line; near the apex the fore wing is somewhat lighter than the rest of the wing and is marked with minute striæ. The hind wing is somewhat paler than the fore wing, is crossed by an obscure median band running from about the middle of the costa toward the inner margin, succeeded by a fine denticulate postmedian line succeeded by a submarginal light line defined externally and internally by deeper brown lines; the termen is slightly darker than the rest of the wing. Expanse, 45–48 mm.

The type was taken at Medje, July 6, 1910, and is in The American Museum of Natural History. The paratype was taken at Medje, on July 17, and is in the Holland Collection in the Carnegie Museum.

The foregoing enumeration of the Noctuids brought home by the American Museum Congo Expedition takes no account of a small residuum consisting of eight or nine specimens thoroughly denuded of scales, lacking antennæ and legs, and otherwise imperfect. Any attempt to classify them would be useless. They represent at least six additional species, to

determine which would be a labor worthy of a paleontologist, but hardly commendable in the case of an entomologist, who may expect at any time to obtain perfect material for study.

Lymantriidæ

STILPNOTIA Westwood and Humphreys

(602) 1. **Stilpnotia ogovensis** (Holland)

Redoa ogovensis HOLLAND, 1893, Ent. News, IV, p. 63, Pl. III, figs. 12, 13.

Leucoma nitida SWINHÖE, 1903, Trans. Ent. Soc. London, LI, p. 379.

Two males and one female taken at Medje in June and July. The description of *L. nitida* Swinhoe shows plainly that it is based upon specimens which have the characteristics which caused me to separate the species from *luteipes* Walker, namely "fore wings with a beautiful silvery sheen, with thin longitudinal curved waves in certain lights, etc." The specimens have been compared with the types in my collection, with which they agree absolutely; the specimen in the Druce Collection of which Swinhoe speaks was a male of *S. luteipes* inadvertently sent Druce as *R. ogovensis*, the males of the two species having been carelessly mixed.

NAROMA Walker

(603) 1. **Naroma signifera** Walker

Naroma signifera WALKER, 1856, List Lep. Het. B. M., VII, p. 1744.

One badly worn female specimen taken at Niangara, December 9, 1910. The *signa*, consisting of a circlet of black raised scales in the cell of the fore wing, are rubbed off in the specimen, but traces of them may be seen with a glass.

STRACENA Swinhoe

(604) 1. **Stracena** species (?)

A single worn specimen allied to the species to which I applied the name *promelæna* but not identical with it, as shown by the type, nor with *fuscivena* Swinhoe, of which we have good specimens. The specimen is, however, too poor to permit me to found a new species upon it. It was taken at Medje in July.

SAPELIA Swinhoe

(605) 1. **Sapelia bipunctata**, new species

Plate XIV: Figure 3, ♂; Figure 4, ♀

♂. White throughout, except that the frons, the pectus and the legs are yellowish, and that at the end of the cell of the primaries there are two minute black dots,

one at the upper and the other at the lower outer angle. In one or two specimens these spots are quite indistinct, and in others they are quite conspicuous. In one or two specimens the costa of the fore wing at the base has a few dark scales.

♀. Like the male, but with greater expanse of wing, and with heavier body and reduced antennæ. Expanse, ♂, 38–42 mm.; ♀, 50–54 mm.

This insect runs to *Sapelia*, according to the table given by Aurivillius (1904, Arkiv Zool., II, part 4, p. 62), and I have no hesitation in locating it here, but I have not been able to find a description or figure in that or any allied genus which fits the species and therefore describe it as new. There are seven males and four females in the collection. They were all taken at Medje in June and July, except one male caught at Gamangui on February 17 and a female captured at Medje on April 6, 1910. The types are in The American Museum of Natural History; paratypes have been reserved for the Holland Collection in the Carnegie Museum.

OLAPA Walker

(606) 1. *Olapa flabellaria* (Fabricius)

Phalæna flabellaria FABRICIUS, 1787, Mantissa Ins., II, p. 188.

Liparis crocicollis HERRICH-SCHÆFFER, 1854, Ausseureur. Schmett., fig. 110.

Olapa flabellaria SWINHOE, 1903, Trans. Ent. Soc. London, LI, p. 390.

There are two females in the collection, one caught at Pawa, October 20, 1910; the other taken at Faradje, December 11, 1912.

LEUCOPERINA¹ Aurivillius

(607) 1. *Leucoperina atroguttata* Aurivillius

Leucoperina atroguttata AURIVILLIUS, 1908, Arkiv Zool., V, part 5, p. 8.

There is a single male specimen of this interesting insect which agrees absolutely with the description of the genus and species given by its author. His description is founded upon a single male contained in the Museum at Brussels. There are two females in our collections, one in the Holland Collection from the valley of the Ogové, the other in the general collection from Cameroon, as well as a male in the Holland Collection. The female is much larger than the male, but in neuration and markings the two sexes agree exactly. The antennæ also, as might be predicated without any information, are less plumose and shorter in the female. Expanse, ♀, 47–52 mm.

¹I cannot resist the opportunity to describe another species of this rare genus of insects to the existence of which my attention has been called by my assistant, Mr. Hugo Kahl.

Leucoperina kahli, new species

♂. Agreeing structurally in every particular with *L. atroguttata* Aurivillius, but differing in having the primaries pale uniformly semi-translucent fawn-colored, and the secondaries, which are white, clouded at the inner angle with pale brown. The wings are less diaphanous than is the case in *atroguttata*; the black mark on the fore wings at the origin of vein 2 is the same. Expanse, 38 mm. Cameroon. Type in Carnegie Museum.

The specimen in The American Museum of Natural History was taken at Medje, in the first week of September 1910.

MYLANTRIA Aurivillius

(608) 1. **Mylantria xanthospila** (Plötz)

Anoa (?) *xanthospila* PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 84.

Charotriche orestes DRUCE, 1887, Proc. Zool. Soc. London, (1888), p. 674.

Nygmia orestes KIRBY, 1892, Cat. Lep. Het., p. 449.

Mylantria xanthospila AURIVILLIUS, 1904, Arkiv Zool., II, part 4, p. 54.

Aurivillius founds his genus *Mylantria*, of which this insect is the type, upon the fact that in it veins 6 and 7 of the hind wing are stalked, which is not the case in the genus *Lymantria*.

The species appears to be not uncommon, and we have more than one hundred specimens in our collections derived from many localities, most of them from Cameroon. It is represented in the collection upon which I am reporting by two males taken at Medje, one in July, the other in August.

DASYCHIRA Hübner

(609) 1. **Dasychira albicostata** (Holland)

Ilema albicostata HOLLAND, 1893, Psyche, VI, p. 471, Pl. xvii, fig. 5.

One rubbed specimen taken at Kwamouth, July 15, 1909.

(610) 2. **Dasychira muscosa** (Holland)

Notohyba muscosa HOLLAND, 1893, Psyche, VI, p. 453.

One more or less defaced specimen taken at Bafwabaka, January 7, 1910.

(611) 3. **Dasychira crucifera** (Holland)

Æcura (?) *crucifera* HOLLAND, 1893, Psyche, VI, p. 453, Pl. xviii, fig. 15, o.

A ragged and rubbed female has been compared with the type and is undoubtedly the same. The insect was caught at Medje, July 29, 1910.

(612) 4. **Dasychira gnava** Swinhoe

Pseudonotodonta virescens MÆSCHLER, 1889, Abhandl. Senck. Nat. Ges., XV, p. 77, Pl. fig. 6. (*nom. præocc.*).

Dasychira gnava SWINHÖE, 1903, Trans. Ent. Soc. London, LI, p. 477.

One male caught at Banalia, September 22, 1914.

LÆLIA Stephens

(613)

1. **Lælia lignicolor** Holland*Lælia lignicolor* HOLLAND, 1893, *Psyche*, VI, p. 431, Pl. x, fig. 17.

One specimen taken "near Nouvelle Anvers, VII, 23, 1909." The insect, upon comparison with the type, is found to agree perfectly.

(614)

2. **Lælia hildoides**, new species

♂. Eyes deep black; palpi brown edged below with white; antennæ with culmen white, setæ testaceous; frons brown, edged on either side, near the eyes, with a narrow whitish line; tegulæ rosy fawn, edged inwardly with brown, so as to cause the brown shade of the upper side of the head to appear to be produced backwardly as a short dark shade; patagia and upper side of thorax rosy fawn; upper side of abdomen pale fawn; pectus whitish with a few brownish hairs below; lower side of thorax and abdomen whitish; legs white, except that the anterior pair are inwardly dark brown. The fore wings on the upper side are prevalently rosy fawn; at the base there are two or three very minute dark punctulations; a dark brown transverse diagonal line, defined outwardly by white, runs from the costa a little before its middle and reaches the inner margin a little more than the fourth of its length before the base; the position of the reniform is indicated by a few light scales, and there is a short dark bar at the end of the cell, defined outwardly by a narrow whitish line. From a point a little before the apex there runs a dark rather heavy postmedian line, terminating upon the inner margin at its middle, and sharply defined outwardly by a narrow band of pure white. A regularly outwardly curved submarginal line, composed of dark spots defined externally with white, runs from the same point where the postmedian line originates upon the costa, parallel to the outer margin, and reaches the inner margin about three-fourths of its length from the base. The hind wings on the upper side are pale, almost white, creamy at the base, deepening into very pale fawn externally, with minute dark punctulations at the end of the veins on the margins. On the under side both wings are creamy white, the fore wing towards the apex and the hind wing on the costal half marked by minute pale striæ and punctulations. The postmedian line on the fore wing reappears faintly on the lower side and on the same side of the secondaries there is an imperfect transverse narrow submarginal line, running from the costa as far as vein 4. There is also a faint reproduction of the bar with which the end of the cell of the primaries is closed on the upper side, this being represented on the lower side by a few dark scales.



Fig. 5.
Lælia hildoides Holland
♂. $\frac{1}{2}$.

♀. The female does not differ, except in its sexual characteristics, from the male, the size being greater, however, and the wings broader. The markings both of the upper and lower sides are very much the same. Expanse, ♂, 22–35 mm.; ♀, 35–40 mm.

The foregoing description is founded upon fourteen males in the collection in the Carnegie Museum, and three females, from the French Congo and Cameroon, including the female specimen brought back by the American Museum Congo Expedition from Medje.

This insect, which in coloration agrees with the insect which I named *Heteronygmia clathrata* (see Psyche, 1893, VI, p. 415), recalls in the markings of the fore wings the limacodid which bears the name *Ctenocompa hilda* (Druce). It is represented in the collection by a mashed female specimen, taken at Medje in the first week of September 1910. We have good examples taken at Efulen, Cameroon, and I select a finely preserved male from our collection as the type of that sex and designate the damaged female in the Lang-Chapin Collection, as well as a series of males and females in the Carnegie Museum as paratypes.

(615) 3. **Lælia soloides**, new species

Plate XIV, Figure 7, ♀

♀. Structurally the insect runs to *Lælia* according to the analytical table given by Aurivillius, 1904, Arkiv Zool., II, No. 4, pp. 62 *et seq.*, but in the color and markings of the wings it looks exactly like some species of the genus *Soloë*. The head, thorax, and abdomen are more or less clothed with yellowish hairs; the legs are yellowish; there are two rows of black spots on the under side of the abdomen; both the fore and hind wings are white, the former slightly dusted on the costa and apical area with pale gray; both wings have at the end of the cell moderately large and very conspicuous roundish black discal spots. Expanse, 44 mm.

The type, which is unique and not in very fine condition, was taken at Medje about the middle of August 1910 and is in The American Museum of Natural History.

(616) 4. **Lælia** species (?)

One specimen taken at Faradje, April 1911, which represents a species probably new to science, but the example is in too imperfect a condition to justify its description.

Sphingidæ

HERSE Oken

(617) 1. **Herse convolvuli** (Linnæus)

Sphinx convolvuli LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 490.

Protoparce convolvuli REBEL, 1910, in Berge's Schmett., 9th Ed., p. 91, Pl. XVII, figs. 3a, b, c.

Herse convolvuli ROTHSCILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 11.

Of this common and widely distributed species there are three examples, a male and two females, all taken at Faradje in November 1910.

ACHERONTIA Laspeyres(618) 1. **Acherontia atropos** (Linnaeus)

Sphinx atropos LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 490.

Acherontia atropos REBEL, 1910, in Berge's Schmett., 9th Ed., p. 87, Pl. xvii, figs. 1a, b, c.

Four males, three caught at Medje in August, and one captured at Faradje "1911-1912."

CÆLONIA Rothschild and Jordan(619) 1. **Cælonia fulvinotata** (Butler)

Protoparce fulvinotata BUTLER, 1875, Proc. Zool. Soc. London, p. 11.

Cælonia fulvinotata ROTHSCHILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 25.

One male caught at Niangara, April 14, 1913.

POLYPTYCHUS Hübner(620) 1. **Polyptychus orthographus** Rothschild and Jordan

Polyptychus orthographus ROTHSCHILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 244, Pl. i, fig. 9, ♂.

One example was taken at Medje.

(621) 2. **Polyptychus nigriplaga** Rothschild and Jordan

Polyptychus nigriplaga ROTHSCHILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 259, Pl. v, fig. 4, ♂.

One male taken at Medje, August 15, 1910.

LIBYOCLANIS Rothschild and Jordan(622) 1. **Libyoclanis hollandi** Clark

Libyoclanis hollandi CLARK, 1917, Proc. New Eng. Zool. Club, VI, p. 62, Pl. vii, fig. 3, ♀.

The single female captured at Medje constitutes the type of the species and was described by Mr. Clark before the writer of this paper began his task.

NEPHELE Hübner(623) 1. **Nephele comma** Hopffer

Nephele comma HOPFFER, 1857, Monatsber. Akad. Wiss. Berlin, p. 421; 1862, Peters, Reise n. Mossambique, Zool., V, p. 424, Pl. xxvii, fig. 12.

Two poorly preserved males, taken at Faradje, December 5 and 13, 1912.

(624) 2. **Nephele funebris** (Fabricius)*Sphinx funebris* FABRICIUS, 1793, Ent. Syst., III, part 1, p. 371.*Nephele funebris funebris* ROTHSCILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 557.

One male labelled as taken at Stanleyville, April 8, 1915.

(625) 2a. **Nephele funebris maculosa** Rothschild and Jordan*Nephele funebris maculosa* ROTHSCILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 558.

Of this varietal form there are eight male specimens; one taken at Matadi, June 24, 1909; two captured at Ngayu, March 1910; five from Stanleyville, two caught in February and two in March, and one in April 1915.

(626) 3. **Nephele bipartita** Butler*Nephele bipartita* BUTLER, 1878, Ann. Mag. Nat. Hist., (5) II, p. 455.

One male from Matadi, caught June 24, 1909.

(627) 4. **Nephele peneus** (Cramer)*Sphinx peneus* CRAMER, 1776, Pap. Exot., I, p. 139, Pl. LXXXVIII, fig. D.*Nephele peneus peneus* ROTHSCILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 560.

One female captured at Medje in July 1910.

(628) 5. **Nephele accentifera** (Palisot de Beauvois)*Sphinx accentifera* PALISOT DE BEAUVOIS, 1805, Ins. Rec. en Afrique et Amérique, Lép., p. 264, Pl. XXIV, fig. 1.*Nephele accentifera* ROTHSCILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 560.

Two females: one from Medje, July 8, 1910; the other taken at Faradje, December 13, 1912.

TEMNORA Hübner(629) 1. **Temnora fumosa** (Walker)*Zonilia fumosa* WALKER, 1856, List Lep. Het. B. M., VIII, p. 193.*Temnora fumosa* ROTHSCILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 574, Pl. XIII, fig. 5, ♂.

Two males, one from Gamangui, February 8, the other from Medje, March 19, 1910.

(630) 2. **Temnora** species (?)

There is a remnant of a specimen taken at Poko, August 19, 1913, which comes near *T. eranga* Holland but is evidently different and probably represents an undescribed species, but the insect, or what is left of it, is in too dilapidated a condition to justify the attempt to describe it.

ATEMNORA Rothschild and Jordan(631) 1. **Atemnora westermanni** (Boisduval)

Macroglossa westermanni BOISDUVAL, 1875, Spec. Gén. Léop. Hét., I, p. 355.

Atemnora westermanni ROTHSCHILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 616.

Three specimens in rather poor condition, all taken at Medje, one in March, one in July, and one in August.

EUCHLORON Boisduval(632) 1. **Euchloron megæra** (Linnæus)

Sphinx megæra LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 492. CLERCK, 1764, Icones Ins., II, Pl. XLVII, fig. 2.

Euchloron megæra megæra ROTHSCHILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 743.

Two males and two females in not very fine condition taken at Medje, a pair in August, a second male in September, and a female without date.

BASIOTHIA Walker(633) 1. **Basiothia charis** (Boisduval)

Charocampa charis BOISDUVAL, 1847, Delegorgue, Voy. Afr. Australe, p. 595.

Basiothia charis ROTHSCHILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 746.

One male caught at Faradje, December 5, 1912.

HIPBOTION Hübner(634) 1. **Hippotion osiris** (Dalman)

Deilephila osiris DALMAN, 1823, Anal. Ent., p. 48.

Hippotion osiris ROTHSCHILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 750.

There are eleven specimens. One was taken at Avakubi "1909"; one at Bafwasende, September 25, 1909; one at Medje, March 1910; eight at Faradje in November and December 1912.

(635) 2. **Hippotion celerio** (Linnæus)

Sphinx celerio LINNÆUS, 1758, Syst. Nat., 10th Ed., p. 491.

Hippotion celerio ROTHSCHILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 751.

Charocampa celerio REBEL, 1910, in Berge's Schmett., 9th Ed., p. 97, Pl. XIX, fig. 6

The collection contains three specimens caught at Faradje, one in November, and two in December 1912; there is also a specimen labelled "on board S. S. Leopoldville, off coast of Senegal, June 10, 1909."

(636)

3. **Hippotion eson** (Cramer)*Sphinx eson* CRAMER, 1779, Pap. Exot., III, p. 57, Pl. ccvi, fig. C.*Hippotion eson* ROTHSCHILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 754.

There are twenty-nine specimens, most of which were taken at Faradje in November and December 1912; two are recorded as from Medje, one caught in July, the other in August; one is from Niangara, June 14, 1913, and one is from Avakubi, August 20, 1913.

(637)

4. **Hippotion balsaminæ** (Walker)*Chærocampa balsaminæ* WALKER, 1856, List Lep. Het. B. M., VIII, p. 138.*Hippotion balsaminæ* ROTHSCHILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 579.

Twelve examples, all captured at Faradje in November and December 1912, except one which was taken at Avakubi, October 20, 1909.

CENTROCTENA Rothschild and Jordan

(638)

1. **Centroctena rutherfordi** (Druce)*Panacra rutherfordi* DRUCE, 1882, Ent. Mo. Mag., XIX, p. 16.*Centroctena rutherfordi* ROTHSCHILD AND JORDAN, 1903, Nov. Zool., IX, Suppl., part 1, p. 790, Pl. x, fig. 9, ♀.

There are two examples, one taken at Medje in July 1910 and the other at Panga, September 18, 1914.

Striphnopterygidæ**JANA** Walker

(639)

1. **Jana eurymas** Herrich-Schæffer*Jana eurymas* HERRICH-SCHÆFFER, 1854, Aussereur. Schmett., Pl. xxi, fig. 98.

AURIVILLIUS, 1901, Bihang Kongl. Sv. Vet.-Akad. Handl., XXVII, Afd. IV, No. 7, p. 24.

There are four males ranging in expanse of wings from 80–105 mm. Three were taken at Medje in July and August 1910, and one at Isiro, in July 1913.

(640)

2. **Jana camerunica** Aurivillius*Jana camerunica* AURIVILLIUS, 1893, Ent. Tidskr., XIV, p. 206; 1901, Bihang Kongl. Sv. Vet.-Akad. Handl., XXVII, Afd. IV, No. 7, p. 23.

The collection contains one male and two females, all in poor condition, being more or less torn and rubbed. One of the males was taken at Avakubi, October 18, 1909, the other at Medje in July 1910, the female was captured at Avakubi, May 27, 1914. The specimens from Avakubi are remarkably large, the male having an expanse of 150 mm. or six inches, the female expanding 160 mm. or six and three-eighths of an inch.

I cannot follow Aurivillius, who with a query sinks *J. nobilis* Holland as a synonym of this species. His description of *J. camerunica* is founded upon a specimen which was in the collection of the late Dr. Otto Staudinger. I had the opportunity of comparing it with the insect to which I gave the specific name *nobilis*, at that time noting that it seemed to be different. *J. nobilis*, though one of the larger species of the genus found in Africa, is smaller than *J. camerunica* Aurivillius, has no trace of roseate or buff on the wings but is a cold gray, with darker brown and black markings arranged very much like those in *J. strigina* and, moreover, has the striking difference from the other species named in this note that the abdomen is annulated with black at the upper end of each segment. This seems to be a characteristic which, taken in connection with the totally different shade of color of the wings, seems to mark it as a form distinct from *J. strigina* and *J. camerunica*.

(641) 3. **Jana gabunica** Aurivillius

Jana gabunica AURIVILLIUS, 1892, Ent. Tidskr., XIII, p. 195; 1901, Bihang Kongl. Sv. Vet.-Akad. Handl., XXVII, Afd. IV, No. 7, p. 24.

Jana marmorata HOLLAND, 1893, Psyche, VI, p. 346, Pl. xx, fig. 2.

Three males: two taken at Medje, one in August, the other in September; the third specimen captured at Bafwasende in September 1909.

PHASICNECUS Butler

(642) 1. **Phasicnecus grandiplaga**, new species

Plate XIV, Figure, 14, ♂

♂. Antennæ whitish, the pectinations fuscous; eyes pale brown; pectus and the anterior pair of legs dark brown; the two posterior pairs of legs and the lower side of the thorax yellowish white. The vertex is pale stramineous; the patagia are bordered externally with stramineous, inwardly are dark maroon, as is also the top of the thorax; the abdomen is pale gray inclining to buff, especially on the lower side where there is at the middle a longitudinal row of four small dark spots. The ground-color of the fore wing on the upper side is pale stramineous, passing outwardly toward the margin into pale ashen gray. The fringes are concolorous. The wing is traversed by a basal, a subbasal, a median, a postmedian, and a submarginal dark line, which are most clearly defined on the light area along the inner margin, but are lost or more or less obscured on the darker median and costal areas of the wing. The postmedian and submarginal lines are exceedingly irregular, and respectively define outwardly and inwardly areas filled in with maroon colored scales, which form on the outer border below the apex a subtriangular spot with inwardly projecting lobes on the interspaces, joined by a narrow band of the same color to the larger area which covers the wing from above vein 2 to the costa, and as far marginad as the postmedian line, and which is also maroon of varying degrees of intensity, except at the end of the cell and just beyond it, where there is an irregularly defined patch of light yellowish scales. The hind wing is broadly pale stramineous in its upper half, shading into pale plumbeous on the outer border and the lower half; the

fringes are concolorous. There is a faint median band composed of light reddish scales, which is regularly curved, external to which there is a similar but much darker postmedian band, which runs nearly in a straight line from the costa to a point on vein 2, where it turns abruptly inward and upward to the inner margin, terminating there in a small, but very dark brown spot, as does also the median transverse line. There is just above the anal angle a small dark linear spot, located on the inner margin between the anal angle and the dark spot which terminates the postmedian line at its inner extremity. On the lower side both wings are pale stramineous, the fore wing being clouded on the outer margin just below the apex with dark brown scales. The median and postmedian lines reappear on the lower side of the wings, the former being represented by a narrow brown line, the latter on the hind wing by a regular series of deep brown spots one on each interspace, but on the fore wing merely indicated by three similar spots near the costal margin, and one between veins 1 and 2. Expanse, 55 mm.

The type, which is unique, was taken at Medje, August 24, 1910, and is the property of The American Museum of Natural History.

When I first examined this specimen I had a feeling that somewhere or other I had seen a representation of the insect, but after a lengthy and painstaking search I have failed to verify my impression and am forced to the conclusion that it represents an undescribed species. It is nearest to *P. preussi* Aurivillius.

Notodontidæ

RIGEMA Walker

(643) 1. *Rigema wærdeni* (Snellen)

Phalera wærdeni SNELLEN, 1872, Tijd. v. Ent., XV, p. 45, Pl. iv, figs. 1-3.

Rigema wærdeni KIRBY, 1892, Cat. Lep. Het., p. 578.

One female caught at Matadi, June 9, 1913.

CATARCTIA Holland

(644) 1. *Catarctia divisa* (Walker)

Arctia (?) *divisa* WALKER, 1855, List Lep. Het. B. M., III, p. 765.

Balacra (?) *divisa* KIRBY, 1892, Cat. Lep. Het., App., p. 907.

Catarctia divisa HOLLAND, 1893, Psyche, VI, p. 537.

One male taken at Medje, August 13, 1910.

CTENOGYNA Felder

(645) 1. *Ctenogyna* (?) *medjensis*, new species

Plate XIV, Figure 10, ♂

♂. Eyes dark brown; palpi pale, darker below, the terminal joint very short; upper side of head, thorax, and abdomen very pale fawn, inclining to yellowish; lower side of thorax and abdomen of the same general color as the upper side, but

upon the sides and the lower surface of the two anterior segments of the abdomen there are conspicuous black spots; legs concolorous, the tarsi a trifle darker; antennæ testaceous. The fore wing on the upper side is pale grayish fawn, becoming slightly darker towards the termen; two or three minute dark basal spots, succeeded by a very fine outwardly curved subbasal line; the cell faintly clouded near its extremity by darker brown, and with a minute, but very distinct black spot at its end; beyond the cell a double postmedian line running obliquely from the costa two-thirds of its length from the base to the inner margin at its middle; beyond this line near the costa the wing becomes lighter in color, almost white; for a short distance this lighter area being crossed by a very fine brown line, which runs from the costa as far as vein 6, where it terminates upon the subcostal line; the subcostal line is fine, dark brown, and beginning at the apex curves inwardly at first and then, as it approaches the inner margin, becomes almost parallel with the postmedian line; the space between the subcostal line and the outer margin, near the extremities of veins 5 and 6 is marked by two deep black spots, accentuated externally by lighter scales, which in turn are succeeded by two fine sagittate marks; the costa near the apex is narrowly bordered by white, the tips of the subcostal nervules indicated by minute black spots, the fringes are dark below the apex, but become lighter near the tornus. The hind wing on the upper side is pale creamy white, clouded on the outer margin opposite the end of the cell and at the anal angle with dark scales; the fringes are uniformly whitish. On the under side the ground-color of both wings is creamy white. The fore wing on the costa above the cell, and more broadly beyond the cell, is clouded with pale gray; there is a faint trace of a discal spot at the end of the cell; a submarginal row of very small, but distinct, dark spots, located on the veins, extends from the costa to the inner margin at about three-fourths of the length of the wing from the base; beyond this line in the region of veins 5-7 are a series of zigzag dark lines, and the fringes near the apex are dark, becoming lighter toward the tornus. The hind wing is on its costal or upper half dusted with gray scales, and there are a few such scales near the anal angle. At the end of the cell there is a minute transverse discal spot; beyond this, running from the costa as far as vein 4, are two parallel outwardly angulated dark lines; the submarginal series of small dark spots, which is conspicuous upon the fore wing, is continued upon the hind wing as far as vein 2, but does not in the type appear upon vein 1; the dark shades beyond the end of the cell of the upper side reappear upon the lower side, but are darker on the lower side. Expanse, 46 mm.

The type, which is unique, was taken at Medje, August 1, 1910, and is in The American Museum of Natural History.

The insect is strictly congeneric with the species which I described as *Ctenogyna* (?) *vilis* and *Ctenogyna* (?) *ogovensis* (cf. Entomological News, IV, 1893, p. 343, Pl. xv, figs. 12, 13). The type of the genus *Ctenogyna* is the species named *natalensis* by Felder, which I do not have in my collection but which I think I saw in London or at Tring and the likeness of which to the insects before me I recognized at the time. The generic reference is provisional, but possibly quite correct. It is, however, not wise to dogmatize in such matters.

ANAPHE Walker(646) 1. **Anaphe infracta** Walsingham

Anaphe infracta WALSINGHAM, 1885, Trans. Linn. Soc. London, (2) II, p. 422, Pl. XLV, fig. 8.

One damaged male specimen caught at Faradjé, "1911-1912."

Geometridæ**Boarmiinae****HYPHENOPHORA** Warren(647) 1. **Hyphenophora palumbata** Warren

Hyphenophora palumbata WARREN, 1894, Nov. Zool., I, p. 402. SWINHOE, 1904, Trans. Ent. Soc. London, p. 498.

One specimen taken at Medje in the early part of August 1910. It agrees with specimens in my collection which have been compared with Warren's type. We have numerous examples from the valley of the Ogové and from Cameroon.

(648) 2. **Hyp henophora perlimbata** (Guenée)

Palyas perlimbata GUENÉE, 1857, Phal., I, p. 396.

Hyp henophora perlimbata SWINHOE, 1904, Trans. Ent. Soc. London, p. 498.

One badly damaged specimen captured at Stanleyville, August 23, 1909, and a better one taken at Medje in the first week of August 1910.

RHAMIDAVA Walker(649) 1. **Rhamidava amplissimata** (Walker)

Acidalia (?) amplissimata WALKER, 1862, List Lep. Het. B. M., XXVI, p. 1614.

Rhamidava amplissimata SWINHOE, 1904, Trans. Ent. Soc. London, p. 499.

One example caught at Ukaturaka, July 1909, and four taken at Medje, the dates of capture running from July to September. This insect seems to be quite common in tropical West Africa and the region of the Congo, judging from the number of specimens in our possession, some of which have been compared with Walker's type.

(650) 2. **Rhamidava (?) pieridaria**, new species

Plate XIV, Figure 13, ♀

♀. Eyes, frons, upper side of head and thorax grayish; the lower side of thorax and entire abdomen pale yellowish gray, lighter than the upper side of the thorax. Fore wing on the upper side white from the base to the outer third, with a few minute striae on the costa; a minute black point near the end of the cell; the outer third of the wing is deep black, the inner margin being straight as far as vein 3, and then indented on veins 2 and 3, the white ground-color extending outwardly at the inner angle of the wing as far as the margin; the hind wing on the upper side is broadly

white save near the upper angle, where it is broadly shaded with blackish. There is an extremely minute black point near the end of the cell in the hind wing, and a very faint transverse postmedian line, composed of minute transverse striæ. The wings on the under side are marked exactly as on the upper side, except that the dark outer spots are much paler and the striæ on the costa of the fore wing near the base somewhat more pronounced than on the upper side. Expanse, 38 mm.

The type, which is unique, was taken at Medje on July 8, 1910. The insect closely resembles in its markings some species of the rhopalocercous genus *Pieris*. Its reference to the genus *Rhamidava* is purely provisional, as the specimen, aside from the wings, is in too poor condition to enable an exact diagnosis to be made, the legs being missing and there being only a fragment of one antenna, which shows that the antennæ are simple. I hesitated to describe this insect because of the imperfect condition of the type but, after examining all of the literature, I have failed to recognize any description of an African geometrid which seems to correspond with it. The type is in The American Museum of Natural History.

MELINOESSA¹ Herrich-Schæffer

(651) 1. **Melinoessa cræsaria** Herrich-Schæffer

Melinoessa cræsaria HERRICH-SCHÆFFER, 1855, Aussereur. Schmett., Pl. LXV, fig. 370. SWINHÖE, 1904, Trans. Ent. Soc. London, p. 499.

One badly damaged specimen taken at Medje, August 12, 1910.

(652) 2. **Melinoessa** (?) species

A damaged specimen from Medje, taken in September 1919, belongs without much doubt to this genus, and seems to be nondescript, but I hesitate to name it.

SEMIOTHISA Hübner

(653) 1. **Semiothisa** species (?)

There is a single specimen taken at Medje, July 29, 1910, which belongs to this genus but which I am unable to refer to any species known to me either by the figures or descriptions which have been given. As most of the verbal descriptions are, however, very unsatisfactory, and often leave the student in doubt, I hesitate to name the insect as new, fearing by so doing to perpetrate a synonym.

¹Swinhoe, *loc. cit.*, sinks *Obrussa catenata* Saalmüller as a synonym of *Melinoessa stellata* Butler, which I think is an error. The two insects resemble each other very closely in the style of marking, but the form of the wings is very different.

ZAMARADA Moore(654) 1. **Zamarada protrusa** Warren (?)

Zamarada protrusa WARREN, 1897, Nov. Zool., IV, p. 123.

There is one male specimen taken at Medje, July 19, 1910, which seems to be the species described by Warren, but, without the type before me, it is almost impossible to be sure of the identification, the description being very concise and applicable at least in part to several other allied species, of which there are, as I write, a number before me which await determination. The genus is well represented in Africa, and we have in our collections numerous species, which, when I last visited the British Museum and the Museum at Tring, did not seem to be found there. A thorough revision of the African forms of the genus is needed.

HYPOCHROSIS Guenée(655) 1. **Hypochrosis massagaria** Karsch

Hypochrosis massagaria KARSCH, 1895, Ent. Nachr., XXI, p. 359, Pl. II, fig. 10.

Two specimens, one taken in March the other in September 1910 at Medje.

BUZURA Walker(656) 1. **Buzura abruptaria** (Walker)

Boarmia abruptaria WALKER, 1869, Proc. Nat. Hist. Soc. Glasgow, I, p. 37.

Buzura abruptaria SWINHOE, 1905, Trans. Ent. Soc. London, p. 528.

A single specimen taken at Avakubi, August 30, 1913. It agrees perfectly with specimens in my collection, which have been identified on comparison with the collections in London and at Tring. In the latter collection I think that Mr. Warren had referred the species to the genus *Eubylodonta* erected by him in 1893 for the reception of an Indian insect.

BOARMIA Treitschke(657) 1. **Boarmia acaciaria** Boisduval

Boarmia acaciaria BOISDUVAL, 1834, Faune Ent. Madagr., p. 116, Pl. XVI, fig. 4.

One damaged specimen of the male sex taken at Medje, March 9, 1919. The species is very variable, but the example before me is quite near the typical form originally described from Madagascar.

(658) 2. **Boarmia** species (?)

A badly rubbed female specimen, which I am unable to refer with precision to any species known to me. It may be nondescript. It was captured at Medje, August 6, 1910.

(659) 3. **Boarmia** (?) species

A somewhat defective male, which upon the whole seems best referred to this genus but which I cannot determine specifically. It was caught at Medje, August 3, 1910.

NEGLA Walker(660) 1. **Negla tenuiorata** (Walker)

Nartheclusa tenuiorata WALKER, 1862, List Lep. Het. B. M., XXIV, p. 1140.

Four males and one female of this common species taken at Medje in July and August 1910.

AMNEMOPSYCHE Butler(661) 1. **Amnemopsyche circumdata** (Walker)

Girpa circumdata WALKER, 1864, List Lep. Het. B. M., XXXI, p. 209.

Nine specimens from scattered localities, the dates of capture ranging from March to December.

(662) 2. **Amnemopsyche flavibasis** (Warren)

Hylemera flavibasis WARREN, 1897, Nov. Zool., IV, p. 241.

A single male specimen caught at Medje, April 6, 1910. The description given by Warren fits the insect so closely as to leave no doubt as to the correctness of the determination. It is strictly congeneric with *G. circumdata* Walker.

PITTHEA Walker(663) 1. **Pitthea continua** Walker

Pitthea continua WALKER, 1854, List Lep. Het. B. M., II, p. 463.

Three specimens, two caught at Medje, one in April and the other in August, the third captured at Niangara in November 1910.

(664) 2. **Pitthea famulita**, new species

Plate XIII, Figure 3, ♂

♂. Superficially resembling *P. famula* (Drury), but much smaller, with narrower wings, and different markings. Antennæ, eyes, and upper side of palpi deep black; lower side of palpi orange; frons, and a narrow line behind each eye pure white; upper side of head, tegulæ, patagia, thorax and upper side of abdomen bluish fuscous; lower side of thorax blackish with orange spots at the insertion of the legs; legs blackish marked on the tibiæ with a fine white line internally; the sternites of the abdomen dark orange, the pleurites having the same color as the top of the abdomen, which is extended downwardly on the sternites on their posterior margin, giving the orange surface of the lower side of the abdomen an annulated appearance. The peculiar organ to which Dr. Karl Jordan calls attention in the *Novitates Zoologicæ*, XII, p. 506, is well developed, as in all other species of the genus and its allies which

are known to me. The prevalent color of the fore wing is black; at the base there are some bluish fuscous scales of the same color as the vestiture of the thorax and abdomen on the upper side, these bluish scales being most noticeable where they overlay the inner area of the subbasal white triangular spot, which extends from near the middle of the cell to the inner margin to a little before the middle of the wing; there is a diagonal moderately broad white subapical band, which does not reach either the costa or the outer margin. The hind wing on the upper side is white, bordered from a little before the middle of the costa with black which sweeps around the wing to the base, but on the inner margin is heavily clothed with bluish fuscous hairs. On the under side the wings are much as on the upper side, but there is a small orange spot at the very base of the hind wing. Expanse, 37 mm.

The type, which is unique, was taken at Medje in the early part of August 1910 and is deposited in The American Museum of Natural History.

Orthostixinæ

ALETIS Hübner

(665)

1. **Aletis helcita** (Clerck)

Papilio helcita CLERCK, 1764, *Icones Ins.*, II, Pl. xxxix, fig. 4.

Aletis helcita SWINHÖE, 1904, *Trans. Ent. Soc. London*, p. 578.

Six specimens, five taken at Medje in the middle months of the year and one at Niangara in November.

Larentiinæ

GONANTICLEA Swinhoe

(666)

1. **Gonanticlea** (?) **langaria**, new species

Plate XIV, Figure 9, ♂

♂. Antennæ pectinate; tibia of hind legs not dilated, having two pairs of spurs; fore wing truncate at apex; hind wings truncate and straight from anal angle to extremity of vein 4, twice denticulate between vein 4 and the upper angle; frons white; vertex ochraceous; upper side of thorax and abdomen very pale gray; under side of thorax and abdomen whitish; legs concolorous; fore wing on the upper side prevalently pale gray tinged with pink, irrorated with pale brown striæ; an anti-median greenish band marked at the costa with a brown spot, runs from the costa to the hind margin; this is succeeded by a postmedian irregular band made up of small sagittate points, their apices pointing basad, the spot on the costa most conspicuous. This band is followed by a pale greenish shade, most noticeable in the subapical region. There is an irregular submarginal band, composed of brown sagittate spots, beyond which, between veins 4 and 5, is a whitish patch, and behind which, near the inner angle, there is a similar whitish lunular patch accentuated externally by dark brown. There are traces near the lower angle of a fine dark marginal line. The fringes are dark brown, checkered with lighter between the apex and vein 4. The hind wing on the upper side is marked like the fore wing, the transverse bands of the fore wing being continued across it, but narrower and less distinct. There is a minute black point at the end of the cell. The hind margin of the wing, from the anal angle to the

extremity of vein 4, is broadly dark brown. On the under side the markings of the upper side are reproduced, but less distinctly and more diffused, and the outer half of both wings is more or less shaded with greenish. On the fore wings the ends of the nervules are distinctly accentuated by dark brown dots, between the apex and vein 4, and on the hind wing, in a similar manner, the ends of the nervules between the upper angle and vein 4 are tipped with dark brown, while the fringes of the straight portion of the outer margin between the anal angle and vein 4 are pale greenish white without maculations. Expanse, 40 mm.

The type, which is unique, was taken at Medje in July 1914 and is deposited in The American Museum of Natural History.

I refer the insect to the genus *Gonanticlea* provisionally. It seems by reason of the straightness of the posterior margin of the hind wing from the anal angle to the extremity of vein 4 to differ, but otherwise corresponds very well with Swinhoe's description and figure of the genus.

Acidaliinæ

ACIDALIA Treitschke

(667) 1. *Acidalia* (?) *medjaria*, new species

♂. Closely resembling *Pseudasthena permutans* Hampson (cf. Ill. Lep. Het. in B. M., 1892, VIII, p. 123, Pl. CLIII, figs. 17-21) but very much smaller in size, and differing in the markings of the wings. Hampson gives the expanse of his species from Ceylon as "one inch" = 25 mm.; the insect before me has an expanse of only 13 mm., that is to say it is only about half the size of the moth described and figured by Hampson. In its coloration it closely resembles the female specimen represented by Hampson in his figure 20, but the pale yellow outer border is relatively wider in *A. medjaria*, and the dark inner area of the wing is solidly deep purplish pink, without any trace of transverse lines or punctulations.

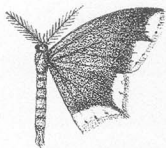


Fig. 6.

Acidalia medjaria,

♂. ♀.

The type was taken at Medje, June 26, 1910, and belongs to The American Museum of Natural History.

Hampson, in his 'Moths of India,' III, p. 419, sinks *Pseudasthena* Moore as a synonym of *Cambogia* Guenée and puts his *Pseudasthena permutans* into *Acidalia* (*loc. cit.*, p. 441). As *A. (?) medjaria* seems to me to be congeneric with *permutans*, I follow Hampson provisionally, at the same time expressing a doubt as to the correctness of the reference to the genus *Acidalia*, the type of which is *A. ochrata* (Scopoli).

PRASINOCYMA Warren

(668) 1. *Prasinocyma unipuncta* Warren

Prasinocyma unipuncta WARREN, 1897, Nov. Zool., IV, p. 44.

There is one specimen taken at Matadi, June 24, 1909. We have a long series of specimens in our collections.

PROBLEPSIS Lederer

(669)

1. **Problepsis ægretta** Felder*Problepsis ægretta* FELDER, 1867, Reise Novara, Lep., Pl. CXXVIII, fig. 14.

A single specimen, agreeing with those in the British Museum and others in my collection, which have been compared with them. It was caught at Banana, June 21, 1909.

OSTEOSEMA Warren

(670)

1. **Osteosema** (?) **phyllobrota**, new species

Plate XIV, Figure 6, ♂

♂, ♀. Eyes black; frons, palpi, vertex, and antennæ pale gray; the antennæ are relatively short in both sexes, bipectinate until near the tip; the collar is whitish; the patagia and upper side of the thorax are deep grass-green; the lower side of the thorax and the entire abdomen are pale gray, or whitish; the legs are also pale gray, the hind tibia armed at the end with two spurs. The costa of the fore wing is gray, densely irrorated with dark brown scales, most numerous on the margin; there is a very fine whitish subcostal line from the base to the apex; the basal half of the wing is grass-green, dissected into three spots by two fine white lines running inwardly from the costa, the first of these lines being located about one-fifth the length of the costa from the base, the second at the end of the cell, the first line extending to the inner margin, the second being lost in the pale outer area of the wing; the basal green spot is subtriangular, the middle spot, which is the largest, is pentagonal, the outer spot, located near the costa at the end of the cell, is the smallest, and is triangular. The outer half of the wing is cream-color, more or less densely punctated with minute transverse brown striæ; there is a large green subapical spot very irregular in its outline, which extends from the subcostal line downward and outward, almost touching the outer margin about its middle, this spot near the apex is traversed by a fine white line on vein 7 cutting off a small triangle of green; at its lower end it is rounded and continued downward by a small lobular extension located between veins 3 and 4; the inner angle of the wing is clouded with a few brown scales; there is a fine dark brown marginal line; the fringes are whitish. The hind wing on the costa is pure white from the base to near the upper angle of the wing; at the base of the wing adjacent to the inner margin is a large green spot, defined outwardly by an irregular narrow white line, angulated outwardly at the end of the cell, and defined outwardly by a narrow green shade, broadest near the costa. The broad pale area beyond this line is marked as on the fore wing with minute transverse dark striæ, beyond it on the submarginal area, extending from the upper angle of the wing downward to vein 2 is a long irregularly shaped green spot defined outwardly by white; the anal angle is clouded with dark brown, the dark brown marginal line and the fringes are as on the fore wing. On the under side both wings are silky white.

The female does not differ materially from the male in the pattern of the markings of the wing, except that the green spots show a tendency to become obsolete and to fade into the paler surrounding areas of the wing, this being particularly true of the hind wing, which in one specimen before me has the marginal green spot of the hind wing almost altogether lost. Expanse, 32-35 mm.

The foregoing description is based upon a specimen which was taken at Medje, September 1, 1910, by the American Museum Congo Expedition, supplemented by three males and two females in the collection of the Carnegie Museum from Cameroon, and three males and two females in the Holland Collection from the valley of the Ogové River. Some years ago I took a number of African Geometridæ with me to Europe for study and while at Tring I marked this species as agreeing best with the genus named *Osteosema* by Warren. At that time it did not appear to be represented in either the British Museum or the collection of Lord Rothschild. It is possible that it has since then been described by some author, but, after having devoted many hours to the perusal of everything which has been printed, I am inclined to think that I am justified in regarding the insect as hitherto nondescript. Unfortunately we have no figures of multitudes of species named in recent years, and the descriptions which have been given are, in many cases, very unsatisfactory. The type, which is a male, is in The American Museum of Natural History, the paratypes are in the Holland Collection and the general collection in the Carnegie Museum.

Geometrinæ

PSEUDOTERPNA Hübner

(671) 1. *Pseudoterpna ruginaria* (Guenée)

Hypochroma ruginaria GUENÉE, 1857, Phal., I, p. 278.

Pseudoterpna ruginaria HAMPSON, 1895, Moths of India, III, p. 472.

One specimen caught at Medje, August 9, 1910.

(672) 2. *Pseudoterpna* (?) *chapinaria*, new species

Plate XIII, Figure 19, ♂

♂. Antennæ slightly pectinated; the hind tibia dilated, with two pairs of spurs, one at the end, another a little distal to the middle; eyes brown; body pale gray; first segment of abdomen whitish; legs concolorous; fore wings on the upper side pale gray; a narrow, somewhat diffuse outwardly curved subbasal line; a faint dark linear mark at the end of the cell, losing itself in the transverse median diffuse dark band which runs from the costa to vein 2, where it curves abruptly inward, and then is extended vertically to the inner margin about its middle. This band is succeeded by a postmedian band, which runs from the costa in a curved line to vein 2, where it descends to the inner margin vertically, parallel to the lower extremity of the median line. The postmedian line is succeeded near the apex by a dark, somewhat diffuse, crenulate subapical line, which runs from the costa to vein 5, where it coalesces with the postmedian line. The margin is marked by a very fine dark line; the fringes are dark gray, checkered with pale gray at the ends of the nervules. The hind wings are colored like the fore wings; the subbasal line of the fore wing is continued on the hind wing as a short waved line, reaching the inner margin before the middle. There

is a dark spot at the end of the cell, coalescing with the median line, which is irregular, festooned, looped inwardly at the end of the cell and on vein 1. The postmedian line is regularly crenulate, running from near the upper angle of the wing to the inner margin, which it reaches four-fifths of the distance from the base. It is succeeded outwardly by a submarginal fine crenulate line which follows the curvature of the hind wing, enclosing between its crenulations which occur on the veins a series of paler spaces, which are outwardly bordered by the fine marginal line. The fringes of the hind wing are uniformly whitish. On the under side the ground-color of the wings is pale yellowish white; the apex of the fore wing is narrowly pure white. There is a dark triangular shade at the base of the fore wing from the subcostal to vein 1; the median band is black, much broader and more sharply defined than on the upper side; the postmedian band is also broad and black, and coalesces with a similar broad black submarginal band at vein 5, leaving between them a pale yellow elongated spot running from the costa as far as vein 5. The outer dark band touches the outer margin of the wing opposite the end of the cell. The hind wing on the lower side is colored like the fore wing; there is a somewhat large, diffuse subcircular dark spot in the cell about its middle. The wing is crossed at the middle by a broad dark median line running from the middle of the costa to the inner margin at the anal angle, and slightly angulated opposite the end of the cell; the outer margin is broadly black; fringes white. Expanse, 24 mm.

At the risk of adding to the synonymy I have described this species as new, after long search having failed to recognize it in any description which is before me. I am not quite certain of the generic reference, but the insect, in spite of its small size, seems to belong structurally better in the genus *Pseudoterpna*, as defined by Hampson, than in any other. The type is in The American Museum of Natural History. There is no indication of locality on the label. A paratype is in the Holland Collection from the valley of the Ogové River. In the paratype the basal area of the fore wing on the under side is much darker than in the type.

In addition to the species of Geometridæ which have been herein-before enumerated and described, there are a few ragged and imperfect specimens which are too poor to determine and which I have been unable to locate.

Saturniidæ

PHILOSAMIA Grote

(673)

1. *Philosamia albida* (Druce)

Attacus albidus DRUCE, 1886, Proc. Zool. Soc. London, p. 409, Pl. xxxvii.

Two rather badly defaced male specimens, one taken at Medje, April 1910, the other labelled "Faradjé, 1912."

[*Note*.—Some confusion has existed as to the closely allied species, *Philosamia plætz* Plætz, and I take the present occasion to point out that Maassen and Weyding in Part V, of their Beitr. Schmett., 1885, text, were in error in setting up *P. getula* as

a different species from *P. platzi*. *P. getula* Maassen and Weyding is the female of *P. platzi*, as Maassen and Weymer originally held. We have specimens taken *in coitu*, settling the question beyond doubt, and all of the so-called *P. getula* in our collections are females, as shown by the presence of ova in their abdomens, as well as by the shape of the antennæ.]

EUDÆMONIA Hübner

(674) 1. *Eudæmonia brachyura minor*, new variety

The synonymy of *E. brachyura* (Drury) is as follows:

Attacus brachyura DRURY, 1780, Ill. Exot. Ent., III, Pl. xxix, fig. 1.

Bombyx argus FABRICIUS, 1781, Spec. Ins., II, p. 170.

Eudæmonia uroarge HÜBNER, 1822 (?), Verzeich. bek. Schmett., p. 151.

Eudæmonia brachyura ROTHSCHILD, 1895, Nov. Zool., II, p. 48.

Eudæmonia brachyura BEUTENMÜLLER, 1897, Journ. N. Y. Ent. Soc., V, p. 166, Pls. xi, xii; 1901, idem, IX, p. 195.

I now propose a new varietal name for the form represented by a single specimen of this insect in the collection, which was captured at Avakubi, December 11, 1909. It agrees with a number of other specimens which we have in our collections from the Ogové River and Cameroon in being of much smaller size and differently marked from the insect figured by Drury and also by Beutenmüller, which probably represents a race occurring in Sierra Leone; I feel that it is worthy of at least a varietal name. It may be in fact another species, and for many years past I have inclined to so regard it.

♂. Prevalent color rosy ashen-gray, the middle of the long tails darker rosy brown, the spatulate extremity inclining to yellowish. Without any trace of the post-median pale yellow band upon the primaries, shown in the figures given by Drury and Stoll and in Beutenmüller's photographs. A small ocellus in the cell of the primaries at the lower outer angle, and beyond the cell in the same wing a transverse series of from two to four small semitranslucent ocelli, which are variable not only in number but in size, some being in one specimen very pale, annulated with dark brown, in others darker, the light inner spot being more or less obliterated. The secondaries have a yellow semitranslucent circular spot at the end of the cell, which seems to be always distinctly annulated with dark brown, especially distinct in the female sex. Beyond the cell there is a transverse series of circular pale yellow semitranslucent spots, ringed with darker brown, they being also variable in number and size, as they are in the fore wing. Expanse: ♂, 20–22 mm. (or about one and one-half inches); ♀, 25–28 mm. (or at most one and seven-eighths of an inch).

The foregoing description is based upon a pair of finely preserved and very perfect specimens (type ♂ and allotype ♀) in the Holland Collection in the Carnegie Museum, which were received from Dr. O. Staudinger and said by him to come from Sierra Leone. The single somewhat defective specimen in the collection upon which I am reporting agrees with these types in size, and in the markings, and may be accepted as a paratype. We have other specimens.

TAGOROPSIS Felder(675) 1. **Tagoropsis gemmifera** (Butler)

Copaxa gemmifera BUTLER, 1878, Proc. Zool. Soc. London, p. 387.

Two male specimens taken at Medje, one in August, the other in September. This insect seems to be not uncommon on the Ogové River and in Cameroon. I possess a good series of both sexes. The females are paler than the males, the yellow of the wings of the males being replaced in the females by white and the outer borders both of the primaries and secondaries being quite broadly laved with pale brown. Some of the males are also whitish, rather than yellow. Attached to a female specimen in my collection is the following manuscript note by the late Dr. A. C. Good: "Taken 5.30 p. m., October 6, 1891, on forest-path. This moth begins to fly just before dark and may occasionally be met along forest-paths at that time, or flying across open spaces. It never stays long out of the forest."

Ceratocampidæ**CIRINA** Walker(676) 1. **Cirina similis** Distant

Cirina similis DISTANT, 1897, Ann. Mag. Nat. Hist., (6) XIX, p. 393; 1903, Ins. Transvaal, p. 62, Pl. III, figs. 1, 2.

Three male specimens taken at Medje, two in June and one in August. They agree very well with the figure of the male given by Distant, so far as their worn condition permits comparison.

BUNÆA Hübner(677) 1. **Bunæa alcinoë** (Stoll)

Attacus alcinoë STOLL, 1780, Cramer, Pap. Exot., IV, Pl. cccxxii, figs. A, B.

A male and a female in damaged condition taken at "Faradje, 1911."

IMBRASIA Hübner(678) 1. **Imbrasia epimethea** (Drury) (?)

Attacus epimethea DRURY, 1773, Ill. Exot. Ent., II, Pl. xiii, fig. 1, ♂.

Gonimbrasia obscura BUTLER, 1878, Ann. Mag. Nat. Hist., (5) II, p. 462. MAASSEN AND WEYDING, 1886, Beitr. Schmett., figs. 84, 85, ♀.

A single female taken at Medje in August. I hesitatingly follow Rothschild (1895, Nov. Zool., II, p. 39) in sinking *I. obscura* (Butler) as a synonym of *Attacus* (*Imbrasia*) *epimethea* Drury. We have long series of males and females bred by the late Dr. A. C. Good on the

Ogové River and at Efulen, Cameroon, the females of which are unmistakably referable to *obscura* Butler. The males do not agree with Drury's figure of the insect he named *A. epimethea* in that they lack the dark costal area on the upper side of the secondaries, well shown in Drury's figure. We have, however, a number of males, not bred from larvæ but captured at various localities, which agree absolutely with Drury's figure of *epimethea* and which have a different facies from the males which by the test of breeding are known to be that sex of *obscura* Butler. The two forms seem to me to be at least varietally distinct, though very closely allied to each other.

NUDAURELIA Rothschild

(679) 1. **Nudaurelia emini** (Butler)

Antheræa emini BUTLER, 1888, Proc. Zool. Soc. London, p. 84.

A single male, taken at Niangara in June 1913. It agrees absolutely with specimens in the collection of the writer which have been compared with the type in the British Museum.

Uraniidæ

ACROPTERIS Hübner

(680) 1. **Acropteris erycinaria** (Guenée)

Miconia erycinaria GUENÉE, 1857, Uran. and Phal., II, p. 30.

One ragged specimen taken at Medje, August 9, 1910.

Cossidæ

CALLOCOSSUS Aurivillius

(681) 1. **Callocossus langi**, new species

Plate XIV, Figure 8, ♀

♀. Eyes black, frons pale orange with a black spot in the center; tegulæ orange, with a black spot at the insertion and on the posterior margin; patagia orange with two blue-black suboval spots succeeding each other in the middle; a blue-black median dorsal line, which runs from the posterior margin of the tegulæ to the meta-thorax, but does not appear to be continued upon the dorsum of the abdomen; at the point of union of the thorax and abdomen on either side three orange-yellow spots, bordered with blue-black; dorsal and lateral surfaces of abdomen solidly bluish black until near the end, where there are two orange-yellow streaks on either side; ovipositor yellow at extremity; the legs blackish, as is also the under side of the thorax, except for the presence of some tufts of yellow hairs at the insertion of the legs; anterior segments of the abdomen on the under side dark like the upper side, the posterior segments orange-yellow on the lower side. Both wings on the upper side are pale bluish, densely spotted all over their surface, including the anterior margin of the hind wings, with small pale orange-yellow maculations, those at the end of the cell

of the fore wings fusing together to form a large subrotund blotch, and those on the inner margin of the hind wings being so numerous as to cause these margins to appear much lighter than the rest of the wing. Expanse, 67 mm.

The specimen before me does not agree with any of the species hitherto described and figured. It comes nearest to the insect named *Callocossus elegans* by Aurivillius, but is larger and differs in not having "the anterior border of the hind wings orange-yellow," in lacking the "three longitudinal blue-black lines on the back of the thorax and abdomen," and in a number of other minute particulars, which are evident upon a comparison with the description given by Aurivillius, and which are brought out in the more detailed description of the type which was taken at Faradje, September 3, 1912, and is in The American Museum of Natural History.

XYLEUTES Hübner

(682)

1. **Xyleutes sjæstedti** Aurivillius (?)

Xyleutes sjæstedti AURIVILLIUS, 1910, Kilimandjaro Reise, IX, p. 50, Pl. I, figs. 14, 15.

The collection contains a single male, which agrees very well in almost all of the markings of the wings with the figure which Aurivillius gives of what he calls the female of the species named by him as *X. sjæstedti* but does not agree with the figure which he gives of the male of that species. The male before me is a much larger insect than the male figured by Aurivillius (*loc. cit.*), and I am impelled to query whether the association of the sexes made by my learned friend is correct, in view of the fact that, had he not figured the male on his plate, I should unhesitatingly declare that the insect before me is the mate of the female he has delineated, with which it agrees spot for spot. I am of the opinion that Aurivillius' species is a composite, he having associated with his male specimen the female of another species represented by the male before me. If this should eventually prove to be true, a new name will have to be given to the female he figures and the male insect upon which I am now reporting.

The insect was taken at Medje, April 6, 1910. It has an expanse of 105 mm.

AZYGOPHLEPS Hampson

(683)

1. **Azygophleps boisduvali** (Herrich-Schæffer)

Zeuzera boisduvalii HERRICH-SCHÆFFER, 1854, Aussereur. Schmett., fig. 167.

KIRBY, 1892, Cat. Lep. Het., p. 872.

One male caught at Bolengi, July 20, 1909.

Drepanulidæ**MEGADREPANA** Holland

(684)

1. **Megadrepana cinerea** Holland*Megadrepana cinerea* HOLLAND, 1893, Ent. News, IV, p. 177, Pl. IX, fig. 4.

A single male specimen, taken at Medje, September 27, 1910. It agrees with the type, except that it is ruddier in color than the type, which is cold gray. It seems to be only a slight color-variety, and I discover that it does not differ materially from similar specimens belonging to a long suite of the species, which we have recently received from the interior of Cameroon.

Lasiocampidæ

The Lasiocampidæ of Africa are a wonderful group of insects, comprising numerous genera and a multitude of species, which, on account of the great difference between the sexes both in size and markings, present much difficulty to the student who has not had the opportunity to breed the insects. As a rule the males are much smaller than the females, the latter in some genera being huge moths, while the males are quite small. Unfortunately the collection upon which I am reporting contains only two specimens, and both of these in defective condition. They each seem to represent species which have not hitherto been described. Of one of them I have good specimens from Cameroon and am able therefore to describe the insect. Of the other I have never seen specimens, and no description occurring in the literature of the subject seems to fit it. I am therefore constrained to leave it until by some good chance better material turns up.

LEIPOXAIS Holland

(685)

1. **Leipoxais punctulata**, new species

Plate XIV: Figure 1, ♂; Figure 2, ♀

♂. The color of the body and wings is a moderately deep, reddish brown; the eyes are dark brown; the posterior margin of the thorax is marked by some greenish hoary hairs. The under side of the body is of the same color as the upper side, inclined to be a trifle lighter at the anal extremity, especially in the case of the male sex; the legs, which are heavily clothed with hair, are of the same color as the body, but marked with a minute white point at the end of the tibiæ. The fore wings are crossed by a very irregular subbasal band composed of pale greenish gray sublunulate minute spots, followed by a somewhat lighter spot located in the cell beyond its middle; this spot is succeeded by a very irregular median band of similar light spots running from the costa to the inner margin, a light spot near the end of the cell forming one of the spots of this series. Immediately beyond the end of the cell are two faint parallel longitudinal spots. On the limbal area of the wing there is an irregularly

curved series of submarginal light spots, a trifle larger than those forming the sub-basal series; the two nearest the inner margin behind the tornus being the largest and becoming somewhat diffuse, forming an irregular light greenish gray blotch near the inner angle of the fore wing. The fringes are dark brown, checkered with light greenish gray. The hind wings are of the same color as the fore wings but a trifle darker in the middle, in the region of the cell and toward the costa; there are traces on the upper side, very indistinct, of a transverse median and postmedian lighter band of spots; the fringes of the hind margin are checkered dark and pale greenish gray, as is the case in the fore wing. On the under side the ground-color is a slightly paler tint of the same color which prevails on the upper side. The markings of the fore wing are very indistinct, consisting merely of a submarginal transverse shade a little before the apex, and a light gray spot near the tornus, the fringes being checkered and appearing exactly as on the upper side. The hind wing, which is strongly produced upward about the middle of the costa, has this tooth-like projection and the adjacent area dark brown, followed by a median and postmedian series of sublunate pale grayish spots, between which bands the area is somewhat lighter than the remainder of the wing. The inner margin of the hind wing is uniformly pale from the base to the anal angle, with the fringes on the under side checkered dark and light, as is the case with the fore wing.

♀. The female is almost twice the expanse of the male, the fore wings are strongly produced at the apex, the costa being strongly curved and the outer margin slightly excavated below the apex. All the markings which appear upon the wings of the male reappear upon the wings of the female, but somewhat more accentuated. On the under side in the female the apical and outer margin of the area of the fore wing is darker than in the male, and there is a diffuse paler spot at the apical extremity contrasting with the darker surrounding areas. The hind wing is marked on the under side in case of the female very much as the wing of the male, but the mesial band, defined internally and externally by sublunate markings, is paler than in the male sex, giving the appearance of a broad grayish green fascia. The fringes both on the upper and under side of the hind wing of the female are more distinctly marked than in the male sex, consisting of a series of sublunate spots defined inwardly and outwardly by fine dark lines. Expanse of male, 32-34 mm.; female, 64 mm.

The type is a beautifully preserved male in perfect condition, collected at Efulen, Cameroon, by Dr. H. L. Weber, on November 29, 1913. The female allotype is an equally perfect specimen collected by Rev. A. I. Good at Lolodorf, Cameroon, October 19, 1915. The paratypes are a male collected by Dr. H. L. Weber at Efulen, Cameroon, November 4, 1912, and the damaged and rubbed specimen taken by the Lang-Chapin Expedition at Medje, August 24, 1910. The three former are in the Carnegie Museum, the latter is in the American Museum of Natural History.

I described in 1894 three species under the genus *Leipoxais*, which I erected for their reception, and the foregoing species is strictly congeneric with these. Dr. Aurivillius has since then described several species of *Leipoxais*, but upon perusal of his descriptions I cannot

identify the hereinbefore named insect as one of the species which he has named, and it certainly is not the same as any of the species which I myself have named. I am therefore reasonably certain that I am not perpetrating a synonym.

Chrysopolomidæ

CHRYSOPOLOMA Druce

(686)

1. *Chrysopoloma rudis* (Walker)

Lasiocampa rudis WALKER, 1865, List Lep. Het. B. M., XXXII, p. 561. DEWITZ, 1881, Nov. Act. Acad. Nat. Cur., XLII, p. 79, Pl. III, fig. 24.

One male caught at Medje in July 1910. It agrees closely with specimens in my collection, which were named upon comparison with Walker's type.

(687)

2. *Chrysopoloma inspersa* Hampson

Chrysopoloma inspersa HAMPSON, 1910, Proc. Zool. Soc. London, p. 484, Pl. XL, fig. 16.

A female caught at Faradje "1911-1912," and which corresponds both with the description and figure given by Hampson, except that it is slightly less in the expanse of the wings.

(688)

3. *Chrysopoloma nubila*, new species

♀. Antennæ yellowish; eyes dark brown; palpi, frons, legs, lower side of thorax, and anterior edges of patagia darker than the adjacent parts; the posterior half of the thorax on the upper side, and the entire abdomen reddish fuscous. The

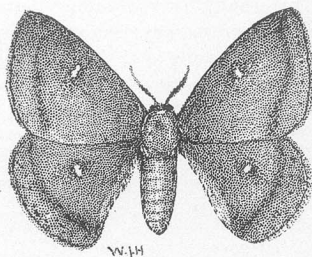


Fig. 7. *Chrysopoloma nubila*. ♀. $\frac{1}{2}$.

fore wing on the upper side purplish gray, becoming darker toward the base, irrorated with minute dark spots not much darker than the ground-color; a small suboval semitransparent white spot at end of the cell, surrounded by a few darker scales; a submarginal dark band running from the costa to the inner margin about four-fifths of the length of the wing from the base, and parallel to the curved outer margin. The hind wings have the same color as the fore wings, but are slightly paler, and toward the base and the inner margin are slightly tinged with roseate; there is a small white spot at the end of the cell like that on the fore wing, but more distinctly annulated with dark scales; the submarginal dark band of the primaries is continued

upon the secondaries, but is a little more distinct, darker, and wider on the latter. On the under side the wings are marked very much as on the upper side, but are a trifle paler. Expanse, 40 mm.

The type, which is unique, was taken at Niangara, April 9, 1913, and is deposited in The American Museum of Natural History.

Limacodidæ

There are over two hundred species of this family which have already been described from the African continent, and there are, as is known, many others which await description. A revision of the genera and species is much needed, and the writer has been devoting some time in recent years to the task. The Lang-Chapin Expedition brought back only three specimens, representing as many species and two genera.

PARASA Moore

(689)

1. *Parasa vivida* (Walker)

Nyssia vivida WALKER, 1865, List Lep. Het. B. M., XXXII, p. 478.

Parasa vivida KIRBY, 1892, Cat. Lep. Hët., p. 543. AURIVILLIUS, 1906, Arkiv Zool., III, No. 1, p. 11 (larva). HAMPSON, 1910, Proc. Zool. Soc. London, p. 485.

This species is represented by a single, somewhat worn male, taken at Faradje, "1911-1912."

Walker's type was from Natal. Hampson lists the species from N. E. Rhodesia. We have in the Carnegie Museum a male from Banza Manteka, Congo (Bain Coll.) and two males and five females collected in Sierra Leone by Schaus and Clements. The species is thus seen to have a wide distribution. The female has not hitherto been described but does not differ essentially from the male in color and markings. The antennæ, as is true of this sex in the genus, are filiform; the size is larger than that of the male; and the marginal band of the primaries is relatively a little wider than in the male and the color of the hind wings a trifle deeper.

(690)

2. *Parasa trapezoides* Aurivillius

Parasa trapezoides AURIVILLIUS, 1899, Ent. Tidskr., XX, p. 253; 1904, Arkiv Zool., II, p. 46.

Parasa mesochloris HAMPSON, 1910, Ann. Mag. Nat. Hist., (8) VI, p. 146.

This species, originally described by Aurivillius from Cameroon, and subsequently by Hampson from the Gold Coast, is represented in the collection by a single male labelled "*Banalia*, September 22, 1914." There are specimens in the Carnegie Museum from Cameroon, and also in the Holland Collection from the valley of the Ogové River. Neither of the authors who have hitherto written about the species have called

attention to the fact that in fresh specimens the nervules on the outer area of the upper surface of the primaries are slightly darker than the brown color of the outer marginal band and are thus clearly defined against it.

CTENOLITA Karsch

(691) 1. *Ctenolita anacompa* Karsch

Ctenolita anacompa KARSCH, 1896, Ent. Nachr., XXII, pp. 273, 283.

A single female, taken at Medje, June 1910, agrees perfectly with specimens in the Holland Collection which were compared by the writer with the type in Berlin.

Zygænidæ

Pompostolinæ

CHARIDEA Guenée

(692) 1. *Charidea hypparchus* (Cramer)

Sphinx hypparchus CRAMER, 1779, Pap. Exot., III, p. 7, Pl. cxcvii, fig. C.

One example, Lukolela, July 18, 1909.

(693) 2. *Charidea semiaurata* (Walker)

Euchromia semiaurata WALKER, 1854, List Lep. Het. B. M., I, p. 207.

One male caught at Stanleyville, August 11, 1909, and two other males taken at Medje, July 9 and 19, 1910.

SALIUNCA Walker

(694) 1. *Saliunca thoracica* (Walker)

Tipulodes ? thoracica WALKER, 1856, List Lep. Het. B. M., VII, p. 1626.

Saliunca thoracica WALKER, 1864, List Lep. Het. B. M., XXXI, p. 108.

One specimen taken at Malela, July 8, 1915. It agrees absolutely with a series of specimens in my collection, some of which have been compared with Walker's type.

(695) 2. *Saliunca rubriventris*, new species



Fig. 8. *Saliunca rubriventris*, ♀. $\frac{1}{2}$.

♀. Antennæ, head, legs, and lower side of thorax black; palpi light brown; upper side of thorax brilliant steely blue; all the segments of the abdomen above and below fiery red, except the first, and having on the sides in the region of the stomata a longitudinal series of fine deep black lines, which do not, however, reach the anal extremity, but terminate on the antepenultimate segment. Wings very much the same as in the preceding species. Expanse, 31 mm.

This species, according to the published descriptions, comes nearest to the insect named *Saliunca ignicincta* by l'Abbé J. de Joannis (cf. Bull. Soc. Ent. Italiana, 1912, XLIV, p. 141) but it is not the same, as a careful perusal of the description of that species plainly shows. The type is unique and is defective in that the antennæ are missing, except a few of the proximal joints. It was taken at Stanleyville, April 9, 1915, and is deposited in The American Museum of Natural History.

Thyrididæ

PROTEROZEUXIS Warren

(696) 1. *Proterozeuxis* (?) *medjensis*, new species

Plate XIV, Figure 12, ♂

♂. Eyes ferruginous, antennæ strongly pectinate, pale ochraceous; tegulæ and patagia pale orange; upper side of thorax and abdomen reddish fuscous, with a narrow band of whitish at the junction of the two; pectus, lower side of the thorax, and abdomen, as well as the legs, pale ochraceous. The fore wings on the upper side are very pale ochraceous, profusely marked with ferruginous lines and striæ, forming reticulations of such a complicated pattern that it would be almost impossible to describe them, but it may be noted that the apex of the wing is relatively free from these striæ, and presents to view a triangular pale space, which is defined inwardly by a fine dark subcrenulate ferruginous line; beyond the cell are two similarly colored parallel lines which run from the costa beyond its middle toward the outer margin and then turn inwardly and downwardly in the direction of the middle of the inner margin, which the line which is basad does not apparently reach; between these lines about the end of the cell are some dark shades and light circular spots; the striæ become more numerous toward the base of the wing, and impart to it a deeper color than the rest of the wing. The upper side of the hind wing is covered like the most of the fore wing with fine reticulated lines, and at the end of the cell there is a darker area corresponding to that on the fore wing. Both wings on the under side are paler than on the upper side, but the lines and markings of the upper side are all reproduced on this side. Expanse, 52 mm.

The type, which is in The American Museum of Natural History, is unique. It was taken at Medje, March 29, 1910.

I have been loath to describe this insect as new to science, but, after trying in vain to reconcile it with available descriptions, have done so. I refer it provisionally to Warren's genus, though it does not seem to quite fit his description, but comes nearer to that than to any other. (See *Novitates Zoologicæ*, 1899, VI, p. 7.)

Pyalidæ**Schœnobiinæ****CIRRHOCHRISTA** Lederer

- (697) 1. **Cirrhochrsta** species near ? **C. brizoalis** Walker

(Cf. List Lep. Het. B. M., XIX, p. 976) (*an eadem?*)

There is one specimen caught at Banana, June 21, 1909. The insect is plainly referable to the subfamily Schœnobiinæ and to the genus *Cirrhochrsta* Lederer. It agrees best upon the whole with the description given by Walker of the species cited above, but, as that species has hitherto only been reported from the Indo-Malayan subregion, I hesitate to declare the identity of our specimen with the form named by Walker, though it may be the same. I cannot just now lay my hands upon Indo-Malayan specimens for comparison, though I think we have some in our collections, which are at the moment inaccessible.

In the markings of the wings this insect agrees absolutely with the insect named *Cirrhochrsta saltusalis* by Schaus and Clements (cf. Lep. S. Leone, 1893, p. 43, Pl. III, fig. 7). Of the latter insect we have a long series, but it is not a *Cirrhochrsta*, though referred to this genus by the authors of the species. It does not have the porrect palpi, which are characteristic of the genus *Cirrhochrsta* and which are marked features of the specimen upon which I am reporting. It is plain that in the case of the insect from Sierra Leone, of which we also have many from the French Congo and Cameroon, we are dealing with a form in which there is parallelism in markings, with positive difference in structure. There is occasion here for further study and investigation.

Pyalinæ**HERCULIA** Walker

- (698) 1. **Herculia** species (?)

There is a solitary specimen taken at Banana, June 21, 1909, which seems to be referable to this genus, rather than to any other, but I am not sure of the genus. I have never seen the species before and am unable to find a recognizable description of it in the literature of the subject. The insect recalls the color and markings of a species in my collection to which I affixed the note some years ago "*Furcivena* sp.? not in B. M." but, while the color and markings are almost identically the same, the form of the wings is altogether different and quite in agreement, in the case of the insect upon which I am reporting, with the form and neuration of *Herculia*.

Hydrocampinæ**ZEBRONIA** Hübner

- (699) 1.
- Zebronia phenice**
- (Cramer)

Phalœna phenice CRAMER, 1782, Pap. Exot., IV, p. 185, Pl. ccclxxxii, fig. G.

Two specimens, one taken at Medje, May 10; the other at Ngayu, December 11, 1910.

Pyraustinæ**ZINCKENIA** Zeller

- (700) 1.
- Zinckenia recurvalis**
- (Fabricius)

Noctua recurvalis FABRICIUS, 1775, Syst. Ent., p. 407.

Hymenia recurvalis SWINHOE, 1900, Eastern Lep. Het., p. 455.

Two specimens, one caught at Banana, June 21, 1909, the other at Stanleyville, no date being given on the label.

PAGYDA Walker

- (701) 1.
- Pagyda caritalis**
- Walker

Pagyda caritalis WALKER, 1859, List Lep. Het. B. M., XVIII, p. 569. HAMPSON, 1898, Proc. Zool. Soc. London, p. 636.

One specimen agreeing perfectly with others in my collection which were identified on comparison with Walker's type. The specimen was taken at Avakubi, October 3, 1909.

- (702) 2.
- Pagyda traducalis**
- (Zeller)

Eudiotis traducalis ZELLER, 1852, Lep. Caffr., p. 54.

Pagyda traducalis HAMPSON, 1898, Proc. Zool. Soc. London, p. 636.

Two specimens of this widely distributed species, caught at Gaman-gui, February 17, 1910.

- (703) 3.
- Pagyda**
- species (?)

There is a single damaged specimen caught at Lukolela, July 18, 1909, which is structurally nearly allied to the last-mentioned species but is very different in its markings. It may be nondescript, but without more and better material I will not venture to express a positive opinion.

ULOPEZA Zeller

- (704) 1.
- Ulopeza**
- species (?)

A rubbed specimen taken at Banana, June 21, 1909, and which I am unable to refer to any species hitherto described, but which ought not to be named with such a specimen as the type.

FILODES Guenée

(705)

1. **Filodes cocytusalis** (Walker)*Euglyphis cocytusalis* WALKER, 1859, List Lep. Het. B. M., XVIII, p. 540.*Filodes cocytusalis* HAMPSON, 1898, Proc. Zool. Soc. London, p. 671.

One male specimen caught at Medje, June 24, 1910.

PHRYGANODES Guenée

(706)

1. **Phryganodes sex-guttata**, new species

Fig. 9.
Phryganodes
sex-guttata, ♂. $\frac{1}{4}$.

♂. Near *P. biguttata* Walker, but differing from that species by the presence in the secondaries of a conspicuous black discal mark. The two black spots, one in the middle and the other at the end of the cell of the primaries, are as in *P. biguttata*. Expanse, 30 mm.

The type, which is unique, was taken at Bolengi, July 20, 1909, and is deposited in The American Museum of Natural History.

(706)

2. **Phryganodes** (?) species (?)

There is a solitary specimen taken at Medje, May 10, 1910, which superficially recalls *P. erebusalis* Hampson (cf. Proc. Zool. Soc. London, 1898, p. 678) but differs from specimens in my collection, which have been compared with Hampson's type, in that the lower side of both wings at and beyond the base are whitish. There are other small and almost undefinable differences, among which the most marked is the fact that the nervules of the primaries on the upper side appear to be accentuated with black scales toward the outer margin, causing them to stand out distinctly on the slightly paler ground-color. The species may be new to science, but without more material it is not wise to describe it as such.

NACOLEIA Walker

(708)

1. **Nacoleia pæonalis** (Walker)*Botys pæonalis* WALKER, 1859, List Lep. Het. B. M., XVIII, p. 639.*Nacoleia pæonalis* HAMPSON, 1898, Proc. Zool. Soc. London, p. 698.

One rubbed example captured at Matadi, June 24, 1909.

(709)

2. **Nacoleia indicata** (Fabricius)*Phalæna-Noctua indicata* FABRICIUS, 1775, Syst. Ent., p. 640.*Nacoleia indicata* HAMPSON, 1898, Proc. Zool. Soc. London, p. 699.

One example caught at Faradje, "1911-1912."

BOTYODES Guenée(710) 1. **Botyodes asialis** Guenée

Botyodes asialis GUENÉE, 1854, Delt. and Pyr., pp. 321, 348. HAMPSON, 1898, Proc. Zool. Soc. London, p. 705, fig.

There is one ragged female specimen taken at Medje, April 6, 1910.

SYLLEPTA Hübner

There are three species referable to this genus, but none of them seem to exactly accord with the descriptions and figures which have been published of species occurring in Africa. After devoting considerable time to the study of the literature and the specimens before me, I must reluctantly content myself with merely listing them, as I do not care to describe them as new to science, and indeed it is possible that I have overlooked them in some of the vague and unsatisfactory descriptions of species of which there are so many in this family, but I do not think so.

(711) 1. **Syllepta** species (?)

One specimen caught at Matadi, June 24, 1909.

(712) 2. **Syllepta** species (?)

Two specimens taken at Medje, one on March 9, the other on June 24, 1910.

(713) 3. **Syllepta** species (?)

A solitary specimen taken at Matadi, June 24, 1909.

AGATHODES Guenée(714) 1. **Agathodes musivalis** Guenée

Agathodes musivalis GUENÉE, 1854, Noct. and Pyr., p. 210, Pl. x, fig. 2. HAMPSON, 1898, Proc. Zool. Soc. London, p. 731.

Two specimens taken at Medje in May.

GLYPHODES Guenée(715) 1. **Glyphodes sericea** (Drury)

Botys (Desmia) sericea DRURY, 1773, Ill. Exot. Ent., II, p. 11, Pl. vi, fig. 1 (Westwood's Edition).

Glyphodes (Stemorrhages) sericea HAMPSON, 1898, Proc. Zool. Soc. London, p. 735.

Seven specimens, one taken at each of the localities, Bolengi, Ukaturaka, and Kwamouth in July 1909; two at Gamangui in February and one at Medje in May 1910, and one at Niangara in April 1913.

(716) 2. **Glyphodes bonjongalis** (Plötz)

Eudiopis bonjongalis PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 305.

Glyphodes bonjongalis HAMPSON, 1898, Proc. Zool. Soc. London, p. 739.

Five specimens: one caught at Basoko, July 1909; two at Medje, May 1910; and two at Gamangui in June 1910.

(717) 3. **Glyphodes ocellata** Hampson

Glyphodes ocellata HAMPSON, 1898, Proc. Zool. Soc. London, p. 739.

One specimen caught at Medje, May 11, 1910.

(718) 4. **Glyphodes ectargyralis** Hampson

Glyphodes ectargyralis HAMPSON, 1898, Proc. Zool. Soc. London, p. 744, Pl. I, fig. 19.

Three specimens agreeing with others in my collection which were collected in the valley of the Ogové and which have been identified by comparison with Hampson's type. Two of the specimens were taken at Avakubi in October 1909, and one at Medje, June 30, 1910.

(719) 5. **Glyphodes** species (?)

There is a specimen taken at Avakubi, October 3, 1909, which is very near the foregoing, but which differs in that there is a short dark band running from the costa of the secondaries downward and connecting with the fuscous discal patch at the end of the cell in such a manner as to form a V-shaped mark about the middle of the wing. The insect is also smaller and not so robustly formed as the preceding species, of which, however, it may only be a variety.

(720) 6. **Glyphodes sinuata** (Fabricius)

Phalæna sinuata FABRICIUS, 1781, Spec. Ins., II, p. 267.

Glyphodes sinuata HAMPSON, 1898, Proc. Zool. Soc. London, p. 747.

There are five specimens of this species, one taken at Batama, September 18, 1909; the others at Medje on dates ranging from March to August 1910.

SAMEODES Snellen(721) 1. **Sameodes cancellalis** (Zeller)

Botys cancellalis ZELLER, 1852, Lep. Caffr., p. 34.

Sameodes trithyralis SNELLEN, 1880, Tijd. v. Ent., p. 218, Pl. VIII, fig. 4.

Sameodes cancellalis HAMPSON, 1899, Proc. Zool. Soc. London, p. 176.

Four specimens taken at Banana, June 21, 1909.

MARUCA Walker(722) 1. **Maruca testulalis** (Geyer)

Crocidophora testulalis GEYER, 1838, Hübner, Samml. Exot. Schmett., IV, figs. 629, 630.

Maruca testulalis HAMPSON, 1899, Proc. Zool. Soc. London, p. 194, fig.

Of this common and widely distributed species, which occurs all over the tropical zone, there are five specimens taken at as many different localities, the dates of capture ranging from April to October.

PACHYZANCLA Meyrick(723) 1. **Pachyzancla bipunctalis** (Fabricius)

Phalæna bipunctalis FABRICIUS, 1793, Ent. Syst., III, part 2, p. 232.

Pachyzancla bipunctalis HAMPSON, 1899, Proc. Zool. Soc. London, p. 204.

I refer to this species a specimen labelled "Matadi, June 24, 1909."

In addition to the foregoing species there are several species of *Pyralidæ* represented by single specimens which I am unable to name satisfactorily without an expenditure of time which I do not feel justified in making, and there are also three species of *Tineidæ* which I pass by.

Ægeriidæ**TRICHOBAPTES** Holland(724) 1. **Trichobaptès auristrigata** (Plötz)

Melittia auristrigata PLÖTZ, 1880, Stett. Ent. Zeit., XLI, p. 77.

Trichobaptès sexstriata HOLLAND, 1893, Journ. N. Y. Ent. Soc., I, p. 104.

Four specimens, all caught at Medje, two on April 6, one in June, and one on August 24, 1910.

ÆGERIA Fabricius(725) 1. **Ægeria nuba** (Beutenmüller)

Sesia nuba BEUTENMÜLLER, 1899, Journ. N. Y. Ent. Soc., VII, p. 171.

One specimen taken at Stanleyville in March 1915, which agrees completely with the types and paratypes in my collection, with which I have compared it.

In conclusion I may mention that there are several cases of bag-worms and a couple of inflated larvæ taken from them, which in the entire absence of any imagines I am unable to name. The African *Æcophoridæ* and *Psychidæ* are as yet poorly represented in most collections, and in mine by only half a dozen species, to none of which do these specimens seem to belong.

PLATE VI

- Fig. 1. *Planema nelsoni* (Smith and Kirby), ♂.
Fig. 2. *Planema nelsoni* (Smith and Kirby), ♀.
Fig. 3. *Papilio ridleyanus* White, ♂, typical.
Fig. 4. *Papilio ridleyanus fumosus* Holland, ♀, dimorph.
Fig. 5. *Hypolimnas bartteloti* var. *obliterata* Holland, ♂.
Fig. 6. *Cymothoë diphysia* Karsch, ♀.
Fig. 7. *Neptis agatha* (Stoll) (form from grass-lands), ♂.
Fig. 8. *Neptis agatha* (Stoll) (form from wood-lands), ♂.



PLATE VII

- Fig. 1. *Bicyclus medontias* var. *obsoletus* Holland, ♂.
- Fig. 2. *Euphædra imitans* Holland, ♀, type.
- Fig. 3. *Precis stygia stygia* Aurivillius, ♀ (under side).
- Fig. 4. *Precis stygia gregorii* (Butler), ♂ (under side).
- Fig. 5. *Precis stygia fuscata* Holland, ♀ (under side).
- Fig. 6. *Cymothoë cyclades* (Ward), ♂.
- Fig. 7. *Kallimula osborni* Holland, ♂, type.
- Fig. 8. *Kallimula osborni* Holland, ♀, allotype.
- Fig. 9. *Mycalesis chapini* Holland, ♂ (under side).
- Fig. 10. *Euryphene maximiniana* Staudinger, ♀.



PLATE VIII

- Fig. 1. *Cymothoë herminia* Grose-Smith, ♂.
Fig. 2. *Cymothoë herminia* var. *poënsis* Holland, ♂.
Fig. 3. *Neptis biafra* Ward, ♀.
Fig. 4. *Cymothoë herminia* Grose-Smith, ♀.
Fig. 5. *Cymothoë capellides* Holland, ♂, type.
Fig. 6. *Cymothoë capella* Ward, ♂ (typical).
Fig. 7. *Cymothoë langi* Holland, ♂, type.
Fig. 8. *Cymothoë langi* Holland, ♀, allotype.
Fig. 9. *Cymothoë adelina* Hewitson, ♂ (typical).
Fig. 10. *Cymothoë adelina* Hewitson, ♀ (vera).



PLATE IX

- Fig. 1. *Euphædra cyanea* Holland, ♂, type.
Fig. 2. *Euphædra cyanea* Holland, ♀, allotype.
Fig. 3. *Cymothoë cænis*, var. *conformis* Aurivillius, ♀,
Fig. 4. *Euryphene lucasi* Holland, ♂, type.
Fig. 5. *Euryphene lucasi* Holland, ♀, allotype.
Fig. 6. *Euphædra medon* var. *innotata* Holland, ♂, type.
Fig. 7. *Cymothoë cænis*, var. *rubida* Holland, ♀, paratype.



PLATE X

- Fig. 1. *Cymothoë aramis* Hewitson, ♂.
Fig. 2. *Cymothoë aramis* Hewitson, ♀.
Fig. 3. *Cymothoë ogova* Plötz, ♂.
Fig. 4. *Cymothoë ogova* Plötz, ♀.
Fig. 5. *Cymothoë Regina-Elizabethæ* Holland, ♂, type.
Fig. 6. *Cymothoë Regina-Elizabethæ* Holland, ♀, allotype.
Fig. 7. *Cymothoë anatorgis* Hewitson, ♂.
Fig. 8. *Cymothoë anatorgis* Hewitson, ♀.
Fig. 9. *Cymothoë angulifascia* Aurivillius, ♂.
Fig. 10. *Mycalesis langi* Holland, ♂, type.
Fig. 11. *Euryphene fulgurata* Aurivillius, ♀.



PLATE XI

- Fig. 1. *Euphædra preussi notata* Holland, ♂, type (under side).
Fig. 2. *Euphædra inanoides* Holland, ♂, type.
Fig. 3. *Euphædra inanoides* Holland, ♀, allotype (under side).
Fig. 4. *Euphædra preussi subviridis* Holland, ♂, type (under side).
Fig. 5. *Euphædra rezioides* Holland, ♀, type (under side).
Fig. 6. *Euphædra preussi fulvofasciata* Holland, ♂, type.
Fig. 7. *Euphædra preussi angustior* Holland, ♂, type.
Fig. 8. *Euphædra preussi latefasciata* Holland, ♂, type.



PLATE XII

- Fig. 1. *Abantis rubra* Holland, ♂, type.
- Fig. 2. *Triclema lutzi* Holland, ♂, type.
- Fig. 3. *Leptalina niangarensis* Holland, ♂, type.
- Fig. 4. *Spindasis aderna* (Plötz), ♂.
- Fig. 5. *Oxylides homeyeri* (Dewitz), ♀.
- Fig. 6. *Spindasis chapini* Holland, ♂, type.
- Fig. 7. *Telipna rothioides* Holland, ♀, type.
- Fig. 8. *Telipna medjensis* Holland, ♀, type.
- Fig. 9. *Pentila clatensi* Aurivillius, ♂.
- Fig. 10. *Epitola langi* Holland, ♂, type.
- Fig. 11. *Pentila clarensis* Neave, ♂, form with enlarged discal spots.
- Fig. 12. *Pentila clarensis* Neave, ♂, form with smaller, more numerous spots.
- Fig. 13. *Diestogyna kahli* Holland, ♂, type.
- Fig. 14. *Diestogyna rotundata* Holland, ♂, type.

All figures drawn by W. J. Holland. Natural Size.



PLATE XIII

- Fig. 1. *Xanthospiloptyx medjensis* Holland, ♂, type.
- Fig. 2. *Amphicallia pactolica* (Butler), ♀.
- Fig. 3. *Pitthea famulita* Holland, ♂, type.
- Fig. 4. *Metarctia chapini* Holland, ♀, type.
- Fig. 5. *Pseudogonitis variabilis* Holland, ♂, type.
- Fig. 6. *Pseudogonitis variabilis* Holland, ♀, allotype.
- Fig. 7. *Pseudogonitis variabilis* Holland, ♀, aberr.
- Fig. 8. *Eutelia nigricans* Holland, ♂, type.
- Fig. 9. *Tolna bolengensis* Holland, ♂, type.
- Fig. 10. *Rhynchodes awakubi* Holland, ♀, type.
- Fig. 11. *Amphigonia hyalinata* Holland, ♂, type.
- Fig. 12. *Heterospila* (?) *rubida* Holland, ♂, type.
- Fig. 13. *Leocyma congoënsis* Holland, ♂, type.
- Fig. 14. *Sphingomorpha aliena* Holland, ♂, type.
- Fig. 15. *Dermaleipa nubilata* Holland, ♂, type.
- Fig. 16. *Deinypena fulvida* Holland, ♂, type.
- Fig. 17. *Deinypena transversata* Holland, ♂, type.
- Fig. 18. *Deinypena morosa* Holland, ♂, type.
- Fig. 19. *Pseudoterpna* (?) *chapinaria* Holland, ♂, type.



PLATE XIV

- Fig. 1. *Leipoxais punctulata* Holland, ♂, type.
Fig. 2. *Leipoxais punctulata* Holland, ♀, allotype.
Fig. 3. *Sapelìa bipunctata* Holland, ♂, type.
Fig. 4. *Sapelìa bipunctata* Holland, ♀, allotype.
Fig. 5. *Deinypena multilineata* Holland, ♂, type.
Fig. 6. *Osteosema* (?) *phyllobrota* Holland, ♂, type.
Fig. 7. *Lælia soloides* Holland, ♀, type.
Fig. 8. *Callocossus langi* Holland, ♀, type.
Fig. 9. *Gonanticlea* (?) *langaria* Holland, ♂, type.
Fig. 10. *Ctenogyna* (?) *medjensis* Holland, ♂, type.
Fig. 11. *Deinypena obscura* Holland, ♂, type.
Fig. 12. *Proterozeugis* (?) *medjensis* Holland, ♂, type.
Fig. 13. *Rhamidava* (?) *pieridaria* Holland, ♀, type.
Fig. 14. *Phasicnecus grandiplaga* Holland, ♂, type.



INDEX

New names of genera, species, and varieties are printed in **heavy-faced type**, also the main reference in a series of references; synonyms are printed in *italics*.

- abadima*, *Acræa*, 128.
Acræa pseudегina, 128.
 Abantiades, 253.
 Abantis, **253**, 254.
 amneris, 255.
 arctomarginata, 254.
 bicolor, 254.
 bismarcki, 254.
 efulensis, **253**, 254.
 elegantula, **253**, 254.
 ja, 254.
 leucogaster, 254.
 levubu, 255.
 lofu, 255.
 lucretia, 255.
 namaquaana, 254.
 nigeriana, 254.
 paradisea, 254.
 plerotica, 254.
 rubra, 116, 250, **253**, 255. Pl.
 XII, Fig. 1.
 tettensis, 253, 254.
 trimeni, 254.
 umvulensis, 254.
 venosa, 254.
 zambesiaca, 254.
 zambezina, 254.
 abdera, *Acræa*, 129.
 abesa, Euryphene, 181.
 Abisara, 213.
 geryon, 213.
 intermedia, 213.
 rogersi, 213.
 rutherfordi, 213.
 rutherfordii, 213.
 abraxas, Pentila, 216.
 abruptaria, *Boarmia*, 309.
 Buzura, 309.
 absolon, Euryphene, 182.
 Papilio, 182.
 absolon micans, Euryphene, 182.
 Aburina, 286.
 infirma, 286.
 acaciaria, *Boarmia*, 309.
 acara, *Acræa*, 130.
 accentifera, *Nephele*, 301.
 Sphinx, 301.
 Achæa, **282**, 283.
 albifimbria, 282.
 catocaloides, 282.
 ezea, 282.
 mania, 282.
 mormoides, 282.
 subsignata, 281.
 Acherontia, 300.
 atropos, 300.
 achillæna, Euryphene barce, 188.
 achlys, Euryphura, 193.
 Harma, 193.
 Acidalia, 312.
 amplissimata, 307.
 medjaria, 117, **312** (Fig. 6).
 ochrata, 312.
 permutans, 312.
 Acidaliinæ, 312.
 Acleros, 255.
 plœtzi, 255.
 acontias, *Acræa*, 129.
 Acontinæ, 276.
Acræa, 122.
 abadima, 128.
 abdera, 129.
 acara, 130.
 acontias, 129.
 alcinoë, 121.
 alciope, 122.
 althoffi, 127.
 althoffi rubrofasciata, 127.
 atergatis, 129.
 atolmis, 129.
 aurivillii, 122.
 bakossua, 122.
 bonasia, 127.
 bonasia supponina, 127.
 cæcilia, 129.
 cephæus, 129.

- egina, 126, **130**.
ehmckeï, 126.
 encedon, 125.
 encedon alcippina, 126.
 encedon fumosa, 126.
 encedon infuscata, 126.
 encedon lycia, 125.
fumida, 122.
infuscata, 126.
 insignis, 131.
 insignis signinna, 131.
 jalema, 130.
 jodutta, 123.
 jodutta dorotheæ, 123.
 leucographa, 131.
 lycoa, 123.
macarina, 122.
 menippe, 130.
metaprotea, 123.
nelsoni, 121.
 neobule, 131.
 oberthüri, 127.
 oberthüri confluent, 127.
 orestia, 124.
 orina, 124.
 parrhasia, 124.
pelasgius, 124.
 peneleos, 124.
 peneleos pelasgius, 124.
 penelope, 124.
 pentapolis, 125.
 pentapolis thelestis, 125.
 perenna, 129.
 pharsalus, 126.
 pseudegina, 128, 129.
 pseudegina abadima, 128.
 quirinalis, 125.
 rogersi, 126.
 salambo, 126.
 semivitrea, 123.
 servona, 123.
supponina, 127.
 terpsichore, 128.
 terpsichore buxtoni, 128.
thelestis, 125.
 vespéralis, 125.
 vinidia, 128.
 viviana, 127.
 zetes, 130.
 Acræidæ, 120.
 acrapex, Borolia, 273.
 Acromecis, 260.
 neander, 260.
 Acronyctinæ, 273.
 Acropteris, 318.
 erycinaria, 318.
 actia, Kallimula, 150.
 actisanes, Ergolis, 158.
 acuta, Phytometra, 284.
Plusia, 284.
adelica, Caprona, 252.
 adelina, Cymothoë, **199**, 200. Pl. VIII,
 Figs. 9 and 10.
Harma, 199.
 aderna, Spindasis, 225. Pl. XII, Fig. 4.
Zeritis, 225.
Adolias fulvomacula, 201.
 adonina, Euphædra, 177.
Romalæosoma, 177.
 Ægeria, 331.
 nuba, 331.
 Ægeriidæ, 331.
 Ægocera, 271.
amabilis, 271.
latreillei, 271.
latreillii, 271.
 obliqua, 272.
 rectilinea, 271.
 ægretta, Problepsis, 313.
æmulatrix, *Eusemia*, 270.
 Xanthospilopteryx, 270.
 æqualis, Diacrisia, 267.
 æson, Charaxes, 206.
 æthiopica, Atella phalantha, 143.
æthiops, *Cupido*, 232.
Kharsanda, 232.
 Mycalesis safitza, 139.
 Nacaduba, 232.
Papilio, 153.
 Salamis parhassus, 153.
africana, *Melanitis*, 131.
 Melanitis leda, 131.
 afzelii, Euphædra, 176.
Romalæosoma, 176.
 Aganainæ, 268.
 Agaristidæ, 270.

- agatha, Neptis, 160. Pl. VI, Figs. 7 and 8.
Papilio, 160.
 agatha lativittata, Neptis, 160.
 Agathodes, 329.
 musivalis, 329.
 agraphis, Mycalesis, 141.
alberti, *Boaris*, 258.
 Parnara, 258.
 albicostata, Dasychira, 297.
 Ilema, 297.
 albida, Philosamia, 315.
albidus, *Attacus*, 315.
 albifimbria, Achæa, 282.
 Ophiusa, 282.
albofasciata, *Euryphura*, 193.
 Euryphura *plautilla*, 193.
alcinoë, *Acræa*, 121.
 Attacus, 317.
 Bunæa, 317.
 Planema, 121.
 alciope, *Acræa*, 122.
 alcippina, *Acræa* *encedon*, 126.
alcippus, *Danaida*, 118.
 Danais *chrysippus*, 118.
 Papilio, 118.
 Aletis, 311.
 helcita, 311.
algira, *Noctua*, 283.
 Parallelia, 283.
aliena, **Sphingomorpha**, 117, 285. Pl. XIII, Fig. 14.
 alinda, *Eurytela*, 157.
Alpenus *aurantiacus*, 267.
 purus, 267.
 althea, *Cymothoë* *cænis*, 199.
 althoffi, *Acræa*, 127.
 althoffi *rubrofasciata*, *Acræa*, 127.
 altisidora, *Cymothoë*, 199.
 Harma, 199.
amabilis, *Egocera*, 271.
 Charilina, 271.
 amanda, *Argina*, 269.
 Euchelia, 269.
 amaranta, *Diestogyna*, 190, 191.
 Amata, 263.
 cerbera, 263.
 marina, 263.
 Amatidæ, 262.
 Amauris, 119.
 damocles, 119.
 damocles, 120.
 hecate, 120.
 hyalites, 120.
 niavius, 119.
 psyttalea, 119.
 tartarea, 120.
amaxia, *Aterica*, 190.
 ameliæ, *Charaxes*, 208.
amestris, *Papilio*, 147.
 Precis, 147.
 Precis *octavia*, 147.
 Amnemopsyche, 310.
 circumdada, 310.
 flavibasis, 310.
 amneris, *Abantis*, 255.
 Amphicallia, 268.
 pactolica, 268. Pl. XIII, Fig. 2.
 pactolicus, 268.
 Amphigonina, 287.
 complex, 287.
 costalis, 288.
hyalinata, 117, 288. Pl. XIII, Fig. 11.
 simplex, 288.
amplissimata, *Acidalia*, 307.
 Rhamidava, 307.
 amulia, *Asterope*, 158.
 Amyna, 289.
 octo, 289.
 punctum, 289.
Anace *invaria*, 264.
 perpusilla, 263.
 anacompa, *Ctenolita*, 324.
 analis, *Mycalesis*, 133.
 Anaphe, 307.
 infracta, 307.
 anatorgis, *Cymothoë*, 201, 202. Pl. X, Figs. 7 and 8.
Ancistrocampta *chrysoglossa*, 251.
Ancylozypha *producta*, 260.
 andremiaja, *Precis*, 146.
 Andronymus, 260.
 neander, 260.
 angasi, *Caligatus*, 274.
angasii, *Caligatus*, 274.

- angolanus, *Papilio*, 248.
 angulifascia, *Cymothoë*, 193, **200**. Pl. ,X
 Fig. 9.
 angustata, *Catuna*, 166.
 angustatum, *Euomma*, 166.
angustior, Euphædra preussi, 116,
 175. Pl. XI, Fig. 7.
 angustus, *Charaxes*, 204.
 Charaxes brutus, 204.
Anoa xanthospila, 297.
anomala, Deilemæra, 117, **268**, 269
 (Fig. 4).
 ansellica, *Euxanthe*, 204.
 Godartia, 204.
 ansorgei, *Kallima*, 154.
 Melanitis, 132.
 antalus, *Deudorix*, 222.
 Dipsas, 222.
 Sithon, 222.
 Antanartia, 143.
 delius, 143.
 antanossa, *Cupido*, 234.
 Lycæna, 234.
 Zizera, 234.
anthedon, Diadema, 157.
 Hypolimnæ, 157.
Antheræa emini, 318.
 antheus, *Papilio*, 249.
 anticlea, *Charaxes*, 208.
 Papilio, 208.
 antifaunus, *Hypolycæna*, 223.
 Iolus, 223.
 antilope, *Kallimula*, 150.
 Precis, 147.
 antilope cuama, *Kallimula*, 150.
 antimachus, *Papilio*, 244.
 Anua, 279.
 david, 280.
 hampsoni, 117, **280**.
 producta, 117, **279**.
 producta, 117, 280.
Apaustus argyrosticta, 259, **260**.
 leucopygus, 255.
 neander, 260.
 Aphnæus, 224.
 caffer, 224.
 crustaria, 224.
 natalensis, 224.
 orcas, 224.
 apicata, *Deinypena*, 291.
apiciplaga, Naxia, 282.
 apparata, *Borolia*, 273.
 Leucania, 273.
 Appias, **237**, 238.
 epaphia, 238.
 phaola, 237.
 rhodope, 237.
 sabina, 238.
aralus, Cymothoë, 198.
 aramis, *Cymothoë*, 193, **201**, 202. Pl. X,
 Figs. 1 and 2.
 Euryphene, 201.
 archesia, *Precis*, 146.
 arcifera, *Dermaleipa*, 279.
Arcte maura, 277.
Arctia divisa, 305.
 Arctiidae, 266.
 Arctiinæ, 267.
 arctomarginata, *Abantis*, 254.
 argenteus, *Epiolus*, 253.
 argia, *Eronia*, 243.
 Papilio, 243.
 Argina, 269.
 amanda, 269.
argus, Bombyx, 316.
 Argynnidinae, 142.
 Argynnis, 169.
argyrosticta, Apaustus, 259, 260.
Arrugia umbra, 221.
 artaxia, *Precis*, 146.
 asialis, *Botyodes*, 329.
 asochis, *Mycalesis*, 134.
 asopus, *Cupido*, 232.
 Lycæna, 232.
 Asterope, 159.
 amulia, 159.
 boisduvali, 159.
 natalensis, 159.
 occidentium, 159.
asterope, Hipparchia, 142.
 Ypthima, 142.
 Asura, 266.
 atricraspeda, 266.
 Atella, 143.
 columbina, 143.
 phalantha, 143.

- phalantha æthiopica*, 143.
Atemnora, 302.
 westermanni, 302.
atergatis, *Acræa*, 129.
Aterica, 167.
 amazia, 190.
 barce, 188.
 edwardsi, 171.
 galene, 167.
 tadema, 189.
 theophane, 167.
 zonara, 183.
atolmis, *Acræa*, 129.
atossa, *Diestogyna*, 190.
 Euryphene, 190.
atratus, *Celænorrhinus*, 251.
atricraspeda, *Asura*, 266.
atroguttata, *Leucoperina*, 296.
atropos, *Acherontia*, 300.
 Sphinx, 300.
Attacus albidus, 315.
 alcinoë, 317.
 brachyura, 316.
 epimethea, 317, 318.
 fullonica, 284.
auga, *Pentila*, 216.
aurantiaca, *Diacrisia*, 267.
aurantiacus, *Alpenus*, 267.
auricruda, *Mycalesis*, 134, **135**.
auristrigata, *Melittia*, 331.
 Trichobaptis, 331.
aurivillii, *Acræa*, 122.
 Euryphene, 185.
Automolis ehrmanni, 265.
avakubi, **Rhynchodes**, 117, **287**. Pl. XIII, Fig. 10.
Axiocerses, 226.
 harpax, 225, **226**.
 perion, 225, 226.
Azanus, 231.
 mirza, 231.
Azygophleps, 319.
 boisduvali, 319.
bæticus, *Cupido*, 232.
 Papilio, 232.
 Polyommatus, 232.
bakossua, *Acræa*, 122.
Balacra, 265.
 divisa, 305.
 ehrmanni, 265.
 glagoessa, 265.
 pulchra, 265.
balsaminæ, *Charocampa*, 303.
 Hippotion, 303.
bammakoo, *Elymniosis*, 131.
 Melanitis, 131.
bananæ, **Nola**, 116, **266** (Fig. 3).
Baoris, 258.
 alberti, 258.
barce, *Aterica*, 188.
 Euryphene, 188.
barce achillæna, *Euryphene*, 188.
bartteloti, *Hypolimnas*, 116, **155**, 156.
bartteloti oblitterata, **Hypolimnas**, 116, **156**. Pl. VI, Fig. 5.
Basiothia, 302.
 charis, 302.
batangæ, *Parnara*, 258.
 Platylesches, 258.
batesi, *Xanthospilopteryx*, 270.
 Xynthospilopteryx, 270.
batikeli, *Deudorix*, 221, 222.
batikelides, **Deudorix**, 116, **221**, **222** (Fig. 1).
baumanni, *Mycalesis*, **137**, 138, 140.
bebra, *Charaxes*, 212.
 Charaxes lichas, 212.
 Philognoma lichas, 212.
beckeri, *Cymothoë*, 194, 195.
Belenois welwitschii, 239.
benitensis, *Grammodes*, 283.
 Parachalciope, 283.
bernice, *Mylothris*, 237.
biafra, *Neptis*, 162, **163**. Pl. VIII, Fig. 3.
biafra continuata, *Neptis*, 162.
bicolor, *Abantis*, 254.
bicoloraria, *Megalopalpus*, 218, 220.
Bicyclus, 132.
 hewitsoni, 132.
 hewitsoni nanodes, 132.
 iccius, 133.
 medontias, 116, 132, 133.
medontias obsoletus, 116, **132**. Pl. VII, Fig. 1.
 sebetus, 133.

- biguttata, Phryganodes, 328.
bimacula, *Pentila*, 215.
 Telipna, 215.
 bipartita, *Nephele*, 301.
 bipunctalis, *Pachyzancla*, 331.
 Phalena, 331.
bipunctata, **Sapelia**, 117, 295. Pl.
 XIV, Figs. 3 and 4.
 bipunctatus, *Charaxes*, 207.
bisinuata, *Terias*, 241.
 Terias senegalensis, 241.
bismarcki, *Abantis*, 254.
bivittata, *Syntomis*, 263.
 Trichæta, 263.
bixæ, *Ismene*, 262.
 Papilio, 262.
 Rhopalocampta, 262.
Bizone delicata, 266.
blassi, *Cymothoë*, 194.
boadicea, *Celænorhynchus*, 251.
 Pterygospidea, 251.
Boarmia, 309, 310.
 abruptaria, 309.
 acaciaria, 309.
Boarmiina, 307.
boisduvali, *Asterope*, 159.
 Azygophleps, 319.
 Crenis, 159.
boisduvalianus, *Papilio*, 244.
boisduvallii, *Zeuzera*, 319.
bolengensis, **Tolna**, 117, 280. Pl.
 XIII, Fig. 9.
Bombyx argus, 316.
 maculosa, 267.
 vaillantina, 277.
bonasia, *Acræa*, 127.
 Papilio, 127.
bonasia supponina, *Acræa*, 127.
bonjongalis, *Eudoptis*, 330.
 Glyphodes, 330.
borbonica, *Hesperia*, 257.
 Parnara, 257.
Borolia, 273.
 acrapex, 273.
 apparata, 273.
Botyodes, 329.
 asialis, 329.
Botys cancellalis, 330.
 pæonalis, 328.
 sericea, 329.
brachyura, *Attacus*, 316.
 Eudæmonia, 117, 316.
brachyura minor, **Eudæmonia**, 117, 316.
brenda, *Terias*, 240.
brenda maculata, *Terias*, 241.
brigitta, *Papilio*, 242.
 Terias, 242.
Brithys, 273.
 pancratii, 273.
brizoalis, *Cirrhochrista*, 326.
bromius, *Papilio*, 246.
brutus, *Charaxes*, 204.
 Papilio, 204.
brutus angustus, *Charaxes*, 204.
bule, *Pardaleodes*, 259.
Bunæa, 317.
 alcinoë, 317.
buxtoni, *Acræa terpsichore*, 128.
Buzura, 309.
 abruptaria, 309.
Byblia, 158.
 crameri, 158.
 ilithya, 158.
 vulgaris *U*, 158.
cachrusalis, *Elyra*, 290.
cacta, *Papilio*, 153.
 Salamis, 153.
cæcilia, *Acræa*, 129.
 Papilio, 129.
Cænides, 261.
 cænira, 261.
 cylinda, 261.
 dace a, 261.
cænira, *Cænides*, 261.
 Hesperia, 261.
 Hidari, 261.
 Pamphila, 261.
cænis, *Cymothoë*, 116, 198, 199, 200.
 Papilio, 198.
cænis althea, *Cymothoë*, 199.
cænis conformis, *Cymothoë*, 198. Pl. IX,
 Fig. 3.
cænis euthalioides, *Cymothoë*, 199.
cænis rubida, **Cymothoë**, 116, 198,

- 199.** Pl. IX, Fig. 7.
caffer, *Aphnæus*, 224.
calescens, *Heterospila*, 290.
Caligatus, 274.
 angasi, 274.
 angasi, 274.
Callimorphinæ, 268.
Callocossus, 318.
 elegans, 319.
 langi, 117, **318.** Pl. XIV, Fig. 8.
calpis, *Hesperia*, 261.
 Pamphila, 261.
calypso, *Papilio*, 239.
 Pieris, 239.
camarensis, *Diestogyna*, 189.
 Euryphene, 189.
Cambogia, 312.
camerunica, *Jana*, **303**, 304.
camillus, *Cyrestis*, 159.
 Papilio, 159.
cancellalis, *Botys*, 330.
 Sameodes, 330.
candiope, *Charaxes*, 209.
 Nymphalis, 209.
capella, *Cymothoë*, 198. Pl. VIII, Fig. 6.
capellides, *Cymothoë*, 116, **198.** Pl. VIII, Fig. 5.
Caprona, 252.
 adelica, 252.
 pillaana, 252.
carana, *Castalius*, 231.
 Cupido, 231.
 Lycæna, 231.
carbo, *Cobalus*, 258.
cardui, *Papilio*, 143.
 Pyrameis, 143.
caritalis, *Pagyda*, 327.
carnea, *Meganaclia*, 263.
Carpostalagma, 269.
 viridis, 269.
carshena, *Euryphene*, 181.
Caryatis viridis, 269.
Castalius, 231.
 carana, 231.
 isis, 231.
 margaritaceus, 231.
castanea, *Euryphene*, 186.
castor, *Charaxes*, 205.
 Papilio, 205.
Catacroptera, 152.
 cloanthe, **152**, 153.
 cloanthe ligata, 152, 153.
 obscurior, 153.
Catarechia, 305.
 divisa, 305.
catenata, *Obrussa*, 308.
catocalina, *Heliophisma*, 280.
 Ophiodes, 280.
Catocalinæ, 277.
catocaloides, *Achæa*, 282.
catochrous, *Charaxes*, 209.
Catopsilia, 243.
 florella, 243.
Catuna, 166.
 angustata, 166.
 crithea, 166.
 oberthuri, 166.
cebrene, *Junonia*, 145.
 Precis, 145.
Celænorrhinus, 250.
 atratus, 251.
 boadicea, 251.
 chrysoglossa, 251.
 chrysoglossus, 251.
 galenus, **250**, 251.
 rutilans, 251.
celerio, *Charocampa*, 302.
 Hippotion, 302.
 Sphinx, 302.
Centroctena, 303.
 rutherfordi, 303.
cephæus, *Acræa*, 129.
 Papilio, 129.
Ceratocampidæ, 317.
Ceratrachia, 259.
 flava, 260.
 ialemia, 259.
 nothus, 259.
 phocion, 259.
 wollastoni, 260.
cerbera, *Amata*, 263.
 Sphinx, 263.
 Syntomis, 263.
ceres, *Euphædra*, 168, 171.
 Terias, 242.
 Terias floricola, 242.

- ceryne*, *Junonia*, 149.
 Precis, 146, **149**.
Salamis, 149.
chalcis, *Euryphura*, 193.
Harma, 193.
chapinaria, *Pseudoterpna*, 117, **314**.
 Pl. XIII, Fig. 19.
chapini, *Metarctia*, 116, **264**. Pl.
 XIII, Fig. 4.
Mycalesis, 116, **140**. Pl. VII, Fig.
 9.
Spindasis, 116, **225**. Pl. XII, Fig.
 6.
 Chapra, 257.
 mathias, 257.
 Charaxes, 114, **204**.
æson, 206.
amelia, 208.
angustus, 204.
anticlea, 208.
bebra, 212.
bipunctatus, 207.
brutus, 204.
brutus angustus, 204.
candiope, 209.
castor, 205.
catochrous, 209.
cynthia, 206.
dilutus, 210.
doubledayi, **210**, 211.
epijasius, 204.
etesipe, 206.
etheocles, **208**, 209.
etheocles hollandi, 209.
etheocles picta, 209.
eudoxus, 205.
eudoxus mechowii, 205.
eupale, 209.
fulvescens, 211.
godarti, 205.
hadrianus, 208.
hildebrandti, 208.
imperialis, 207.
kahldenii, 209.
laodice, 210.
lichas bebra, 212.
lucretius, 207.
mechowii, 205.
mycerina, **210**, 211.
nichetes, 210.
nobilis, 208.
numenes, 207.
ogovensis, 210.
paphianus, 212.
pollux, 205.
porthos, 210.
protoclea, 116, **206**.
protoclea marginepunctata, 116,
206.
smaragdalis, 207.
tiridates, 207.
vologeses, 211.
zelica, 210.
zingha, 212.
charcedonius, *Papilio*, 249.
 Charidea, 324.
hypparchus, 324.
semiaurata, 324.
 Charilina, 271.
amabilis, 271.
charis, *Basiothia*, 302.
Chærocampa, 302.
charita, *Plastingia*, 260.
chelys, *Papilio*, 132.
Gnophodes, 132.
Chionæma, 266.
delicata, 266.
chloëropis, *Euryphene*, 188.
chlorea, *Noctua*, 285.
Phalæna, 285.
Sphingomorpha, 285.
chloris, *Mylothris*, 236.
Papilio, 236.
Chærocampa balsaminæ, 303.
celerio, 302.
charis, 302.
Chærotriche orestes, 297.
chorimene, *Precis*, 146, **147**.
Vanessa, 147.
chrysippus, *Danaida*, 118.
Danais, 118.
Papilio, 118.
chrysippus alcippus, *Danais*, 118.
chrysoglossa, *Ancistrocampta*, 251.
Celænorhinus, 251.
chrysoglossus, *Celænorhinus*, 251.

- Chrysophanus perion*, 226.
Chrysopoloma, 322.
 inspersa, 322.
 nubila, 117, **322** (Fig. 7).
 rudis, 322.
Chrysopolomidae, 322.
cinerea, *Megadrepina*, 320.
circumdata, *Amnemopsyche*, 310.
 Girpa, 310.
Cirina, 317.
 similis, 317.
Cirphis, 272.
 polyrabda, 273.
 prominens, 272.
Cirrhochrista, 326.
 brizoalis, 326.
 saltusalis, 326.
cissalma, *Hypolimnas*, 155.
clarensis, *Pentila*, 215. Pl. XII, Figs. 11 and 12.
clarki, *Pseudacræa*, 165.
clarki egina, *Pseudacræa*, 165.
clathrata, *Heteronygmia*, 299.
clelia, *Junonia*, 144, 146.
 Papilio, 144.
 Precis, 144, 146.
cloanthe, *Catacroptera*, **152**, 153.
 Papilio, 152.
cloanthe ligata, *Catacroptera*, 152, 153.
clatensi, *Pentila*, 216. Pl. XII, Fig. 9.
coanza, *Hesperia*, 259.
Cobalus carbo, 258.
coccinata, *Cymothoë*, 201.
 Harma, 201.
Cocytodes, 277.
 maura, 277.
cocytusalis, *Euglyphis*, 328.
 Filodes, 328.
cœlestina, *Kallimula*, 150.
Cœlonia, 300.
 fulvinotata, 300.
cænobila, *Papilio*, 166.
 Pseudoneptis, 166.
cœrulescens, *Euphædra*, 175, 176, 178, 179.
colmanti, *Cymothoë*, 195.
columbina, *Atella*, 143.
 Papilio, 143.
 comma, *Nephele*, 300.
 complex, *Amphigonia*, 287.
 Episparis, 287.
 confluens, *Acræa oberthûri*, 127.
 conformis, *Cymothoë cænis*, 198. Pl. IX, Fig. 3.
 confusa, *Cymothoë*, 195.
 congoënsis, **Leocyma**, 117, **277**. Pl. XIII, Fig. 13.
 congolensis, *Euryphene*, 185.
 consanguinea, *Planema*, 121.
 continua, *Pitthea*, 310.
 continuata, *Neptis*, 162.
 Neptis biafra, 162.
 convolvuli, *Herse*, 299.
 Protoparce, 299.
 Sphinx, 299.
 Copaxa gemmifera, 317.
 coprates, *Euphædra eleus*, 171.
 Romalæosoma, 171.
 Cossidæ, 318.
 costalis, *Amphigonia*, 288.
 crameri, *Byblia*, 158.
Crenis, 159.
 boisdouali, 159.
 madagascariensis, 159.
 natalensis, 159.
 occidentaleum, 159.
creona, *Papilio*, 238.
 Pieris, 238.
cretacea, *Goniloba*, 256.
 Hypoleucis, 256.
crithea, *Catuna*, 166.
 Papilio, 166.
Crocidophora testulalis, 331.
crocicollis, *Liparis*, 296.
cræsaria, *Melinoessa*, 308.
crossleyi, *Euxanthe*, 204.
 Godartia, 204.
crowleyi, *Euphædra*, 169.
crucifera, *Dasychira*, 297.
 Æcua, 297.
crustaria, *Aphnæus*, 224.
 Spindasis, 224.
Ctenocompa hilda, 299.
Ctenogyna, **305**, 306.
 medjensis, 117, **305**. Pl. XIV, Fig. 10.

- natalensis, 306.
 ogoensis, 306.
 vilis, 306.
 Ctenolita, 324.
 anacompa, 324.
 cuama, Kallimula antilope, 150.
 Cupidesthes, 227.
 thyrsis, 227.
 Cupido, 232.
 æthiops, 232.
 antanossa, 234.
 asopus, 232.
 bæticus, 232.
 carana, 231.
 falkensteini, 230.
 gaika, 234.
 heritsia, 230.
 hippocrates, 233.
 isis, 231.
 lysimon, 234.
 malathana, 232.
 micylus togara, 233.
 mirza, 231.
 ornatus, 234.
 osiris, 232.
 parsimon, 233.
 patricia, 233.
 phlyaria, 230.
 plurilimbata, 234.
 punctatus, 234.
 telicanus plinius, 231.
 Cupidopsis, 233.
 hippocrates, 233.
 jobates, 233.
 curvilinea, Diacrisia, 267.
 Spilosoma, 267.
cyanea, Euphædra, 116, 178, 179. Pl. IX, Figs. 1 and 2.
cyara, Lycæna, 230.
 Phlyaria, 230.
 cyclades, Cymothoë, 195, 201. Pl. VII, Fig. 6.
 Harma, 195.
 Cyclopides, 256.
 unicolor, 256.
 Cylogramma, 277.
 latona, 277.
 magus, 278.
 cylinda, Cænides, 261.
 Hesperia, 261.
 cymodoce, Kallima, 154.
 Cymothoë, 193.
 adelina, 199, 200. Pl. VIII, Figs. 9 and 10.
 altisidora, 199.
 anatorgis, 201, 202. Pl. X, Figs. 7 and 8.
 angulifascia, 193, 200. Pl. X, Fig. 9.
 aralus, 198.
 aramis, 193, 201, 202. Pl. X, Figs. 1 and 2.
 beckeri, 194, 195.
 blassi, 194.
 cænis, 116, 198, 199, 200.
 cænis althea, 199.
 cænis conformis, 198. Pl. IX, Fig. 3.
 cænis euthalioides, 199.
 cænis rubida, 116, 198, 199. Pl. IX, Fig. 7.
 capella, 198. Pl. VIII, Fig. 6.
 capellides, 116, 198. Pl. VIII, Fig. 5.
 coccinata, 201.
 colmanti, 195.
 confusa, 195.
 cyclades, 195, 201. Pl. VII, Fig. 6.
 diphyia, 195, 196. Pl. VI, Fig. 6.
 ehmckeï, 198.
 fumana, 196.
 herminia, 116, 196. Pl. VIII, Figs. 1 and 4.
 herminia poënsis, 116, 196. Pl. VIII, Fig. 2.
 hewitsoni, 197.
 jodutta, 198.
 johnstoni, 197.
 langi, 116, 197. Pl. VIII, Figs. 7 and 8.
 lurida, 201.
 ogova, 116, 201, 202. Pl. X, Figs. 3 and 4.
 ogova rubescens, 116, 203.
 Reginæ-Elizabethæ, 116, 201. Pl. X, Figs. 5 and 6.
 reinholdi, 194.
 reinholdii, 194.

- sangaris, **200**, 201, 202, 203.
 staudingeri, 197.
 theobene, 194.
 theodosia, **194**, 196.
 weymeri, 197.
Cynandra, 166.
 opis, 166.
cynorta, *Papilio*, 244.
cynthia, *Charaxes*, 206.
cypræfila mechowiana, *Papilio*, 245.
Cyrestis, 159.
 camillus, 159.
cyriades, *Harma*, 198.

dacela, *Cænides*, 261.
 Hesperia, 261.
dædalus, *Hamanumida*, 167.
 Papilio, 167.
dædalus meleagris, *Hamanumida*, 167.
damocles, *Amauris*, 119.
 Papilio, 119.
damocles, *Amauris*, 120.
Danaida, 118.
 alcippus, 118.
 chrysippus, 118.
 petiverana, 119.
Danaidæ, 118.
Danaïs, 118.
 chrysippus, 118.
 chrysippus alcippus, 118.
 limniace, 119.
 petiverana, 119.
Danaus, 118.
dardanus, *Papilio*, 244.
Dasychira, 297.
 albicostata, 297.
 crucifera, 297.
 gnava, 297.
 muscosa, 297.
david, *Anua*, 280.
 Minucia, 280.
decus, *Palla*, 211.
 Papilio, 211.
Deilemera, **268**, 269.
 anomala, 117, **268**, 269 (Fig. 4).
 fallax, 268.
 leuconoë, 268.
Deilephila osiris, 302.

Deinypena, 291.
 apicata, 291.
 fulvida, 117, **292**. Pl. XIII, Fig. 16.
 geometroides, 291.
 lacista, 291.
 lathetica, 291.
 marginata-punctata, 291.
 morosa, 117, **291**. Pl. XIII, Fig. 18.
 morosa pallidior, 117, **292**.
 multilineata, 117, **292**. Pl. XIV, Fig. 5.
 obscura, 117, **294**. Pl. XIV, Fig. 11.
 transversata, 117, **293**. Pl. XIII, Fig. 17.
 triangularis, 291.
delicata, *Bizone*, 266.
Chionæma, 266.
delius, *Antanartia*, 143.
 Hypanartia, 143.
 Papilio, 143.
demodocus, *Papilio*, 246.
demodocus nubila, *Papilio*, 246.
demoleus, *Papilio*, 246.
Dermaleipa, 278.
 arcifera, 279.
 nubilata, 117, **278**. Pl. XIII, Fig. 15.
 parallelipeda, 279.
desjardinsi, *Terias*, 242.
Desmia sericea, 329.
desolata, *Mycalasis*, 139.
Deudorix, 221.
 antalus, 222.
 batikeli, 221, 222.
 batikelides, 116, **221**, 222 (Fig. 1).
 eleala, 221.
 elealodes, 221.
dewitzi, *Planema*, 121.
Diacrisia, 267.
 æqualis, 267.
 aurantiaca, 267.
 curvilinea, 267.
 lutescens, 267.
 maculosa, 267.
Diadema anthedon, 157.
 mechowi, 155.

- monteironis*, 155.
Dichora, 213.
labdaca, 212.
Diestogyna, 189.
amaranta, **190**, 191.
atossa, 190.
camarensis, 189.
doriclea, 190.
doriclea infusca, 190.
gambiæ, 190.
goniogramma, 189.
kahli, 116, **191**. Pl. XII, Fig. 13.
mawamba, **189**, 191.
melanops, 189.
rotundata, 116, **191**. Pl. XII, Fig. 14.
saphirina, 189.
tadema, **189**, 191.
umbrina, 192.
digamma, *Metaleptina*, 276.
Westermannia, 276.
dilutus, *Charaxes*, 210.
diphyia, *Cymothoë*, **195**, 196. Pl. VI, Fig. 6.
Dipsas antalus, 222.
divisa, *Arctia*, 305.
Balacra, 305.
Catarectia, 305.
divitiosa, *Ophideres*, 285.
doleta, *Ypthima*, 142.
donovani, *Mylothris spica*, 116, 117, **236**, 237.
doriclea, *Diestogyna*, 190.
doriclea infusca, *Diestogyna*, 190.
dorotheæ, *Acræa jodutta*, 123.
doubledayi, *Charaxes*, **210**, 211.
Drepanulidæ, 320.
dromus, *Hesperia*, 255.
Pyrgus, 255.
dryope, *Eurytela*, 157.
Papilio, 157.
dubia, *Hypolimnas*, 156.
Hypolycæna, **223**, 224.
Mycalesis, 137.
dubius, *Papilio*, 156.
eberti, *Euphædra*, 177.
ectargyralis, *Glyphodes*, 330.
edipus, *Papilio*, 259.
Pardaleodes, 259.
edwardsi, *Aterica*, 171.
Euphædra, 171.
efulensis, *Abantis*, **253**, 254.
Rhynchodes, 117, **287**.
egina, *Acræa*, 126, **130**.
Papilio, 130.
Pseudacræa clarki, 165.
Egybolis, 277.
vaillantina, 277.
ehmckeï, *Acræa*, 126.
Cymothoë, 198.
ehrmanni, *Automolis*, 265.
Balacra, 265.
Elæodes, 284.
virescens, 284.
eleala, *Deudorix*, 221.
elealodes, *Deudorix*, 221.
elegans, *Callocossus*, 319.
elegantula, *Abantis*, **253**, 254.
Sapæa, 253.
eleus, *Euphædra*, **169**, 170.
Papilio, 169.
eleus coprates, *Euphædra*, 171.
eleus hybrida, *Euphædra*, 170.
eleus hybridus, *Euphædra*, 170.
eliasis, *Henotesia*, 142.
Mycalesis, 142.
elongata, *Planema*, 121.
elorea, *Oboronia*, 235.
Elymniinae, 131.
Elymniopsis, 131.
bammakoo, 131.
phegea, 131.
Elyra, 290.
cachrusalis, 290.
gabunalis, 290.
phlegeusalis, 290.
emini, *Antheræa*, 318.
Nudaurelia, 318.
encedon, *Acræa*, 125.
Papilio, 125.
encedon alcippina, *Acræa*, 126.
encedon fumosa, *Acræa*, 126.
encedon infuscata, *Acræa*, 126.

- encedon lycia, Acræa, 125.
 Enmonodia, 278.
 occidentalis, 278.
 enotrea, Ergolis, 158.
 Papilio, 158.
 entebia, Euryphene, 182.
 Entomogramma, 278.
 pardus, 278.
epæa, *Papilio*, 120.
 Planema, 120.
 epaphia, Appias, 238.
 Papilio, 238.
 epijasius, Charaxes, 204.
epimethea, *Attacus*, 317, 318.
 Imbrasia, 317.
Epiolus argenteus, 253.
 epiprotea, Planema, 121.
Episparis complex, 287.
 simplex, 288.
 Epitola, 217, 218.
 langi, 116, 217. Pl. XII, Fig. 10.
 mangoënsis, 218.
 Epitolinæ, 217.
 eranga, Temnora, 301.
 Erastriinæ, 289.
 Ercheia, 281.
 multilinea, 282.
 periploca, 281.
 subsignata, 281, 282.
Erebus magus, 278.
 erebusalis, Phryganodes, 328.
Eremobia virescens, 284.
 Ergolis, 158.
 actisanes, 158.
 enotrea, 158.
 murina, 158.
 pagenstecheri, 158.
 Eronia, 243.
 argia, 243.
 pharis, 243.
 thalassina, 243.
 erubescens, Metarctia, 264.
 erycinaria, Acropterus, 318.
 Micronia, 318.
 eson, Hippotion, 303.
 Sphinx, 303.
 Estigmene, 267.
 pura, 267.
 etesipe, Charaxes, 206.
 Nymphalis, 206.
 etheocles, Charaxes, 208, 209.
 Papilio, 208.
 etheocles hollandi, Charaxes, 209.
 etheocles picta, Charaxes, 209.
 ethosea, Mesoxantha, 158.
 Papilio, 158.
ethyra, *Precis*, 147.
 Salamis, 147.
 Eubyjodonta, 309.
Euchelia amanda, 269.
 Euchloron, 302.
 megæra, 302.
 megera megæra, 302.
 Euchromia, 265.
 guineënsis, 266.
 lethe, 265.
 semiaurata, 324.
 sperchia, 266.
 Eudæmonia, 316.
 brachyura, 117, 316.
 brachyura minor, 117, 316.
 uroarge, 316.
Eudiotis bonjongalis, 330.
 tradiculis, 327.
 eudoxus, Charaxes, 205.
 Papilio, 205.
eudoxus mechowii, Charaxes, 205.
Euglyphis cocytusalis, 328.
 Eunicinæ, 159.
Euomma angustatum, 166.
 eupale, Charaxes, 209.
 Papilio, 209.
 Euphædra, 168.
 adonina, 177.
 afzelii, 176.
 ceres, 168, 171.
 cœrulescens, 175, 176, 178, 179.
 crowleyi, 169.
 cyanea, 116, 178, 179. Pl. IX, Figs.
 1 and 2.
 eberti, 177.
 edwardsi, 171.
 eleus, 169, 170.
 eleus coprates, 171.
 eleus hybrida, 170.
 eleus hybridus, 171.

- gausape, 177, 178, 179.
 imitans, 169. Pl. VII, Fig. 2.
inanoides, 116, 175. Pl. XI, Figs. 2 and 3.
 inanum, 175, 176.
 karschi, 179.
 losinga, 180.
 medon, 116, 179, 180.
medon innotata, 116, 179. Pl. IX, Fig. 6.
 perseis, 169.
 phaethusa, 176.
 preussi, 116, 168, 171, 172, 173, 174, 175.
preussi angustior, 116, 175. Pl. XI, Fig. 7.
preussi fulvofasciata, 116, 174. Pl. XI, Fig. 6.
preussi latefasciata, 116, 175. Pl. XI, Fig. 8.
 preussi njami, 172, 173.
 preussi njamnjami, 171, 173, 174, 175.
preussi notata, 116, 173. Pl. XI, Fig. 1.
preussi subviridis, 116, 174. Pl. XI, Fig. 4.
 ravola, 176.
 rezia, 177.
rezioides, 116, 177. Pl. XI, Fig. 5.
 ruspina, 169.
 spatiosa, 180.
 themis, 177.
 vetusta, 177.
 xypete, 116, 168, 178.
xypete maxima, 116, 178.
 Euptera, 169, 203.
 pluto, 203.
eurinome, *Euxanthe*, 204.
Euriphene infusca, 190.
 eurodoce, Kallimula, 150.
 eurymas, Jana, 303.
 Euryphene, 180.
 abesa, 181.
 absolon, 182.
 absolon micans, 182.
 aramis, 201.
 atossa, 190.
 aurivillii, 185.
 barce, 188.
 barce achillæna, 188.
 camarensis, 189.
 carshena, 181.
 castanea, 186.
 chloëropis, 188.
 congolensis, 185.
 entebixæ, 182.
 flaminia, 187.
 fulgurata, 185. Pl. X, Fig. 11.
 gambiæ, 190.
 iturina, 185.
 lætitia, 186.
 lesbonax, 188.
 lucasi, 116, 183. Pl. IX, Figs. 4 and 5.
 luteola, 188.
 mandinga, 184.
 mardania, 187.
 maximiniana, 187. Pl. VII, Fig. 10.
 oxione, 184.
 partita, 185.
 phantasia, 187.
 phranza, 185.
 plistonax, 187.
 pluto, 203.
 rubrocostata, 188.
 severini, 186.
 sophus, 186.
 sophus phreone, 187.
 subtentyris, 181.
 tentyris, 181.
 umbrina, 192.
 zonara, 182, 183.
 Euryphura, 192.
 achlys, 193.
 albofasciata, 193.
 chalcis, 193.
 plautilla albofasciata, 193.
 Eurytela, 157.
 alinda, 157.
 dryope, 157.
 hiarbas, 157.
 Eurytelinæ, 157.
Eusemia æmulatrix, 270.
 poggei, 270.
 Eutelia, 274.

- nigricans**, 117, **274**. Pl. XIII,
Fig. 8.
subrubens, 274.
Euteliinae, 274.
euthalioides, *Cymothoë cænis*, 199.
Euxanthe, 204.
 ansellica, 204.
 crossleyi, 204.
 eurinome, 204.
 trajanus, 204.
evenus, *Mycalesis*, 139.
 Mycalesis safitza, 139.
Everes, 233.
 micylus, 233.
 togara, 233.
evippe, *Papilio*, 240.
 Teracolus, 240.
exaleuca, *Neptidomima*, 116, **164**.
 Neptis, 116, 164.
eximia, *Methorasa*, 280.
 Tolna, 280.
ezea, *Achæa*, 282.
 Phalæna, 282.

falcata, *Philognoma*, 212.
falkensteini, *Cupido*, 230.
 Plebeius, 230.
 Uranothauma, 230.
fallax, *Deilemera*, 268.
 Nyctemera, 268.
 Spindasis, 225.
 Zeritis, 225.
famula, *Pitthea*, 310.
famulita, *Pitthea*, 117, **310**. Pl. XIII,
Fig. 3.
fan, *Osmodes*, 259.
 Pardaleodes, 259.
Filodes, 328.
 cocythusalis, 328.
fiabellaria, *Olapa*, 296.
 Phalæna, 296.
flaminia, *Euryphene*, 187.
flava, *Ceratrachia*, 260.
 Oboronia ornata, 116, **235**.
flavibasis, *Amnemopsyche*, 310.
 Hylemera, 310.
flaviventris, *Xanthospilopteryx*, 270.
flesus, *Nisoniades*, 251.
 Papilio, 251.
 Tagiades, 251.
florella, *Catopsilia*, 243.
 Papilio, 243.
florestan, *Hesperia*, 262.
 Ismene, 262.
floricola, *Terias*, 242.
floricola ceres, *Terias*, 242.
forestan, *Papilio*, 262.
 Rhopalocampa, 262.
frugalis, *Mocis*, 283.
 Noctua, 283.
fulgurata, *Euryphene*, 185. Pl. X, Fig.
11.
fullonica, *Attacus*, 284.
 Ophideres, 284.
 Phalæna, 284.
fulvescens, *Charaxes*, 211.
 Palla, 211.
fulvida, **Deinypena**, 117, **292**. Pl.
XIII, Fig. 16.
fulvinotata, *Cœlonia*, 300.
 Protoparce, 300.
fulvofasciata, **Euphædra preussi**, 116,
174. Pl. XI, Fig. 6.
fulvomacula, *Adolias*, 201.
fumana, *Cymothoë*, 196.
fumida, *Acræa*, 122.
fumosa, *Acræa encedon*, 126.
 Temnora, 301.
 Zonilia, 301.
fumosus, **Papilio ridleyanus**, 116, **247**.
Pl. VI, Fig. 4.
funebis, *Nephele*, 301.
 Nephele funebis, 301.
 Sphinx, 301.
funebis funebis, *Nephele*, 301.
funebis maculosa, *Nephele*, 301.
Furcivena, 326.
fuscata, **Precis stygia**, 116, 147, **148**,
149. Pl. VII, Fig. 5.
fuscivena, *Stracena*, 295.

gabunalis, *Elyra*, 290.
gabunica, *Jana*, 304.
gaika, *Cupido*, 234.
 Lycæna, 234.
 Zizera, 234.

- galena*, *Hesperia*, 250.
galene, *Aterica*, 167.
Papilio, 167.
galenus, *Celenorrhinus*, **250**, 251.
Hesperia, 250.
Plesioneura, 250.
gallienus, *Papilio*, 245.
gambiae, *Diestogyna*, 190.
Euryphene, 190.
gausape, *Euphædra*, **177**, 178, 179.
Romalæosoma, 177.
gemmifera, *Copaxa*, 317.
Tagoropsis, 317.
Geometra hesperia, 272.
Geometridæ, 114, **307**, 314, 315.
Geometrinæ, 314.
geometroides, *Deinypena*, 291.
Gerydus, 218.
geryon, *Abisara*, 213.
getula, *Philosamia*, 316.
Girpa circumdata, 310.
gladiatoria, *Schausia*, 272.
glagoessa, *Balacra*, 265.
Pseudapiconoma, 265.
Glyphodes, 329.
bonjongalis, 330.
ectargyralis, 330.
ocellata, 330.
sericea, 329.
sinuata, 330.
gnavia, *Dasychira*, 297.
Gnophodes, 132.
chelys, 132.
parmeno, 132.
godarti, *Charaxes*, 205.
Godartia ansellica, 204.
crossleyi, 204.
trajanus, 204.
golo, *Mycalesis*, 136, 137.
golo violascens, *Mycalesis*, 137.
Gonanticlea, **311**, 312.
langaria, 117, **311**. Pl. XIV, Fig. 9.
gonessa, *Hesperia*, 256.
Goniloba cretacea, 256.
Gonimbrasia obscura, 317.
goniogramma, *Diestogyna*, 189.
Gonopterinae, 275.
gottbergi, *Pseudacræa*, 165.
Grammodes, 283.
benitensis, 283.
stolida, 283.
grandiplaga, **Phasicnecus**, 117, **304**.
Pl. XIV, Fig. 14.
gregorii, *Precis*, 148.
Precis stygia, 147, **148**, 149. Pl. VII,
Fig. 4.
grisea, *Hyda*, 250.
Pterygospidea, 250.
Sarangesa, 250.
gruenbergi, *Xanthospilopteryx*, 271.
guineënsis, *Euchromia*, 266.
Zygæna, 266.
Hadeninae, 272.
hadrianus, *Charaxes*, 208.
hæmatica, *Metarctia*, 264.
Hamanumida, 167.
dædalus, 167.
dædalus meleagris, 167.
meleagris, 167.
hampsoni, **Anua**, 117, **280**.
hapale, *Terias*, 242.
Harma achlys, 193.
adelina, 199.
altisidora, 199.
chalcis, 193.
coccinata, 201.
cyclades, 195.
cyriades, 198.
jodutta, 198.
ogova, 202.
reinholdi, 194.
theobene, 194.
uselda, 200.
harpax, *Axiocerses*, 225, **226**.
Papilio, 226.
harpyia, *Kallimula*, 149, **152**.
Kallimula pelarga, 150.
Papilio, 152.
Precis, 152.
hatita, *Hypocycæna*, 223.
hecatæa, *Lachnoptera*, 142.
hecate, *Amauris*, 120.
helcita, *Aletis*, 311.
Papilio, 311.
helcitoides, *Phægorista*, 270.

- Heliophisma, 280.
 catocalina, 280.
 Henotesia, 141.
 eliasis, 142.
 peitho, 142.
 perspicua, 141.
 phæa, 141.
 Hepialidæ, 253.
 Herculia, 326.
heritsia, *Cupido*, 230.
 Lycæna, 230.
 Phlyaria, 230.
 herminia, *Cymothoë*, 116, **196**. Pl. VIII,
 Fig. 1 and 4.
herminia poënsis, *Cymothoë*, 116,
 196. Pl. VIII, Fig. 2.
 Herse, 299.
 convolvuli, 299.
Hespagarista tigrina, 271.
hesparia, *Geometra*, 272.
 Massagidia, 272.
 Hesperia, 255.
 borbonica, 257.
 cænira, 261.
 calpis, 261.
 coanza, 259.
 cylinda, 261.
 dacela, 261.
 dromus, 255.
 florestan, 262.
 galena, 250.
 galenus, 250.
 gonessa, 256.
 hippocrates, 233.
 laronia, 256.
 mathias, 257.
 plinius, 231.
 plœtzi, 255.
 pulvina, 258.
 unicolor, 262.
 Hesperiidæ, 109, 112, 113, 114, **249**.
 Hesperinæ, 250.
 hesperus, *Papilio*, 245.
 Heterocera, 109, **262**.
heterogyna, *Stethotrix*, 252.
 Heteronygmia clathrata, 299.
 Heterospila, 289.
 calescens, 290.
 rubida, 117, **289**. Pl. XIII, Fig. 12.
 hewitsoni, *Bicyclus*, 132.
 Cymothoë, 197.
 hewitsoni nanodes, *Bicyclus*, 132.
 hiarbas, *Eurytela*, 157.
 Papilio, 157.
 Hidari, 261.
 cænira, 261.
 hilda, *Ctenocompa*, 299.
 hildebrandti, *Charaxes*, 208.
 Nymphalis, 208.
hildoides, *Lælia*, 117, **298** (Fig. 5).
Hipparchia asterope, 142.
hippocoön, *Papilio*, 244.
hippocrates, *Cupido*, 233.
 Cupidopsis, 233.
 Hesperia, 233.
 Hippotion, 302.
 balsaminæ, 303.
 celerio, 302.
 eson, 303.
 osiris, 302.
 hobleyi, *Pseudacræa*, 165.
 hollandi, *Charaxes etheocles*, 209.
 Libyoclanis, 300.
homeyeri, *Hypolycæna*, 222.
 Oxyliodes, 222. Pl. XII, Fig. 5.
 hostilia warburgi, *Pseudacræa*, 164.
hyalinata, *Amphigonia*, 117, **288**. Pl.
 XIII, Fig. 11.
 hyalites, *Amauris*, 120.
 hybrida, *Euphædra eleus*, 170.
hybridus, *Euphædra eleus*, 171.
 Hyda, 250.
 grisea, 250.
 micacea, 250.
 Hydrocampinæ, 327.
Hylemera flavibasis, 310.
Hymenia recurvalis, 327.
Hypanartia delius, 143.
 Hypena, 291.
 Hypeninæ, 290.
 Hyphenophora, 307.
 palumbata, 307.
 perlimbata, 307.
Hypochroma ruginaria, 314.
 Hypochrosis, 309.
 massagaria, 309.

- Hypoleucis, 256.
 cretacea, 256.
 Hypolimnas, 154.
 anthedon, 157.
 bartteloti, 116, **155**, 156.
 bartteloti oblitterata, 116, **156**. Pl.
 VI, Fig. 5.
 cissalma, 155.
 dubia, 156.
 inaria, 154.
 mechowi, 155.
 mississippi, 154.
 monteironis, 155.
 salmacis, 154.
 Hypolycæna, 223.
 antifaunus, 223.
 dubia, **223**, 224.
 hatita, 223.
 homeyeri, 222.
 lebona, 223, 224.
 liara, 224.
 hypparchus, Charidea, 324.
 Sphinx, 324.
 Hyreus virgo, 230.

 ialemia, Ceratrichia, 259.
 iccius, Bicyclus, 133.
 Idiomorphus, 133.
 Mycæsis, 133.
Idiomorphus iccius, 133.
 nanodes, 132.
 sebetus, 133.
 ignicincta, Saliunca, 325.
 ignobilis, Mycæsis, 134.
Ilema albicostata, 297.
 ilithya, Byblia, 158.
 illyris, Papilio, 249.
 Imbrasia, 317.
 epimethea, 317.
 obscura, 317, 318.
 imitans, Euphædra, 169. Pl. VII, Fig. 2.
 immaculata, Leptosia medusa, 235.
 Nychitona medusa, 235.
 imperialis, Charaxes, 207.
inanoïdes, **Euphædra**, 116, **175**. Pl.
 XI, Figs. 2 and 3.
 inanum, Euphædra, 175, 176.
 inaria, Hypolimnas, 154.
 incerta, *Pamphila*, 259.
 Pardaleodes, 259.
 indicata, Nacoleia, 328.
 Noctua, 328.
 Phalæna, 328.
 infida, Pieris, 239.
 infirma, Aburina, 286.
 Naxia, 286.
 infracta, Anaphe, 307.
 infusca, Diestogyna doriclea, 190.
 Euriphene, 190.
infuscata, *Acræa*, 126.
 Acræa encedon, 126.
innotata, **Euphædra medon**, 116, **179**.
 Pl. IX, Fig. 6.
 inornata, Mocis, 284.
 Trigonodes, 284.
 inornatus, Leptolina, 256, 257.
 insignis, *Acræa*, 131.
 insignis signina, *Acræa*, 131.
 inspersa, Chrysopoloma, 322.
 intermedia, Abisara, 213.
invaria, *Anace*, 264.
 Metarctia, 264.
 iole, Lachnoptera, 142.
 Papilio, 142.
Iolus antifaunus, 223.
 isis, Castalius, 231.
 Cupido, 231.
 Papilio, 231.
Ismene bixæ, 262.
 florestan, 262.
 unicolor, 262.
 itonia, Ypthima, 142.
 ituria, Lycænesthes, 227.
 iturina, Euryphene, 185.

 ja, Abantis, 254.
 jalema, *Acræa*, 130.
 Jana, 303.
 camerunica, **303**, 304.
 eurymas, 303.
 gabunica, 304.
 marmorata, 304.
 nobilis, 304.
 strigina, 304.
 jobates, Cupidopsis, 233.
 jodutta, *Acræa*, 123.

- Cymothoë*, 198.
Harma, 198.
Papilio, 123.
jodutta dorotheæ, *Acræa*, 123.
johnstoni, *Cymothoë*, 197.
Junonia, **144**, 145, 146, 149.
 cebrene, 145.
 ceryne, 149.
 clelia, 144, 146.
 lavinia, 146.
 œnone, 145, 146.
 orithya, 144, 146.
 orithya madagascariensis, 144.
 sophia, 145.
 westermanni, **145**, 146.

kahldeni, *Charaxes*, 209.
kahli, *Diestogyna*, 116, **191**. Pl. XII,
 Fig. 13.
 Leucoperina, 117, **296**.
Kallima, 146, 150, **154**.
 ansorgei, 154.
 cymodoce, 154.
 rattrayi, 154.
 rumia, 154.
Kallimula, 116, 146, 147, **149**, 150.
 actia, 150.
 antilope, 150.
 antilope euama, 150.
 cœlestina, 150.
 eurodoce, 150.
 harpyia, 149, 152.
 leodice, 152.
 milonia, 150, **151**.
osborni, 116, 149, **150**. Pl. VII,
 Figs. 7 and 8.
 pelarga, 150, **152**.
 pelarga harpyia, 150.
 pelarga leodice, 150.
 sinuata, 150, **151**.
karschi, *Euphædra*, 179.
kersteni, *Lycænesthes larydas*, 228.
Kharsanda æthiops, 232.
kowara, *Precis*, 151.

labdaca, *Dichora*, 212.
 Libythea, **212**, 213.
lachares, *Lycænesthes*, 228.

Lachnocnema, 220.
 luna, 221.
 magna, 221.
 reutlinger, 221.
Lachnoptera, 142.
 iole, 142.
 hecatæa, 142.
lacista, *Deinypena*, 291.
Lælia, **298**, 299.
 hildoides, 117, **298** (Fig. 5).
 lignicolor, 298.
 soloides, 117, **299**. Pl. XIV, Fig. 7.
 lætitia, *Euryphene*, 186.
Lampides, 222.
langaria, *Gonanticlea*, 117, **311**. Pl.
 XIV, Fig. 9.
langi, *Callocossus*, 117, **318**. Pl. XIV,
 Fig. 8.
 Cymothoë, 116, **197**. Pl. VIII,
 Figs. 7 and 8.
 Epitola, 116, **217**. Pl. XII, Fig. 10.
 Mycælesis, 116, **139**, 140. Pl. X,
 Fig. 10.
 Myopsyche, 116, **262**, 263 (Fig. 2).
laodice, *Charaxes*, 210.
 Papilio, 210.
laronia, *Hesperia*, 256.
 Osmodes, 256.
 Plastingia, 256.
Larentiina, 311.
larydas, *Lycænesthes*, 228.
 Papilio, 228.
larydas kersteni, *Lycænesthes*, 228.
Lasiocampa rudis, 322.
Lasiocampidæ, 320.
latefasciata, *Euphædra preussi*, 116,
 175. Pl. XI, Fig. 8.
lathetica, *Deinypena*, 291.
latifimbriata, *Zeritis*, 225.
lativittata, *Neptis agatha*, 160.
latona, *Cyligramma*, 277.
 Noctua, 277.
latreillei, *Ægocera*, 271.
latreillii, *Ægocera*, 271.
lavinia, *Junonia*, 146.
lebona, *Hypolycæna*, 223, 224.
leda, *Melanitis*, 131.
leda africana, *Melanitis*, 131.

- Leipoxais, 320, 321.
punctulata, 117, **320**. Pl. XIV,
 Figs. 1 and 2.
 Lemoniidae, 213.
 Leocyma, 277.
congoënsis, 117, **277**. Pl. XIII,
 Fig. 13.
 leodice, Kallimula, 152.
 Kallimula pelarga, 150.
 Papilio, 152.
 Precis, 152.
 leonidas, Papilio, 249.
 lepeletieri, Leptalina, 256, 257.
 Leptalina, **256**, 257.
 inornatus, 256, 257.
 lepeletieri, 256, 257.
niangarensis, 116, 250, **256**, 257.
 Pl. XII, Fig. 3.
 tsita, 256, 257.
 unicolor, 256.
 leptoglana, *Mycalesis*, 139.
 Leptosia, 235.
 medusa, 235.
 medusa immaculata, 235.
 nupta, 236.
 lermanni, Neptis, 164.
 lesbonax, *Euryphene*, 188.
 lethe, Euchromia, 265.
Zygæna, 265.
Leucania apparata, 273.
prominens, 272.
Leucochitonia lucetia, 252.
 leucogaster, Abantis, 254.
 leucographa, Acræa, 131.
Leucoma nitida, 295.
 leuconoë, Deilemera, 268.
Nyctemera, 268.
 Leucoperina, 296.
 atroguttata, 296.
kahli, 117, **296**.
leucopygus, *Apaustus*, 255.
 levubu, Abantis, 255.
 liara, Hypolycæna, 224.
libentina, *Liptena*, 217.
 Pseuderesia, 217.
 Libyoclanis, 300.
 hollandi, 300.
 Libythea, 212.
 labdaca, **212**, 213.
 Libytheidæ, 212.
lichas bebra, *Charaxes*, 212.
 Philognoma, 212.
 ligata, *Catacroptera cloanthe*, 152, 153.
 lignicolor, Lælia, 298.
 Limacodidæ, 323.
 limniace, Danais, 119.
Liparis crocicollis, 296.
Liptena libentina, 217.
milca, 144.
 Lipteninae, 112, **214**.
 Lithosiinae, 266.
litura, *Noctua*, 273.
 Prodenia, 273.
 lofu, Abantis, 255.
 lormieri, Papilio menestheus, 247.
 losinga, Euphædra, 180.
Romalæosoma, 180.
lucasi, **Euryphene**, 116, **183**. Pl. IX,
 Figs. 4 and 5.
 lucetia, Eagris, 252.
Leucochitonea, 252.
 lucretia, Abantis, 255.
 Papilio, 165.
 Pseudacræa, 165.
 lucretius, Charaxes, 207.
 Papilio, 207.
 luna, Lachnocnema, 221.
lunata, *Lycoselene*, 274.
 Risoba, 274.
 lunulata, Lycænesthes, 227.
 lurida, Cymothoë, 201.
 lutea, Metarctia, 264.
 luteibarba, Rhodogastria, 267.
 luteipes, Stilpnotia, 295.
 luteola, Euryphene, 188.
 lutescens, Diacrisia, 267.
Spilosoma, 267.
lutzi, **Triclema**, 116, **229**. Pl. XII, Fig.
 2.
 lyæus, Papilio nireus, 246.
Lycæna antanossa, 234.
asopus, 232.
carana, 231.
cyara, 230.
gaika, 234.
heritsia, 230.

- mirza*, 231.
ornata, 234.
osiris, 232.
patricia, 233.
togara, 233.
Lycænesthes, 227.
 ituria, 227.
 lachares, 228.
 larydas, 228.
 larydas kersteni, 228.
 lunulata, 227.
 makala, 228.
 musagetes, 227.
 pyroptera, 229.
 rufomarginata, 228.
 scintillula, 229.
 silvanus, 227.
 thyrsis, 227.
Lycænidae, 112, 113, **213**, 222.
Lycæninæ, 218.
lycia, *Acræa encedon*, 125.
 Papilio, 125.
lycoa, *Acræa*, 123.
Lycoselene lunata, 274.
Lymantria, 297.
Lymantriidæ, 295.
lysimon, *Cupido*, 234.
 Papilio, 234.
 Zizera, 234.

mabillei, *Xanthospilopteryx*, 270.
macaria, *Papilio*, 122.
 Planema, 122.
macarina, *Acræa*, 122.
Macroglossa westermanni, 302.
maculata, *Sape*, 250.
 Sarangesa, 250.
 Terias brenda, 241.
maculosa, *Bombyx*, 267.
 Diacrisia, 267.
 Nephele funebris, 301.
madagascariensis, *Crenis*, 159.
 Junonia orithya, 144.
magna, *Lachnocnema*, 221.
magus, *Erebus*, 278.
 Cyligramma, 278.
makala, *Lycænesthes*, 228.
malathana, *Cupido*, 232.

mandanes, *Mycalesis*, 134.
mandinga, *Euryphene*, 184.
mangoënsis, *Epitola*, 218.
mania, *Achæa*, 282.
mardania, *Euryphene*, 187.
 Papilio, 187.
margaritaceus, *Castalius*, 231.
marginepunctata*, *Charaxes proto-
***clea*, 116, 206.**
margin-punctata, *Deinypena*, 291.
marina, *Amata*, 263.
 Syntomis, 263.
marmorata, *Jana*, 304.
Marpesiinæ, 159.
marpessa, *Neptis*, 160.
martius, *Mycalesis*, 136, 137.
Maruca, 331.
 testulalis, 331.
massagaria, *Hypochrosis*, 309.
Massagidia, 272.
 hesparia, 272.
materna, *Noctua*, 285.
 Ophideres, 285.
 Phalæna, 285.
mathias, *Chapra*, 257.
 Hesperia, 257.
maura, *Arcte*, 277.
 Coeytodes, 277.
mauritia, *Noctua*, 268.
mawamba, *Diestogyna*, **189**, 191.
***maxima*, *Euphædra xypete*, 116, 178.**
maximiniana, *Euryphene*, 187. Pl. VII,
 Fig. 10.
mechowi, *Charaxes*, 205.
 Charaxes eudoxus, 205.
 Diadema, 155.
 Hypolimnas, 155.
mechowiana, *Papilio cypræafla*, 245.
mechowianus, *Papilio*, 245.
***medjaria*, *Acidalia*, 117, 312 (Fig. 6).**
***medjensis*, *Ctenogyna*, 117, 305. Pl.**
XIV, Fig. 10.
***Proterozeugis*, 117, 325. Pl. XIV,**
Fig. 12.
***Telipna*, 116, 214. Pl. XII, Fig. 8.**
***Xanthospilopteryx*, 117, 271. Pl.**
XIII, Fig. 1.
medon, *Euphædra*, 116, 179, 180.

- Papilio*, 179.
medon innotata, **Euphædra**, 116, 179.
 Pl. IX, Fig. 6.
medontias, *Bicyclus*, 116, 132, 133.
medontias obsoletus, **Bicyclus**, 116,
 132. Pl. VII, Fig. 1.
medusa, *Leptosia*, 235.
Papilio, 235.
medusa immaculata, *Leptosia*, 235.
Nychitona, 235.
Megadrepæna, 320.
cinerea, 320.
megæra, *Euchloron*, 302.
Euchloron megæra, 302.
Sphinx, 302.
megæra megæra, *Euchloron*, 302.
Megalopalpus, 218.
bicoloraria, 218, 220.
metaleucus, 218, 220.
similis, 218, 220.
simplex, 218, 220.
zymna, 218, 219, **220**.
Meganaclia, 263.
carnea, 263.
perpusilla, 263.
Melanitis, 131.
africana, 131.
ansorgei, 132.
bammakoo, 131.
leda, 131.
leda africana, 131.
melanomitra, *Oxylides*, 223.
melanops, *Diestogyna*, 189.
meleagris, *Hamanumida*, 167.
Hamanumida dædalus, 167.
Papilio, 167.
melicerta, *Neptis*, 164.
Papilio, 164.
Melinoessa, 308.
cresaria, 308.
stellata, 308.
Melittia auristrigata, 331.
melusina, *Mycalesis*, 135.
Papilio, 135.
menestheus, *Papilio*, 247.
menestheus lormieri, *Papilio*, 247.
menippe, *Acræa*, 130.
mesochloris, *Parasa*, 323.
Mesoxantha, 158.
ethosea, 158.
Metagarista, 271.
triphænoides, 271.
Metaleptina, 276.
digramma, 276.
metaleucus, *Megalopalpus*, 218, 220.
metanira, *Neptis*, 161.
metaprotea, *Acræa*, 123.
Metarctia, **264**, 265.
chapini, 116, **264**. Pl. XIII, Fig. 4.
erubescens, 264.
hæmatica, 264.
invaria, 264.
lutea, 264.
perpusilla, 263.
rubripuncta, 265.
metella, *Neptis*, 160.
Methorasa, 280.
eximia, 280.
micacea, *Hyda*, 250.
micans, *Euryphene absolon*, 182.
Micronia erycinaria, 318.
micylus, *Everes*, 233.
micylus togara, *Cupido*, 233.
milca, *Liptena*, 144.
Vanessula, 144.
Miletus zymna, 220.
milonia, *Kallimula*, 150, 151.
Precis, 151.
milyas, *Mycalesis*, 138.
minor, **Eudæmonia brachyura**, 117,
316.
Minucia david, 280.
producta, 279.
miriam, *Mycalesis*, 135.
Papilio, 135.
mirza, *Azanus*, 231.
Cupido, 231.
Lycæna, 231.
misippus, *Hypolimnas*, 154.
Papilio, 154.
Mocis, **283**, 284.
frugalis, 283.
inornata, 284.
repanda, 283.
undata, 284.
mollitia, *Mycalesis*, 136.

- Mominæ, 284.
monteironis, *Diadema*, 155.
 Hypolimnas, 155.
 Monura, 212.
 zingha, 212.
 mormoides, Achæa, 282.
morosa, **Deinypena**, 117, **291**. Pl.
 XIII, Fig. 18.
morosa pallidior, **Deinypena**, 117,
 292.
 mozambica, Spindasis, 224.
 multilinea, Ercheia, 282.
multilineata, **Deinypena**, 117, **292**.
 Pl. XIV, Fig. 5.
murina, *Ergolis*, 158.
 musagetes, Lycænesthes, 227.
 muscosa, Dasychira, 297.
 Notohyba, 297.
 musivalis, Agathodes, 329.
 Mycalesis, 133.
 agraphis, 141.
 nalis, 133.
 asochis, 134.
 auricruda, 134, **135**.
 baumanni, **137**, 138, 140.
 chapini, 116, **140**. Pl. VII, Fig. 9.
 desolata, 139.
 dubia, 137.
 eliasis, 142.
 evenus, 139.
 golo, 136, **137**.
 golo violascens, 137.
 iccius, 133.
 ignobilis, 134.
 langi, 116, **139**, 140. Pl. X, Fig. 10.
 leptoglæna, 139.
 mandanes, 134.
 martius, 136, 137.
 melusina, 135.
 milyas, 138.
 miriam, 135.
 mollitia, 136.
 nebulosa, 141.
 obscura, 136.
 pavonis, 138.
 peitho, 142.
 perspicua, 141.
 phæa, 141.
 safitza, 139, 140.
 safitza æthiops, 139.
 safitza evenus, 139.
 sambulos, 134.
 sandace, **135**, 138.
 sebetus, 133.
 sophrosyne, 136.
 tæniæ, 134.
 tolosa, 141.
 uniformis, 135.
 vulgaris, 141.
 vulgaris tolosa, 141.
 xeneas, 133.
 mycerina, Charaxes, **210**, 211.
 Nymphalis, 210.
 Mylantria, 297.
 xanthospila, 297.
 Mylothris, 236.
 bernice, 237.
 chloris, 236.
 poppea, 237.
 rubricosta, 237.
 sjöstedti, 236.
 spica, 116, 117, **236**, 237.
 spica donovani, 116, 117, **236**, 237.
 sulphurea, 237.
 Myopsyche, 262.
 langi, 116, **262**, 263 (Fig. 2).
 ochsenheimeri, 263.
 Nacaduba, 232.
 æthiops, 232.
 stratola, 232.
 Nacoleia, 328.
 indicata, 328.
 pæonalis, 328.
namaquaana, *Abantis*, 254.
 nanodes, *Bicyclus hewitsoni*, 132.
 Idiomorphus, 132.
 Naroma, 295.
 signifera, 295.
Nartheccusa tenuiorata, 310.
natalensis, *Aphnæus*, 224.
 Asterope, 159.
 Crenis, 159.
 Ctenogyna, 306.
 Spindasis, 224.
 Naxia, 286.

- apioiplaga*, 282.
*infirm*a, 286.
 neander, *Acromecis*, 260.
Andronymus, 260.
*Apau*stus, 260.
nebulosa, *Mycalis*, 141.
Negla, 310.
tenuiorata, 310.
nelsoni, *Acræa*, 121.
 Planema, 121. Pl. VI, Figs. 1 and 2.
nemetes, *Neptis*, 160.
neobule, *Acræa*, 131.
Nephele, 300.
accentifera, 301.
bipartita, 301.
comma, 300.
*funeb*ris, 301.
*funeb*ris *funeb*ris, 301.
*funeb*ris *maculosa*, 301.
peneus, 301.
peneus peneus, 301.
neptidina, *Pseudathyma*, 203.
Neptidinæ, 159.
Neptidomima, 116, 164.
exaleuca, 116, 164.
Neptidopsis, 157.
ophione, 157.
Neptis, 159, 164.
agatha, 160. Pl. VI, Figs. 7 and 8.
agatha lativittata, 160.
biafra, 162, 163. Pl. VIII, Fig. 3.
biafra continuata, 162.
continuata, 162.
exaleuca, 116, 164.
lermanni, 164.
marpessa, 160.
melicerta, 164.
metanira, 161.
metella, 160.
nemetes, 160.
nicobule, 164.
nicomedes, 162.
nicomedes quintilla, 162.
nicoteles, 163.
nysiades, 161, 162.
pasteuri, 160.
*sac*lava, 160.
seeldrayersi, 161.
strigata, 163.
niangarensis*, *Leptalina, 116, 250, 256, 257. Pl. XII, Fig. 3.
niavius, *Amauris*, 119.
Papilio, 119.
nichetes, *Charaxes*, 210.
nicobule, *Neptis*, 164.
nicomedes, *Neptis*, 162.
nicomedes quintilla, *Neptis*, 162.
nicoteles, *Neptis*, 163.
nigeriana, *Abantis*, 254.
nigricans*, *Eutelia, 117, 274. Pl. XIII, Fig. 8.
nigriplaga, *Polyptychus*, 300.
nireus, *Papilio*, 245.
nireus lyæus, *Papilio*, 246.
Nisoniades flesus, 251.
ophion, 251.
nitida, *Leucoma*, 295.
njami, *Euphædra preussi*, 172, 173.
njamnjami, *Euphædra preussi*, 173, 174, 175.
nobicea, *Papilio*, 245.
nobilis, *Charaxes*, 208.
Jana, 304.
Noctua algira, 283.
chlorea, 285.
frugalis, 283.
indicata, 328.
latona, 277.
litura, 273.
materna, 285.
mauritia, 268.
orichalcea, 284.
pancratii, 273.
punctum, 289.
recurvalis, 327.
repanda, 283.
stolida, 283.
undata, 284.
vidua, 268.
Noctuidæ, 272, 294.
Noctuinæ, 284.
Nola, 266.
bananæ, 116, 266 (Fig. 3).
Nolinæ, 266.
notata*, *Euphædra preussi, 116, 173. Pl. XI, Fig. 1.

- nothus, *Ceratrichia*, 259.
Notodontidae, 305.
Notohyba muscosa, 297.
nuba, *Ægeria*, 331.
Sesia, 331.
nubila, *Chrysopoloma*, 117, **322** (Fig. 7).
Papilio demodocus, 246.
nubilata, *Dermaleipa*, 117, **278**. Pl. XIII, Fig. 15.
Nudaurelia, 318.
 emini, 318.
numenes, *Charaxes*, 207.
 Nymphalis, 207.
nupta, *Leptosia*, 236.
 Nychitona, 236.
nyanza, *Telipna*, 214, 215.
Nychitona medusa immaculata, 235.
 nupta, 235.
Nyctemera fallax, 268.
 leuconoë, 268.
Nyctipao, 277.
 valceri, 277.
 walkeri, 277.
Nymgia orestes, 297.
Nymphalidae, 112, 113, **142**.
Nymphalinae, 164.
Nymphalis candiope, 209.
 etesipe, 206.
 hildebrandti, 208.
 mycerina, 210.
 numenes, 207.
 sangaris, 200.
nysiades, *Neptis*, **161**, 162.
Nyssia vivida, 323.

oberthüri, *Acræa*, 127.
 Catuna, 166.
oberthüri confluens, *Acræa*, 127.
obliqua, *Ægocera*, 272.
obliterata, *Hypolimna bartteloti*, 116, **156**. Pl. VI, Fig. 5.
Oboronia, 234.
 elorea, 235.
 ornata, 116, 234.
ornata flava, 116, **235**.
 ornata vestalis, 235.
 plurilimbata, 234.
 punctata, 234.
Obrussa catenata, 308.
obscura, *Deinyppena*, 117, **294**. Pl. XIV, Fig. 11.
 Gonimbrasia, 317.
 Imbrasia, 317, 318.
 Mycalesis, 136.
obscurior, *Catacroptera*, 153.
obsoletus, *Bicyclus medontias*, 116, **132**. Pl. VII, Fig. 1.
occidentalis, *Enmonodia*, 278.
occidentarium, *Asterope*, 159.
 Crenis, 159.
ocellata, *Glyphodes*, 330.
ochrata, *Acidalia*, 312.
ochsenheimeri, *Myopsyche*, 263.
octavia, *Precis*, 145, **146**, 147, 150.
 Papilio, 146.
octavia amestris, *Precis*, 147.
octavia sesamus, *Precis*, 147.
octo, *Amyna*, 289.
Œcophoridae, 331.
Œcura crucifera, 297.
cenone, *Junonia*, 145, 146.
ogova, *Cymothoë*, 116, 201, **202**. Pl. X, Figs. 3 and 4.
 Harma, 202.
ogova rubescens, *Cymothoë*, 116, **203**.
ogovens, *Charaxes*, 210.
 Ctenogyna, 306.
 Redoa, 295.
 Stilpnotia, 295.
 Syntomis, 263.
Olapa, 296.
 flabellaria, 296.
Ophideres, 284.
 divitiosa, 285.
 fullonica, 284.
 materna, 285.
 princeps, 285.
Ophiodes catocalina, 280.
 parallelipipeda, 279.
ophion, *Nysionades*, 251.
 Papilio, 251.
ophione, *Neptidopsis*, 157.
 Papilio, 157.
Ophiusa albifimbria, 282.
opis, *Cynandra*, 166.

- Papilio*, 166.
orcas, *Aphnæus*, 224.
Thecla, 224.
orestes, *Chærotriche*, 297.
Nygma, 297.
orestia, *Acræa*, 124.
orichalcea, *Noctua*, 284.
Phytometra, 284.
orina, *Acræa*, 124.
orithya, *Junonia*, 144, 146.
Precis, 144, 146.
orithya madagascariensis, *Junonia*, 144.
ornata, *Oboronia*, 116, 234.
Lycæna, 234.
***ornata flava*, *Oboronia*, 116, 235.**
ornata vestalis, *Oboronia*, 235.
ornatus, *Cupido*, 234.
orthographus, *Polyptychus*, 300.
Orthostixina, 311.
***osborni*, *Kallimula*, 116, 149, 150. Pl. VII, Figs. 7 and 8.**
osiris, *Cupido*, 232.
Deilephila, 302.
Hippotion, 302.
Lycæna, 232.
Osmodes, 256.
fan, 259.
laronia, 256.
Osteosema, **313**, 314.
***phyllobrota*, 117, 313. Pl. XIV, Fig. 6.**
oxione, *Euryphene*, 184.
Oxylides, 222.
homeyeri, 222. Pl. XII, Fig. 5.
melanomitra, 223.
Ozarba, 289.
Pachyzancla, 331.
bipunctalis, 331.
Pacidara venustissima, 274.
pactolica, *Amphicallia*, 268. Pl. XIII, Fig. 2.
pactolicus, *Amphicallia*, 268.
Pleretes, 268.
pagenstecheri, *Ergolis*, 158.
Pagyda, 327.
caritalis, 327.
traducalis, 327.
Palla, 211.
decius, 211.
fulvescens, 211.
ussheri, 211.
vologeses, 211.
***pallidior*, *Deinypena morosa*, 117, 292.**
palumbata, *Hyphenophora*, 307.
Palyas perlimbata, 307.
Pamphila cœnira, 261.
calpis, 261.
incerta, 259.
sator, 259.
Pamphilina, 255.
Panacra rutherfordi, 303.
pancratii, *Brithys*, 273.
Noctua, 273.
paphianus, *Philognoma*, 212.
Charaxes, 212.
Papilio, 114, **244.**
absolon, 182.
æthiops, 153.
agatha, 160.
alcippus, 118.
amestris, 147.
angolanus, 248.
antheus, 249.
anticlea, 208.
antimachus, 244.
argia, 243.
bæticus, 232.
bixæ, 262.
boisduvalianus, 244.
bonasia, 127.
brigitta, 242.
bromius, 246.
brutus, 204.
cacta, 153.
cæcilia, 129.
cænïs, 198.
camillus, 159.
calypso, 239.
cardui, 143.
castor, 205.
cepheus, 129.
charcedonius, 249.
chelys, 132.
chloris, 236.

- chrysippus*, 118.
clelia, 144.
cloanthe, 152.
cænobita, 166.
columbina, 143.
creona, 238.
crithea, 166.
cynorta, 244.
cyprræafila mechowiana, 245.
dædalus, 167.
damocles, 119.
dardanus, 244.
decius, 211.
delius, 143.
demodocus, 246.
demodocus nubila, 246.
demoleus, 246.
dryope, 157.
dubius, 156.
edipus, 259.
egina, 130.
eleus, 169.
encedon, 125.
enotrea, 158.
epæa, 120.
epaphia, 238.
etheocles, 208.
ethosea, 158.
eudoxus, 205.
eupale, 209.
evippe, 240.
flesus, 251.
florella, 243.
forestan, 262.
galene, 167.
gallienus, 245.
harpax, 226.
harpypia, 152.
helcita, 311.
hesperus, 245.
hiarbas, 157.
hippocoön, 244.
illyris, 249.
iole, 142.
isis, 231.
jodutta, 123.
laodice, 210.
larydas, 228.
leodice, 152.
leonidas, 249.
lucretia, 165.
lucretius, 207.
lycia, 125.
lysimon, 234.
macaria, 122.
mardania, 187.
mechowianus, 245.
medon, 179.
medusa, 235.
meleagris, 167.
melicerta, 164.
melusina, 135.
menestheus, 247.
menestheus lormieri, 247.
miriam, 135.
misippus, 154.
niavius, 119.
nireus, 245.
nireus lyæus, 246.
nobicea, 245.
octavia, 146.
ophion, 251.
ophione, 157.
opis, 166.
parrhasia, 124.
pelarga, 152.
phegea, 131.
phocion, 259.
policenes, 249.
pollux, 205.
pylades, 248.
rhodope, 117, 236, 237.
ridleyanus, 116, **247**. Pl. VI, Fig. 3.
ridleyanus fumosus, 116, **247**.
 Pl. VI, Fig. 4.
salmacis, 154.
semire, 165.
silvanus, 227.
sophia, 145.
sophus, 186.
telicanus, 231.
terea, 149.
terpsichore, 128.
theorini, 248.
tiridates, 207.
tyndaræus, 248.

- ucalegon*, 248.
ucalegonides, 248.
zalmoxis, 244.
zenobia, 245.
zetes, 130.
zingha, 212.
Papilionidæ, 235.
Papilioninæ, 244.
Parachalciope, 283.
 benitensis, 283.
paradisea, Abantis, 254.
Paragerydus, 218.
Parallelia, **283**, 286.
 algira, 283.
parallelipipeda, *Dermaleipa*, 279.
 Ophiodes, 279.
Parasa, 323.
 mesochloris, 323.
 trapezoides, 323.
 vivida, 323.
Pardaleodes, 259.
 bule, 259.
 edipus, 259.
 fan, 259.
 incerta, 259.
 rutilans, 251.
Pardopsis punctatissima, 216.
pardus, *Entomogramma*, 278.
parhassus, *Salamis*, 153.
parhassus æthiops, *Salamis*, 153.
parmeno, *Gnophodes*, 132.
Parnara, **257**, 258.
 alberti, 258.
 batangæ, 258.
 borbonica, 257.
parrhasia, *Acræa*, 124.
 Papilio, 124.
parsimon, *Cupido*, 233.
partita, *Euryphene*, 185.
pasteuri, *Neptis*, 160.
patricia, *Cupido*, 233.
 Lycæna, 233.
Patula walkeri, 277.
paucicolor, *Xanthopiloptyx*, 271.
pauli, *Pentila*, 216.
pavonis, *Mycalesis*, 138.
peitho, *Henotesia*, 142.
 Mycalesis, 142.
pelarga, *Kallimula*, 150, **152**.
 Papilio, 152.
 Precis, 152.
pelarga leodice, *Kallimula*, 150.
pelarga harpyia, *Kallimula*, 150.
pelasgius, *Acræa*, 124.
 Acræa peneleos, 124.
peneleos, *Acræa*, 124.
peneleos pelasgius, *Acræa*, 124.
penelope, *Acræa*, 124.
peneus, *Nephele*, 301.
 Nephele peneus, 301.
 Sphinx, 301.
peneus peneus, *Nephele*, 301.
Penicillaria subrubens, 274.
pentapolis, *Acræa*, 125.
pentapolis thelestis, *Acræa*, 125.
Pentila, **215**, 216.
 abraxas, 216.
 auga, 216.
 bimacula, 215.
 clarensis, 215. Pl. XII, Figs. 11 and 12.
 clætensi, 216. Pl. XII, Fig. 9.
 pauli, 216.
perenna, *Acræa*, 129.
perion, *Arxiocerses*, 225, 226.
 Chrysophanus, 226.
periploca, *Ercheia*, 281.
perlimbata, *Hyphenophora*, 307.
 Palyas, 307.
permutans, *Acidalia*, 312.
 Pseudasthena, 312.
perpusilla, *Anace*, 263.
 Meganaclia, 263.
 Metarctia, 263.
perseis, *Euphædra*, 169.
perspicua, *Henotesia*, 141.
 Mycalesis, 141.
petiverana, *Danaïda*, 119.
 Danaïs, 119.
phæa, *Henotesia*, 141.
 Mycalesis, 141.
Phægorista, 270.
 helcitoides, 270.
 similis, 270.
phaëthusa, *Euphædra*, 176.
 Romalæosoma, 176.

- Phalæna bipunctalis*, 331.
chlorea, 285.
ezea, 282.
flabellaria, 296.
fullonica, 284.
indicata, 328.
materna, 285.
phenice, 327.
sinuata, 330.
phalantha, Atella, 143.
phalantha æthiopica, Atella, 143.
Phalera wærdeni, 305.
phantasia, Euryphene, 187.
phaola, Appias, 237.
Pieris, 237.
pharis, Eronia, 243.
Pieris, 243.
pharsalus, Acræa, 126.
Phasicnecus, 304.
grandiplaga, 117, 304. Pl. XIV, Fig. 14.
preussi, 305.
phegea, Elymnioptis, 131.
Papilio, 131.
phenice, *Phalæna*, 327.
Zebroia, 327.
Philognoma, 212.
falcata, 212.
lichas bebra, 212.
paphianus, 212.
Philosamia, 315.
albida, 315.
getula, 316.
plœtzi, 316.
phlegeusalis, Elyra, 290.
Phlyaria, 230.
cyara, 230.
heritsia, 230.
phlyaria, *Cupido*, 230.
phocion, Ceratrichia, 259.
Papilio, 259.
phranza, Euryphene, 185.
phreone, Euryphene sophus, 187.
Phryganodes, 328.
biguttata, 328.
erebusalis, 328.
sex-guttata, 117, 328 (Fig. 9).
phyllobrota, *Osteosema*, 117, 313.
 Pl. XIV, Fig. 6.
Phytometra, 284.
acuta, 284.
orichalcea, 284.
picta, *Charaxes etheocles*, 209.
Pielus, 253.
pieridaria, *Rhamidava*, 117, 307. Pl. XIV, Fig. 13.
Pierinae, 235.
Pieris, 238, 308.
calypso, 239.
creona, 238.
infida, 239.
phaola, 237.
pharis, 243.
rubricosta, 237.
sabina, 238.
solilucis, 239.
thalassina, 243.
theora, 239.
theuszi, 239.
pillaana, Caprona, 252.
Pitthea, 310.
continua, 310.
famula, 310.
famulita, 117, 310. Pl. XIII, Fig. 3.
Planema, 120.
alcinoë, 121.
consanguinea, 121.
dewitzi, 121.
elongata, 121.
epæa, 120.
epiprotea, 121.
macaria, 122.
nelsoni, 121. Pl. VI, Figs. 1 and 2.
poggei, 121.
pseudeuryta, 121.
tellus, 120.
Plastingia charita, 260.
laronia, 256.
Platylesches, 258.
batangæ, 258.
plautilla albofasciata, Euryphura, 193.
Plebeius falkensteini, 230.
punctatus, 234.
Pleretes pactolicus, 268.
plerotica, Abantis, 254.

- Plesioneura galenus*, 250.
plicata, Speiridonia, 278.
pliniius, *Cupido telicanus*, 231.
 Hesperia, 231.
plistonax, Euryphene, 187.
plœtzi, Acleros, 255.
 Hesperia, 255.
 Philosamia, 316.
plurilimbata, *Cupido*, 234.
 Oboronia, 234.
 Thermoniphas, 234.
Plusia, 284.
 acuta, 284.
Plusiinae, 284.
pluto, Euptera, 203.
 Euryphene, 203.
poënsis, **Cymothoë herminia**, 116,
 196. Pl. VIII, Fig. 2.
pæonialis, *Botys*, 328.
 Nacoleia, 328.
poggei, *Eusemia*, 270.
 Planema, 121.
 Xanthospilopteryx, 270.
Polacanthopoda, 271.
 tigrina, 271.
policenes, *Papilio*, 249.
pollux, *Charaxes*, 205.
 Papilio, 205.
Polydesma, 287.
 umbricola, 287.
Polyommatus, 232.
 bæticus, 232.
Polyptychus, 300.
 nigriplaga, 300.
 orthographus, 300.
polyrabda, *Cirphis*, 273.
Pompostolinae, 324.
poppea, *Mylothris*, 237.
porthos, *Charaxes*, 210.
Prasinocyma, 312.
 unipuncta, 312.
pratinas, *Romalæosoma*, 171.
Precis, 144, **145**, 149, 150, 152.
 amestris, 147.
 andremiaja, 146.
 antilope, 147.
 archesia, 146.
 artaxia, 146.
 cebrene, 145.
 ceryne, 146, 149.
 chorimene, 146, 147.
 clelia, 144, 146.
 ethyra, 147.
 gregorii, 148.
 harpyia, 152.
 kowara, 151.
 leodice, 152.
 milonia, 151.
 octavia, 145, **146**, 147, 150.
 octavia amestris, 147.
 octavia sesamus, 147.
 orithya, 144, 146.
 pelarga, 152.
 rhadama, 146.
 simia, 147.
 sinuata, 151.
 sophia, 145.
 stygia, 116, **147**.
stygia fuscata, 116, 147, **148**, 149.
 Pl. VII, Fig. 5.
stygia gregorii, 147, **148**, 149. Pl.
 VII, Fig. 4.
stygia stygia, 147, **148**, 149. Pl.
 VII, Fig. 3.
 terea, 146, **149**.
 trimeni, 147.
 westermanni, 145, 146.
preussi, *Euphædra*, 116, 168, **171**, 172,
 173, 174, 175.
 Phasiencus, 305.
preussi angustior, ***Euphædra***, 116,
 175. Pl. XI, Fig. 7.
preussi fulvofasciata, ***Euphædra***, 116,
 174. Pl. XI, Fig. 6.
preussi latefasciata, ***Euphædra***, 116,
 175. Pl. XI, Fig. 8.
preussi njami, *Euphædra*, **172**, 173.
preussi njamnjami, *Euphædra*, 171, **173**,
 174, 175.
preussi notata, ***Euphædra***, 116, **173**.
 Pl. XI, Fig. 1.
preussi subviridis, ***Euphædra***, 116,
 174. Pl. XI, Fig. 4.
princeps, *Ophideres*, 285.
Problepsis, 313.
 ægretta, 313.

- Procampta*, 252.
 rara, 250, **252**.
Prodenia, 273.
 litura, 273.
producta, *Ancyloxypha*, 260.
 Anua, 117, **279**.
 Anua, 117, 280.
 Minucia, 279.
promelæna, *Stracena*, 295.
prominens, *Cirphis*, 272.
 Leucania, 272.
Proterozexis, 325.
 medjensis, 117, **325**. Pl. XIV, Fig. 12.
protoclea, *Charaxes*, 116, **206**.
protoclea marginepunctata, *Charaxes*, 116, **206**.
Protoparce convolvuli, 299.
 fulvinotata, 300.
protracta, *Pseudacræa*, 165.
protrusa, *Zamarada*, 309.
Pseudacræa, 164.
 clarki, 165.
 clarki egina, 165.
 gottbergi, 165.
 hobleyi, 165.
 hostilia warburgi, 164.
 lucetia, 165.
 protracta, 165.
 semire, 165.
 sibyllina, 203.
Pseudapiconoma glagoessa, 265.
Pseudasthena, 312.
 permutans, 312.
Pseudathyma, 203.
 neptidina, 203.
 sibyllina, 203.
pseudegina, *Acræa*, 128, 129.
pseudegina abadima, *Acræa*, 128.
Pseuderesia, 217.
 libentina, 217.
pseudeuryta, *Planema*, 121.
Pseudogonitis, **275**, 276.
 variabilis, 117, **275**. Pl. XIII, Figs. 5, 6, and 7.
Pseudoneptis, 166.
 cœnobita, 166.
Pseudonotodonta virescens, 297.
Pseudoterpna, **314**, 315.
 chapinaria, 117, **314**. Pl. XIII, Fig. 19.
 ruginaria, 314.
Psychidæ, 331.
psyttalea, *Amauris*, 119.
Pterygospidea boadicea, 251.
 grisea, 250.
 tergemira, 251.
pudens, *Sphingomorpha*, 285.
pulchra, *Balacra*, 265.
pulvina, *Hesperia*, 258.
 Semalea, 258.
 Trichosemeia, 258.
punctata, *Oboronia*, 234.
punctatissima, *Pardopsis*, 216.
punctatus, *Cupido*, 234.
 Plebeius, 234.
punctulata, *Leipoxais*, 117, **320**. Pl. XIV, Figs. 1 and 2.
punctum, *Amyna*, 289.
 Noctua, 289.
pura, *Estigmene*, 267.
purus, *Alpenus*, 267.
pylades, *Papilio*, 248.
Pyralidæ, **326**, 331.
Pyralinæ, 326.
Pyrameis, 143.
 cardui, 143.
Pyraustinae, 327.
Pyrgus dromus, 255.
 spio, 255.
pyroptera, *Lycænesthes*, 229.

quintilla, *Neptis nicomedes*, 162.
quirinalis, *Acræa*, 125.

rara, *Procampta*, 250, **252**.
rattrayi, *Kallima*, 154.
ravola, *Euphædra*, 176.
 Romalæosoma, 176.
rectilinea, *Ægocera*, 271.
recurvalis, *Hymenia*, 327.
 Noctua, 327.
 Zinckenia, 327.
Redoa govomensis, 295.
Reginæ-Elizabethæ, *Cymothoë*, 116, **201**. Pl. X, Figs. 5 and 6.

- regularis, Terias, 242.
 reinholdi, Cymothoë, 194.
 Harma, 194.
 reinholdii, Cymothoë, 194.
 repanda, Mocis, 283.
 Noctua, 283.
 reutlingeri, Lachnocnema, 221.
 rezia, Euphædra, 177.
rezioides, Euphædra, 116, 177. Pl. XI, Fig. 5.
 rhadama, Precis, 146.
 Rhamidava, 307, 308.
 amplissimata, 307.
pieridaria, 117, 307. Pl. XIV, Fig. 13.
 Rhodogastria, 267.
 luteibarba, 267.
 vidua, 268.
 rhodope, Appias, 237.
 Papilio, 117, 236, 237.
 Rhopalocampta, 262.
 bixæ, 262.
 forestan, 262.
 unicolor, 262.
 Rhopalocera, 114, 118.
 Rhynchos, 287.
 avakubi, 117, 287. Pl. XIII, Fig. 10.
 efulensis, 117, 287.
 ridleyanus, *Papilio*, 116, 247. Pl. VI, Fig. 3.
ridleyanus fumosus, Papilio, 116, 247. Pl. VI, Fig. 4.
 Rigema, 305.
 wærdeni, 305.
 Risoba, 274.
 lunata, 274.
 rogersi, Abisara, 213.
 Acræa, 126.
Romalæosoma adonina, 177.
 afzelii, 176.
 coprates, 171.
 gausape, 177, 178.
 losinga, 180.
 phaëthus, 176.
 pratins, 171.
 ravola, 176.
 ruspina, 169.
 spatiosa, 180.
 vetusta, 177.
 xypete, 178.
 rothi, Telipna, 214.
rothioides, Telipna, 116, 214. Pl. XII, Fig. 7.
rotundata, Diestogyna, 116, 191. Pl. XII, Fig. 14.
rubescens, Cymothoë ogova, 116, 203.
rubida, Cymothoë cænis, 116, 198, 199. Pl. IX, Fig. 7.
Heterospila, 117, 289. Pl. XIII, Fig. 12.
rubra, Abantis, 116, 250, 253, 255. Pl. XII, Fig. 1.
 rubricosta, Mylothris, 237.
 Pieris, 237.
 rubripuncta, Metaretia, 265.
rubriventris, Saliunca, 117, 324 (Fig. 8).
 rubrocostata, Euryphene, 188.
 rubrofasciata, Acræa althoffi, 127.
 rudis, Chrysopoloma, 322.
 Lasiocampa, 322.
 rufomarginata, Lycænesthes, 228.
 rufoplagata, Triclema, 229.
ruginaria, Hypochroma, 314.
 Pseudoterpna, 314.
 rumia, Kallima, 154.
 ruspina, Euphædra, 169.
 Romalæosoma, 169.
 rutherfordi, Abisara, 213.
 Centroctena, 303.
 Panacra, 303.
rutherfordii, Abisara, 213.
 rutilans, Celænorrhinus, 251.
 Pardaleodes, 251.
 sabina, Appias, 238.
 Pieris, 238.
 saclava, Neptis, 160.
 safitza, Mycalesis, 139, 140.
 safitza æthiops, Mycalesis, 139.
 safitza evenus, Mycalesis, 139.
 salambo, Acræa, 126.
 Salamis, 153.
 cacta, 153.
 ceryne, 149.

- ethyra*, 147.
parhassus, 153.
parhassus æthiops, 153.
Saliunca, 324.
ignicincta, 325.
rubriventris, 117, **324** (Fig. 8).
thoracica, 324.
salmacis, *Hypolimnas*, 154.
Papilio, 154.
saltusalis, *Cirrhochris* a, 326.
sambulos, *Mycalesis*, 134.
Sameodes, 330.
cancellalis, 330.
trithyalis, 330.
sandace, *Mycalesis*, **135**, 138.
sangaris, *Cymo'hoë*, **200**, 201, 202, 203.
Nymphalis, 200.
Sapæa elegantula, 253.
Sape, 250.
maculata, 250.
Sapelia, **295**, 296.
bipunctata, 117, **295**. Pl. XIV,
 Figs. 3 and 4.
saphirina, *Diestogyna*, 189.
Sarangesa, 250.
grisea, 250.
maculata, 250.
Sarrothripinæ, 274.
sator, *Pamphila*, 259.
Saturniidae, 315.
Satyridae, 131.
Satyrinæ, 131.
Schausia, 272.
gladiatoria, 272.
transiens, 272.
Schcenobiinæ, 326.
scintullula, *Lycænesthes*, 229.
sebetus, *Bicyclus*, 133.
Idiomorphus, 133.
Mycalesis, 133.
seeldrayersi, *Neptis*, 161.
Semalea, 258.
pulvina, 258.
semiaurata, *Charidea*, 324.
Euchromia, 324.
Semiothisa, 308.
semire, *Papilio*, 165.
Pseudacræa, 165.
semivitreata, *Acræa*, 123.
senegalensis, *Terias*, 240, **241**.
senegalensis bisinuata, *Terias*, 241.
sericea, *Botys*, 329.
Desmia, 329.
Glyphodes, 329.
Stemorrhages, 329.
servona, *Acræa*, 123.
sesamus, *Precis octavia*, 147.
Sesia nuba, 331.
severini, *Euryphene*, 186.
sex-guttata, **Phryganodes**, 117, **328**
 (Fig. 9).
sexstriata, *Trichobaptis*, 331.
sibyllina, *Pseudacræa*, 203.
Pseudathyma, 203.
siginna, *Acræa insignis*, 131.
signifera, *Naroma*, 295.
silvanus, *Lycænes hes*, 227.
Papilio, 227.
simia, *Precis*, 147.
similis, *Cirina*, 317.
Megalopalpus, 218, 220.
Phægoris' a, 270.
simplex, *Amphigonina*, 288.
Episparis, 288.
Megalopalpus, 218, 220.
Simplicia, 290.
simplicia, *Ypthima*, 142.
sinuata, *Glyphodes*, 330.
Kallimula, 150, 151.
Phalæna, 330.
Precis, 151.
Sithon antalus, 222.
sjöstedti, *Mylothris*, 236.
sjöstedti, *Xyleutes*, 319.
smaragdalis, *Charaxes*, 207.
solilucis, *Pieris*, 239.
Soloë, 299.
soloides, **Lælia**, 117, **299**. Pl. XIV,
 Fig. 7.
sophia, *Junonia*, 145.
Papilio, 145.
Precis, 145.
sophrosyne, *Mycalesis*, 136.
sophus, *Euryphene*, 186.
Papilio, 186.
sophus phreone, *Euryphene*, 187.

- spatiosa*, Euphædra, 180.
Romalæosoma, 180.
Speiridonia, 278.
 plicata, 278.
sperchia, *Euchromia*, 266.
 Sphinx, 266.
Sphingidæ, 114, **299**.
Sphingomorpha, 285.
 aliena, 117, **285**. Pl. XIII, Fig. 14.
 chlorea, 285.
 pudens, 285.
Sphinx accentifera, 301.
 atropos, 300.
 celerio, 302.
 cerbera, 263.
 convolvuli, 299.
 eson, 303.
 funebis, 301.
 hypparchus, 324.
 megæra, 302.
 peneus, 301.
 sperchia, 266.
spica, Mylothris, 116, 117, **236**, 237.
 Tachyris, 236.
spica donovani, Mylothris, 116, 117, **236**, 237.
Spilosoma curvilinea, 267.
 lutescens, 267.
Spindasis, 224.
 aderna, 225. Pl. XII, Fig. 4.
 chapini, 116, **225**. Pl. XII, Fig. 6.
 crustaria, 224.
 fallax, 225.
 mozambica, 224.
 natalensis, 224.
spio, *Pyrgus*, 255.
 Syrichtus, 255.
staudingeri, *Cymothoë*, 197.
stellata, *Melinoessa*, 308.
Stemorrhages sericea, 329.
Stethotrix heterogyna, 252.
Stilpnotia, 295.
 luteipes, 295.
 ogovensis, 295.
stolida, *Grammodes*, 283.
 Noctua, 283.
Stracena, 295.
 fuscivena, 295.
 promelæna, 295.
stratola, *Nacaduba*, 232.
strigata, *Neptis*, 163.
strigina, *Jana*, 304.
Striphnopterygidæ, 303.
stygia, *Precis*, 116, **147**.
 Precis stygia, 147, **148**, 149. Pl. VII, Fig. 3.
stygia fuscata, *Precis*, 116, 147, **148**, 149. Pl. VII, Fig. 5.
stygia gregorii, *Precis*, 147, **148**, 149. Pl. VII, Fig. 4.
stygia stygia, *Precis*, 147, **148**, 149. Pl. VII, Fig. 3.
subrubens, *Eutelia*, 274.
 Penicillaria, 274.
subsignata, *Achæa*, 281.
 Ercheia, **281**, 282.
subtentyris, *Euryphene*, 181.
subviridis, *Euphædra preussi*, 116, **174**. Pl. XI, Fig. 4.
sulphurea, *Mylothris*, 237.
supponina, *Acræa*, 127.
 Acræa bonasia, 127.
Syllepta, 329.
Syntomidæ, 262.
Syntomis, 263.
 bivittata, 263.
 cerbera, 263.
 marina, 263.
 ogovensis, 263.
Syrichtus spio, 255.

Tachyris spica, 236.
tadema, *Aterica*, 189.
 Diestogyna, **189**, 191.
tænias, *Mycalesis*, 134.
Tagiades, 251.
 flesus, 251.
 wærmanni, 251.
Tagoropsis, 317.
 gemmifera, 317.
Tarucus, 231.
 telicanus, 231.
tartarea, *Amauris*, 120.
telicanus, *Papilio*, 231.
 Tarucus, 231.
telicanus plinius, *Cupido*, 231.

- Telipna, 214.
 bimacula, 215.
 medjensis, 116, **214**. Pl. XII, Fig. 8.
 nyanza, 214, 215.
 rothi, 214.
 rothioides, 116, **214**. Pl. XII, Fig. 7.
 tellus, Planema, 120.
 Temnora, 301.
 eranga, 301.
 fumosa, 301.
 tentyris, Euryphene, 181.
tenuiorata, *Narthecusa*, 310.
 Negla, 310.
 Teracolus, 112, **240**.
 evippe, 240.
terea, *Papilio*, 149.
 Precis, 146, 149.
tergemira, *Pterygospidea*, 251.
 Terias, 240.
 bisinuata, 241.
 brenda, 240.
 brenda maculata, 241.
 brigitta, 242.
 ceres, 242.
 desjardinsi, 242.
 floricola, 242.
 floricola ceres, 242.
 hapale, 242.
 regularis, 242.
 senegalensis, 240, **241**.
 senegalensis bisinuata, 241.
 zoë, 243.
 terpsichore, Acræa, 128.
 Papilio, 128.
 terpsichore buxtoni, Acræa, 128.
 testulalis, Maruca, 331.
 Crocidophora, 331.
 tettensis, Abantis, 253, 254.
 thalassina, Eronia, 243.
 Pieris, 243.
Thecla orcas, 224.
thelestis, Acræa, 125.
 Acræa pentapolis, 125.
 themis, Euphædra, 177.
 theobene, Cymothoë, 194.
 Harma, 194.
 theodosia, Cymothoë, **194**, 196.
theophane, *Aterica*, 167.
 theora, Pieris, 239.
 theorini, *Papilio*, 248.
 Thermesia, 278.
Thermoniphas plurilimbata, 234.
 theuszi, Pieris, 239.
 thoracica, Saliunca, 324.
 Tipulodes, 324.
 Thyrididæ, 325.
 thyrsis, Cupidesthes, 227.
 Lycænesthes, 227.
tigrina, *Hespagarista*, 271.
 Polacanthopoda, 271.
 Tineidæ, 331.
Tipulodes thoracica, 324.
 tiridates, Charaxes, 207.
 Papilio, 207.
togara, *Cupido micylus*, 233.
 Everes, 233.
 Lycæna, 233.
 Tolna, 280.
 bolengensis, 117, **280**. Pl. XIII, Fig. 9.
 eximia, 280.
tolosa, *Mycalesis*, 141.
 Mycalesis vulgaris, 141.
traducalis, *Eudiotis*, 327.
 Pagyda, 327.
 trajanus, Euxanthe, 204.
 Godartia, 204.
 transiens, Schausia, 272.
transversata, **Deinypena**, 117, **293**.
 Pl. XIII, Fig. 17.
 trapezoides, Parasa, 323.
 triangularis, Deinypena, 291.
 Trichætæ, 263.
 bivittata, 263.
 Trichobaptēs, 331.
 auris'rigata, 331.
 sexstriata, 331.
Trichosemeia pulvina, 258.
 Triclema, 229.
 lutzi, 116, **229**. Pl. XII, Fig. 2.
 rufoplagata, 229.
Trigonodes inornata, 284.
trimeni, Abantis, 254.
 Precis, 147.

- triphænoides, Metagarista, 271.
trithyralis, Sameodes, 330.
 tsita, Leptalina, 256, 257.
 tyndaræus, Papilio, 248.

ucalegon, Papilio, 248.
 ucalegonides, Papilio, 248.
 Ulopeza, 327.
umbra, Arrugia, 221.
 umbricola, Polydesma, 287.
 umbrina, Euryphene, 192.
umvulensis, Abantis, 254.
 undata, Mocis, 284.
 Noctua, 284.
unicolor, Cyclopides, 256.
 Hesperia, 262.
 Ismene, 262.
 Leptalina, 256.
 Rhopalocampa, 262.
 uniformis, Mycalesis, 135.
 unipuncta, Prasinocyma, 312.
 Uraniidæ, 318.
 Uranothauma, 230.
 falkens eini, 230.
uroarge, Eudæmonia, 316.
uselda, Harma, 200.
 ussheri, Palla, 211.

vaillantina, Bombyx, 277.
 Egybolis, 277.
valceri, Nyctipao, 277.
Vanessa chorimene, 147.
 Vanessinæ, 143.
 Vanessula, 144.
 milca, 144.
variabilis, **Pseudogonitis**, 117, 275.
 Pl. XIII, Figs. 5, 6, and 7.
 venosa, Abantis, 254.
venustissima, Pacidara, 274.
 vespéralis, Acræa, 125.
 vestalis, Oboronia ornata, 235.
 vetusta, Euphædra, 177.
 Romalæosoma, 177.
vidua, *Noctua*, 268.
 Rhodogastria, 268.
 vilis, Ctenogyna, 306.
 vinidia, Acræa, 128.
 violascens, Mycalesis golo, 137.

 virescens, Elæodes, 284.
 Eremobia, 284.
 Pseudonotodonta, 297.
virgo, *Hyreus*, 230.
 viridis, Carpostalagma, 269.
 Caryatis, 269.
 vittalbata, Xanthospilopteryx, 271.
 viviana, Acræa, 127.
vida, *Nyssia*, 323.
 Parasa, 323.
vologeses, *Charaxes*, 211.
 Palla, 211.
 vulgaris, Mycalesis, 141.
 vulgaris tolosa, Mycalesis, 141.
vulgaris U, *Byblia*, 158.

 walkeri, Nyctipao, 277.
 Patula, 277.
 warburgi, Pseudacræa hostilia, 164.
welwitschii, *Belenois*, 239.
 westermanni, Aemnora, 302.
 Junonia, 145, 146.
 Precis, 145, 146.
Westermannia digramma, 276.
westermanni, *Macroglossa*, 302.
 weymeri, Cymodolope, 197.
wærdeni, *Phalera*, 305.
 Rigema, 305.
wærmanni, *Tagiades*, 251.
 wollastoni, Ceraurichia, 260.

xanthospila, Anoa, 297.
 Mylantria, 297.
 Xanthospilopteryx, 270.
 æmulatrix, 270.
 batesi, 270.
 flaviventris, 270.
 gruenbergi, 271.
 mabillei, 270.
medjensis, 117, 271. Pl. XIII,
 Fig. 1.
 paucicolor, 271.
 poggei, 270.
 vittalbata, 271.
 xeneas, Mycalesis, 133.
 Xyleutes, 319.
 sjæstedti, 319.
Xynthospilopteryx batesi, 270.

- xypete, *Euphædra*, 116, 168, 178.
 Romalæosoma, 178.
xypete maxima, Euphædra, 116, 178.
 Ypthima, 142.
 asterope, 142.
 doleta, 142.
 itonia, 142.
 simplicia, 142.
 zalmoxis, *Papilio*, 244.
 Zamarada, 309.
 protrusa, 309.
 zambesiaca, *Abantis*, 254.
 zambezina, *Abantis*, 254.
 Zebronia, 327.
 phenice, 327.
 zelica, *Charaxes*, 210.
 zenobia, *Papilio*, 245.
Zeritis aderna, 225.
 fallax, 225.
 latifimbriata, 225.
 zetes, *Acræa*, 130.
 Papilio, 130.
Zeuzera boisduvalii, 319.
Zinckenia, 327.
 recurvalis, 327.
zingha, Charaxes, 212.
 Monura, 212.
 Papilio, 212.
Zizera, 234.
 antanossa, 234.
 gaika, 234.
 lysimon, 234.
 zoë, *Terias*, 243.
zonara, Aterica, 183.
 Euryphene, 182, **183**.
Zonilia fumosa, 301.
Zygæna guineënsis, 266.
 lethe, 265.
Zygænidæ, 324.
 zymna, *Megalopalpus*, 218, 219, **220**.
 Miletus, 220.