

(Continued from page 490.)

stalked, the stalk given off at the end of the cell; veins 9 and 10 are given off from the end of a secondary cell located near the base above the lower cell. Type *H. castanea*, Holl.

158. *H. castanea*, sp. nov. ♀. Palpi, front and collar pale rufous; patagia hoary, whitish; upper side of thorax pale ochraceous; abdomen and legs rufous. The primaries on the upper side are very pale reddish-brown with the outer margin and the inner margin near the base whitish. The wings are marked by a broad chestnut red ray, which runs from the costa at the base outwardly to the outer margin, where it is widened covering the outer angle and the inner margin for one-third of its length from the outer angle. At the end of the cell, there is a dark brown annulus pupilled with lighter brown. There is a geminate waved sub-basal and transverse limbal line. From the apex a broad line runs inwardly terminating upon vein 6. There is a submarginal series of lunulate yellowish marks defined internally by pale brown lines and outwardly on the margin by very heavy dark brown lines. The secondaries on the upper surface are pale creamy with a dark brown patch near the anal angle, and the fringes for one-half of the distance from the anal angle are likewise dark brown. The wings on the under side are very pale yellowish-rufous, the markings of the upper side reappearing very faintly and indistinctly. Expanse, 68 mm.

The only specimen of this beautiful species which I have ever seen was bred from a small, oval, dark brown cocoon, which was found adhering to a leaf, and from which the imago emerged April 27th, 1891. The insect is apparently quite rare.

#### METANASTRIA, Hübn.

159. *M. porphyria*, sp. nov. ♂. Palpi, front and collar dark brown; patagia brown

shading into purplish, hoary in certain lights; the upper side of the abdomen is purplish-brown; the under side of the thorax and abdomen is paler. The primaries are brown with a purplish white canescence. They are crossed by a number of dark brown lines, one running from the costa at the base to the middle of the inner margin, the next crossing the middle of the cell to the outer angle, forked at the costa and connected with the basal line about the middle and near the inner margin by transverse branches. The third line of the series is broad and does not quite reach the outer margin at its outer extremity bifurcating along the median nervules. The fourth line runs diagonally from the costa toward the outer margin and is slightly curved inwardly. There is a submarginal series of angulated whitish markings, most conspicuous near the apex, which is heavily clouded with dark brown. The secondaries are pale brown with the fringes whitish. On the under side the wings are dark brown crossed by obscure median bands of darker brown. The costal area of the secondaries is irrorated with purplish-white. The light submarginal markings of the upper side reappear faintly upon the lower side. Expanse, 63 mm.

160. *M. (?) spargata*, sp. nov. ♂. Palpi pale chestnut margined externally with dark brown; front pale rufous; collar brown, margined internally and externally with dark brown patagia reddish; upper side of thorax and abdomen pale rufous; legs ferruginous, the tarsi black; the under side of the thorax and abdomen is rufous. The upper side of the primaries is dark brown with the basal area and a broad band running from the apex to the inner margin pale ferruginous. These areas are defined outwardly and inwardly by scalloped dark lines defined within by pale yellowish-red shading into whitish toward the costa. At the end of the cell, there is a moderately large circular white spot margined with dark brown. The fringes

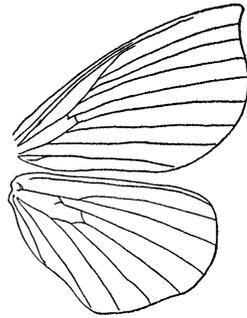
are very dark brown margined internally by paler brown. The broad band of paler color which crosses the outer area of the primaries is continued upon the secondaries which have the same general ground color as the primaries. On the under side the wings are light yellowish, clouded heavily with dark brown on the base, the apex of the primaries, and upon the costa of the secondaries. The dark spots and lines which define the outer and inner limits of the transverse limb band of the wings on the upper side reappear upon the lower side, being most distinct upon the secondaries. Expanse, 65 mm.

This species is referred with great doubt to *Metanastria* from which the form of the antennae and palpi together with the greater breadth of the wings differentiate it. Unfortunately, the very heavy vestiture of the wings and the fact that I have but one specimen prevent me at present from making a critical anatomical diagnosis.

*EPIJANA*, gen. nov.

Superficially resembling the genus *Jana*, from which it, however, is structurally quite different. Palpi minute, directed forward, heavily clothed with hair, the last joint obsolescent. Antennae of the male heavily pectinated, the pectinations moderately long, decreasing abruptly in length at the apex. The antennae of the female are almost devoid of pectinations, except at the base where the setae are very minute. The fore-wings are produced at the apex. The outer margin is somewhat excavated below the apex, and then rounded regularly to the outer angle, which is likewise evenly rounded. The inner margin is rounded. The secondaries have the costa relatively long, almost straight; the apex and the outer margin evenly rounded; the anal angle produced inwardly, or slightly lobed; the inner margin slightly excavated above the anal angle and bowed toward the abdomen before the base. In the primaries the upper

discocellular is angulated; veins seven, eight, and nine are stalked; vein eleven springs from the subcostal near the base and coalesces with ten beyond nine, forming an elongated secondary cell above the true cell. The costal nervure runs parallel to vein eleven and terminates upon the margin about the middle of the costa. In the secondaries, the costal nervure is conformed to the costal margin along the edge of which it lies; veins six and seven are stalked. The vestiture of the wings is heavy as in *Jana*. Type *E. lanosa*, Holl.



Neuration of *Epijana lanosa*, Holl., ♀.

161. *E. lanosa*, sp. nov. ♂ Palpi, front and thorax rich brown; abdomen fawn; lowerside of thorax and abdomen together with the legs bright ochraceous, the anterior margins of the legs being brown. The culmen of the antennae is whitish, the pectinations testaceous. The primaries are crossed by a straight blackish, or very dark brown, line which runs from the costa before the apex to the inner margin about its middle, and is defined outwardly by a narrow line of pale lilac. The wings within this line toward the base are dark brown, beyond it they are paler brown, dusted near the apex and above the outer angle with lilac scales. The fringes on the outer and inner margins are very heavy brown, tinged with lilac. The secondaries are bright yellowish-ochraceous, laved with brown shading into lilac upon the inner margin and

at the anal angle. In some specimens, an incomplete transverse brown band extends half way across the wing from the inner margin. On the underside, both wings are bright ochraceous with the costae and fringes lilacine-brown.

♀. The female does not differ from the male in its markings, save that on the underside the costa of the secondaries is not shaded with brown and the fringes on the under side are lighter than in the male. Expanse, ♂, 75 mm. ♀, 80 mm. Habitat Kangwé and Benita.

There is a specimen of this beautiful species in the collection of Mr. Herbert Druce.

162. *E. cinerea*, sp. nov. ♀. Front brown; body and legs fawn. Primaries grayish-fawn crossed beyond the cell by a straight, dark brown transverse line, which runs from the middle of the inner margin to beyond the middle of the costa just before reaching which it is bent inwardly toward the base. This line is followed by an obscure parallel line of the same color which extends from the inner margin to a point opposite the end of the cell. This is in turn succeeded by an irregularly curved series of brown sagittate markings followed on the outer margin below the apex and near the outer angle by broad, dark brown cloudings. The fringes are lilacine-brown. The secondaries are in color like the primaries crossed by regularly curved transverse median, transverse limb, and transverse submarginal lines, which are somewhat obscure in the region of the costa. On the underside, the wings are fawn heavily sprinkled with minute brown scales, giving them a "pepper and salt" appearance. The lines and markings of the upper surface reappear faintly on the underside. In certain lights, the underside of the wings displays a beautiful pavonine iridescence, as in *Stibolepis subiridescens*, Holl. Expanse, 75 mm.

163. *E. tenuis*, sp. nov. ♀. Body and legs ochraceous, paler beneath. There is a line of black spots running from the collar to the extremity of the abdomen along the dorsal line. Primaries plumbeous, crossed by a dark brown, straight line, which runs from the costa to the inner margin about three-fourths of their length from the base. The secondaries are orange-red with the outer third broadly and uniformly margined with dark plumbeous-brown. On the underside, both wings are uniformly bright orange-red, with their outer margins bordered as the outer margins of the secondaries upon the upperside. Expanse, 45 mm.

This beautiful species agrees structurally in all respects with the two larger species described above, so far as the female specimen which is before me shows. The type is unique.

JANA, H. S.

164. *F. nobilis*, sp. nov. ♂. Antennae pale testaceous; palpi brown; front pale gray; collar and patagia dark fawn; pectus and first pair of legs dark fawn of the same color as the collar; the thorax, abdomen, and the two last pairs of legs pale fulvous. Upperside: The primaries are fawn of the same color as the collar with the inner margin and the outer angle pale cinereous. The wings are crossed before the base by a straight transverse line of dark brown margined inwardly with pale cinereous. This is succeeded by a similar line which crosses the middle of the cell and is parallel to the first. There is a short linear brown line at the end of the cell defined inwardly by gray. Beyond the cell there is a straight transverse dark brown line running from beyond the middle of the costa to the middle of the inner margin, where it nearly touches the line crossing the middle of the cell. This is defined inwardly by a broad, pale gray shade. This line is followed by another straight transverse line running from the costa three-

fourths of the distance from the base to the inner margin two-thirds of the distance from the base, defined inwardly by a pale gray line, which is interrupted on the nervules by ochraceous dots, marking the origin of a regular series of hastate markings which lie on the side toward the base with their points toward the base, which are dark brown shaded with pale gray toward the margin. Beyond this dark brown line the outer third of the wing is fawn marked by a subapical brown shading and a similarly submarginal shading near the outer angle, both fading inwardly into gray. The secondaries have the costa and the outer margin of the prevalent fawn color of the primaries with the inner margin and inner angle broadly glaucous gray. There is a broad patch of black hairs at the base followed by a black incomplete transverse band running from the inner margin to beyond the end of the cell, and gradually widening from the inner margin. This is followed by a narrower black line which is very obscure upon the costa, but gradually widens toward the inner margin and becomes more distinct and terminates upon the internal vein. This is again followed by a very broad, dark brown band which runs from the costa before the outer angle to the inner margin, its inner edge being straight, its outer edge curved and denticulate, and defined by a pale gray waved line. The under side of the wings is very pale fawn, the bands beyond the end of the cells reappearing from the upper surface, paler, but more distinctly defined. Expanse, 130 mm.

165. *F. marmorata*, sp. nov. ♂. Palpi blackish-brown; antennae and front pale grayish; collar dark brown; patagia, thorax, and upper side of abdomen dark fawn; legs and lower side of abdomen brownish. The prevalent color of the upper and lower side of the wings is dark fawn, paler toward the apex of both wings. The primaries have a small circular white dot at the end of the cell on both

sides of the wing. Upon the upper side of the primaries near the inner margin before the base there is a small subquadrate blackish spot, and on the costa of the primaries before the apex a similarly colored short band constricted at the middle. In addition, the basal third of the primaries is crossed by a series of waved and denticulate lines forming intricate patterns. About the middle of the primaries beyond the cell there are four waved and denticulate lines arranged in pairs, the inner pair curving toward the base on the costa, and toward the inner margin about its middle, the outward pair bowed outwardly beyond the region of the cell. These lines are followed by a straight dark brown line running from the apex to the inner margin three-fourths of the distance from the base, defined inwardly by a paler line interrupted on the nervules by small subhastate markings. The nervules beyond this straight line for a short distance are dark brown and accentuated with small whitish dots. Beyond these again are paler cloudings followed by darker cloudings, that nearest the outer margin below the apex being the darkest. The secondaries have the transverse lines of the primaries continued upon them, most distinctly marked toward the inner margin. Near the apex of the secondaries is a broad brownish patch constricted somewhat at the middle. On the under side of both wings the lines of the upper side reappear upon the pale fawn ground beyond the cell, but are more regular and more distinct.

♀. The female is marked much as the male but all the markings are paler and more obscure. Expanse, ♂, 78 to 82 mm., ♀, 85 to 87 mm. Habitat, Kangwé and Talaguga.

In one of the males before me, the transverse markings of the upper side of the primaries are almost obsolete.

TARAGAMA, Moore.

166. *T. choerocampoides*, sp. nov. ♂. Palpi and front yellowish; patagia and lower edges of collar rich rosy-brown; the middle of

the collar dark brown, punctuated on the median line by grayish scales; the inner edges of the patagia blackish; the middle of the thorax hoary marked by three narrow parallel dark brown lines; upper side of thorax rosy-brown; the palpi and pectus and under side of the thorax and abdomen dark sooty-brown with a narrow black line upon the ventral line of the abdomen. Legs are concolorous, with the tarsi grayish. The primaries on the upper side are rosy-brown, shading into yellowish at the base and are traversed by four nearly parallel curved brown lines, which run from before the apex to the middle of the inner margin. The outer margin is evenly bordered with a dark brown shade. The subcostal nervules appear distinctly upon the darker ground of the wing, being pale yellowish. The pattern of marking strongly recalls that of many species of *Choerocampa*. The secondaries are uniformly rosy-brown, shading into yellowish at the costa near the base. On the under side, both wings are dark rosy-brown, shading into yellowish upon the inner margin of the primaries. The bands of the upper surface faintly reappear upon the lower side. Expanse, 60 mm.

167. *T. livida*, sp. nov. ♂. Body slaty-gray, or mouse color, shading into blackish at the anal extremity of the abdomen. The patagia are black, margined with mouse color. The costa and the inner margin of the primaries on the upper side are broadly pale mouse color. From the base at its middle there arises a black shade, which widens outwardly and extends from the apex to the outer angle, being darkest at the base. It is traversed by a dark black line running from the end of the cell to its lower margin and by a similar line running from the apex to its inner margin and is interrupted beyond this last line by five or six small submarginal whitish spots, those nearest the apex being the most distinct. The secondaries on the upper side are dark mouse color with the costa and the

inner margin paler and the outer margin a trifle darker. The fringes on both wings are very narrowly pale mouse color. On the under side both wings are pale mouse color with the inner margin of the primaries lighter and the outer margins of both wings slightly darker. The fringes are as on the upper side with small blackish marks at the tips of the nervules. Expanse 38 mm. Habitat Talaguga.

This may be the male of *T. (Pachypasa) Grüberii*, Dew.

168. *T. fuliginosa*, sp. nov. ♂. Allied to the preceding species in form and size, but differing in that the prevalent color is sooty-black on both sides of the wings. The broad diverging median ray which appears in the preceding species is also characteristic of this species, being defined as a more intense black upon the blackish body of the wing. The transverse lines of the primaries which appear in the preceding species are lacking in this form as also the submarginal series of light spots. Expanse 40 mm.

This may be a highly melanic form of the preceding species, but the fact that numerous specimens of it have been taken which are all quite constant in their markings suggests that we have to do with a distinct form.

169. *T. Honrathi*, Dew. ♂. The female of this species was described by Dewitz. In a suite of eighteen specimens bred from larvae, there are ten males. Front and upper side of thorax hoary-gray; metathorax heavily clothed with rosy-brown hairs; upper side of thorax grayish-brown; under side of thorax brown; under side of abdomen ochraceous. The primaries are hoary-brown on the upper side crossed upon the middle by a broad band of dark brown, margined externally and internally by wavy and denticulated lines of darker brown and interrupted throughout its entire length from the costa to the inner margin by two parallel curved series of blackish subhastate markings the innermost series pointing outwardly, the outermost

pointing inwardly, and in many instances connected between their apices by narrow black lines following the nervules. Beyond this dark band is a band of paler color, denticulated inwardly, and irregularly angulated and denticulated outwardly. The secondaries are reddish-brown shading into ochraceous upon the costa and at the base. On the under side, the primaries are hoary upon the costa and the outer margin; the median area broadly and uniformly maroon defined outwardly by two parallel dark curved lines running from the costa to the inner margin before the outer angle. The inner margin near the base is smooth, shining pale yellowish. The secondaries are of the same color as the primaries laved with maroon upon the median area and toward the base. The transverse outer lines of the primaries are continued upon the secondaries. Expanse: ♂, 50 to 70 mm; ♀, 75 to 130 mm.

Mr. Kirby has referred the preceding species to Moore's genus, *Taragama*, which he places among the Pinaridae. I accept the reference of this and the other species herein described to this genus provisionally. *Taragama* is, however, as Mr. Hampson has shown, a *Lasiocampid* genus.

Mr. Good has been quite successful in rearing this species from the larva, and I shall have occasion later to more fully describe its life history. The last batch of specimens of this species sent to me was reared from larvae which were evidently underfed and are dwarfed in consequence. A brood was taken in the branches of a tree called *Ntyei* overhanging the bank of the river. Mr. Good says, "When first found, the least disturbance would cause them all to fall off of the branches. I wondered how this would work, where they overhung the water until a few days ago, when I saw a caterpillar much like these fall into the water. It did not seem to be in the least disconcerted, but drawing its abdominal end forward under itself, and then forcibly straightening itself, swam quite easily. I have no doubt that this and many related

species, the larvae of which are generally found hanging over the water, can swim."

#### GASTROPLAKAEIS, Möschl.

170. *G. forficulatus*, Möschl. ♀. Front, collar, patagia and thorax pinkish-brown. The patagia are fringed inwardly with long erect hoary hairs. The pectus and thorax below are hoary-gray. The abdomen is rufous. The primaries are rosy-brown, shading on the outer margin into hoary-gray. They are crossed by obscure, transverse basal, sub-basal, and geminate limb and sublimbal dark brown lines. They have a very distinct patch of dark black raised scales at the end of the cell, margined narrowly by pale gray. The secondaries are fuscous, shading into rufous at the base. On the under side, both wings are brown with the costae and the outer margins profusely sprinkled with hoary scales. Expanse 95 mm.

Möschler erected his genus *Gastroplakaeis* for the reception of an insect of which he knew only the male. The female which I describe corresponds sufficiently, in the light of what I know in reference to the succeeding species, with the male of *G. forficulatus* to justify me in reckoning it as that sex of Möschler's species. Möschler laid stress upon the formation of the brush of hairs at the extremity of the abdomen. This was no doubt due in the specimen before him to the expanded posture of the male claspers, and is not either of generic or specific value, as is shown by numerous specimens in my possession. The genus, however, is very well marked, and the female especially differs in curious particulars, noticeably in the high and conspicuously tufted inner margins of the patagia, from other African *Lasiocampid* genera. The genus is quite as remarkable as *Pachypasa* and *Gonometa* on account of the wide dissimilarity in size and marking between the two sexes.

171. *G. Greyi*, sp. nov. ♂. Palpi, front, collar, and thorax hoary-gray; abdomen on the upper side orange-pink annulated by seven lines of jet black, tipped with a long tuft of cream colored hair. The under side of the thorax at the base of the wings and the metathorax are orange-pink. The pectus and lower side of the thorax and abdomen are pale hoary gray. The legs have the tibiae heavily clothed with dark hoary scales. The tarsi are blackish. The primaries on the upper side are hoary-gray like the thorax, paler on the outer margins. The inner margin is provided at the middle with a series of long blackish hairlike scales, which project outwardly and give the inner margin a lobed appearance. The wing is ornamented by a spot of deep black velvety raised scales at the end of the cell, and is crossed by an obscure denticulate sub-basal line followed by a geminate more distinct waved and denticulate transverse median line, followed beyond the cell by a similar less distinct line which curves outwardly and runs from the costa to the inner margin at its lobe-like hairy projection there apparently uniting with the transverse median line. The outer margin, which is broadly pale hoary gray, is slightly clouded with darker brown on the apex near the costa and on the outer angle and is marked by a few obscure submarginal brown spots. The secondaries are dark brown broadly laved with orange-pink at the base and on the inner margin. They are crossed by an incomplete black median band which runs from beyond the end of the cell to the inner margin, where it coalesces with a short blackish longitudinal ray situated near the inner angle. This transverse line is followed by a very obscure submarginal dark shade. The neurations, which are pale, stand out in strong relief upon the darker ground of the wings. On the under-side, the wings are hoary-gray with the neurations pale yellow and standing out distinctly upon the darker background. The contrast is made more effective on the median

area of both wings by the clouding of the intraneural spaces with dark brown, or blackish. The secondaries have the inner margin broadly laved with orange-pink.

♀. The prevalent color of this sex is dark chocolate-brown, darkest upon the outer margins of the primaries and secondaries. The primaries are crossed by the same lines which appear in the male, but modified by reason of the different form and greater expanse of the wing. The black patch of raised velvety scales at the end of the cell is distinct in this sex and the tufted formation of the patagia which are margined with black externally and sprinkled with ochraceous hairs is very characteristic. On the under side the costa, which is produced just before the base and has its costal margin quite straight beyond this projection, is clothed upon its edge with long projecting hairs. There is no trace whatever in this sex of the broad orange-pink markings of the male. Expanse, ♂, 80 mm.; ♀, 135 mm.

I have two females of this species which were bred by Mr. Good from larvae. He exposed a virgin female in a cage and succeeded in assembling the males which are referable to Möschler's genus *Gastropalacaeis*, which, without a knowledge of this fact, would at first glance appear to be an improbable assortment of the sexes. I take pleasure in naming this beautiful species after my good friend, Robert M. Grey, who is one of our most ardent collectors, and who for nearly a year rendered me faithful service in expanding and arranging my great African and Indian collections.

#### LEIPOXAIS, gen. nov.

Allied to genus *Libethra*, strictly congeneric with *Gastropacha haematidea*, Snell., which is referred by Kirby to *Libethra*, where, however, it does not belong, as is clearly shown by the neuration. The palpi are large, compressed, directed forward, and heavily clothed with hair. The antennae of

the male are relatively short, heavily pectinated, directed forward and then recurved about the middle. The antennae of the female are very minutely pectinated, appearing simple to the naked eye. The primaries of the male are broad, subtriangular, with the costa strongly arched, the outer margin and the outer angle evenly rounded, the inner margin almost straight. The secondaries of the male have the costa strongly produced upwardly about the middle, giving the costa a lobed appearance. The apex, the outer margin, and the anal angle are evenly rounded. In the female the primaries are sharply produced at the apex and subfalcate. The secondaries have the costa as in the male sex. The female is twice as large as the male. In both sexes the discocellulars of the primaries are angulated; veins six and seven and nine and ten are stalked. Vein eleven apparently coalesces with twelve about its middle. Twelve is continuous along the costal margin. In the secondaries veins four and five are stalked; veins six, seven, and eight diverge widely, vein eight terminating at the extremity of the lobed projection of the costal margin. Type *L. peraffinis*, Holland.



Neuration of *Leipoxais peraffinis*, Holl., ♂, †.

172. *L. peraffinis*, sp. nov. ♂. Body and appendages reddish-brown. Primaries and secondaries of the same color as the body, the secondaries inclining to luteous on the inner margin and the primaries shading on the outer margin in many specimens into cinereous. The primaries are ornamented by a curved sub-basal obscurely blackish line followed by a minute silvery white dot on the cell, after which there are two irregularly curved obscurely blackish transverse lines,

which diverge on the costa and converge at the middle of the inner margin. Beyond this there is a sinuous band of small obscure blackish sub-hastate spots extending from before the apex to the outer third of the inner margin. The secondaries on the upper side have no markings. The primaries on the under side are pale fuscous without markings except that the transverse bands of the upper side very faintly reappear on the lower side in some specimens. The secondaries on the under side are marked by a very sinuous band of angulated spots extending from before the apex irregularly parallel to the outer margin as far as the first median nervule. The lobe-like projection of the costa is clouded with dark fuliginous and a similar fuliginous spot is located beyond the cell upon the median nervules not very far from their origin. The inner margin is pale stramineous.

♀. In the female the upper side is marked very much as in the male, save that the sinuous submarginal band of the primaries is composed not of blackish, but of pale whitish spots, and on the under side there is a dark brown spot on the costa before the apex accentuated outwardly by two whitish dots, and the secondaries are crossed by a very broad transverse median and a somewhat narrow transverse submarginal band of dark reddish-brown. Both of these bands terminate inwardly upon the first median nervule. Expanse, ♂, 32 mm.; ♀, 56 mm.

There is what appears to be a variety of this species in which the space between the two outermost transverse bands of the primaries is paler than the body of the wing, inclined to luteous, and in which the whole median area of the secondaries on the upper side is likewise pale. There is a very marked resemblance in this species to the insect described as *Gastropacha haematidea*, Snell., but the fringes in this species, of which a suit of fifteen specimens is before me, are not checkered as in the insect described by Snellen, but are uniformly brown and the markings are different in other respects.



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