

(Continued from page 520.)

173. *L. major*, sp. nov. ♂. The wings have the same general appearance as in the preceding species. The basal area of the primaries is pale ferruginous defined outwardly by a curved brown line followed by a broad transverse median band of darker brown defined externally by a curved and sinuate dark brown line, which is produced upon the secondaries and is succeeded by a broad and somewhat diffuse brown line, which in turn is followed by a sinuate series of cinereous hastate spots, as in the preceding species. The outer margin of the primaries shades into lilacine. At the end of the cell, there is a large and conspicuous round silvery white spot. The secondaries have the costa broadly dark brown with the outer margin broadly paler brown. The base and inner margin are pale stramineous. On the underside, the primaries are reddish-fuscous crossed by a broad transverse median band and clouded with blackish at the apex and on the outer margin. The secondaries are reddish-brown heavily dusted with dark brown scales and clouded with dark brown at the base. A broad sinuate transverse median band of dark reddish-brown bordered externally and internally by blackish lines crosses the wing from the lobe on the costa to the first median nervule, and is succeeded toward the outer margin by a series of five or six blackish spots forming an irregular curved series and margined externally by pale gray.

♀. The female resembles the male in the general color of the wings, but lacks the silvery spot upon the cell and all the markings are not only much more obscure, but more intricate, the single transverse lines on the primaries in this sex being all geminate and darker, and the outer margin being heavily clouded with blackish. The secondaries are traversed by a broad and diffuse band of submarginal markings. The base and the inner margin are obscure brown, as the rest of the wing. On the under side, the

primaries are uniformly obscure brown with the outer margins and the apex heavily clouded with blackish. The transverse median band which appears in the male on the under side of the primaries is wanting. The under side of the secondaries is blotched and marbled with fuliginous upon a dark brown ground in a most intricate manner. Expanse, ♂ 48 mm. ♀ 68 mm.

Described from specimens taken in coitu.

174. *L. margin punctata*, sp. nov. ♂. Front, collar, and thorax pale fawn, inclined to ochraceous; upper side of abdomen, lower side of thorax and abdomen and legs very pale fawn. The wings are pale fawn, inclined to cinereous. The primaries are ornamented by a very pale ochraceous sub-basal curved line defined outwardly and inwardly by very narrow darker lines. This is followed by a lunulate silvery spot at the end of the cell, beyond which there is a straight transverse ochraceous limbal line, running from beyond the middle of the costa to the middle of the inner margin and marked externally and internally by very narrow brown lines. A conspicuous series of blackish dots produced outwardly between the first and second median nervules runs from the apex to the inner margin before the outer angle. The secondaries are cinereous and the submarginal series of blackish dots is continued upon them. The wings on the under side are pale cinereous, the markings of the upper surface reappearing faintly upon them. The fringes are separated from the body of the wing by a very fine black line and are obscurely checkered. Expanse, 35 mm.

GASTROPACHA, Ochs.

175. *G. cinerascens*, sp. nov. ♂. Allied in the form of the wings to *G. Gerstäckerii*, Dew., but widely different. The body is pale cinereous, as also the upper side of both wings. There is a very irregular and obscure sub-basal line followed by a trifold silvery

spot at the end of the cell, succeeded by a band of transverse limbal markings, lunulate in form, whitish, and margined externally and internally by dark brown, succeeded by an interrupted submarginal series of obscure blackish spots. The secondaries, which are pale ashen like the primaries, have a large translucent circular spot at the end of the cell, and the lines of the primaries are continued upon the secondaries. On the under side the markings of the upper side reappear, but far more sharply defined and darker in color. Both wings, furthermore, are heavily clouded on the median area with dark slaty-gray.

♀. The female does not differ materially from the male, except in the much greater size and the corresponding modifications of outline and the much greater obscurity of the transverse markings. Expanse, ♂, 65 mm.; ♀, 95 mm.

The female in my possession was reared from a cocoon about three inches in length and three-fourths of an inch in diameter, which was found attached to the trunk of a tree. The cocoon is whitish in color, the exterior compacted of silk mingled with the whitish hair and the short but sharp blackish spines of the larva. The inner layers of the cocoon are hard and coriaceous. The chrysalis is relatively long, black, smooth, and without a cremaster. The insect may be distinguished from *G. Gerstäckerii* by its uniformly cinereous color and the absence of the broad mesial band of dark brown which characterizes the latter species.

LASIOCAMPA, Schrank.

176. *L. viridescens*, sp. nov. ♂. Culmen of antennae pale yellow; setae dark brown; body olive-green throughout with the end of the abdomen tufted with reddish hair. Upper side: Primaries olive-green clouded with reddish-brown on the costa and along the outer margin, traversed by a sub-basal and geminate transverse median brown line. There is at the end of the cell a small linear

brown discal dot. The outer third of the wing is ornamented by an irregularly curved and denticulate series of lilacine-brown markings, which are immediately followed externally by a pale green band conformed to the outer margin of these darker markings. The secondaries are brown, darker at the base, where they are heavily clothed with hair. The fringes on the secondaries are narrow and uniformly pure white. On the under side both wings are brown laved on the costae with pinkish. The marks of the upper surface of the primaries reappear indistinctly on the lower side. The secondaries have a dark pinkish-brown incomplete transverse line running from the costa and terminating about the middle of the cell. The outer margin is grayish-white. The fringes are white as upon the upper side. Expanse, 43 mm.

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

177. *L. immunda*, sp. nov. ♂. Upper side of thorax and abdomen brown, the thorax somewhat hoary. The under side of the body and the legs paler brown. The upper side of the primaries is of the same color as the thorax shading into pale hoary-brown on the outer margin. There is a small silvery dot at the end of the cell. The primaries are crossed by obscure dark brown geminate sub-basal and median transverse bands. There is a submarginal series of sinuous and denticulate narrow brown lines. The secondaries are pale at the base, inclining to ferruginous, with the outer margins broadly brownish-fuscous. On the under side, both wings are pale brownish-fuscous; both are crossed by obscure and diffuse transverse median bands.

♀. The female differs from the male in having the tips of the patagia and inner margin and outer angle of the primaries laved with pale ochraceous. There are also a few obscure whitish submarginal lines

below the apex. On the under side both wings are dark fuscous with no traces of the transverse median bands. Expanse, ♂ 58 mm.; ♀ 75 mm. Habitat Kangwé and Benita.

This species differs somewhat in the ground color. Some of the males before me are much paler than the type.

178. *L. leucophaea*, sp. nov. ♂. Front, collar, and thorax dark vandyke brown; upper side of abdomen paler, inclining at anal extremity to hoary-gray. The legs and lower side of thorax and abdomen dark vandyke brown. Upper side: The primaries at the base are dark vandyke brown marked with a few bright ferruginous scales.

The outer margins are lilacine-gray. There is a small silvery dot at the end of the cell. The wing is further ornamented by geminate sub-basal and geminate transverse median angulated lines of obscure blackish and a submarginal series of pale ochraceous denticulate lines running from the apex to the inner margin before the outer angle. The secondaries are broadly vandyke brown on the costa with the remainder of the wing uniformly pale vandyke brown, shading into grayish on the outer margin. Under side: Both wings are uniformly pale grayish-brown. The secondaries have the fringes, which are narrow, pale gray, and the inner margin a trifle lighter than the rest of the wing. Expanse, 48 mm.

179. *L. lutescens*, sp. nov. ♂. Allied to the preceding species, from which it may be distinguished by its uniformly smaller size, warmer coloration, and the invariable presence of a broad patch of yellow on the inner margin near the outer angle and a smaller patch of yellow near the base about the origin of the first median nervule; also by the invariable presence of several silvery white lunulate markings on the primaries below the apex; otherwise this species does not materially differ from the preceding.

♀. The female is marked almost precisely like the male, but is much larger, the prevalent color being a warm pinkish-brown. Expanse, ♂ 45 mm.; ♀ 65 mm.

I have a good series of this species *ex larva*. They emerged from the cocoon in the latter part of August and early September, having pupated between July 28th and August 17th. I shall in a future paper furnish a full description of the larvae.

180. *L. minima*, sp. nov. ♂. Front, collar, and upper side of the thorax warm reddish-brown. Upper side of abdomen pale pinkish-brown; legs and under side of the body pale pinkish brown, the anterior margins of the legs being marked with dark brown. Upper side: The primaries are pale pinkish-brown of the same color as the upper side of the abdomen with a dark brown band of the same color as the upper side of the thorax extending obliquely from the costa at the base to the outer angle. The apical third of the wing below the costa is clouded with the same dark brown color. There is a small silvery spot at the end of the cell, and very narrow and obscure angulated transverse basal, median, limb, and submarginal lines. The secondaries are pale pinkish brown of the same shade as the upper side of the abdomen and have an obscure incomplete transverse median line on the costa. On the under side, both wings are pale pinkish-brown, the dark lines of the upper surface reappearing very faintly and obscurely upon this side. Expanse, 30 mm.

SATURNIIDAE.

CYRTOGONE, Walk.

181. *C. lichenodes*, sp. nov. ♂. Front and collar dark brown; patagia vandyke brown sprinkled with hoary scales. The middle of the thorax and the upper side of the abdomen are whitish, hoary, marked with a line of black spots on the dorsal line

of the abdomen, and by a lateral row of similar spots on either side of the abdomen above the spiracles. The pectus and legs and the lower side of the abdomen are rich dark brown. The tarsi are ringed with pale yellowish. Upper side: The primaries are olivaceous-gray, shading at the apex and on the outer margin near the middle into pale ochraceous. They are profusely sprinkled with transverse linear greenish-gray striae. There is an interrupted sub-basal line crossing the lower end of the cell and curving outwardly to near the middle of the inner margin. This line is rich velvety black. The outer angle and the apical third of the wing are clouded with vandyke brown and marked by exceedingly intricate black curved zigzagged submarginal lines. The secondaries at the base and on the costa are vandyke brown, shading into pinkish near the costa. The outer margin and the inner margin are broadly vandyke brown marked with a multitude of minute blackish striae and spots. A zigzag black line runs from the inner margin above the anal angle toward the outer margin. On the under side, the primaries have the base and the inner margin broadly laved with pink; the costa, the apical third, and the outer margin pale fuliginous dotted and streaked with exceedingly intricate spots and lines of blackish, with two or three silvery white dots upon the costa near the middle. The secondaries have the same color and style of marking as the apical third of the primaries. The general effect of the marking and coloration strongly suggests some forms of lichens, hence, the specific name. Expanse, 58 to 65 mm. Habitat Kangwé and Benita. Taken in the month of January.

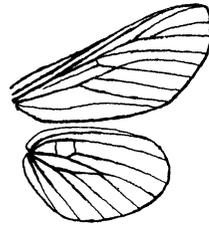
Mr. Kirby in his synonymical catalogue refers *Cyrtogone*, Westw., to the Pinaridae, but without propriety. I have carefully denuded the wings of a specimen of the above species, which I compared with the types of the genus in the British Museum and find the neuration to be strictly Saturniid.

Westwood was right in his location of the genus. It has nothing in common with *Pinara* or *Gonometa*, the typical genera of Mr. Kirby's group.

ARBELIDAE.

LEBEDODES, gen. nov.

Allied to *Encaumaptera*, Hpsn. The palpi minute, porrect; antennae of male relatively short, bipectinated to tips, the branches gradually diminishing in length from the base to the tip; legs hairy; tibiae with long terminal spurs. Fore wings with veins seven, eight, and nine stalked together. Hind wings with no bar between vein seven and eight; vein eight long running nearly parallel to the costa as far as the apex; the areole is divided in the middle by a narrow upright bar; veins three and four from the end of the cell; veins five and six from the upper and lower angles of the areole. Type *L. cossula*, Holl.



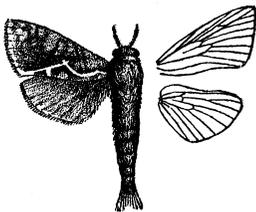
Neuration of *L. cossula*, Holl., ♂ †

182. *L. cossula*, sp. nov. ♂. Extremity of abdomen projecting for half its length beyond the inner margin of the secondaries. Front and collar pale mouse color; patagia dark blackish-brown, margined internally by mouse color; upper side of thorax mouse color; upper side of abdomen mouse color inclining towards the anal extremity to pale ochraceous and ornamented on the dorsal line immediately back of the metathorax by a large patch of brown, or blackish hairs.

The under side of the body and the legs are mouse color. The primaries and the secondaries on the upper side are mouse color, shading slightly on the inner margin into brownish. The inner margin from the base to the middle below vein one is dark, blackish-brown. The wings are crossed by a number of brownish transverse striae and marked on the outer third by a straight transverse brown line running from the costa two-thirds of the distance from the base to the outer angle, where it unites with a similarly colored curved submarginal brown line. The secondaries are marked on their inner two-thirds by numerous, narrow, transverse brown striae. On the under side, both wings are paler than on the upper side and the markings of the upper surface faintly reappear. Expanse, 50 mm.

METARBELA, gen. nov.

Allied to *Arbela*, Moore, but differing in the following particulars: The antennae are relatively shorter than in the genus *Arbela*; the primaries have a bar between veins nine and ten a little beyond the origin of vein seven, which together with vein eight are emitted from vein nine. The existence of this bar results in the formation of a secondary cell beyond the true cell. In the secondaries, vein one has two branches, whereas in *Arbela* there are three; and veins six and seven are stalked, whereas in *Arbela* they spring directly from the cell. Type *Metarbela stivafer*, Holland.



Metarbela stivafer Holl., (Cf. Hampson, Moths of India, v. i, p. 315, for neuration of *Arbela*).

183. *M. stivafer*,* sp. nov. ♂. The palpi brown; front very light brown; collar and patagia darker brown; upper side of thorax and abdomen clothed with golden-ochraceous hairs; the lower side of thorax and abdomen covered with long silky pale ochraceous scales. The primaries on the upper side are pale ochraceous with the outer margin fading into pale cinereous. The fringes are a trifle darker than the marginal portion of the wing. The body of the wing below the cell and beyond it toward the outer margin is clouded with brownish irregular markings. On the lower margin a well defined silvery line runs from the base to the outer angle. This line is curved strongly beyond the base forming almost a semi-circle from the base to the origin of the first median nervule, and then runs along this nervule as a straight line to the outer angle. Midway between the outer angle and the origin of the median nervule a white silvery spot appears and is confluent with the silvery line on its lower side. The lower margin of this silvery line is sharply defined by dark brown. The secondaries are uniformly very pale fuscous. On the under side, both wings are pale fuscous. Expanse, 25 to 30 mm.

I have a series of sixteen males of this species, but no females. I give it its specific name from a fancied resemblance to the outline of a plough-tail which the silvery marks upon the primaries present when viewed from in front.

ADDENDA TO BOMBYCIDAE.

ARCTIIDAE.

AUTOMOLIS, Hübn.

184. *A. Ehrmanni*, sp. nov. ♀. Antennae black; palpi and front crimson; collar bluish-green margined above with crimson; patagia crimson; upper side of thorax crim-

* *stiva* = a plough-tail; *ferre* = to bear.

son; upper side of abdomen with the somites bluish-green, heavily bordered on their hind margins with crimson. The lower side of the thorax and abdomen is crimson with the legs bluish-green. The primaries on the upper side are smoky-brown with the outer angle laved with ferruginous. There is a subtriangular hyaline spot in the cell on its upper margin before the discocellulars. There is a subovate larger hyaline spot below the cell near the origin of the first median nervule and a curved transverse series of four hyaline spots beyond the cell, the largest situated between veins five and six. The secondaries are uniformly bright orange-red. On the lower side, the primaries have the costa crimson and the inner margin broadly orange-red, shading upwardly into crimson with the apical half maroon. The secondaries are as on the upper surface. Expanse 70 mm. Habitat Liberia.

I name this magnificent species in honor of Mr. George Ehrmann, of Pittsburgh, whose interest in entomological matters is well known, and to whom I am indebted for the type.

LIPARIDAE.

AROA, Walk.

185. *A. omissa*, sp. nov. ♂. Body and appendages argillaceous; abdomen with a number of small tufts of black hairs on the dorsal line. Primaries argillaceous sprinkled with minute darker scales, with a black sub-basal dot near the costa, a large subquadrate black spot at the end of the cell, and above it on the costa two small subtriangular black spots. The secondaries are creamy-white with a dark gray discal spot and a series of similar transverse spots near the anal angle. On the under side, both wings are creamy-white, both have conspicuous gray, discal spots, and the markings of the secondaries near the anal angle reappear from the upper side. Expanse, 22 mm.

NOTODONTIDAE.

DESMEOCRERA, Wallengr.

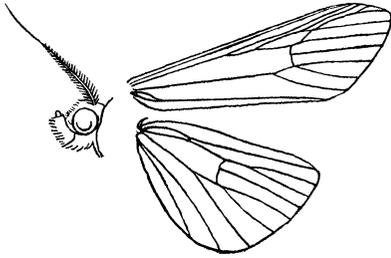
186. *D. (?) hinnula*, sp. nov. ♂. Front brownish; upper side of thorax and abdomen pale greenish-brown with some dark spots upon the dorsal line of the abdomen; legs brown; under side of abdomen pale fawn. Primaries dark wood-brown interrupted by a curved crenulate narrow greenish-yellow transverse limb band about the middle of which a narrow greenish-yellow ray reaches outwardly to the margin. On either side of this pale band are two very fine dark brown lines, conformed to the convolutions of the band. In addition the wing is ornamented by a very fine curved and denticulate basal and sub-basal line. There is a linear dark brown discal mark at the end of the cells. The fringes are pale greenish-gray minutely checkered with dark brown at the tips of the nervules. The secondaries are uniformly fuscous. The under side of both wings is fuscous, the primaries paler on the costa and traversed by an obscure, curved transverse limb band. Expanse, 34 mm.

I refer this inconspicuous and obscurely colored bombycid provisionally to *Desmeocraera*, to which it apparently comes nearer than to any other genus known to me.

SCRANCIA, gen. nov.

Closely allied to *Gargetta*, Walk., from which it differs in that the antennae in the male are simple from beyond the middle to their tip, the pectinations being confined to the basal half (whereas in *Gargetta* they extend to the tip); in the female the pectinations at the base are almost obsolete. Furthermore, in the primaries veins 10 and 11 have their origin relatively nearer the base of the cell than in *Gargetta*, and the areole at the upper angle of the cell is much larger. The brush of hairs at the basal extremity of the inner margin of the primaries, which is characteristic of *Gargetta*, is

wanting. The primaries are relatively longer and more sharply produced, and the abdomen is relatively longer. (Cf. Hampson, *Fauna of British India, Moths*, v. i, p. 135, for neuration of *Gargetta*.) Type *S. modesta*, Holland.



Scrancia modesta, Holl., ♂. (See plate 17, fig. 33.)

187. *S. modesta*, sp. nov. ♂. Lower side of palpi and collar pale fulvous; front paler; culmen of antennae pale grayish; setae testaceous; patagia hoary-gray; abdomen above and below together with the legs obscure fuscous-ochraceous. The primaries are gray showing a lilacine reflection on the inner and outer margins. At the base they are clouded with brownish, and are crossed by obscure geminate transverse basal, transverse median, and transverse limbal zigzag brown lines, the spaces between which are slightly paler than the body of the wing. On the inner margin, where the transverse limbal band terminates, there is a dark brown dot. Beyond the transverse limbal line, the neurations are marked with narrow blackish rays, each interrupted on the middle by a small white dot. There is an angulated submarginal series of obscure grayish lines. The margin is accentuated on the interspaces by brownish linear dots. The fringes are uniformly brown. At the end of the cell, there is an obscure brownish discal mark crossed by two narrow parallel transverse darker lines. The secondaries are uniformly pale fuscous shading into creamy on the costa. On the under side both wings are dusky, traversed

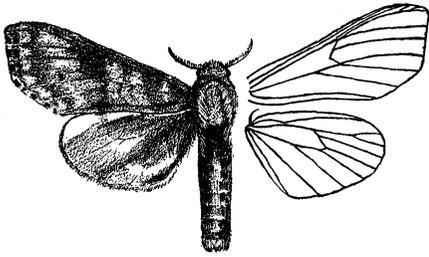
by incomplete transverse median, transverse limbal, and transverse submarginal bands of brown.

♀. The female is like the male save in the respects pointed out in the description of the genus. Expanse, ♂ and ♀, 48 mm.

CATARCTIA, gen. nov.

Palpi hairy, porrect, compressed; second joint long; third joint obsolescent and almost concealed by the hairy vestiture at the extremity of the second joint. Antennae short, bipectinated to the tips; setae in the female somewhat shorter than in the male. Legs of the male very hairy; of the female less hairy. The tibiae of the second pair are armed with a terminal spur; of the third pair armed with a subterminal and double terminal spurs. The primaries of the male are produced, with the costa rounded before the apex; apex truncate; outer margin produced at second median nervule, the margin forming an obtuse angle at this point; inner margin nearly straight. Secondaries suboval with all the margins evenly rounded. In the primaries, vein five springs from the upper discocellular one-third of the distance above the point at which it describes an angle directed inwardly with the lower discocellular. Vein seven is emitted from vein ten beyond the cell. Veins eight and nine are very short, stalked, the stalk being emitted from vein ten before the apex. Vein eleven is emitted from the cell near its upper angle. In the secondaries, vein one has two branches; veins six and seven are stalked; vein eight converges beyond its origin toward the cell, and then diverges widely. Type *C. (Arctia?) divisa*, Walker. (Cf. Walker's List, v. iii, p. 765.)

Walker described two insects under the name *Arctia divisa*, one an Indian insect, which is identical according to Kirby with *Arctia leopardina*, Koll. The other insect, which Walker referred with doubt to the genus *Arctia*, was from Sierra Leone. I have examined Walker's type, which is a male, and have compared it with specimens in my



Cateartia divisa, Walk., ♂.

collection. The female is in the collection of Mr. Herbert Druce of London, and is also represented in my collection by numerous specimens. The insect is a true notodont, as is shown by the neuriation.

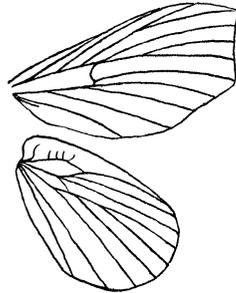
188. *C. divisa*, Walk. ♀. Differs from the male in the much broader expanse of the primaries, and in the almost complete obscuration of the transverse lines and markings of the primaries which appear in the male. The primaries in the case of the female are almost uniformly dull fawn on the upper surface, and are marked with a minute black spot at the base and similar minute black spots on the margin upon the intraneural interspaces. The secondaries are broadly pink, except upon the costa, where they are pale whitish fawn. On the under side, the primaries are broadly pink with the margins narrowly fawn. The secondaries are as in the male, but more broadly laved with pinkish.

LASIOCAMPIDAE.

PRONONESTIS, gen. nov.

Closely allied to *Odonestis*, Germ., from which it differs in the form of the primaries, which do not have the outer margin evenly rounded as in *Odonestis*, but produced at the outer extremity of the lower radial nervule. Furthermore, in the secondaries veins three, four, and five spring from a common stalk,

whereas in *Odonestis*, they spring directly from the cell. The accessory costal veinlets in the secondaries are few and incomplete, none of them reaching the costal margin, whereas in *Odonestis* they are well defined and reach the costal margin. The palpi are also much shorter than in *Odonestis*, scarcely being produced beyond the front. The female is much larger than the male. The antennae in both sexes diverge widely and are then bent backward about one-third of the distance from their insertion. Type *P. fulva*, Holland.



Neuriation of *Prononestis fulva*, Holl., ♂. (Cf. Hampson, *Moths of India*, v. i, p. 425, for neuriation of *Odonestis*.)

189. *P. fulva*, sp. nov. ♂. Lower side of palpi and antennae pale fulvous; upper side of thorax and legs moderately dark fulvous; lower side of thorax and entire abdomen pale fulvous. The upper side of the primaries is fulvous, slightly paler than the upper side of the thorax, and fading into pale fulvous-cinereous on the outer margin. There is a bright elongated discal cluster of silvery white scales at the end of the cell. The middle of the wing is clouded from the costa to the outer angle by dark brown. A similar patch of clouding covers the apex and does not quite reach the outer margin. Between these dark cloudings there is a narrow clouded band running from the costa transversely toward the outer margin, gradually



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