

other species of the Asteroidea is necessary before one can venture with any degree of assurance to answer the questions raised by the observations recorded in these notes.

For assistance in consulting the scattered and by no means readily accessible literature of autotomy and self-evisceration, I am indebted to the kindness of Dr. Bather of the British Museum of Natural History, and of Mr. A. R. Nichols of the National Museum, Dublin.

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XXXIX.—*New Species of Heterocera from Costa Rica*.—XVII. By W. SCHAUS, F.Z.S.

[Continued from p. 240.]

Subfam. *GEOMETRINÆ*.

*PROUTOSCIA*, gen. nov.

♂. Antennæ serrate and densely ciliate. Palpi short; second joint thickly scaled, third slender. Femora and tibiæ dilated, the hind tibiæ with large tufts of long hairs; ventral tufts at end of abdomen. Fore wings broad; outer margin rounded, slightly incurved above tornus; vein 2 from just beyond middle of cell; 3 and 4 apart; 6 from cell; 7 from end of areole; 8, 9, 10 stalked from end of areole; 11 from middle of areole. Hind wings broad, excised and lobed at anal angle; median approximated to inner margin; vein 2 apparently absent; 3 from near angle; 4 from angle; 5 from middle of discocellular, downbent towards angle; 6 from upper angle; 7 from cell; underneath with long tufts about anal angle, upturned hairy scales along vein 4, and down-turned scales along vein 6; an oblique ridge of hairy scales between veins 6 and 7. In the female the neurulation is normal, and the tufts are absent; the anal angle is slightly produced.

*Proutoscia mirifica*, sp. n.

♂. Frons buff-white with black points. Vertex white shaded with lilacine grey behind. Collar and thorax mottled lilacine and whitish, with a few dark irrorations. Abdomen above lilacine grey; two dorsal and an interrupted lateral reddish-brown line. Wings: base and margins pale lilacine grey. Fore wings: disc of wing with a large semihyaline pale yellow space pointed towards base of cell, its hind edge



curved to near inner margin postmedially, its fore edge following subcostal, and interrupted on vein 6 by a projecting brown shade, its outer edge parallel with outer margin; this space is edged with reddish brown, and is followed from vein 2-7 by a narrower reddish-brown shade; an oblique brown line at base of costa; an elongated yellow spot edged with reddish below cell at base; a brown, sinuous antemedial line from cell to submedian below which it is deeply inbent; a subterminal fine dark purplish line from costa, curved before apex, and slightly inbent below vein 3. Hind wings: a subbasal yellow spot partly edged with reddish; a large semihyaline yellow space, angled towards base, upturned towards costa, constricted postmedially, and not expanding towards apex, edged with reddish brown; a reddish-brown postmedial line, and a yellow, reddish-edged spot below vein 7; the subterminal purple line sinuous to termen at vein 6; termen shaded with reddish brown from apex to vein 6; termen from 6-5 shaded with black. Wings below yellowish white, simply showing the semihyaline spaces.

Expanse 40 mm.

The female differs in having the terminal opaque space on fore wings broader; the semihyaline space on hind wings outbent towards middle of outer margin, and has five rounded projections; the subterminal line continues to inner margin, and there is no black shading near anal angle.

Expanse 42 mm.

*Hab.* Sixola.

*Oospila peralta*, sp. n.

♂. Palpi dark brown. Frons rubbed. Vertex green; a white line between antennæ. Body and wings deep green. Abdomen: three suffusing oval tufts on segments 2-4 dorsally, dark brown irrorated with white and silver; smaller brown dorsal tufts on following segments. Wings: faint traces of an outer and subterminal darker shade; terminal white spots extending on cilia which are otherwise fuscous brown tipped with white. Fore wings: costa finely yellow, with a few brown irrorations; a faint darker antemedial shade; a black discal point. Hind wings: a small white discal spot. Wings below greenish white; the costa of fore wing more broadly yellowish.

Expanse 26 mm.

*Hab.* Peralta.

Near *O. restricta*, Warr.



*Blechroma epaphras*, sp. n.

♂. Palpi black, edged below and above with white. Frons white mottled with brown; vertex and body above green; some brown mottlings on thorax; abdomen with four small white dorsal spots, and faint whitish segmental lines on following segments. Wings green with some scattered darker green spots; cilia whitish green, with small fuscous spots at veins. Fore wings: costa finely creamy white striated with fuscous grey; some antemedial smoky spots forming an inbent line; four fuscous spots about discocellular; an outer lunular smoky shade, slightly inset between veins 5 and 6. Hind wings; a fuscous spot at base; a fine antemedial line and smoky spot on inner margin; the outer smoky shade nearer termen from vein 4 to inner margin. Wings below greenish white; the costa of fore wings with dark striæ and spots; some small spots in cell, and larger spots at end of cell and beyond it; the outer line well marked on costa.

Expanse 28 mm.

*Hab.* Juan Vinas, Carillo.

*Tachyphyle oleaster*, sp. n.

♂. Frons green; vertex white. Thorax, abdomen, and wings dull green, the wings tinged with brown; minute black discal points; a greenish-white line from near apex of fore wing to middle of inner margin of hind wing. Fore wings: the costa brighter green; a faint whitish-green medial line; cilia rather long, silky green. Wings below whitish olive; the whitish lines indistinct; the apex of fore wing tipped with black; minute black discal points. The female has no black tip to apex of fore wing below.

Expanse, ♂ 21 mm., ♀ 30 mm.

*Hab.* La Florida, Sixola, Tuis, Guapiles.

*Tachyphyle hamata*, sp. n.

♂. Palpi white. Vertex white. Collar and thorax green; abdomen above paler green. Wings green. Fore wings: the apex falcate; the outer margin incurved; some brownish striæ in cell and below it, forming a faint antemedial line extending to submedian; a fine fuscous line on discocellular; outer space to termen shaded with brown, crossed by a broad dark purplish-brown shade, outwardly tinged with lilacine; this shade extends across middle of hind wings. Fore wings below dull dark green, the hind wings greenish white; a



broad dull purplish-green shade from apex of fore wing to middle of inner margin of hind wing.

Expanse 32 mm.

*Hab.* Tuis.

*Racheospila acutularia*, sp. n.

♂. Palpi brownish fringed with white below. Head and body green; a white line between antennæ; three dorsal white spots on abdomen, the first and third edged with dark red. Wings green; a terminal reddish-brown line, cut by fine buff lines on veins; cilia pale buff, darker-tipped, and with faint reddish shades at veins; minute black discal points; lines whitish, very fine; antemedial very indistinct; postmedial straight on fore wings, slightly angled on hind wings. Apex of fore wings acute, the costa white, shaded brown at base.

Expanse 25 mm.

*Hab.* Tuis.

Belongs to Sect. I.

*Racheospila agenoria*, sp. n.

♂. Palpi brown fringed with white below, the second joint long, the third minute. Frons dark green with lateral white points below; a white line between antennæ edged behind with brown. Thorax and abdomen above green; a small white spot edged with roseate brown dorsally at base; traces of segmental white lines and two points; in the female there are three dorsal spots of about the same size. Wings green; a terminal red line; cilia white tipped with greyish, and with narrow brownish shades at veins; an outer wavy lunular white line; black discal points. Fore wings: the costa finely white shaded with brown at base; an antemedial white line faintly wavy and outbent from costa. Hind wings: the antemedial white line slightly wavy, indistinct.

Expanse 22 mm.

*Hab.* Juan Vinas, Tuis.

Belongs to Sect. I. Allied to *R. lixaria*, Gn., but distinguished by the green frons and more wavy lines.

*Racheospila dorsilinea*, sp. n.

♂. Palpi whitish tipped with reddish brown. Head reddish brown crossed by a white line between antennæ, and one near palpi. Body above green; a white dorsal line on thorax behind and on abdomen. Wings pale green finely



irrorated with darker green; a very fine terminal brownish-red line; cilia creamy white; minute black discal points. Fore wings: costa white shaded with brownish red at base; a fine white antemedial line, slightly outcurved; a fine white outer line, parallel with termen. Hind wings: a fine white outer line, slightly curved. Underneath greenish white, the costa of fore wing tinged with pale brown, and with dark red at base.

Expanse 25 mm.

*Hab.* Poas.

Belongs to Sect. I. *d.*

*Racheospila nympharia*, sp. n.

♂. Frons greyish brown edged with green in front. Vertex and body green; three dorsal white spots on abdomen faintly edged with reddish, the basal spot smallest. Wings green; a very fine terminal pale brownish line, sometimes absent; cilia buff-white, with faint darker shades at veins; minute black discal points; antemedial and postmedial lines fine, white, the antemedial outcurved, the postmedial straight on fore wings, faintly wavy on hind wings. The female has the frons darker brown, and the white line on vertex edged with reddish brown.

Expanse, ♂ 27 mm., ♀ 30 mm.

*Hab.* Juan Vinas, Sitio, Tuis.

Belongs to Sect. I. *d.*

*Racheospila strigaria*, sp. n.

♀. Frons brown. Vertex green; a white line between antennæ. Body green, with traces of paler green segmental lines on abdomen. Wings green crossed by whitish striæ; cilia green; costa of fore wings finely white. Wings below whitish green; some fuscous shading at base of costa, and similar faint irrorations above median on fore wings.

Expanse 29 mm.

*Hab.* Turrialba.

Belongs to Sect. I. *h.*

*Racheospila concinnaria*, sp. n.

♂. Palpi white shaded with light brown. Frons light brown crossed by a white line near palpi; vertex white. Body above green; a dorsal white line on abdomen. Wings pale green; antemedial and outer lunular white lines, the latter outbent between veins 3 and 4; minute black discal



points; terminal minute white points; cilia white tipped with pale greyish brown.

Expanse, ♂ 15 mm., ♀ 19 mm.

*Hab.* Sixola, Guapiles, Juan Vinas, Avangarez.

Belongs to Sect. II.

*Racheospila interlucens*, sp. n.

♂. Palpi reddish brown fringed with white. Frons reddish brown crossed by a white horizontal line; vertex white, edged with reddish brown behind. Collar and thorax green. Abdomen above purple with short white segmental lines dorsally. Wings green; an outer row of short purple streaks on veins; a fine terminal roseate brown line; cilia roseate white, with faint darker shades at veins. Fore wings: antemedial small purple spots on subcostal, median, and submedian; costa white shaded with brown at base, and edged behind by a faint yellowish line; a purple discal point. Hind wings: a large semi-oval purple spot on inner margin, edged with a broad yellowish shade on discal side. Underneath greenish white.

Expanse 27 mm.

*Hab.* Juan Vinas, Tuis.

*Racheospila porcius*, sp. n.

Palpi purplish fringed with white below. Frons purplish. Vertex green edged with white behind. Collar and patagia green. Thorax and abdomen above roseate brown, partly irrorated with black; two white dorsal spots. Wings green; discal spots rather large, lilacine brown. Fore wings: costa creamy white; inner and outer lines paler green, edged on medial side with darker green, the former slightly outbent, the latter faintly outcurved and barely lunular, suffusing at vein 2 with roseate brown blotch on inner margin, which is downcurved to tornus, and upbent as a line on termen; a similar large spot on outer margin from just above vein 4 to vein 8, its inner edge rounded; both spots edged with purple-brown and then narrowly with orange-yellow; termen green from below to above vein 4. Hind wings: termen from apex to near vein 4, and from 2 to inner margin broadly lilacine brown, edged as spots on fore wings, but connected by a fine terminal purple line; a narrow purplish streak from anal blotch along inner margin, not reaching base.

Expanse 29 mm.

*Hab.* Juan Vinas.

Near *R. fallax*, Warr., but spots all larger.



*Leptolopha marginata*, sp. n.

♀. Palpi buff-white. Frons reddish brown; a white line between antennæ. Body above green; abdomen with yellowish-white dorsal line, and lateral white segmental lines. Wings green with some scattered darker green irrorations; termen pale greenish yellow inwardly edged by a fine yellow-brown line; cilia greenish yellow. Fore wings: costa greenish yellow; a black discal point. Hind wings: a whitish-yellow streak across end of cell. Wings below greenish white.

Expanse 24 mm.

*Hab.* Tuis.

Between *L. flavolimes*, Warr., and *permagna*, Warr.

Subfam. *ACIDALIINÆ*.*Anisodes aquila*, sp. n.

♀. Body olive-buff, the last three segments of abdomen above bright magenta. Fore wings yellow-buff, finely irrorated with purplish brown; an indistinct dark antemedial line, angled in cell, and marked by purplish points on subcostal, in cell, on median, and on submedian; a fine purplish-red outer line from vein 7, straight and inbent to inner margin, followed by a slightly fuscous shade; subterminal purple-brown points on veins; a fine terminal magenta line, and similar points on interspaces. Hind wings similar, the irrorations partly replaced by purplish striæ, the outer line not reaching costa. Wings below similar, but duller; purplish discal shades; the outer line broader, purplish; the fore wing below cell shaded with purplish.

Expanse 43 mm.

*Hab.* Poas.

*Anisodes erastus*, sp. n.

♀. Head fuscous grey. Collar, thorax, and abdomen pale brownish red. Wings yellow thickly irrorated with brown-red, the lines fine, fuscous grey. Fore wings: costa fuscous grey; antemedial slightly outcurved; a streak on discocellular; veins from cell greyish; postmedial slightly outcurved, vertical from vein 2; outer line oblique from vein 8 to vein 6, then lunular; a subterminal greyish line from costa to termen at vein 4. Hind wings: medial space and veins beyond greyish; a black point on discocellular; postmedial slightly curved; outer line straight from costa to



vein 6, then lunular and closer to termen. Wings below luteous tinged with roseate ; lines faintly marked.

Expanse 22 mm.

*Hab.* Sixola.

*Anisodes peplumaria*, sp. n.

♀. Palpi purplish fringed with pale buff. Head, collar, thorax, base, and tip of abdomen yellow irrorated with red ; abdomen otherwise dorsally fuscous tinged with lilacine. Wings fuscous tinged with lilacine. Fore wings: base yellow irrorated with red, its outer edge inbent from end of cell to inner margin at antemedial line, which is fine, fuscous, and slightly outcurved ; an outbent fuscous line at base ; a medial line on costa, beyond which are some yellowish irrorations ; postmedial fine, black, lunular, deeply outcurved and barely visible on dark ground-colour ; outer line fine, lunular, oblique to vein 4, then inbent, followed by yellow to termen, but cut by dark veins, and greatly reduced before apex by a broad fuscous line from costa to termen at vein 4. Hind wings: base and termen from below vein 4 to anal angle yellow irrorated with red ; a black discal point ; traces of a postmedial and subterminal black line ; a few black scales postmedially below vein 3. Wings below purplish ; the yellow spaces on termen whiter ; the base suffused with roseate yellow.

Expanse 24 mm.

*Hab.* Sixola.

*Anisodes scriptilinea*, sp. n.

♀. Frons lilacine brown, Vertex, collar, thorax, and base of abdomen deep yellow irrorated with red ; abdomen otherwise lilacine white irrorated with yellow and reddish brown. Wings yellow, the lines purplish. Fore wings thinly irrorated with red, rather more thickly on basal half ; a basal line ; antemedial line outbent on costa, then vertical, preceded by a short line in cell ; a lilacine grey line on discocellular edged with purple, and a spot above it on costa ; postmedial fine, outcurved, straight and slightly outbent from vein 2, below discocellular, to inner margin ; outer line outbent, wavy, lunular, and incurved from vein 4 ; a heavy straight line from costa before apex to termen at vein 4 ; a terminal lunular line, veins finely greyish. Hind wings more heavily irrorated with red, except on medial space which is lilacine grey, and encloses a small



yellow, red, and black discal spot; antemedial line wavy; postmedial outbent between veins 4 and 3; outer line oblique to vein 4, then lunular and subterminal; a fine line from costa to termen at vein 4; the veins on outer half fuscous grey. Wings below tinged with red; the lines fine, faintly indicated.

Expanse 24 mm.

*Hab.* Sixola.

*Anisodes silas*, sp. n.

♂. Palpi whitish buff edged above at base with magenta. Head, body, and wings pale yellow; terminal half of abdomen whiter, and with a few dark red hairs. Wings irrorated with reddish-brown points connected by ochreous-yellow shades, forming short striæ. Fore wings: two dark superposed points on costa beyond base; black points on subcostal, in cell, on median and submedian, connected by a fine ochreous-yellow antemedial lunular line, inbent from subcostal; a white point circled with purple-brown at end of cell, followed by an oblique dark line, faintly lunular, from costa to middle of inner margin; a fine outer lunular line marked by dark points on veins; a fine subterminal lunular shade, the lunules outwardly filled with clearer yellow; terminal dark points on interspaces. Hind wings: a fine antemedial wavy line; a dark transverse shade from costa beyond middle to middle of inner margin, crossing the discocellular spot which is white, broken into three parts by some dark shading; outer and subterminal line, also terminal spots, as on fore wing. Underneath whitish yellow, the lines as above, purplish; a similar faint shade on fore wing along median and between veins 3 and 4 to subterminal.

Expanse 36 mm.

*Hab.* Juan Vinas, Tuis, Poas.

*Anisodes sopater*, sp. n.

♂. Body above roseate brown, the third and fourth segments of abdomen dorsally purplish; underneath luteous. Wings roseate brown; minute subterminal black points on veins; fine terminal points on interspaces; a very faint postmedial smoky shade. Fore wings: a white point on discocellular. Hind wings: a white point edged with black on discocellular. Fore wings below roseate; a fine whitish line on discocellular; a fine darker outer line. Hind wings below yellowish white, the costa tinged with roseate; a fine roseate outer line.

Expanse 29 mm.

*Hab.* Juan Vinas, Tuis.



*Anisodes tertullus*, sp. n.

♀. Palpi and head fuscous brown. Body and wings deep yellow thickly irrorated with red; a dorsal line on abdomen, and lines on wings fuscous. Fore wings: costa fuscous; a fine antemedial line, slightly curved; a line on discocellular; postmedial slightly outbent to vein 4, angled and inbent to below discocellular, then downturned; subterminal fine, lunular; veins tinged with fuscous brown, irrorated with yellowish; cilia purplish. Hind wings: a small white spot at end of cell, dark-edged; postmedial straight from costa to vein 4, angled and upturned and outbent to middle of inner margin; subterminal fine, lunular. Wings below roseate yellow, the lines faintly indicated.

Expanse 30 mm.

*Hab.* Juan Vinas.

*Anisodes timotheus*, sp. n.

♀. Palpi whitish buff, the second joint streaked above with purple-red. Frons whitish, edged with dark brown above. Vertex, collar, thorax, and wings lilacine buff with brownish striæ; a fuscous line on collar in front. Wings: lines dull olive-green irrorated with black; outer line lunular, outcurved; traces of subterminal dull greenish shades, veins terminally so shaded; terminal black points. Fore wings: costal margin dark olive, with fuscous-brown irrorations; antemedial line outcurved to below cell, then outbent; an oblique narrow oval line at end of cell; postmedial sinuous, nearly vertical; two small subterminal black spots between veins 4 and 6. Hind wings: a black point at base; antemedial lunular, outangled near inner margin; an oval black spot containing a white point on discocellular; medial line fine; outer line a continuation of medial line on fore wing. Wings below yellowish white; fore wings with lines and striæ purplish red; hind wings with faint traces of outer line and a few striæ on costa; terminal points reddish.

Expanse 27 mm.

*Hab.* Juan Vinas, Tuis, Guapiles.

Very near *A. spissata*, Warr.

*Anisodes transecta*, sp. n.

♂. Body above olive-grey; abdomen pale buff terminally and with a lateral purple-red streak about middle. Wings whitish buff, shaded and striated with light brown. Fore wings: costal margin olive-grey, irrorated with fuscous; a



reddish-brown line from base along median and close above vein 4 to termen, crossed by a similar line from costa near apex to middle of inner margin, both partly shaded with dark grey; a curved antemedial line in cell and a short line from cell, inset; a reddish-brown annular spot at end of cell containing lilacine scales; an outer, wavy, reddish-brown line from vein 8 to just below 4, and a similar point on vein 3; termen mottled with dark grey and red-brown from line at vein 4 to near 6; olive-grey shading and reddish irrorations from vein 4 to tornus; terminal dark points. Hind wings: a fuscous basal streak; a fine red-brown antemedial line and broader medial line, suffusing below costa, diverging on inner margin, the latter followed by olive-grey shading and a silvery-white point on discocellular; outer line fine, reddish brown from vein 6 to inner margin; termen broadly fuscous grey from near vein 4 to inner margin. Underneath whitish yellow, with few striæ; the lines fuscous, less distinct; the outer line punctiform.

Expanse 37 mm.

*Hab.* Juan Vinas.

*Anisodes trophinus*, sp. n.

♀. Body and wings deep yellow, irrorated with red; a black dorsal patch, irrorated with white near base of abdomen; lines fine, black; a subterminal deeply lunular dentate line; an interrupted terminal red line; a fine black and red line on discocellulars; some black mottling on cilia at veins. Fore wings: antemedial line twice outcurved to submedian; a lunular postmedial line, incurved below vein 3 and thickened on veins. Hind wings: subterminal line irregular, angled at vein 4. Wings below yellow, shaded with red; the subterminal line well marked.

Expanse 33 mm.

*Hab.* Juan Vinas.

*Anisodes tychicus*, sp. n.

♀. Palpi buff, edged with purple above. Frons purple. Vertex fuscous. Collar and thorax red. Abdomen above red at base, otherwise purplish; underneath luteous. Wings reddish orange, thickly striated with red; a faint subterminal lunular line, marked by dark points on veins; terminal purplish points on interspaces. Fore wings: costa and inner margin dull purplish brown; antemedial line slightly outbent, dark red; a white point at end of cell, closely followed by a broad medial reddish shade, interrupted



by a dull greyish-brown shade just below cell, this shade extending on veins 3 and 4 to termen. Hind wings: a fine subbasal line; a large white spot at end of cell, followed by a transverse dark shade; veins 3, 4, 6, and 7 heavily shaded with dull greyish brown. Wings below pale yellowish, shaded with roseate purple; medial shade and subterminal line well marked; discocellular spots dull white, on fore wing linear.

Expanse 33 mm.

*Hab.* Juan Vinas.

*Anisodes vineotincta*, sp. n.

♀. Body above brownish red, underneath yellowish buff, the legs partly dull roseate. Wings dull brownish red, with scattered white striæ; veins fuscous; subterminal white points on veins. Fore wings: a round white spot at end of cell, edged with fuscous. Hind wings: a large round white discal spot, edged with fuscous and containing an interrupted fuscous ring, within which the white is tinged with yellow. Wings below thinly scaled, whitish buff, tinged with roseate; a postmedial sinuous red line; an indistinct fine red subterminal line; termen with reddish striæ.

Expanse 35 mm.

*Hab.* Juan Vinas, San José.

*Heterephyra directilinea*, sp. n.

♀. Body and wings brown, thickly irrorated with reddish, the lines purplish red. Fore wings: the antemedial line outcurved on costa and slightly outbent, very distinct; postmedial line straight, distinct; outer line finer, twice outcurved; a minute white discal point, dark-edged. Hind wings: a white discal spot, dark-edged; postmedial line straight; outer line wavy. Wings below yellowish, tinged with pale roseate brown; black streaks on discocellular; postmedial line straight, fuscous; outer line dentate, wavy, without the pronounced curves of upper side.

Expanse 35 mm.

*Hab.* Juan Vinas.

Closely allied to *H. ladrilla*, Dogn.

*Heterephyra johannis*, sp. n.

♂. Palpi reddish brown, fringed below with pale buff. Frons below dark brown, shading to black above and on vertex. Collar, thorax, abdomen, and wings brown, tinged



with red and finely irrorated with fuscous. Fore wings: the costa darker shaded; lines fine, fuscous; antemedial slightly angled on median; postmedial vertical to vein 4, inbent to vein 2, and vertical to inner margin; outer line finely wavyly lunular, inbent at vein 3 and vertical below it; a small white discal spot. Hind wings: a black discal point, edged with grey; postmedial bluntly angled at vein 4; outer line curved, finely wavy, indistinct. Wings below roseate brown, with faint traces of postmedial and outer lines.

Expanse 32 mm.

*Hab.* Juan Vinas.

Allied to *H. fuscicosta*, Warr., but differently coloured.

*Dichromatopodia masinissa*, sp. n.

♂. Head, thorax, and wings reddish brown, finely irrorated with buff; discal spots small, whitish and fuscous grey; a fine outer buff line, faintly curved; a medial fuscous shade. Fore wings: a fine buff antemedial line, angled on subcostal. Wings below pale reddish brown; a medial dark line; a fine purplish-red outer line. Abdomen fuscous brown.

Expanse 26 mm.

The female has the base and outer margin tinged with dark purple, and some fuscous shading following outer line.

*Hab.* Juan Vinas, Cartago.

*Dichromatopodia micipsa*, sp. n.

♂. Body and wings reddish brown, irrorated with greyish buff; veins slightly yellowish; discal spots small, mottled grey and black; an outer nearly straight buff line, inwardly edged with slightly darker brown. Fore wings: an antemedial buff line, angled on subcostal, then straight to inner margin. Wings below luteous, shaded with pale red; cilia purplish; a faint reddish outer line.

Expanse 25 mm.

*Hab.* Juan Vinas.

Very similar to *D. miniata*, Dr., which has a white line on discocellular.

*Dichromatopodia orbona*, sp. n.

♀. Body and wings purplish brown. Fore wings: costa dark-shaded; a fine antemedial purple-red line, inwardly edged with dark grey, outwardly oblique from costa; a small white spot on discocellular; outer line heavily marked,



fuscous brown, outwardly edged with ochreous grey, from costa near apex to middle of inner margin on hind wings; the ochreous-grey shade on hind wing is followed by a fine black line. Wings below dull roseate, the outer line less conspicuous.

Expanse 24 mm.

Hab. Tuis.

Subfam. *LARENTIINÆ*.

*Cambogia citriaria*, sp. n.

♀. Head and collar orange-brown; a white line between antennæ. Thorax and abdomen yellow, spotted with orange-brown. Wings bright yellow, crossed by broken orange-brown lines; the small discal spots distinct on a clear yellow shade preceding the postmedial fascia, which is broad, tinged with dull lilacine grey, and striated with yellow, its inner edge slightly curved, its outer edge on fore wing incurved beyond cell and below vein 2; this fascia is followed by a narrow clear yellow shade; the lines on outer space are darker yellow, edged with orange-brown, and irregularly confluent. Hind wings: the outer edge of postmedial fascia expands between veins 2 and 4. Wings below pale yellow, the markings purplish. Fore wings: an antemedial shade; postmedial shade broad, outlined as above, followed by a fine line and heavier subterminal line; terminal points between the veins. Hind wings: the postmedial shade narrow; a subterminal line; discal spots on both wings.

Expanse 21-23 mm.

Hab. Juan Vinas, Tuis.

Intermediate between *C. odatis*, Dr., and *C. numeria*, Dr.

*Hammaptera caribbea*, sp. n.

♀. Body and fore wings pale green. Fore wings: sub-basal fascia consisting of three black lines on a greenish-brown ground; antemedial space clear, with faint traces of a line and dark spot on costa; medial fascia consisting of four black lines on greenish brown; a dark line on discocellular; postmedial geminate, irregular, somewhat incurved opposite cell, followed by two outer lines, the inner one more heavily marked, indentate between veins 6 and 5, outcurved and punctiform on veins and fold; another line suffuses with the brown shadings preceding the subterminal lunular whitish line, these shadings being blacker and heavier above and below vein 5 and at vein 7; terminal geminate black



points at veins. Hind wings dull brownish grey, the outer margin darkest. Wings below yellowish white; black discal points; three wavy postmedial lines; the outer margins broadly black; cilia greenish yellow, spotted with black on fore wings.

Expanse 32 mm.

*Hab.* Sixola, Banana River, Alajuela.

The male has anal fold to near base filled with long creamy tufts.

*Hammaptera fartaria*, sp. n.

♂. Body greenish mottled with brown; black segmental lines on abdomen, edged behind with grey. Fore wings to outer line dark green; subbasal, medial, and postmedial fasciæ dark brown, edged and crossed by still darker lines, starting from three black lines on costa, the medial and postmedial suffusing shortly below cell; a narrower antemedial fascia marked by two lines; outer line white, strongly marked, slightly incurved between veins 6 and 4, then lunular, projecting somewhat between 4 and 3, inwardly shaded with dark green and outwardly edged by a green line from costa to vein 6 and between veins 4 and 3; terminal space broadly light green, crossed by some darker lunular lines, and with fuscous-brown shadings on costa, from vein 3 to tornus, and above vein 4, the latter having its anterior edge oblique and shaded with reddish brown. Hind wings slate-colour, without fovea or long hairs in fold. Wings below fuscous; black discal points. Fore wings: an outer white fascia from costa to vein 4, angled and less distinct, but expanding and better marked on inner margin; apex white; a terminal white spot between veins 3 and 4. Hind wings: a narrow outer whitish line.

Expanse 38 mm.

*Hab.* Juan Vinas, Sitio.

*Hammaptera herbosaria*, sp. n.

♂. Palpi green, mottled with fuscous. Head and body green, collar with a transverse fuscous shade; patagia heavily shaded with fuscous brown; abdomen with transverse black shades, most distinct on three basal segments. Fore wings bright green; a subbasal dark green fascia, somewhat constricted below cell, edged by fine black lines and crossed by two fine dark brown lines; antemedial space crossed by a geminate dark green line, and a fine single line before medial fascia, which is similar to subbasal, but its



outer edge is lunular below cell and touches the inversely lunular postmedial on vein 2, on fold, and not quite on submedian; postmedial fuscous brown, geminate, wavy, and outcurved beyond cell; a fuscous line edged with pale green on discocellular; postmedial followed by a fine indistinct dark green line; a geminate outer line, the inner portion heavily shaded with black from costa to vein 4, and on veins otherwise; a lunular subterminal pale green line, preceded by fine geminate lines and outwardly partly edged with black; a terminal black line; cilia green, spotted with fuscous green. Hind wings dark slate-colour; the fovea above anal angle whitish, shaded with roseate buff; a terminal black line and pale points at veins; cilia brown, tipped with grey. Wings below whitish, finely irrorated with black; black discal lines. Fore wings: an antemedial small black spot on costa; postmedial and outer fuscous lines angled at vein 4 and not reaching inner margin, which is broadly clear white; termen broadly fuscous, a whitish shade at apex and terminally between veins 3 and 4. Hind wings: fine postmedial and outer black lines; a broad marginal black shade, partly mottled with white terminally.

Expanse 35 mm.

*Hab.* Juan Vinas.

*Hammoptera linusaria*, sp. n.

♂. Palpi light brown, joints tipped with white. Head and abdomen cream-colour, the latter with fine pale brown transverse lines. Thorax grey; patagia streaked with black. Fore wings white, irrorated with brown; medial space brown; termen shaded with brown; a subbasal brownish line, edged with black irrorations; a fine brownish antemedial line, preceded and followed by a less distinct line; the medial space inwardly edged by a wavy black line and outwardly by angled black lines on veins, also crossed by black lines, suffusing below black discocellular line, forming spots to inner margin; a subterminal lunular white line, preceded by black spots above and below vein 5; terminal geminate black spots at veins. Hind wings whitish, the termen rather broadly dark grey. Wings below whitish, the outer margin broadly fuscous grey; fine discal streaks, more pronounced on fore wing.

Expanse 24 mm.

*Hab.* Esperanza, Tuis, Banana River, Avangarez.

The description is taken from a specimen with medial space heavily marked, some specimens having it much greyer, with



only its margins darker; this is especially the case in the females. The species is very similar to *H. tenera*, Warr., but differs below.

*Coremia apollosaria*, sp. n.

♂. Body brownish grey; abdomen with transverse dark brown shades and whitish segmental lines. Fore wings grey; base and medial space light reddish brown, the termen shaded with grey-brown; basal space edged by a darker line; two fine antemedial lines; the medial space crossed by fine darker lines before and beyond the black point on discocellular, the last line vertical from costa to vein 4, outangled, and slightly inbent; postmedial space whitish, with geminate black points on veins; apex greyish, with an oblique terminal fuscous shade below it. Hind wings whitish; a minute point on discocellular; postmedial lines very faint; some grey-brown shading at anal angle. Wings below greyish, with faint traces of lines; minute discal points and some scattered irrorations on hind wings.

Expanse 24 mm.

The female has the medial space broader and deep reddish brown.

*Hab.* Poas, Turrialba.

*Coremia discataria*, sp. n.

♂. Body slate-grey; abdomen with paler segmental lines. Fore wings slate-grey; a medial and a postmedial broad brownish fascia, suffusing below a large pale patch at end of cell and crossed by indistinct fuscous lines, the outer edge of postmedial finely paler grey, sinuous; a subbasal curved brownish line and traces of a finer antemedial; traces of a subterminal lunular whitish line, preceded by brownish shadings, all very indistinct; traces of an interrupted terminal fuscous line. Hind wings grey; three sinuous, fine, medial fuscous lines, and traces of other lines on inner margin close to anal angle. Wings below greyish; black discal points; three fine postmedial fuscous lines. Hind wings thinly irrorated with fuscous and reddish brown.

Expanse 26 mm.

*Hab.* Poas, Turrialba.

*Coremia lucasaria*, sp. n.

♂. Body brown; some black irrorations on abdomen. Fore wings: basal and outer thirds yellow-brown; medial



space fuscous brown; basal space crossed by indistinct darker lines; medial space broad on costa, narrower below vein 4 and cell, its inner edge outcurved, shaded with white on costa, its outer edge serrate, vertical to vein 4, projecting, slightly inbent, with darker streaks on veins 2-4 and some white shading on costa; veins on postmedial space irrorated with fuscous and whitish; subterminal black spots from veins 4-8, partly edged with white; an interrupted terminal black line. Hind wings grey-brown; a broad medial shade, slightly darker. Wings below greyish; outer third of fore wing and entire hind wing irrorated with reddish; minute black discal points.

Expanse 23 mm.

*Hab.* Turrialba.

*Coremia zenasaria*, sp. n.

♂. Head, collar, and thorax greyish brown. Abdomen dark grey, mottled with black and crossed by pale segmental lines. Fore wings grey-brown, rather browner on medial space; a black discal point; lines fine, fuscous, slightly outcurved; a basal, two subbasal, two antemedial, three medial, three postmedial; the outer medial and inner postmedial somewhat lunular; a fuscous spot on postmedial above vein 4, not always present; two lunular dark grey outer lines marked with black points on veins; subterminal whitish, more distinct from veins 4-8, and inwardly shaded with black; an interrupted terminal black line. Hind wings greyish; a black point on discocellular anteriorly; three fine medial and two subterminal fuscous lines. Wings below grey; hind wings and costa of fore wings shaded with lilacine brown; black discal points; the lines faintly marked; the outer postmedial line most distinct.

Expanse 20 mm.

*Hab.* Turrialba.

*Anapalta artemas*, sp. n.

♂. Head and collar brown. Thorax brown; patagia mottled black and grey. Abdomen brown, with black dorsal spots. Fore wings dark brown; a subbasal lunular black line; a broad antemedial whitish fascia, irrorated with light brown; medial and postmedial space with some lighter brown irrorations; two medial black lines and two postmedial lunular lines, black on costa, otherwise fuscous brown, and followed on costa to below vein 7 by a brownish-white shade, less so on inner margin; outer space lighter brown,



with a faint subterminal pale lunular line, preceded by a black shade at vein 6; an interrupted terminal dark brown line. Hind wings greyish, with traces of two lunular dentate postmedial lines, closer together on inner margin; a terminal fuscous line. Fore wings below fuscous grey; the outer margin and hind wings brownish white; black discal points; the two postmedial lines finely lunular dentate; two converging lines from costa before apex of fore wing.

Expanse 26 mm.

*Hab.* Poas.

This species shows considerable variation, especially in the intensity of the antemedial fascia.

*Perizoma pudens*, sp. n.

Palpi and body black-brown, except terminal half of abdomen, which is light grey. Fore wings light silky grey; basal fourth dark brown, crossed by two fine black lines, starting from indistinct fuscous-grey spots on costa; a faint fuscous spot at end of cell; a postmedial and a smaller subterminal dark brown spot on costa; a faint postmedial darker shade and some dark points on veins; termen irregularly and faintly shaded with brown; cilia fuscous grey. Hind wings whitish grey.

Expanse 17 mm.

*Hab.* Turrialba, Poas.

Near *P. fallax*, Warr.

*Perizoma tetrica*, sp. n.

♂. Palpi and frons black-brown, vertex paler, shaded with grey behind. Collar and three terminal segments of abdomen whitish grey; abdomen otherwise and thorax black-brown. Fore wings: basal third fuscous brown, crossed by three fine wavy black lines, the outer two edged with grey on costa; outer two-thirds pale grey shaded with fuscous grey at end of cell, terminally, and broadly on inner margin from postmedial line to tornus; a quadrate dark brown postmedial spot on costa, from which are two fine and interrupted dark lines, slightly incurved, and macular on inner margin; a subterminal broad fuscous-brown shade from costa to near vein 6; a terminal black line interrupted by pale spots on veins; cilia grey partly shaded with black. Hind wings dark silky grey-brown; the dark postmedial line of underside partly visible. Wings below dark silky



grey; black discal spots. Hind wings: the postmedial fuscous line angled below vein 4.

Expanse 13 mm.

*Hab.* Juan Vinas.

*Eriopygidia myrtusaria*, sp. n.

♀. Palpi brownish ringed with white. Head whitish buff, possibly faded green. Collar and thorax dark green. Abdomen orange-yellow. Fore wings sage-green, lines black-brown, thick; an irregular subbasal line; antemedial outcurved from subcostal to fold, preceded on costa by a short line; medial broad on costa, oblique and angled near discocellular and suffusing with the inbent postmedial, the two lines diverging to vein 2, from which to inner margin they are connected by dark brown lines forming four green spots between them; a costal spot between medial and postmedial, from which a darker green shade extends to and on discocellular; an outer line, replaced from between veins 7 and 6 to between 5 and 4, and also from below vein 3 to below 2, by a pale brownish shade; a dentate bluish-green subterminal shade partly shaded outwardly with black-brown; cilia with large black spots at veins. Hind wings orange, the base and inner margin clouded with fuscous, and similar subterminal clusters of scales; the spots on cilia smaller, not reaching apex. Underneath pale olive-brown; fine dark discal streaks; faint traces of a darker postmedial shade, and a subapical shade on fore wings.

Expanse 38 mm.

*Hab.* Poas.

Near *E. narangilla*, Dogn.

*Psaliodes demasaria*, sp. n.

♂. Palpi grey. Head brown. Collar, thorax, and abdomen brown mottled with white. Fore wings chocolate-brown, darkest between medial and postmedial lines and on outer margin; an antemedial white fascia, crossed by a brown line and expanding on inner margin to medial line, which is lunular, the lunules incurved, preceded by a small white spot on costa; an oblique fuscous streak on discocellular; postmedial white, irregularly outbent from costa, sharply inturned at vein 3 to cell, expanding on inner margin, where it is crossed by a brown line, and followed on costa by an inbent white line to vein 6; subterminal white markings on costa, between veins 4 and 2, and at tornus; base of



cilia black spotted with buff, terminally paler. Hind wings greyish brown; cilia spotted at base with dark brown. Fore wings below greyish brown, darker shaded apically; white points on costa, and similar irrorations on termen; post-medial whitish shadings below costa; an outer lunular velvety brown line edged with white outwardly. Hind wings below brownish thickly mottled and irrorated with white; a round yellowish spot at end of cell partly edged with dark brown; a deeply lunular dark brown outer line from costa to vein 3; a postmedial dark brown spot on inner margin.

Expanse 18 mm.

*Hab.* Volcano Turrialba.

*Psaliodes claudiaria*, sp. n.

Palpi, head, and thorax brown; the abdomen paler, with dark transverse shades posteriorly, edged dorsally by white segmental lines. Fore wings brown; a darker inbent sub-basal line, faintly edged with white outwardly; a medial white line, slightly inbent, edged with dark brown, more broadly outwardly; a postmedial white line, also edged with dark brown and followed by a whitish line outbent above vein 5 to apex; this outbent line edged by a fuscous shade, which is irregularly outbent below vein 5 to termen at vein 3; the terminal space from vein 3 to apex shaded with grey-brown; a terminal fuscous line; cilia yellowish spotted with fuscous. Hind wings whitish, the termen faintly shaded with brown; a terminal dark line; cilia yellow. Hind wings below white striated with grey-brown; the veins partly yellow; a dark discal point; a postmedial curved brown line, inangled at vein 3.

Expanse 18 mm.

*Hab.* Juan Vinas.

*Psaliodes crispata*, sp. n.

♂. Palpi, head, collar, and thorax brown. Abdomen silvery grey at base with brownish irrorations; dorsum shaded with dark brown terminally. Fore wings: base brown, becoming darker before antemedial line, which is white, inset from median to inner margin; space to medial line dark brown, thinly irrorated with pale brown and shaded with white along subcostal; medial line broad, white, its edges incurved and crossed from subcostal by a fine wavy brown line; space to postmedial dark brown, its outer edge deeply lunular; postmedial white, the space beyond pale



brown, mottled with white towards apex and crossed near postmedial by whitish lunules; a broad terminal dark brown space from vein 7-4, inwardly edged with whitish, and dark marginal lunules below 4 and below 3; cilia dark brown spotted with yellowish. Hind wings whitish grey; cilia pale yellowish with dark spots at veins. Fore wings below greyish, with traces of whitish lines; a vermilion streak above subcostal from base to medial line, then below subcostal and along vein 8 to apex. Hind wings below whitish striated with brown; a dark brown line on discocellular; a dark outer dentate line, inset at vein 3.

Expanse 19 mm.

Hab. Poas.

*Psaliodes infulata*, sp. n.

♀. Palpi and frons brown. Vertex, collar, and thorax yellowish buff, the collar and patagia anteriorly shaded with dark brown. Abdomen light brown with pale segmental lines. Fore wings: base yellowish buff mottled with brown, shading to dark brown at antemedial line, which is white, vertical, indentate on submedian; space following yellowish buff mottled with brown; medial and postmedial lines white inversely lunular edged with dark brown, the space between them filled in with irregular dark brown blotches at end of cell, and from vein 2 to inner margin, otherwise lighter brown shaded with yellowish buff; postmedial line followed by a straight yellowish-white shade; outer space brown, paler shaded; a terminal dark brown space, very broad between veins 4 and 6, narrowing to apex, and similar lunules below vein 4 to tornus; cilia yellowish spotted with fuscous brown. Hind wings whitish grey, shaded with pale brown on outer half. Fore wings below fuscous grey, the costa shaded with orange. Hind wings below yellowish white, striated with grey, chiefly at base and on outer third; a brown discal spot and sinuous postmedial line.

Expanse 23 mm.

Hab. Cachi.

*Psaliodes interstrata*, sp. n.

♀. Palpi and frons light brown. Vertex white. Collar and thorax whitish buff shaded with brown. Abdomen pale brown with whitish segmental lines, edged with dark brown. Fore wings white striated with brown except on lines, which are rather broad and with nearly straight edges; antemedial line inbent, inwardly edged with dark brown; medial line



inbent, the space to postmedial line dark brown from costa to median, and from vein 2 to inner margin; postmedial line inbent below vein 4, its outer edge suffusing somewhat with ground-colour; some terminal dark brown shading, chiefly above vein 4 to apex; cilia yellowish white spotted with dark brown. Hind wings white, the termen shaded with pale brown. Fore wings below fuscous grey; a white medial spot across cell, and one above inner margin; the postmedial line and subterminal markings white, distinct. Hind wings below white striated with brownish grey; a dark streak on discocellular; a fine dark postmedial line, slightly sinuous.

Expanse 21 mm.

*Hab.* Poas.

*Psaliodes philetus*, sp. n.

♀. Palpi brown. Head, collar, and thorax olive-brown, with paler mottlings; a dark brown spot on patagia. Abdomen whitish buff, finely irrorated with brown. Fore wings olive-brown; the lines white, divided by a fine dark brown line; the antemedial sinuous, the medial and postmedial inversely lunular; a fuscous-brown streak on discocellular, and dark brown shade beyond it; a subterminal lunular dark brown line, almost touching postmedial between veins 4 and 6, and outwardly shaded with dull fuscous brown to termen; some yellowish striæ on costa and outer space; cilia alternately black and yellow. Hind wings whitish, outwardly shaded with brown; a faint fuscous medial line; cilia yellow, with fine fuscous streaks at veins. Hind wings below yellowish white striated with greyish brown; a black discal spot followed by a fuscous-brown line, broad on inner margin and barely reaching costa.

Expanse 27 mm.

*Hab.* Poas, Turrialba.

Near *P. aurantivena*, Warr.

*Psaliodes simplex*, sp. n.

♂. Palpi dark brown fringed above with white. Head, collar, patagia, and abdomen purplish grey; thorax dark reddish brown. Fore wings purplish grey, with a few scattered whitish irrorations; a fine subbasal dark brown vertical line; inner and outer lines fine, yellowish white, broadly edged on medial side with dark reddish brown, the inner line faintly inbent, the outer line vertical on costa, outangled on vein 6, where a faint brown shade extends to apex, and parallel with outer margin from vein 6 to inner



margin; terminal yellowish points at veins; cilia fuscous on basal half, outwardly white spotted with fuscous. Hind wings dull roseate, terminally shaded with lilacine grey; a straight brownish outer line; cilia fuscous grey partly tipped with white. Fore wings below roseate brown; traces of inner and outer lines; costa and termen fuscous grey; a fuscous line on discocellular. Hind wings below roseate brown, the termen shaded with fuscous grey; a black line on discocellular; a broad yellowish outer line edged with dark reddish brown.

Expanse 18 mm.

*Hab.* Carillo.

Near *P. cronia*, Dr., and *P. acutangula*, Warr.

*Psaliodes sutum*, sp. n.

♀. Palpi whitish outwardly shaded with roseate brown. Head and collar whitish divided by a purplish line. Thorax and abdomen purplish brown, the latter with slate-colour segmental lines. Fore wings brown faintly tinged with purple; a broad inner fascia, dull greyish, shaded with ochreous brown on costa, edged by white lines, and crossed by a faint similar line, its inner edge angled in cell, its outer edge straight and inbent; a fuscous shade on discocellular; a faint postmedial darker brown line, irrorated with grey, outcurved beyond cell, dentate from vein 3 to inner margin, the space beyond it broadly clearer brown crossed by a faint darker line; cilia dark brown, irregularly tipped with white. Hind wings white, the termen shaded with roseate brown; a black discal point. Wings below roseate brown. Fore wings: a black streak on discocellular. Hind wings: a black discal point broadly edged with white; a lunular postmedial whitish line.

Expanse 20 mm.

*Hab.* Poas.

Allied to *P. bicolor*, Prout.

Subfam. *ENOCHROMINÆ*.

*Dolichoneura eriphyle*, sp. n.

♂. Palpi and head fuscous brown. Thorax slate-grey. Abdomen brownish slate; dorsal white points. Wings slate-grey; a terminal fine black line; cilia light brown. Fore wings: an antemedial pale brown line, broadest in cell and on costa; a pale brown wavy outer line, shaded on either



side with buff, slightly incurved opposite cell and below vein 2; terminal space shaded with buff except at apex; a dentate lunular subterminal greyish shade. Hind wings: an antemedial and a postmedial light brown line; an irregular and faintly marked subterminal greyish line. Wings below dark grey.

Expanse 35 mm.

*Hab.* Tuis.

*Dolichoneura squalida*, sp. n.

♀. Palpi and head dark brown. Body and wings slate-grey; white dorsal points on abdomen. Fore wings: antemedial geminate whitish spots on inner margin; a white discal point; an outer light brown lunular line, angled at vein 6, preceded by a narrow light grey shade, the space beyond to termen being ochreous grey except on costa to subterminal which is slate-grey; an interrupted subterminal lunular dentate slate-grey line partly shaded with whitish grey. Hind wings: a subbasal geminate whitish line, closely followed by the white discal point; a pale brown lunular outer line edged with ochreous grey, somewhat interrupted, and chiefly noticeable on inner margin; faint subterminal whitish spots; cilia dark olive-brown. Wings below dark grey.

Expanse 35 mm.

*Hab.* Juan Vinas, Tuis, Guapiles.

This may possibly be the female of *D. eriphyle*, Schs., in spite of their dissimilarity.

*Phellinodes gratiosa*, sp. n.

♂. Head brown. Collar and thorax mottled grey and white. Abdomen dark grey irrorated with white. Fore wings grey mottled with dark grey and fuscous, the inner margin tinged with brown; costal and outer margins mottled with white except at apex which is occupied by a large dark brown spot inwardly edged by a curved black line and containing some fuscous striæ; a small black spot on discocellular. Hind wings black, slightly mottled with grey on inner margin; a broad white space from base to well beyond cell. Fore wings below: costal margin broadly brownish grey striated with fuscous; a small postmedial white spot; the apical spot more broadly edged with black; a narrow white shade from base above median, expanding between veins 2 and 4 to termen, and terminally irrorated and spotted



with black; inner margin broadly fuscous grey. Hind wings below white mottled with fuscous brown, forming a well-marked subterminal shade; discocellular shaded with fuscous; cilia black spotted with white from vein 4 to apex.

Expanse 38 mm.

*Hab.* Tuis.

Belongs to Sect. II.

XL.—*Descriptions and Records of Bees.*—XLVI.

By T. D. A. COCKERELL, University of Colorado.

*Trigona ziegleri mayarum*, subsp. n.

Worker.—Agrees with Friese's short account of *T. ziegleri*, except that the hair of the thorax is pale ferruginous, and the head is distinctly wider, fully  $2\frac{1}{3}$  mm. The size also is a little greater, length fully 6 mm. Friese states that the hind tibiae of *ziegleri* are black at apex, in *mayarum* about the apical half is black, and the hind basitarsi are black on outer side. Among the species known to me, *T. mayarum* comes closest to *T. jaty*, Sm.; but the latter is much smaller, with the pleura mainly dark, and the yellow lateral face-marks forming a much more acute angle above. Other characters of *mayarum* are: mandibles with a little tooth at inner corner, but otherwise unarmed; scape very broadly yellow in front; flagellum clear ferruginous beneath, rufo-piceous above; yellow supraclypeal mark an equilateral triangle; front dullish with fine short reddish hair, but smooth and shining below the ocelli; tegulae apricot-colour; wings with a faint orange tint; abdomen apricot-colour, shining.

*Hab.* Quirigua, Guatemala (*W. P. Cockerell*).

I expect that when this can be actually compared with *T. ziegleri* it will be found to be a distinct species. An allied but larger species is the Brazilian *T. manni*, Ckll.

*Trigona jatiformis*, sp. n.

Worker.—Length  $4\frac{1}{2}$  mm.

Smooth and shining; head and thorax black with pale markings; abdomen clear ferruginous, with a rather narrow black or blackish band along hind margin of first dorsal segment; labrum honey-colour; mandibles edentate, pallid (pellucid whitish) basally, rufous apically;





Schaus, William. 1912. "XXXIX.— New species of Heterocera from Costa Rica .—XVII." *The Annals and magazine of natural history; zoology, botany, and geology* 10, 286–311. <https://doi.org/10.1080/00222931208693239>.

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