

Issued



by the

SMITHSONIAN INSTITUTION  
U. S. NATIONAL MUSEUM

Vol. 102

Washington: 1952

No. 3308

MOTHS OF THE GENUS *EPEIROMULONA*, A NEW GENUS  
OF LEPIDOPTERA

By WILLIAM D. FIELD

THE GENUS treated in this paper (Arctiidae, Lithosiinae) has formerly been represented by a single species originally described as *phelina* by Druce and doubtfully referred by him to the genus *Autoceras* Felder in the text of his description<sup>1</sup> and placed in the genus *Melania* Wallengren on the plate accompanying this text.<sup>2</sup> Subsequently Hampson<sup>3</sup> placed it in *Mulona* Walker and Forbes,<sup>4</sup> recognizing that it did not belong with *Mulona*, transferred it tentatively to the genus *Gaudeator* Dyar. In reality it belongs to quite a distinct and new genus.

A study of the 75 specimens from the collections of the United States National Museum, the British Museum (Natural History), and Cornell University discloses the fact that the genus contains 7 species (one of these with 3 subspecies), all but 1 being new.

**EPEIROMULONA, new genus**

*Type.*—*Epeiromulona lephina*, new species.

Labial palpus upturned, short, barely reaching above lower margin of frons.

Antennae of male and female filiform and gradually more slender to the tip; each subsegment heavily setose underneath. Each subsegment with a pair of bristles arising from middle of ventrolateral

<sup>1</sup> *Biologia Centrali-Americana*, Insecta, Lepidoptera-Heterocera, vol. 1, p. 139, 1885.

<sup>2</sup> *Ibid.*, vol. 3, pl. 13, fig. 13, 1885.

<sup>3</sup> *Catalogue of the Lepidoptera Phalaenae in the British Museum*, vol. 2, pp. 386-387, 1900.

<sup>4</sup> *Bull. Mus. Comp. Zool.*, vol. 85, p. 183, 1939.

margin and with a second pair of bristles arising from just above middle of dorsolateral margin of subsegment and with a single sensory cone arising from near the middle of front margin.

Venation of forewing with vein 2 from outer fourth of cell, nearly straight, not downward curved at base; vein 3 separate from just before lower angle of cell (3 very rarely stalked with 4); 4 from lower angle and 4 and 5 separate; 6 from below upper angle of cell; 9 from stalk of 7 and 8; 10 and 11 free; 10 from cell about halfway between stem of 7, 8, and 9 and base of 11; 11 from outer third of cell and curved distally toward 12.

Venation of hindwing with 2 from outer fourth of cell; 3 stalked with 4 from lower angle of cell; 5 separate and from just below middle of cell; 6 and 7 stalked from upper angle of cell; 8 from about middle or slightly after middle of cell.

Male genitalia (see all figures on pls. 41-43 and figs. 13-17 on pl. 45) with uncus hooklike, broad at base and sharply constricted and curved distally; gnathos absent; anellus present (dorsal plates absent) and represented by a strongly sclerotized, nearly H-shaped juxta; vinculum broadly U-shaped; inner surface of harpe with downward-projecting lobe from near middle (this lobe sometimes fingerlike or hooklike) except in *icterinus*; saccus very small; aedeagus broader posteriorly than anteriorly and bent or at least curved near middle; vesica armed with numerous spinelike cornuti; bulbus ejaculatorius from about anterior fourth or fifth of aedeagus.

Female genitalia (see all figures on pl. 44 and figs. 11 and 12 on pl. 45) with pouch between posterior margin of seventh abdominal segment and anterior margin of eighth abdominal segment; seventh abdominal segment sometimes strongly sclerotized above this pouch, sometimes so much so that the pouch is more like a lip than a pouch; strongly sclerotized species with a pair of lateral lateroventral cup-like shallow pouches on seventh segment, lying on each side of raised central area; eighth segment not at all or only weakly sclerotized ventrally, never forming a solid ventral plate, but with a plate that is broken through the middle; ostium bursae before middle of eighth segment; ductus bursae heavily sclerotized, broad at ostium bursae and somewhat twisted and narrowed at bursa copulatrix; entrance to bursa copulatrix armed with a furcate plate, this plate inwardly covered with short spines; bursa copulatrix with ductus seminalis from right side or slightly dorsal and near ductus bursae; bursa copulatrix sub-spherical, slightly bent and extended to the left and with a ribbonlike scobinate plate at anterior end.

*Comparative remarks.*—This genus is somewhat related to *Mulona* Walker and *Gaudeator* Dyar. Vein 2 of forewing is nearly straight, not at all downward curved at base in *Gaudeator* and *Epeïromulona*,

whereas in *Mulona* vein 2 is downward curved at base. Vein 5 of hindwing is present in *Gaudeator* and *Epeiromulona*, absent in *Mulona*. Veins 3 and 4 of hindwing are usually connate or separate in *Gaudeator*, stalked in *Mulona* and *Epeiromulona*. *Epeiromulona* is easily distinguished by the male and female genitalia from the other two genera. In males of *Mulona* the juxta is bifurcate and U- or V-shaped. In *Epeiromulona* the juxta is H-shaped and in *Gaudeator* a broad, slightly curved plate. The transtilla is absent in *Epeiromulona* and present in *Mulona* and *Gaudeator*. The aedeagus is short and broad in *Mulona*, short and not so broad in *Gaudeator*, and is rather long in *Epeiromulona*. Numerous cornuti are present on the vesica in *Gaudeator* and *Epeiromulona* and absent in *Mulona*. In females of *Mulona* the middle two-thirds or more of bursa copulatrix is heavily serrulate while *Gaudeator* and *Epeiromulona* females are not serrulate but contain instead two areas of armature, one each at anterior and posterior end of bursa copulatrix. The anterior armature in *Epeiromulona* consists of a ribbonlike scobinate plate and in *Gaudeator* this armature consists of a small, nearly round scobinate plate. The posterior armature in *Epeiromulona* consists of a bifurcate plate covered with short spines and in *Gaudeator* this armature consists of a collar covered with long spines, this collar almost half encircling bursa copulatrix near entrance of ductus bursae.

## KEY TO THE SPECIES OF EPEIROMULONA

- |   |  |
|---|--|
| 1. Vertex of head orange.....   | icterinus, new species (p. 467)                    |
| Vertex of head white.....   | 2  |
| 2. Hindwings, salmon pink.....  | roseata, new species (p. 465)                      |
| Hindwings yellow or orange.....   | 3  |
| 3. Legs yellow with black bands.....  | 4  |
| Legs white with black bands.....  | biloba, new species (p. 460)                       |
| 4. Fringe of forewing entirely orange or pale orange-yellow; apex of first femur yellow.....              | 5  |
| Fringe opposite middle of outer margin of forewing black; apex of first femur black.....                  | thysanata, new species (p. 466)                    |
| 5. Males.....   | 6  |
| Females.....  | 9  |
| 6. Upper elements of H-shaped juxta distinctly shorter than bottom elements (pl. 41, fig. 1).....         | lephina, new species (p. 459)                      |
| Upper elements of H-shaped juxta as long as or slightly longer than bottom elements (pl. 42, fig. 3)..... | 7  |
| 7. Distal end of harpe narrow, much narrower than base.....   | 8  |
| Distal end of harpe as broad or nearly as broad as base (pl. 45, fig. 17).....                            | hamata colombiensis, new subspecies (p. 464)       |
| 8. Harpe with costa not at all or only slightly expanded at apex (pl. 42, fig. 3a; pl. 45, figs. 13, 14). |  |
|   | hamata hamata, new species and subspecies (p. 462) |
| Harpe with costa well expanded at apex (pl. 45, figs. 15, 16).  |  |
|   | hamata venezuelensis, new subspecies (p. 463)      |

9. Posterior margin of seventh abdominal segment below, with three distinct lobes (pl. 44, figs. 9, 10)----- 11  
 Posterior margin of seventh abdominal segment below without these lobes ----- 10
10. Shallow cuplike pouches on seventh abdominal segment extending well into ventral surface (pl. 44, fig. 7)----- *phelina* (Druce) (p. 458)  
 Shallow cuplike pouches on seventh abdominal segment lateral in position (pl. 44, fig. 8)----- *lephina*, new species (p. 459)
11. Lobes on each side of mesial lobe of posterior margin of seventh abdominal segment small (pl. 44, fig. 9).  
     *hamata brasiliensis*, new subspecies (p. 465)  
 These lobes large, nearly as large as mesial lobe (pl. 44, fig. 10).  
     *hamata hamata*, new species and subspecies (p. 462)

EPEIROMULONA PHELINA (Druce)

PLATE 44, FIGURE 7; PLATE 46, FIGURE 22

*Autoceras* (?) *phelina* DRUCE, *Biologia Centrali-Americana*, Insecta, Lepidoptera-Heterocera, vol. 1, p. 139, 1885.

*Melania phelina* (DRUCE), *Biologia Centrali-Americana*, Insecta, Lepidoptera-Heterocera, vol. 3, pl. 13, fig. 13, 1885.

*Cincia phelina* (Druce), KIRBY, A synonymic catalogue of Lepidoptera Heterocera, p. 366, 1892.

*Mulona phelina* (Druce), HAMPSON, Catalogue of the Lepidoptera Phalaenae in the British Museum, vol. 2, pp. 386, 387 (♀), 1900.—DRAUDT, in Seitz, *Gross-schmetterlinge der Erde*, vol. 6, p. 252, pl. 34, fig. c 9, 1918.—STRAND, in Wagner, *Lepidopterorum catalogus*, pars 26, p. 732, 1922.

*Male*.—Unknown.

*Female*.—(pl. 46, fig. 22).—Palpus, head, base of antenna, patagium, tegula, pronotum, and mesonotum pale dirty orange-yellow. Except for palpi this color may be due to a stain and may have originally been white (in the single known specimen of this species). Metanotum and thorax underneath pale orange-yellow. Antenna beyond base black with a long white streak just before apex. There is a black spot in middle of thorax and another on base of tegula. Foreleg pale orange-yellow with most of tibia and last four tarsal subsegments black. First tarsal subsegment nearly white. Hindleg pale orange-yellow (midlegs missing in the single known specimen). Wings white, spotted with 15 black spots and bars, these arranged as in *E. biloba*. Fringe of forewing pale yellowish orange.

Length of forewing 9 mm.

Female genitalia as illustrated (pl. 44, fig. 7) and with characters as given in the key.

*Type locality and distribution*.—"Volcán de Chiriquí," Panama.

*Additional type data*.—Described from a single specimen, the holotype female (elevation 2,000 to 3,000 feet; Champion; ♀ genitalia preparation, British Museum No. 1951-22).

*Location of type*.—In the British Museum (Natural History).

*Remarks.*—The photographs of the type (pl. 46, fig. 22) and of the genitalia of the type (pl. 44, fig. 7) were furnished through the courtesy of D. S. Fletcher, of the British Museum (Natural History), Department of Entomology.

EPEIROMULONA LEPHINA, new species

PLATE 41, FIGURES 1, 1a, 1b; PLATE 44, FIGURE 8; PLATE 46, FIGURES 18–20

*Mulona phelina* (Druce), Dyar nec Druce, in part., Proc. U. S. Nat. Mus., vol. 47, p. 167, 1914.

*Gaudicator* (?) *phelina* (Druce), FORBES nec Druce, in part., Bull. Mus. Comp. Zool., vol. 84, No. 4, p. 163 (on chart), p. 183, August 1939.

*Male.*—(pl. 46, figs. 18, 20).—Palpus pale orange-yellow. Head, base of antenna, patagium, tegula, pronotum, and mesonotum white. Metanotum and thorax underneath pale orange-yellow. Antenna beyond base black with a long white streak just before apex. A black spot in middle of thorax and on base of tegula (this last spot usually hidden by patagium). Legs pale orange-yellow with foretibia, apex of midtibia and hindtibia and last four tarsal subsegments of all legs black; apex of forefemur yellow. Abdomen orange-yellow, pale yellowish white at base above. Forewings and hindwings above and below very similar to *biloba* with fringe of forewing slightly paler orange-yellow near the margin.

Length of forewing 6.5–7 mm.

Male genitalia as illustrated (pl. 41, figs. 1, 1a, 1b) and with characters as given in the key.

*Female* (pl. 46, fig. 19).—Habitus like that of the male.

Length of forewing 7–8 mm.

Female genitalia as illustrated (pl. 44, fig. 8) and with characters as given in the key.

*Type locality.*—Porto Bello, Colón Province, Panama.

*Additional type data.*—Described from the holotype, male (locality as given above; U.S.N.M. type No. 34839; August Busck; March 1912; ♂ genitalia preparation W. D. F. No. 3191, 1949); allotype, female (same data as holotype; ♀ genitalia preparation W. D. F. No. 3218, 1949); paratypes Nos. 1–5, two males and three females (Río Trinidad, Panama; March, May, June 1911, 1912; August Busck. W. D. F. genitalia preparations as follows: Paratype No. 1, ♂, No. 3190, 1949; paratype No. 2, ♂, No. 3192, 1949; paratype No. 3, ♀, No. 3212, 1949; paratype No. 4, ♀, No. 1666, 1941; paratype No. 5, ♀, No. 3211, 1949); paratype No. 6, ♂ (La Chorrera, Panama; May 1912; August Busck; ♂ genitalia preparation W. D. F. No. 1675, 1941); paratypes Nos. 7–9, males (Cayuga, Guatemala; Schaus and Barnes; March, May, August. W. D. F., ♂ genitalia preparations as follows: Paratype No. 7, No. 3187, 1949; paratype No. 8, No. 1672, 1941; Paratype No. 9, No.

3239, 1949) and paratypes Nos. 10–13, females (Barro Colorado Island, Panama Canal Zone; March, November 1934, 1940, 1941; James Zetek and Marston Bates. W. D. F., ♂ genitalia preparations as follows: Paratype No. 10, No. 3213, 1949; paratype No. 11, No. 3214, 1949; paratype No. 12, No. 3226, 1949; paratype No. 13, No. 3244, 1949).

*Locations of types.*—Holotype, allotype, and paratypes Nos. 1, 3, 4, 5, 6, 7, 13 in the United States National Museum. Paratypes Nos. 8, 12 in the collection of Cornell University. Paratypes Nos. 9, 11 in the British Museum (Natural History). Paratypes Nos. 2, 10 in the American Museum of Natural History.

*Distribution.*—PANAMA: *Province of Colón*, Porto Bello (May); Río Trinidad (March, May, and June); *Province of Panama*, La Chorrera (May). CANAL ZONE: Barro Colorado Island (March, April, November). GUATEMALA: *Department of Izabal*, Cayuga (May).

*Remarks.*—Fifteen specimens (including the genitalia preparations of all these) were examined.

*Comparative remarks.*—This species differs in habitus from *E. biloba* in having the underside of thorax and the legs colored pale orange-yellow with black bands on the legs, and in having the femur of foreleg pale orange-yellow. In *biloba* the underside of thorax and the legs are white with black bands on the legs and with the apical half of the femur of foreleg black.

EPEIROMULONA BILOBA, new species

PLATE 41, FIGURE 2, 2a, 2b; PLATE 46, FIGURE 21

*Mulona phelina* (Druce), DYAR nec Druce, in part, Proc. U. S. Nat. Mus., vol. 47, p. 167, 1914.

*Male* (pl. 46, fig. 21).—Palpus, head, base of antenna, patagium, tegula, and thorax (above and below) white. A black spot in middle of thorax and another at the base of tegula (this spot usually hidden by patagium). Antenna beyond base black with a long white streak just before apex. Forelegs white or very pale yellowish white with black on apical half of femur, basal half of tibia, and the last four subsegments of tarsus. Midlegs and hindlegs white with apex of tibia and last four subsegments of tarsus black. Abdomen orange-yellow except at base above, where it is yellowish white. Forewing above white with 15 small black spots and bars. Five black bars along costal margin, the first near base, the second opposite the beginning of the last one-third of cell, the fourth just beyond end of cell and C-shaped and the fifth subapical and nearly touching the lower ele-

ment of the C-shaped bar. Four spots lie on lower margin of cell and on vein 2, the first on lower margin of cell just before middle, the second at point of origin of vein 2, the third in the middle of vein 2, and the fourth just beyond this. There is a series of four spots along vein 1, the first near base of vein 1, the second near middle of this vein, the fourth at the margin, and the third between the second and fourth. There are two spots opposite end of cell on vein 4, one in the middle of this vein and the other beyond this near outer margin of wing. Fringe of outer margin of forewing bicolored, orange near margin and pale orange-yellow beyond this. Hindwing above and below, including fringe, pale orange-yellow with an apical black spot on costal margin at apex. Forewing below, including fringe, orange-yellow, usually with a pink tinge on the cell and sometimes also on the surrounding interspaces in middle of wing, and with a black spot on middle of costal margin, a black streak extending from base of wing outward, sometimes to the black spot, a U-shaped black subapical marking on costal margin and a small black spot at end of vein 4 on the margin (this black spot not extending into the fringe opposite).

Length of forewing 6.5–7 mm.

Male genitalia as illustrated (pl. 41, figs. 2, 2a, 2b).

*Female*.—Unknown.

*Type locality*.—Río Trinidad (labeled Trinidad River), Colón Province, Panama.

*Additional type data*.—Described from the holotype, male (locality as given above; June 1912; August Busck; U.S.N.M. type No. 34808; ♂ genitalia preparation W. D. F. No. 3189, 1949); paratypes Nos. 1–3, males (same locality and data as holotype except collected in March and June; ♂ genitalia preparation W. D. F. No. 3188, 1949 for paratype No. 1; ♂ genitalia preparation W. D. F. No. 1665, 1941 for paratype No. 2; ♂ genitalia preparation W. D. F. No. 3186, 1949 for paratype No. 3) and paratypes Nos. 4 and 5, males (Muzo, Colombia; 400–800 meters; Fassl; ♂ genitalia preparation W. D. F. No. 3235, 1949 for paratype No. 4; ♂ genitalia preparation W. D. F. No. 3234, 1949 for paratype No. 5).

*Location of types*.—Holotype and paratypes Nos. 1 and 2 in the United States National Museum. Paratype No. 3 in the entomological collection of Cornell University. Paratypes Nos. 4 and 5 in the British Museum (Natural History).

*Distribution*.—PANAMA: *Province of Colón*, Río Trinidad (March, June). COLOMBIA: *Department of Boyacá*, Muzo.

*Remarks*.—Six specimens (including their genitalia preparations) studied.

## EPEIROMULONA HAMATA, new species

*Male* (pl. 46, figs. 23, 25, 26).—Palpus pale orange-yellow. Head, base of antenna, patagium, tegula, pronotum, and mesonotum white. A black spot in middle of thorax and another on base of tegula (usually covered by patagium). Metanotum and thorax underneath pale orange-yellow (or sometimes whitish yellow). Legs pale orange-yellow (sometimes whitish yellow) and marked with black as in *E. biloba*, except that apex of first femur is yellow, not black. Abdomen pale orange-yellow, slightly whitish at base above. Antenna beyond base black with a long white streak just before apex. Forewings and hindwings above and below very similar to *E. phelina* and hardly separable from *E. biloba*. Apical spot on hindwing variable, sometimes greatly reduced or absent and sometimes enlarged.

Length of forewing 6.5–8 mm.

Male genitalia as illustrated (pl. 42, figs. 3, 3a, 3b; pl. 45, figs. 13–17). This species divides into three subspecies on the basis of apparently constant differences in the harpes (see descriptions, pp. 462–464).

*Female* (pl. 46, figs. 24, 27).—Habitus like that of the male.

Length of forewing 7.2–8.2 mm.

Female genitalia as illustrated (pl. 44, figs. 9, 10). On the basis of the female genitalia there is a fourth subspecies (see description, p. 465).

*Distribution*.—Trinidad, northern South America and Brazil.

*Comparative remarks*.—In addition to the great differences in the genitalia this species differs from *E. biloba* in lacking the black on the femur of foreleg and in having the legs yellow with black bands instead of white with black bands. It is hardly distinguishable from *E. lephina* and *E. phelina* except in the genitalia. However, the black bars in middle and base of costa on forewing above are usually thicker and more round or subquadrate than in *phelina* or *biloba*.

*Subspeciation*.—As stated above this species divides into four subspecies on the basis of the male and female genitalia. These subspecies appear to be geographically isolated. They do not appear to differ in color and habitus. When more material becomes available for study so that the extent of individual variation can be worked out it is possible that these subspecies will be elevated to specific rank.

## EPEIROMULONA HAMATA HAMATA, new subspecies

PLATE 42, FIGURES 3, 3a, 3b; PLATE 44, FIGURE 10; PLATE 45, FIGURES 13, 14;  
PLATE 46, FIGURES 23, 24

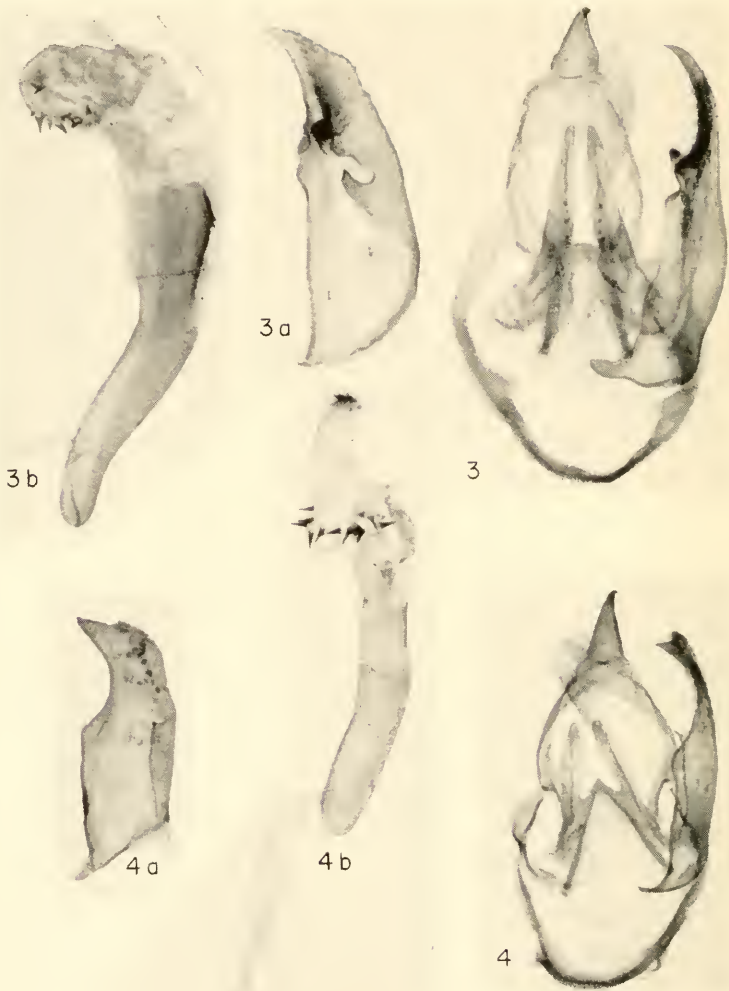
*Male* (pl. 46, fig. 23).—Palpus, head, thorax, abdomen, and wings as described above.

Length of forewing 7.5–8 mm.

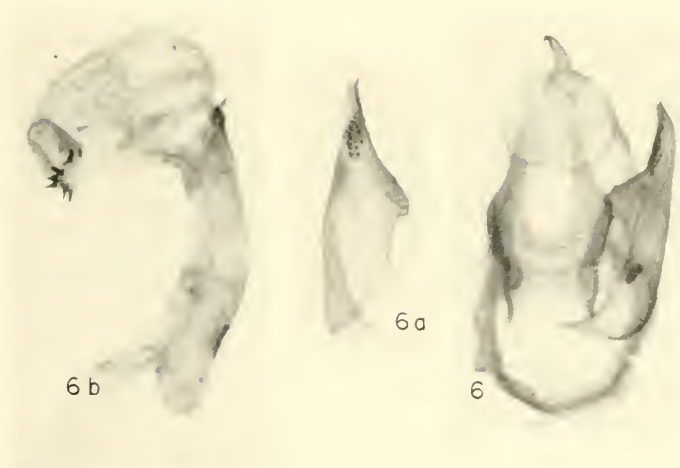
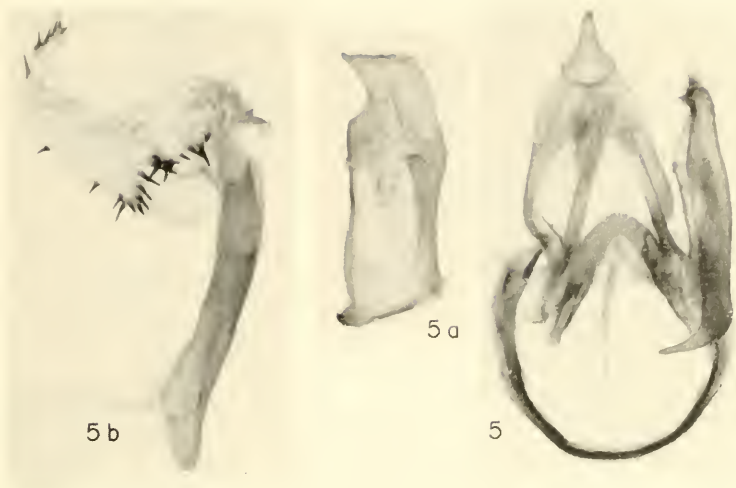




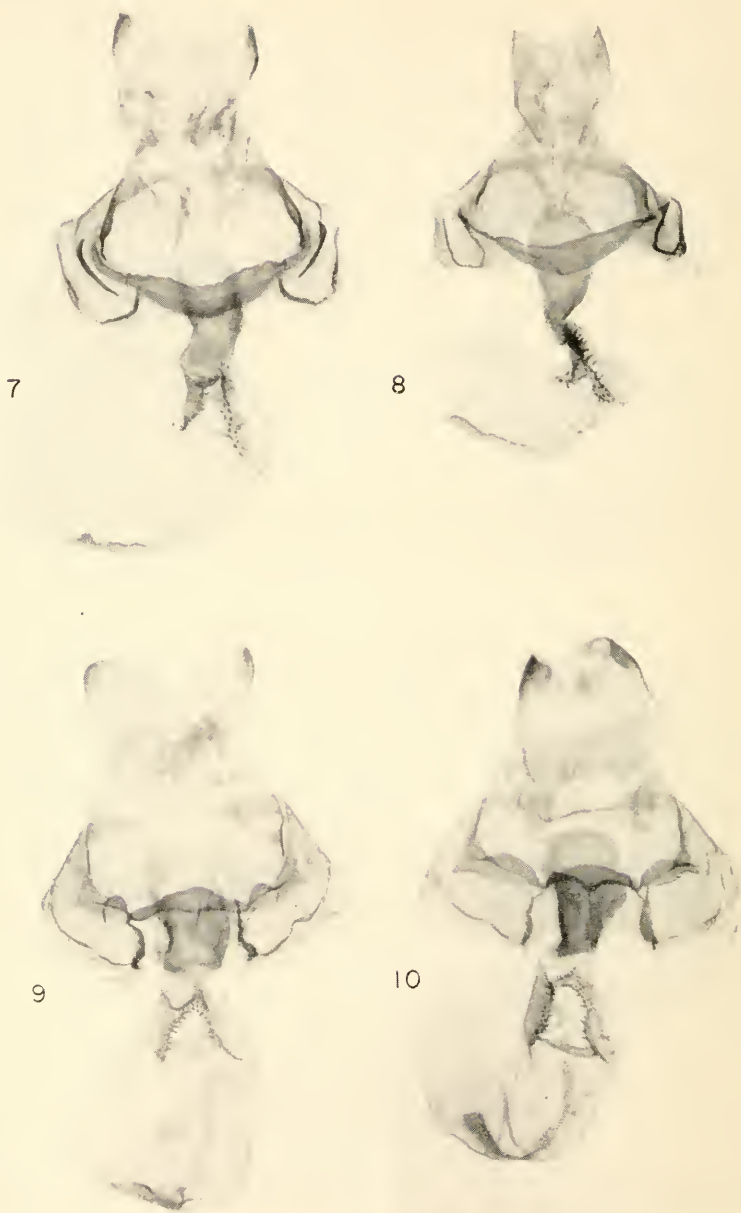
1-1b, *Epiromulona lephina*, new genus and species: 1, Male genitalia; 1a, harpe; 1b, aedeagus; male genitalia preparation No. W.D.F. 3191, 1949; holotype. 2-2b, *E. biloba*, new species: 2, Male genitalia; 2a, harpe; 2b, aedeagus; male genitalia preparation No. W.D.F. 3189, 1949; holotype.



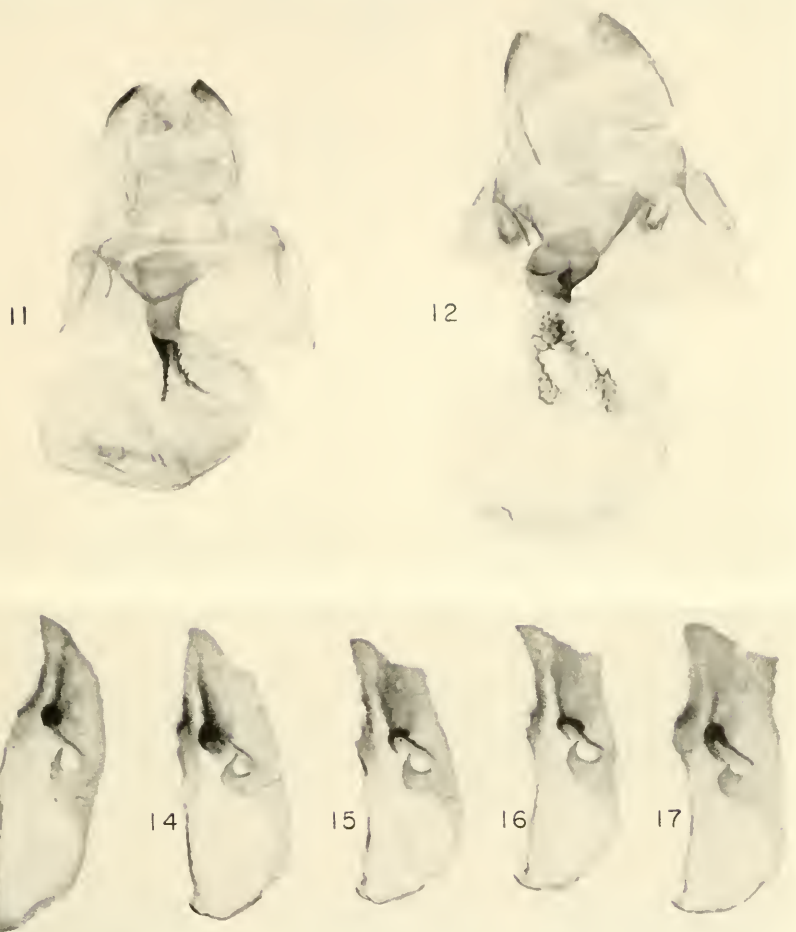
3-3b, *Epeiromulona hamata hamata*, new species and subspecies: 3, Male genitalia; 3a, harpe; 3b, aedeagus; male genitalia preparation No. W.D.F. 1667, 1941; holotype.  
 4-4b, *E. thysanata*, new species: 4, Male genitalia; 4a, harpe; 4b, aedeagus; male genitalia preparation No. W.D.F. 1670, 1941; holotype.



5-5b, *Epeiromulona roseata*, new species: 5, Male genitalia; 5a, harpe; 5b, aedeagus; male genitalia preparation No. W.D.F. 1674, 1941; holotype. 6-6b, *E. icterinus*, new species: 6, Male genitalia; 6a, harpe; 6b, aedeagus; male genitalia preparation No. W.D.F. 1673, 1941; holotype.



7, *Epeironulona phelina* (Druce): Female genitalia; British Museum genitalia preparation No. 1951-22; holotype. 8, *E. lephina*, new species: Female genitalia; genitalia preparation No. W.D.F. 3218, 1949; allotype. 9, *E. hamata brasiliensis*, new subspecies: Female genitalia; W.D.F. genitalia preparation No. 3222, 1949; holotype. 10, *E. hamata hamata*, new subspecies: Female genitalia; W.D.F. genitalia preparation No. 1677, 1949; allotype.



- 11, *Epeiromulona thysanata*, new species: Female genitalia; genitalia preparation No. W.D.F. 1678, 1941; allotype. 12, *E. icterinus*, new species: Female genitalia; genitalia preparation No. W.D.F. 3217, 1949; allotype. 13, *E. hamata hamata*, new subspecies: Left harpe; male genitalia preparation No. W.D.F. 3208, 1949; paratype No. 1. 14, *E. h. hamata*, new subspecies: Left harpe; male genitalia preparation No. W.D.F. 3227, 1949; paratype No. 5. 15, *E. hamata venezuelensis*, new subspecies: Left harpe; male genitalia preparation No. W.D.F. 3231, 1949; holotype. 16, *E. hamata venezuelensis*, new subspecies: Left harpe; male genitalia preparation No. W.D.F. 3233, 1949; paratype No. 2. 17, *E. hamata colombiensis*, new subspecies: Left harpe; male genitalia preparation No. W.D.F. 3236, 1949; holotype.



18. *Epepiromulona lephina*, new species, holotype, male. 19. *E. lephina*, new species, allotype, female. 20. *E. lephina*, new species, underside of paratype No. 7, male. 21. *E. biloba*, new species, holotype, male. 22. *E. phelina* (Druce), holotype, female. 23. *E. hamata hamata*, new species and subspecies, holotype, male. 24. *E. h. hamata*, new species and subspecies, allotype, female. 25. *E. hamata venezuelensis*, new subspecies, holotype, male. 26. *E. hamata colombiensis*, new subspecies, holotype, male. 27. *E. hamata brasiliensis*, new subspecies, holotype, female. 28. *E. roseata*, new species; holotype, male. 29. *E. icterinus*, new species, holotype, male. 30. *E. thysanata*, new species, holotype, male. 31. *E. thysanata*, new species, allotype, female. (All figures twice natural size.)

Male genitalia as illustrated (pl. 42, figs. 3, 3a, 3b; pl. 45, figs. 13, 14). This subspecies differs from the others in having the distal end of harpe narrower and more elongate, with costa not greatly expanded at apex. In this subspecies the downward-projecting, hooklike structure from middle of costa is usually greatly recurved and elongated at tip and the ampullalike spiny knob is located much closer to the ventral margin than in the other subspecies.

*Female* (pl. 46, fig. 24).—Habitus like that of the male.

Length of forewing 7.2–8 mm.

Female genitalia as illustrated (pl. 44, fig. 10), differing from *E. hamata brasiliensis* in having the apex of ductus bursae slightly broader and with broad lobes along posterior edge of seventh sternum above shallow cuplike depressions that lie on either side of the central raised transverse ridge.

*Type locality*.—Cayenne, French Guiana.

*Additional type data*.—Described from the holotype, male (locality as given above; William Schaus; U.S.N.M. type No. 34818; ♂ genitalia preparation W. D. F. No. 1667, 1941); allotype, female (Trinidad, West Indies; August Busck; ♀ genitalia preparation W. D. F. No. 1677, 1941) and from two male and three female paratypes (various localities: Cayenne, French Guiana; Trinidad, West Indies and Caparo, west-central Trinidad, West Indies. Genitalia preparations as follows: Paratype No. 1, ♂, W. D. F. No. 3208, 1949; paratype No. 2, ♀, W. D. F. No. 3215, 1949; paratype No. 3, ♀, W. D. F. No. 3216, 1949; paratype No. 4, ♀, W. D. F. No. 3221, 1949 and paratype No. 5, ♂, W. D. F. No. 3227, 1949).

*Location of types*.—Holotype, allotype, and paratypes Nos. 1–3 in the United States National Museum. Paratypes Nos. 4 and 5 in the British Museum (Natural History).

*Distribution*.—FRENCH GUIANA: Cayenne. TRINIDAD: Capara in west-central Trinidad; several specimens are labeled simply "Trinidad."

*Remarks*.—Six specimens (including their genitalia preparations) were studied.

*EPEIROMULONA HAMATA VENEZUELENSIS*, new subspecies

PLATE 45, FIGURES 15, 16; PLATE 46, FIGURE 25

*Male* (pl. 46, fig. 25).—Palpus, head, thorax, abdomen, and wings not different from typical *E. hamata*.

Length of forewing 6.5–7.2 mm.

Male genitalia as illustrated (pl. 45, figs. 15, 16). This subspecies differs from typical *hamata* in having the distal end of harpe elongate at ventral margin and with costa expanded at apex. The downward-projecting hooklike structure originates from just before middle of costa and is recurved and elongate at the tip but not as recurved and

elongate as in *E. hamata hamata*. The ampullalike spiny knob is located almost midway between the costal and ventral margins.

*Female*.—Unknown.

*Type locality and distribution*.—Las Quiguas, Esteban Valley, Venezuela.

*Additional type data*.—Described from the holotype, male (locality as given above; ♂ genitalia preparation W. D. F. No. 3231, 1949); paratype No. 1, male (same locality; ♂ genitalia preparation W. D. F. No. 3232, 1949) and paratype No. 2, male (same locality; ♂ genitalia preparation W. D. F. No. 3233, 1949).

*Location of types*.—Holotype and paratype No. 1 in the British Museum (Natural History). Paratype No. 2 in the United States National Museum.

*Remarks*.—Three specimens (including their genitalia preparations) were studied.

**EPEIROMULONA HAMATA COLOMBIENSIS, new subspecies**

PLATE 45, FIGURE 17; PLATE 46, FIGURE 26

*Male* (pl. 46, fig. 26).—Palpus, head, thorax, abdomen, and wings not different from the other subspecies.

Length of forewing 7.5–8 mm.

Male genitalia with harpe as illustrated (pl. 45, fig. 17). *E. h. colombiensis* differs from the other subspecies in having the distal end of harpe very much broader, only slightly elongated at ventral margin. Costa is more greatly expanded at apex than in *E. h. venezuelensis*. The downward-projecting hooklike structure arises from just before middle of costa and is broad and short, only slightly recurved and elongated at tip. The ampullalike spiny knob is located below middle of harpe but is not nearly so close to ventral margin as it is in *E. hamata hamata*. The ventral margin of harpe is greatly expanded just below this ampullalike structure.

*Female*.—Unknown.

*Type locality and distribution*.—Upper Río Negro, Colombia.

*Additional type data*.—Described from the holotype, male (locality as given above; 800 meters; collection Fassl; ♂ genitalia preparation W. D. F. No. 3236, 1949) and paratype No. 1, male (same locality and data; ♂ genitalia preparation W. D. F. No. 3237, 1949) and paratype No. 2, male (same locality and data; ♂ genitalia preparation W. D. F. No. 3238, 1949).

*Location of types*.—Holotype and paratype No. 1 in the British Museum (Natural History). Paratype No. 2 in the United States National Museum.

*Remarks*.—Three specimens (including their genitalia preparations) were studied.



## EPEIROMULONA HAMATA BRASILIENSIS, new subspecies

PLATE 44, FIGURE 9; PLATE 46, FIGURE 27

*Male*.—Unknown.

*Female* (pl. 46, fig. 27).—Palpus, head, thorax, abdomen, and wings not different from typical *hamata*.

Length of forewing 7 mm.

Female genitalia as illustrated (pl. 44, fig. 9) with apex of ductus bursae slightly narrower than in *E. hamata hamata* and with narrow lobes projecting from posterior edge of seventh sternum above shallow cuplike depressions that lie on each side of the central raised transverse ridge.

*Type locality and distribution*.—Melguina, 10 miles south of Diamantino, Mato Grosso, Brazil.

*Additional type data*.—Described from a single specimen, the holotype, female (locality as given above; 2,000 feet; C. L. Collenette; ♀ genitalia preparation W. D. F. No. 3222, 1949).

*Location of type*.—In the British Museum of Natural History.

## EPEIROMULONA ROSEATA, new species

PLATE 43, FIGURES 5, 5a, 5b; PLATE 46, FIGURE 28

*Male* (pl. 46, fig. 28).—Palpus, head, base of antenna, patagium, tegula, pronotum and mesonotum white. A black spot in middle of thorax and another on base of tegula. Metanotum pale yellowish white. Legs pale orange or yellow, sometimes whitish yellow. Foreleg with black on apical half of femur and basal half of tibia and the last four subsegments of tarsus. Midlegs and hindlegs with apex of tibia and last four subsegments of tarsus black. Abdomen yellow with slightly pinkish tinge above and pale whitish yellow below. Forewing above and below very similar to *phelina*. Fringe very pale yellow. Hindwing above and below salmon-pink, usually without apical black spot.

Length of forewing 5.5–7 mm.

Male genitalia as illustrated (pl. 43, fig. 5, 5a, 5b).

*Female*.—Unknown.

*Type locality*.—Between La Gloria and Cardel, state of Vera Cruz, Mexico.

*Additional type data*.—Described from the holotype, male (locality as given above; U.S.N.M. type No. 34836; J. Camelo C.; 1938; ♂ genitalia preparation W. D. F. No. 1674, 1941); paratypes Nos. 1–8, males (Río Temas, Honduras; ♂ genitalia preparations as follows: paratype No. 1, W. D. F. No. 3199, 1949; paratype No. 2, W. D. F. No. 3200, 1949; paratype No. 3, W. D. F. No. 3201, 1949; paratype No. 4, W. D. F. No. 3202, 1949; paratype No. 5, W. D. F. No. 3204,

1949; paratype No. 6, W. D. F. No. 3205, 1949; paratype No. 7, W. D. F. No. 3206; paratype No. 8, W. D. F. No. 3207, 1949); and paratype No. 9, male (Costa Rica; H. Schmidt; ♂ genitalia preparation W. D. F. No. 3229, 1949).

*Location of types.*—Holotype and paratypes Nos. 1–6 in the United States National Museum. Paratype No. 9 in the British Museum (Natural History). Paratype No. 7 in the American Museum of Natural History. Paratype No. 8 in the collection of Cornell University.

*Distribution.*—MEXICO: *State of Vera Cruz*, between La Gloria and Cardel. HONDURAS: Río Temas. COSTA RICA: *Department of San José*, San José.

*Comparative remarks.*—Aside from the readily discernible differences in the genitalia this species differs from all the others except *E. icterinus* in having the hindwing salmon-pink instead of yellow or orange-yellow. It is easily distinguished from *icterinus* by having the vertex of the head white instead of yellow or orange-yellow.

A single specimen from San José, Costa Rica, differs from typical *roseata* in having the hindwings above and below white instead of salmon-pink. Whether this specimen is an aberration or a faded specimen cannot be ascertained. It was not included in the type series.

*Remarks.*—Twelve specimens (including the genitalia preparations of all these) were studied.

#### EPEIROMULONA THYSANATA, new species

PLATE 42, FIGURES 4, 4a, 4b; PLATE 45, FIGURE 11; PLATE 46, FIGURES 30, 31  
*Gaudeator* (?) *phelina* (Druce), FORBES nec Druce, in part., Bull. Mus. Comp. Zool., vol. 84, No. 4, p. 183, August 1939.

Male (pl. 46, fig. 30).—Palpus and frons pale yellowish white. Vertex of head, base of antenna, patagium, tegula, and nota of thorax white. A black spot in middle of thorax and another on base of tegula. Legs yellow and banded as in *E. lephina*, but with apex of first femur black. Abdomen pale orange-yellow, whitish at the base above. Wings above similar to *lephina* and *E. phelina*, differing in the fringe of outer margin of forewing. In *E. thysanata* this fringe is orange next to the margin with black scales opposite middle of wing, these scales usually covering entire width of fringe. Beyond these black and orange basal scales the fringe is fuscous. The black fringe scales here described represent a change in position of the black spot found in *E. phelina* and other species on the margin of the wing inward from the fringe (i. e., not in the basal scales of the fringe). Hindwing above similar to *phelina* and *lephina*, differing in having fringe of outer margin fuscous along apical third of wing.

Length of forewing 6–6.5 mm.

Male genitalia as illustrated (pl. 42, figs. 4, 4a, 4b).

*Female* (pl. 46, fig. 31).—Habitus entirely like that of the male.

Length of forewing 7 mm.

Female genitalia as illustrated (pl. 45, fig. 11).

*Type locality*.—Cayenne, French Guiana.

*Additional type data*.—Described from the holotype, male (locality as given above; U.S.N.M. type No. 34837; ♂ genitalia preparation W. D. F. No. 1670, 1941); allotype, female (Paramaribo, Dutch Guiana; ♀ genitalia preparation W. D. F. No. 1678, 1941); and from six male and two female paratypes (various localities: Cayenne, French Guiana; Godebert-Maroni, French Guiana; Nouveau Chantier, French Guiana; Moengo, Boven, Cottica River, Dutch Guiana; Bartica, British Guiana, and Tumatumari, Potaro River, British Guiana. Genitalia preparations are as follows: paratype No. 1, ♂, W. D. F. No. 1669, 1941; paratype No. 2, ♂, W. D. F. No. 1668, 1941; paratype No. 3, ♂, W. D. F. No. 3228, 1949; paratype No. 4, ♂, W. D. F. No. 1671, 1941; paratype No. 5, ♂, W. D. F. No. 3209, 1949; paratype No. 6, ♂, W. D. F. No. 3243, 1949; paratype No. 7, ♀, W. D. F. No. 3223, 1949; paratype No. 8, ♀, W. D. F. No. 3224, 1949.)

*Location of types*.—Holotype, allotype, and paratypes Nos. 1, 2, and 4 in the United States National Museum. Paratype No. 3 in the British Museum (Natural History). Paratype No. 5 in the American Museum of Natural History. Paratypes Nos. 6 to 8 in the collection of Cornell University.

*Distribution*.—FRENCH GUIANA: Cayenne; Godebert-Maroni (October); Nouveaux Chantier (January). DUTCH GUIANA: Moengo, Boven, Cottica River (May); Paramaribo. BRITISH GUIANA: Bartica; Tumatumari, Potaro River (June).

*Remarks*.—Ten specimens (including their genitalia preparations) studied.

*Comparative remarks*.—The black fringe scales opposite the middle of the outer margin of the forewing distinguish this from all the other species in the genus.

EPEIROMULONA ICTERINUS, new species

PLATE 42, FIGURES 6, 6a, 6b; PLATE 45, FIGURE 12; PLATE 46, FIGURE 29

*Mulona phelina* (Druce), DYAR nec Druce, in part., Proc. U. S. Nat. Mus., vol. 47, p. 167, 1914.

*Gaudeator* (?) *phelina* (Druce), FORBES nec Druce, in part., Bull. Mus. Comp. Zool., vol. 84, No. 4, p. 163 (on chart), p. 183, August 1939.

*Male*.—(pl. 46, fig. 29).—Palpus and frons pale yellowish white. Vertex of head orange. Base of antenna, patagium, tegula, and nota

of thorax yellowish white. A black spot in middle of thorax and another on base of tegula. Legs white or pale yellowish white and banded as in *E. phelina* but with apical half of first femur black. Abdomen pale orange-yellow, whitish at the base above and paler below than above. Forewing above and below as in *E. lephina* with black spots on upper side slightly more prominent. Fringe with scales next to outer margin orange or orange-yellow and bordered outwardly with pale yellow or whitish hyaline scales, sometimes with a few black scales along base of fringe opposite middle of outer margin. Hindwings above usually salmon pink, sometimes pale orange yellow. Hindwings below pale orange-yellow.

Length of forewing 7-8 mm.

Male genitalia as illustrated (pl. 43, fig. 6, 6a, 6b).

*Female*.—Habitus uncertain (only a single badly rubbed specimen is available for study) but probably like that of male. Vertex of head orange as in the male.

Length of forewing 8 mm.

Female genitalia as illustrated (pl. 45, fig. 12).

*Type locality*.—Cayuga, Guatemala.

*Additional type data*.—Described from the holotype, male (locality as given above; U. S. N. M. type No. 34838; September; ♂ genitalia preparation W. D. F. No. 1673, 1941) and from 13 male paratypes (various localities: Cayuga, Guatemala; Port Bello, Panama; La Chorrera, Panama; Barro Colorado Island, Canal Zone. Genitalia preparations are as follows: paratype No. 1, W. D. F. No. 3210, 1949; paratype No. 2, W. D. F. No. 3194, 1949; paratype No. 3, W. D. F. No. 3193, 1949; paratype No. 4, W. D. F. No. 3195, 1949; paratype No. 5, W. D. F. No. 1676, 1941; paratype No. 6, W. D. F. No. 3246, 1949; paratype No. 7, W. D. F. No. 3198, 1949; paratype No. 8, W. D. F. No. 3196, 1949; paratype No. 9, W. D. F. No. 3245, 1949; paratype No. 10, W. D. F. No. 3197, 1949; paratype No. 12, W. D. F. No. 3225, 1949.) The single female specimen is from Porto Bello, Panama (genitalia preparation W. D. F. No. 3217, 1949) and because of the badly rubbed wings of this specimen it is excluded from the type series.

*Location of types*.—Holotype and paratypes Nos. 1-8 in the United States National Museum. Paratype No. 8 in the British Museum of Natural History. Paratype No. 9 in the American Museum of Natural History. Paratypes Nos. 11 to 13 in the collection of Cornell University.

*Distribution*.—GUATEMALA: *Department of Izabal*, Cayuga (August, September). PANAMA: *Province of Colón*, Porto Bello (March, April, May); *Province of Panama*, La Chorrera (May). CANAL ZONE: Barro Colorado Island (March, October, November).

*Remarks.*—Fifteen specimens (including the genitalia preparations of 13 of these) studied.

*Comparative remarks.*—This species is easily distinguishable from all the other species of *Epeiromulona* in having the vertex of the head partially covered with orange or orange-yellow scales.

#### NOTE ON THE ILLUSTRATIONS

José Oiticica Filho, of the Division of Insects, National Museum of Brazil, made the photographs for all figures except plate 44, figure 7, and plate 46. The photograph of the type of *Epeiromulona phelina*, plate 46, figure 22, and of its genitalia, plate 44, figure 7, was furnished through the courtesy of D. S. Fletcher, of the Department of Entomology, British Museum (Natural History). The remaining figures on plate 46 were done by the photographic laboratory of the United States National Museum. In the photographs of the male genitalia, the aedeagi have been removed from the genitalia and shown in lateral view. The left harpes have also been removed and laid flat to show the structure of their inner faces. The remainder of the male genitalia and all female genitalia were photographed from the ventral view.

No symbols were used on these plates, since the student not already familiar with the structures involved may turn to an earlier paper for explanation (Proc. U. S. Nat. Mus., vol. 100, p. 326, pls. 6, 7, 1950).