

AMERICAN MUSEUM NOVITATES

PUBLISHED BY THE AMERICAN MUSEUM OF NATURAL HISTORY
CITY OF NEW YORK JANUARY 5, 1950 NUMBER 1446

NEW SPECIES OF *BATHYPHLEBIA* FROM ECUADOR AND PERU (LEPIDOPTERA, SATURNIIDAE)

BY JOSÉ OITICICA FILHO AND CHARLES D. MICHENER

The species of *Bathyphebia* Felder have long been included by most authors in the genus *Eacles* Hübner. The two groups are, however, abundantly distinct, not only in appearance but in structural characters. The species of *Bathyphebia* are broad winged and have the antennae of the male pectinate to the apices and those of the female narrowly so, characters not shared by *Eacles*. A full account of the numerous generic differences will be given in a forthcoming generic revision of the Saturniidae of the Western Hemisphere.

Bathyphebia johnsoni, new species

This species differs from its previously described relatives, such as *B. aglia* Felder (1874), by the cinnamon brown rather than gray ground color of the wings of the male, the yellow spot basad of the eye spot of the forewing, the yellow apical area of the forewing, and the concave outer margin of the forewing. The female differs from other known females by the eye spot of the forewing which is distinct, with a white center and a brown iris margined externally with black.

MALE: Length of body 40 mm. (38 mm. to 45 mm. among paratypes); length of forewing 58 mm. (55 mm. to 62 mm. among paratypes).

Antennae light brown, flagellum 30- to 31-segmented. Labial palpi three-segmented. Vestiture of head, prothorax, and ventral and lateral parts of thorax yellow; vestiture of mesoscutum brown, band across front end of mesoscutum gray brown, of

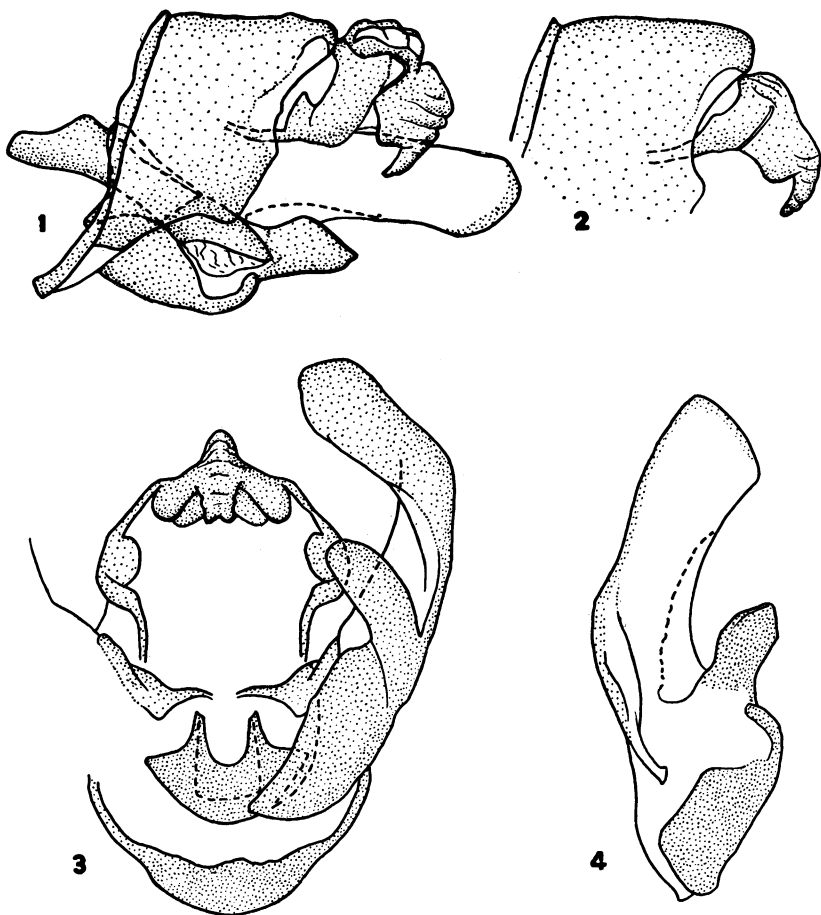


FIG. 1. Lateral view of male genitalia, right clasper removed, of *Batthyphlebia johnsoni flavior*, holotype (genitalic preparation 1612, A.M.N.H.).

FIG. 2. Lateral view of uncus and upper portion of ninth tergum of *B. rufescens*, holotype (genitalic preparation 4012, U.S.N.M.).

FIG. 3. Ventral view of male genitalia, aedeagus removed, of *B. johnsoni flavior*, holotype (genitalic preparation 1612, A.M.N.H.).

FIG. 4. Inner view of harpe of same.

tegulae red brown, of posterior portion of thorax, dorsally, mixed yellow and red brown; vestiture of abdomen reddish brown dorsally, posterior margins of terga with some yellow hairs (enough in some paratypes to give the abdomen a banded appearance); lateral and ventral parts of abdomen grayish brown with two rows of small (often inconspicuous) whitish spots on each side.

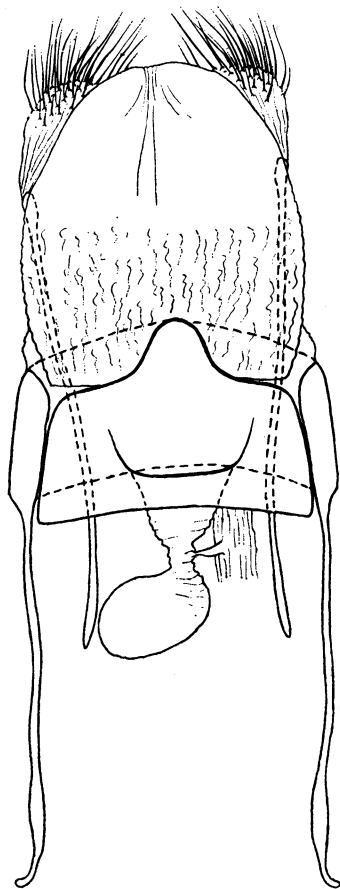


FIG. 5. Ventral view of female genitalia of *Bathyphebia johnsoni johnsoni*, allotype (genitalic preparation 204, A.M.N.H.).

Forewings with outer margins concave, so that the wings are falcate. Upper surfaces of wings with ground color cinnamon brown. Forewing with a small yellow spot at wing base, apex of discal cell marked by a translucent whitish streak or small spot which forms the center of a rather large brown eye spot which is only slightly differentiated, by its darker, duller color, from the ground color; a quadrangular yellow spot is adjacent to the eye spot basally and a shading of yellow scales distad of eye spot (in some paratypes this yellow nearly absent, in others nearly as conspicuous as spot basad of eye spot); apex of forewing, in front of

postmedian line, yellow, this yellow fading proximally into the brown of the ground color; postmedian line of forewing dark brown, shaded on outer side with pale gray; tornus with a shading of yellow scales; (wing veins of outer third of wing narrowly lined with yellow in some paratypes). Ground color of hind wings similar to that of forewings except anteriorly where it is paler and grayer, especially basad of postmedian line; eye spot as large in diameter as width of discal cell, outer ring black, central portion brown (or black in some paratypes), with a white streak which is translucent medially; postmedian line of hind wing similar to that of forewing but somewhat broader and darker, margined on outer side with pale gray shading, line fading out near anterior margin of wing. Entire forewing and hind wing beyond postmedian line sparsely spotted with dark brown dots.

Under surface of forewing dusky yellow, duller and darker (sometimes purplish brown) near costal margin; eye spot dark gray with translucent whitish central streak; postmedian line dark gray; area beyond this line and in front of vein Cu_2 purplish brown, the wing margin and streaks along the veins brown, the remaining area appearing somewhat purplish because of a scattering of elongate pale gray scales; under surface of hind wing dusky yellow, anterior third purplish, portion beyond dark gray postmedian line colored like comparable part of forewing, eye spot purplish brown with translucent streak. Under surfaces of both wings speckled with purplish brown, the spots sparsest on basal part of forewing and in areas beyond postmedian lines, densest on costal part of hind wing.

Vestiture of femora dusky above, yellow below, that of tibiae and tarsi rosy brown; epiphyses golden brown, base of each at basal sixth of tibia, apex at distal third.

Genitalia (fig. 3) similar to those of *B. aglia* but median apical lobe of uncus shorter, only feebly transversely ridged, long upper lobe of harpe narrower than in *aglia*; basal part of uncus swollen and tumid with a pair of longitudinal membranous bands (fig. 1).

FEMALE: Length of body 38 mm. (41 mm. in paratype); length of forewing 64 mm. (66 mm. in paratype).

Antennae light brown, flagellum 30-segmented. Vestiture of body yellow except for a dark gray brown band across anterior portion of mesonotum; each side of abdomen with two rows of small black spots, those of upper row centered with white.

Forewings not falcate, outer margins nearly straight. Upper

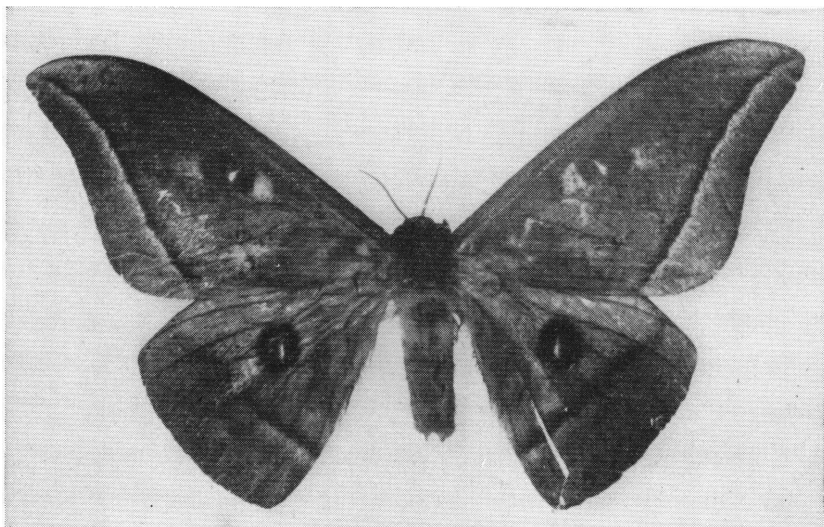


FIG. 6. *Bathyphebia johnsoni johnsoni*, upper side, holotype.

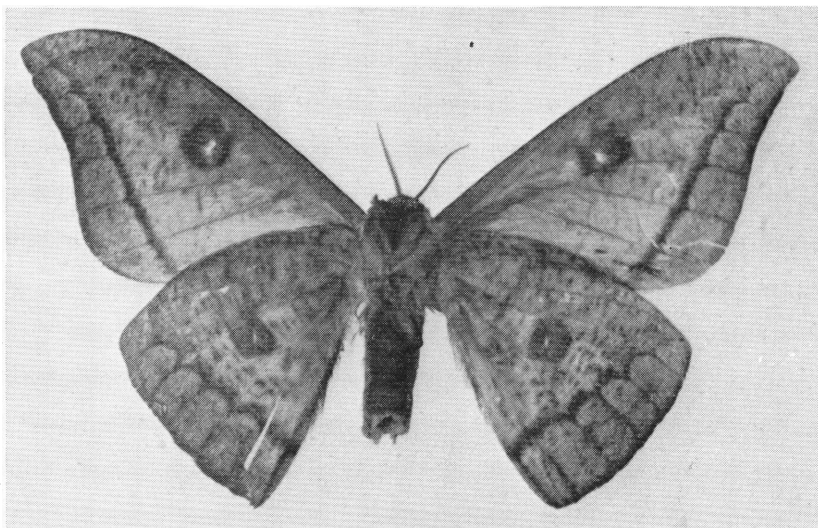


FIG. 7. *Bathyphebia johnsoni johnsoni*, under side, holotype.

surfaces of wings yellow. Forewing with costal margin dark gray brown, most broadly so basally; premedian line strongly undulate, gray, inconspicuous posteriorly; eye spot much smaller

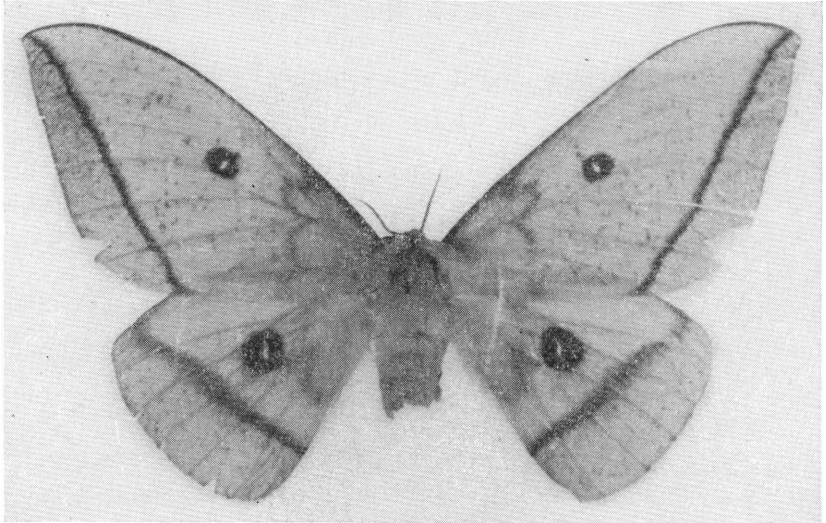


FIG. 8. *Bathyphebia johnsoni johnsoni*, upper side, allotype.

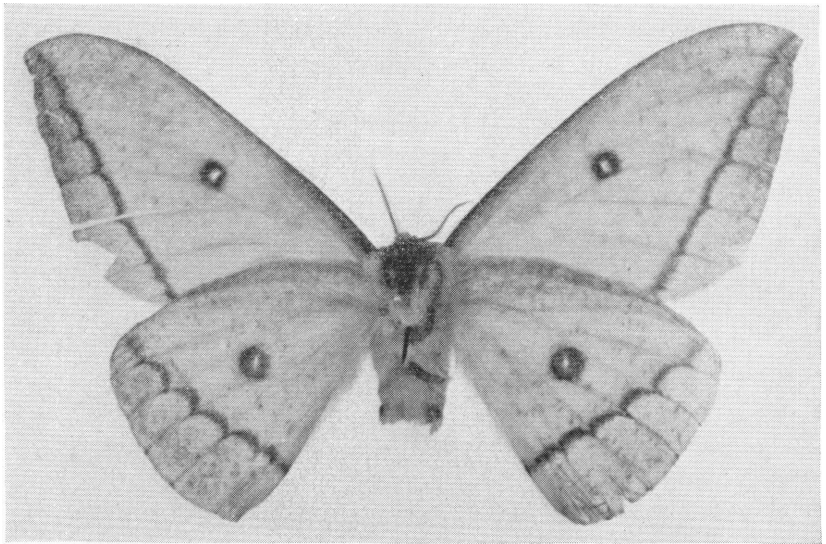


FIG. 9. *Bathyphebia johnsoni johnsoni*, under side, allotype.

than in male, dark gray brown (conspicuously brown medially in paratypes), with a small whitish central area containing a translucent streak (the paratype has the eye spot somewhat elongate

and a small brown spot in front of each eye spot); postmedian line dark gray brown, shaded on distal side with pale gray; area beyond postmedian line slightly dusky, especially towards wing apex, because of a scattering of dark scales. Hind wing with premedian line very faint and diffuse; eye spot slightly smaller than in male but otherwise similar; postmedian line dark gray brown, paler anteriorly, shaded on distal side with pale gray. Entire forewing and hind wing beyond postmedian line sparsely speckled with brownish dots.

Under surface of wings similar to upper but markings less clear-cut, premedian lines absent, postmedian lines more undulate, areas beyond postmedian lines and costal area of hind wing appearing slightly purplish except for the yellower outer margins.

Vestiture of femora dusky above, otherwise yellow, that of tibiae and tarsi brown, dusky on distitarsi.

Genitalia (fig. 5) do not appear to differ from those of *B. aglia* by any constant characters.

Holotype male (genitalic preparation 1608, A.M.N.H.), allotype female (genitalic preparation 204, A.M.N.H.), and nine male and one female paratypes: Rio Piene, Apurimac, Peru. (Two of the male paratypes have genitalic preparation numbers 205 and 1610, A.M.N.H.)

The holotype and allotype will be placed in the collection of the American Museum of Natural History in New York. Paratypes will be found in the United States National Museum and in the Oiticica collection in Rio de Janeiro.

All of the specimens of this form are from the collection of the late Frank Johnson, to whom we are indebted for the opportunity to study them, and we take great pleasure in naming this species for him.

Bathyphebia johnsoni can be divided into two subspecies. The above description is based entirely upon *B. johnsoni johnsoni*, which we judge to occur at lower altitudes than *B. johnsoni flavior*, described below.

A single topotypical male paratype (genitalic preparation 1610, A.M.N.H.) of *B. johnsoni johnsoni* has rather extensive yellow areas, especially on the hind wings, as in *flavior*.

***Bathyphebia johnsoni flavior*, new subspecies**

This form resembles *B. johnsoni* proper, differing by its smaller size and other features listed below.

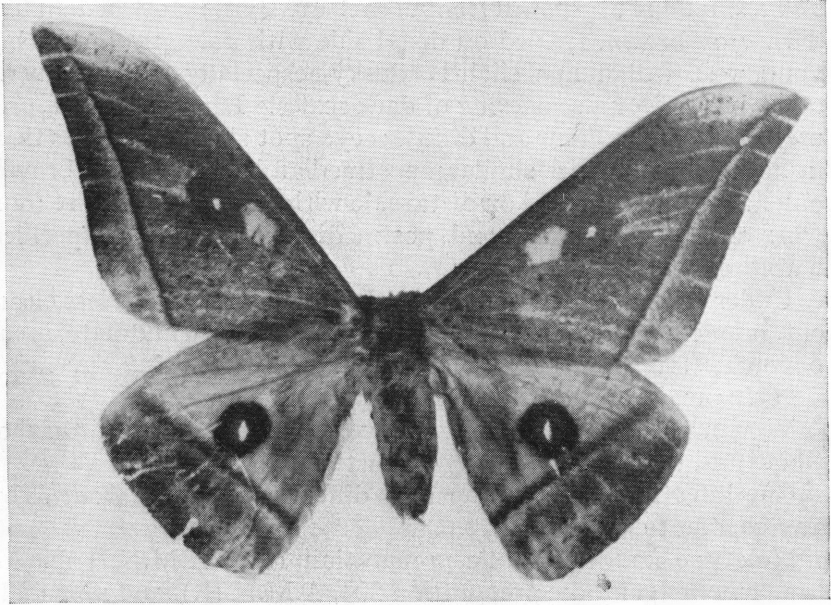


FIG. 10. *Bathyphebia johnsoni flavior*, upper side, holotype.

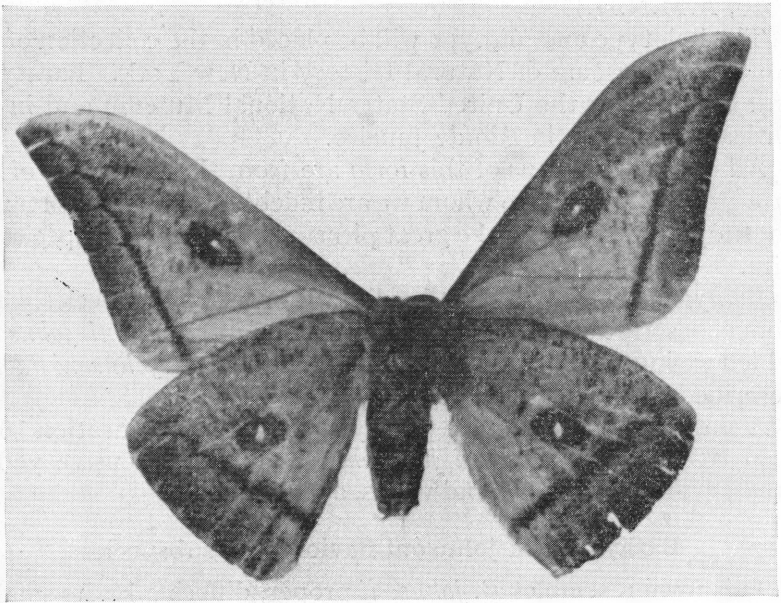


FIG. 11. *Bathyphebia johnsoni flavior*, under side, holotype.

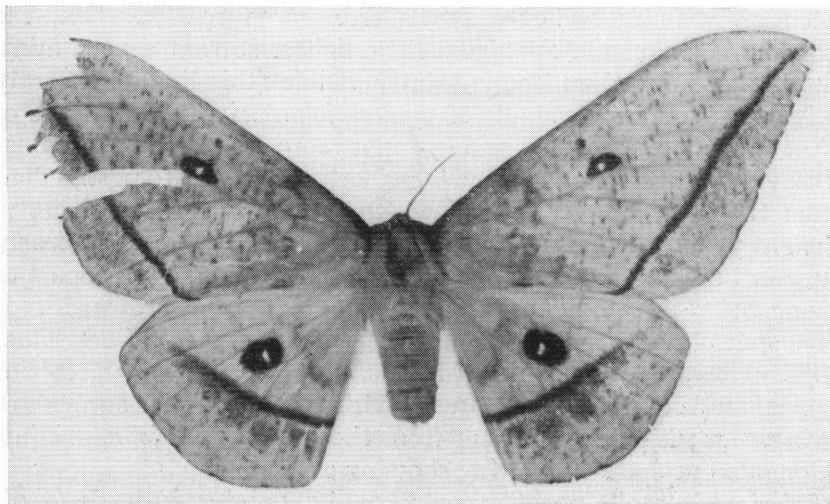


FIG. 12. *Bathyphebia johnsoni flavior*, upper side, female.

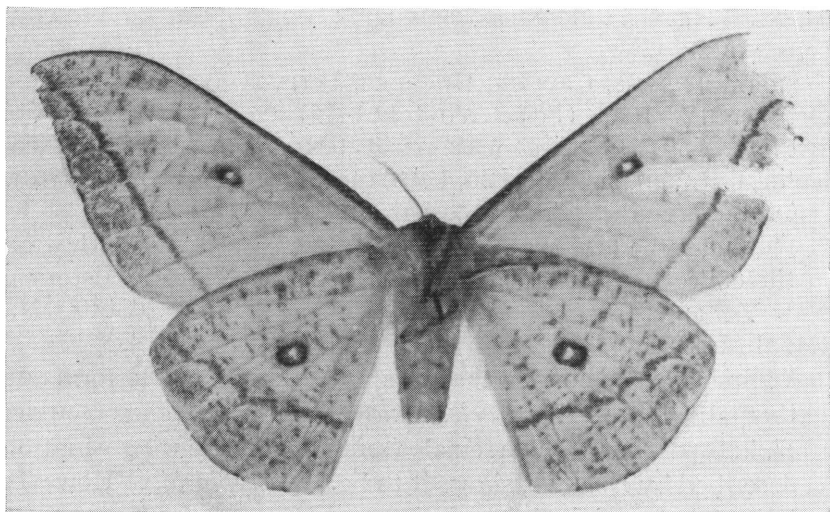


FIG. 13. *Bathyphebia johnsoni flavior*, under side, female.

MALE: Length of forewing 57 mm. (varying to 51 mm. among paratypes). Brown vestiture of body usually redder, yellow bands on abdominal terga usually more conspicuous. Forewings more

slender, with more acute apices than in typical *johnsoni*, the ground color on the average a little lighter so that a very faint, undulate, premedian line is faintly visible (this line also faintly visible in some individuals of typical *johnsoni*); yellow areas of forewing more extensive and eye spot more elongate than in most individuals of *johnsoni*. Hind wing with area basad to postmedian line largely yellow, pale yellow (to grayish yellow) anteriorly, bright yellow behind eye spot; dusky premedian line more clearly visible because of pale ground color of this portion of wing, part of wing between this line and posterior wing margin brownish red; eye spot close to and often touching postmedian line (it is sometimes close to the line in typical *johnsoni*); area near posterior apical angle of hind wing suffused with yellow. Under surfaces of wings not strikingly different from those of typical *johnsoni*, but elongate eye spot of forewing showing clearly.

A single female from Tarma, Peru, 1000 meters altitude (genitalic preparation 1611, A.M.N.H.), may be the female of this form. It differs from *johnsoni* proper by the more elongate spot of the forewing and the brown shading beyond the postmedian lines, especially on the hind wing where large brown spots are formed in cells M_3 and Cu_1 .

Holotype male, Carpish, Huanuco, Peru, 2700 meters altitude, October 12, 1946 (Felix Woytokowski) (genitalic preparation 1612, A.M.N.H.); three male paratypes: same locality and collector, October 16, 25, and 26, 1946, the last from 2100 feet altitude (genitalic preparations 1613 to 1615, A.M.N.H.)

The holotype and the female tentatively associated with it are in the collection of the American Museum of Natural History in New York; a paratype will be placed in the United States National Museum.

At first it was thought that one or the other of the forms described above might be *Eacles penelope* var. *peruvianus* Bouvier, 1927, known from a single female from Peru whose wing venation, as described by Bouvier, shows it to be a *Bathyphlebia*. However, to judge by the original description and Bouvier's later comments (Bouvier, 1931, Mém. Acad. Sci. Inst. France, ser. 2, vol. 60, p. 135), this female has markings very similar to those of *Eacles ducalis* Walker, 1855. Among the other differences, the eye spots of the hind wings of *peruvianus* are small, not enlarged and conspicuous as they are in *B. johnsoni*.

***Bathyphebia rufescens*, new species**

This species is similar in many features of its coloration to *B. johnsoni*, but the ground color of the upper surface is paler and redder, the forewings are not falcate, the disc of the mesoscutum is provided with yellow vestiture, the under surface of the abdomen is yellow, the eye spot of the hind wing beneath is much paler than that of the forewing, and the postmedian lines on the under surface are not scalloped.

MALE: Length of forewing 60 mm.

Antennae light brown, flagellum 33-segmented. Labial palpi three-segmented. Vestiture of head, prothorax, and ventral and lateral parts of thorax yellow; mesoscutum with a transverse dusky band anteriorly, discal portion yellow, lateral and posterior margins and tegulae with brownish red vestiture; vestiture of posterior part of thorax dorsally red brown and yellow; vestiture of abdomen pinkish brown dorsally, posterior margins of terga with yellow hairs forming abdominal bands; lateral and ventral parts of abdomen yellow with two rows of small pinkish brown spots on each side.

Forewings not falcate, outer margins nearly straight, although very feebly concave near apex of vein M_2 . Forewing with a small yellow spot at wing base, apex of discal cell marked by a small white spot which forms the center of a rather large, brown, somewhat elongated eye spot which is distinctly less red than background color; a transverse yellow bar is adjacent to eye spot basally and a feeble yellow shading is present distad of eye spot; premedian line scarcely visible, slightly more brown and less red than background, most noticeable basad of yellow bar; apex of wing, in front of postmedian line, yellow, this yellow fading proximally into the brown of the ground color; postmedian line of forewing dark brown, shaded on outer side with pale gray; wing veins of outer third of wing feebly lined with yellow. Ground color of hind wings similar to that of forewings except anteriorly where it is paler, especially basad of postmedian line; eye spot smaller than in *johnsoni*, smaller in diameter than width of discal cell, black with a central white streak which is bordered with dark brown; hind wing yellowish basally; premedian line scarcely discernible, dusky; postmedian line more diffuse than that of forewing but otherwise similar and margined on outer side by a shading of pale gray scales, especially posteriorly. Entire forewing and hind wing beyond postmedian line speckled with dark brown dots.

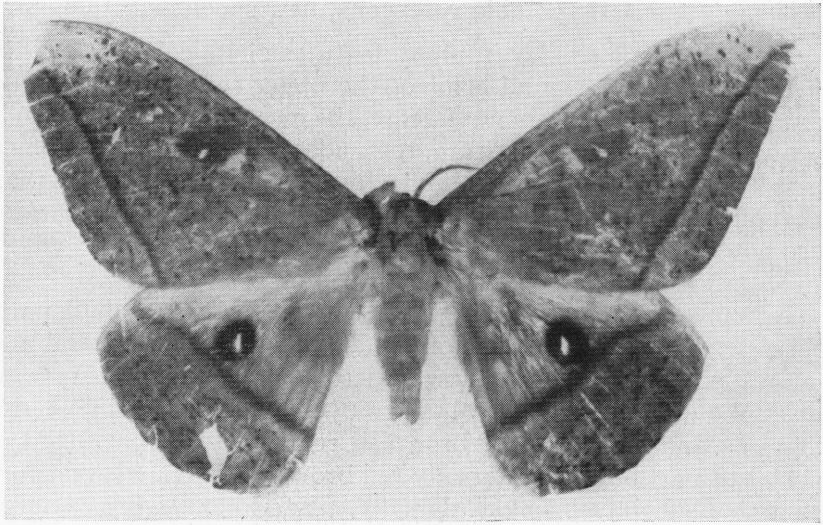


FIG. 14. *Bathyphlebia rufescens*, upper side, holotype.

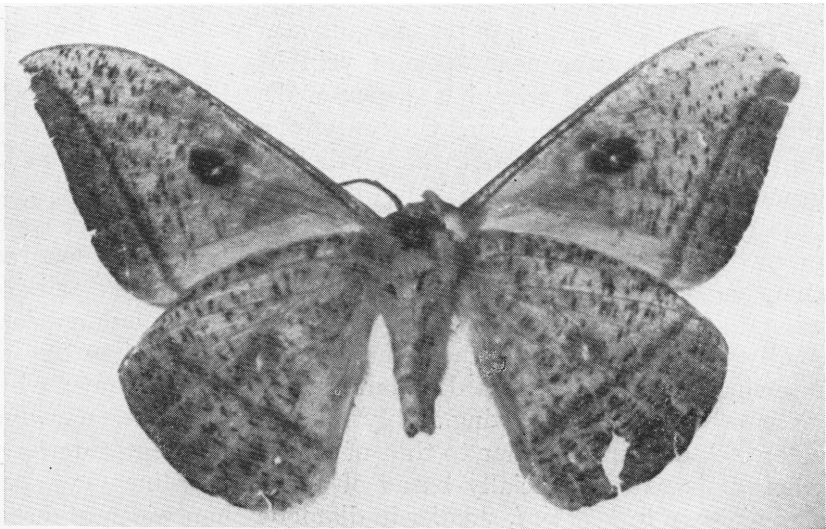


FIG. 15. *Bathyphlebia rufescens*, under side, holotype.

Under surface of forewing pinkish yellow, pinker in costal half of wing; eye spot dark gray with small translucent whitish central spot; postmedian line dark gray, shaded on outer side with pale gray

or whitish scales; area beyond this line reddish brown, not greatly different from ground color of upper surface; under surface of hind wing pinkish yellow, pinker towards base, portion beyond dark gray postmedian line reddish brown, slightly paler than upper surface; eye spot reddish brown with central white streak; postmedian lines of both wings straight, not scalloped as they are on under surface of *johnsoni*; under surfaces of both wings speckled with dark brown, the spots sparsest in basal part of forewing.

Vestiture of femora largely yellow, that of tibiae and tarsi pink; epiphyses brown, otherwise as in *johnsoni*.

Genitalia similar to those of *johnsoni*, upper lobe of harpe as slender as in *johnsoni*, uncus smaller, not tumid basally, and without longitudinal membranous bands (fig. 2).

Holotype male, Guayaquil, Ecuador (F. W. Goding), in the United States National Museum, bearing the genitalic preparation number 4012.

The genitalia of *Bathyphebia* seem to offer good specific characters, although there is some intraspecific variation. The only species for which a good series has been available for study is *B. johnsoni*. In this form the apex of the uncus is not always bidentate as shown in figure 3, and the median portion of the uncus does not always extend so far posteriorly as shown in the same figure. The species is readily recognized by the tumid base of the uncus, with longitudinal membranous bands. *B. aglia* Felder (1874) may be recognized by the strong transverse rugae of the uncus, extending to its base, and by the broad upper lobe of the harpe. A species tentatively identified as *B. gschwandneri* Schawerda (1925) is similar to *aglia*, but the transverse rugae of the uncus are much weaker, especially apically. In *B. rufescens* the uncus is not greatly different from that of *gschwandneri*, but the rugae are even weaker and those of the base of the uncus are oblique; also the upper lobe of the harpe is narrow, as in *johnsoni*, not broad as in *aglia* and *gschwandneri*. *Bathyphebia eminens* (Dognin) (1891) differs from the rest in many ways, among them the presence of spicules on the sac of the aedeagus and the presence of a heavily sclerotic broad inner projection from the middle lobe of each clasper.

