

REDESCRIPTION AND REASSIGNMENT OF THE
BRAZILIAN *ANERASTIA HEMIRHODELLA* HAMPSON TO
VOLATICA HEINRICH (PYRALIDAE: PHYCITINAE)

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ABSTRACT. *Anerastia hemirhodella* Hampson from São Paulo, Brazil, is redescribed and illustrated on the basis of the female holotype and newly associated male and female specimens, and transferred from *Rhinaphe* Berg to *Volatica* Heinrich in the Phycitinae (Pyralidae).

Additional key words: Neotropics, Brazil, taxonomy, *Rhinaphe*.

Hampson (1901) described *Anerastia hemirhodella* in the *Anerastiinae* and later (Hampson 1918) transferred the species to *Rhinaphe* Berg in his new subfamily *Hypsotropinae*, a taxon encompassing largely the same genera as *Anerastiinae*, though excluding *Anerastia*. In my own revisionary work (1968, 1976) on the group I have used Hulst's (1890) older name *Peoriinae* and transferred *Anerastia* and additional genera and species to the *Phycitinae*. More recently (1984) I redescribed and transferred to the *Phycitinae* eight Neotropical species previously placed in either *Anerastiinae* or *Hypsotropinae*, and indicated three other Neotropical species, including *A. hemirhodella*, needed to be similarly dealt with when types could be examined.

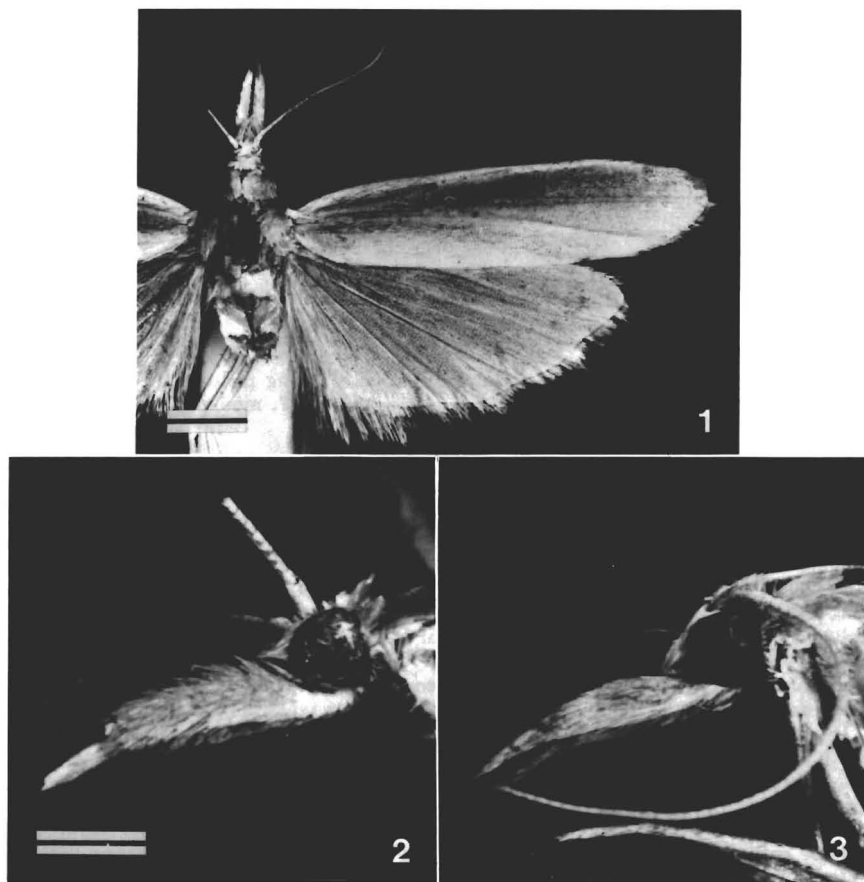
Through the kindness of Mr. Michael Shaffer of the Department of Entomology, Natural History Museum, London, I have recently examined the female holotype of *hemirhodella* and associated it with three male and two female specimens from Brazil. A detailed examination of these six specimens reveals relationship with neither *Anerastia* nor *Rhinaphe*, but rather with *Volatica* Heinrich (1956) in the *Phycitinae*.

The ISCC-NBS Color-Name Charts (Kelly 1965) were used so far as practical in the following descriptions, though for very small structures only general color designations could be given.

***Volatica hemirhodella* (Hampson), new combination**
(Figs. 1-14)

Anerastia hemirhodella Hampson in Ragonot, 1901:402, plate 52, fig. 12 [in *Anerastiinae*].
Rhinaphe hemirhodella (Hampson), 1918:85 [in *Hypsotropinae*].

Description. Head: Frons conical; dark yellowish pink laterally, yellowish white medially. Labial palpus porrect in both sexes, 4.7 times as long as eye diameter; basal segment white to yellowish white; second white to yellowish white ventrolaterally near base and brownish pink laterally near eye, otherwise dark yellowish pink laterally with a few yellowish white scales near apex; third dark yellowish pink with a few scattered yellowish white scales. Maxillary palpus well developed, cylindrical, obliquely ascending along and dorsal to second segment of labial palpus; dark yellowish pink to brownish pink. Proboscis



FIGS. 1-3. *Volatica hemirhodella*. 1, holotype ♀; 2, holotype, head, lateral view; 3, male head, lateral view, Rio Negro (Becker). Scale bar = 2.0 mm (1), 1.0 mm (2, 3).

reduced, but not concealed between labial palpi; scales light brown. Antenna filiform in both sexes, basal two segments of flagellum fused in male, otherwise unmodified; cilia about $\frac{2}{3}$ segment width in male (Figs. 4-7), finely ciliate in female; scape pink anteriorly, yellowish white elsewhere; shaft yellowish white. Eye diameter 0.7 mm. Ocellus much reduced, with a narrow dark circular ring bordering lens (holotype, see Discussion). Chaetosemata well developed. Vertex (partly denuded in holotype) yellowish white medially, dark yellowish pink laterally. Occiput dark yellowish pink laterally, yellowish white dorsally.

Thorax: Patagium mostly dark yellowish pink, pale yellow toward body midline, white along lateral margin. Tegula dark yellowish pink on inner $\frac{2}{3}$, gradually becoming pale yellow on posterior third; lateral third bearing conspicuous and sharply demarcated light yellow band that continues onto wing as the costal band. Pectus light reddish brown. Foreleg moderate brown (reddish brown in some specimens) on outer side, yellowish white on inner side. Mesothorax light reddish brown ventrally. Mid- and hind legs light reddish brown on outer sides, yellowish white on inner sides.

Forewing: Median radius 11.5 mm (range: 10.5-13 mm). With 11 developed veins. R_1 from distal $\frac{1}{10}$ of cell; bases of R_2 , R_{3+5} , and M_1 all well separated. R_{3+4} stalked with R_5 about $\frac{2}{3}$ free length of latter. M_1 from upper outer angle of cell. M_2 stalked with M_3 about



FIGS. 4-7. *Volatica hemirhodella*, male antenna showing pedicel (in part) and first 3 shaft segments. 4, anterior; 5, lateral; 6, posterior; and 7, medial views. Scale bar = 50 μ m.

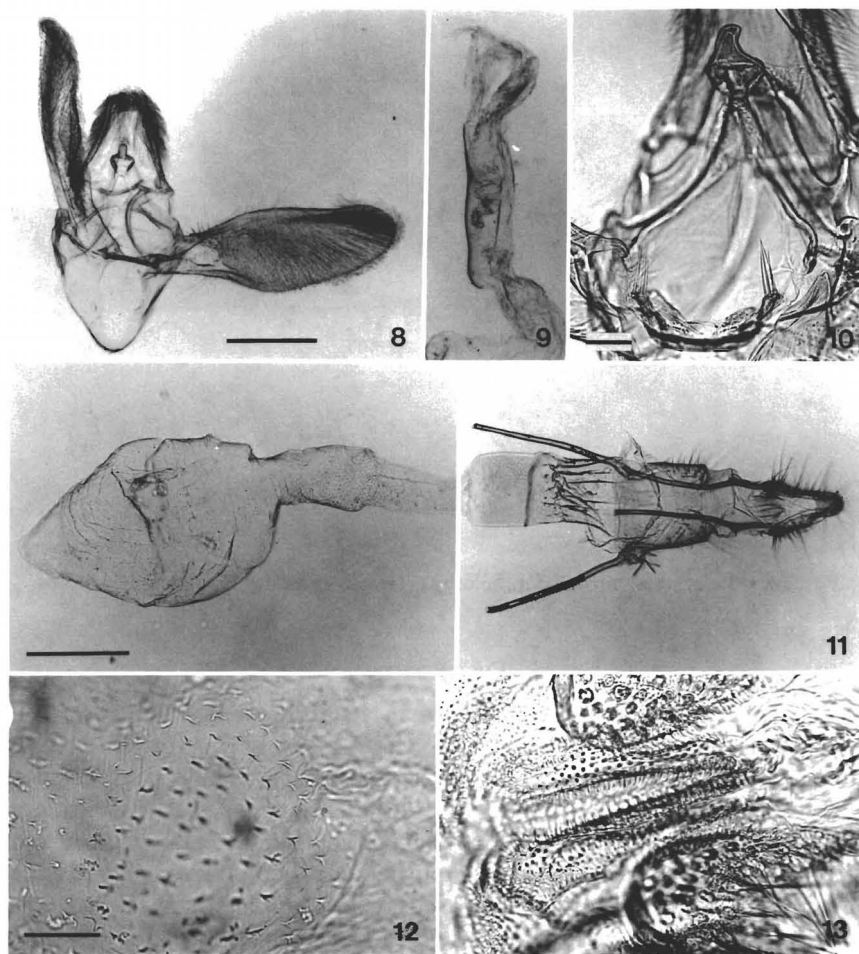
half its length or longer; from lower outer angle. Cu_1 from before the angle, well separated from M_3 and Cu_2 . Costa narrowly marked with light reddish brown on basal $\frac{1}{5}$; prominent yellowish white costal band uniformly wide on basal $\frac{1}{4}$, then tapering distally and extending to wing apex, there extremely narrow; costal band marked with only a very few dark yellowish pink scales (visible only with magnification). Broad band of dark yellowish pink extending throughout cell and distally to wing margin, its posterior margin somewhat indistinct, bounded approximately by 1st anal fold, but extending farther posteriorly on basal $\frac{1}{4}$ of wing. Ground on posterior $\frac{1}{3}$ of wing nearly uniformly yellowish white. Undersurface in both sexes with base of subcosta bearing yellowish pink tuft of slender scales extending distad along subcosta approximately as far as retinaculum.

Hindwing: With 7 veins. M_{2+3} fused, stalked with Cu_1 about $\frac{1}{4}$ length of free portion of Cu_1 ; from lower outer angle of cell. Cell very nearly $\frac{1}{2}$ wing length as measured along Cu_2 . Anal veins very nearly straight. Nearly uniformly white, brownish tinge along anterior margin.

Abdomen: All exposed abdominal segments light orange yellow on dorsal surfaces.

Male genitalia: (Figs. 8-13) With uncus hoodlike, laterally decurved, apex broadly rounded, dorsal and lateral surfaces rather densely setose. Gnathos with medial process hooked, lateral arms ligulate. Transtilla V-shaped, the arms long slender bars roughly parallel to gnathos arms, weakly joined just anterior to medial process of gnathos. Juxta broadly U-shaped, distal end of each arm with tubercle bearing about 4 moderately long straight setae. Valve simple, rounded apically; costa strongly sclerotized, flared at base; inner surface of valve with longitudinal subrectangular depression medially at base; sacculus somewhat expanded basally, its base less strongly developed than that of costa. Tegumen broad. Vinculum broadly rounded anteriorly. Aedeagus subcylindrical, about 0.3 times as wide as long; vesica unarmed. Eighth abdominal segment simple.

Female genitalia: (Fig. 14) With ovipositor lobes long, triangular in lateral view with posteroventral margin elongate and diagonal, apex narrowly rounded. Posterior apophysis very nearly as long as anterior; outer margin concave on posterior half, convex on anterior half; small nodule in center of concavity—in midregion of 8-9 intersegmental membrane. Posterior apophyses nearly parallel, anterior divergent. Eighth segment membranous midventrally, lateroventral lobes of collar well separated; collar with moderate number of setae ventrally, laterally and dorsally on posterior half except near dorsal midline; dorsally nearly devoid of setae on posterior half and on and near midline. Ostial chamber short, ligulate, walls lightly sclerotized, with about a dozen longitudinal folds. Ductus bursae with posterior half moderately well sclerotized, flattened, somewhat wider than long; anterior half narrow, membranous. Ostium bursae consisting of narrow cylindrical posterior portion bearing on its posterior half numerous minute anteriorly directed acu-



FIGS. 8-13. *Volatica hemirhodella* genitalia. 8, male genitalia (aedeagus omitted), J. Shaffer slide 2267; 9, aedeagus; 10, transtilla and gnathos region, USNM slide 58158; 11, female genitalia, USNM slide 58156; 12, bursa neck spines; 13, ostium oviductus, holotype. Scale bar = 0.5 mm (8, 9, 11), 0.1 mm (10), 0.05 mm (12, 13).

minate cusps; remainder of bursa unarmed, signum absent. Ductus seminalis from midregion of corpus bursae, basally digitate and posteriorly directed, then tapering to very slender.

Holotype. ♀. Labelled: "Sao Paulo. 88.-169."; "Type"; "Pyrilidae Brit. Mus. Slide No. 10912" [BMNH].

Other specimens examined. (3♂, 2♀): BRAZIL, Santa Catarina, Nova Teutonia (F. Plaumann), IX-1963 (2♀), one undissected; the other, USNM genitalia slide 58156, wing slide 58157; X-1963 (♂), USNM genitalia slide 58158 [USNM]; Paraná, Lapa (Becker), 17. XI. 1971 (♂), J. Shaffer genitalia slide 2358; Paraná, Rio Negro (Becker), 22. IX. 1970 (♂), J. Shaffer genitalia slide 2267 [VOB].



FIG. 14. *Volatica hemirhodella*, holotype, female genitalia. Scale bar = 0.5 mm.

DISCUSSION

The species resembles a peoriine in its reduced proboscis and its habitus, notably the pink coloration (though rarely this intense in peoriines), slender forewings with longitudinal pattern, long porrect palpi and light orange yellow scales on the dorsal surface of the abdomen; but genital and other characters place it within the phycitine genus *Volatica*. As compared with previously described species of *Volatica*, *hemirhodella* specimens are less robust and more slender winged with pinkish longitudinal wing markings rather than brownish transverse ones, and with proboscis much reduced.

Despite their superficial dissimilarity, *hemirhodella* corresponds closely with other *Volatica* species in wing venation, labial palpi (porrect), ocellus (reduced), male antenna shaft (unmodified), male 8th abdominal segment (absence of hair tufts and other modifications), and genitalia of both sexes. The male genitalia in particular are quite similar, differing mainly in the transtilla, this structure in *hemirhodella* consisting of very slender right and left sclerites that are weakly joined dorsally, whereas in other species of *Volatica* these sclerites are broad and well joined dorsally.

The degree of fusion of M_{2+3} varies from approximately half way in three of the six specimens examined, to $\frac{3}{4}$ in the fourth (IX-63) specimen, to completely fused on the holotype and in the Lapa specimen.

In each specimen the degree of fusion was similar in right and left wings.

Although all six specimens examined are very similar in coloration and structure, the holotype differs from the others in two respects: the ocellus is better developed and the bursa (Fig. 14) lacks the neck seen in slide 58156 (Fig. 11). Either of these distinctions could represent individual variation, difficult to evaluate in such a small series, and the latter could be an artifact of slide preparation. Nonetheless, the possibility of sibling species must be considered and it is hoped that one day a sufficient number of specimens will be available to permit resolution of this question.

ACKNOWLEDGMENTS

I thank Mr. Michael Shaffer, Department of Entomology, Natural History Museum, London [BMNH] for the loan of the holotype; Dr. Alma Solis, Systematic Entomology Laboratory, USDA, for arranging the loan of Smithsonian specimens [USNM]; Dr. Vitor Becker, Planaltina, Brazil for the loan of the male specimens from his personal collection [VOB]; and Ms. Linda Trimmer for assistance with SEM work. The Hitachi S-530 scanning electron microscope used in producing Figs. 4-7 was supported in part by NSF Grant No. BSR-8511148.

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Received for publication 22 January 1991; revised and accepted 28 May 1991.