

559

**Two Undescribed Species of Psychodid Diptera  
from Tropical America.**

by Charles P. Alexander, Massachusetts State College,  
Amherst, Mass.

(With 3 figures)

I am describing herewith a new species of *Bruchomyia* from southeastern Brazil, collected by Mr. Fritz Plaumann, and a new *Phlebotomus* from the Peruvian Andes, taken by Mr. Felix Woytkowski. The types of both species are preserved in my personal collection of Diptera.

The Bruchomyiinae include the most generalized of all Psychodidae and are certainly among the most primitive of all existing Diptera. In 1929 and again in 1940 (Consult Bibliography at end of paper) I have published papers considering the Tropical American species of this subfamily. In the latter paper I had described two new species of *Nemopalpus*. Also in 1940, at almost this same time, a paper by Tonnoir (1940) also considered the American species of *Nemopalpus*. It appears that the new species described, *N. szilady* Tonnoir, from Costa Rica, is distinct from those described by myself.

*Bruchomyia plaumanni*, sp. n.

General coloration of body dark brown, thorax gray pruinose, especially the praescutal stripes; antennae (excluding the terminal button) 31-segmented; wings with  $R_s$  relatively short, about two-thirds as long as  $R_{2-3}$ ; a transverse supernumerary crossvein connects vein  $Cu_1$  with the anal margin some distance before the atrophied tip of the latter; male hypopygium with the median lobe of tergal plate short-oval to subcircular in outline; dististyle with branches markedly unequal, the lower branch dark-colored, its tip narrowly obtuse.

Male. — Length, about 5 mm.; wing, 5.5 mm.; antenna, about 5.3 mm.

Rostrum and palpi brownish black. Antennae (excluding the minute terminal "button") 31-segmented; scape yellow; remaining segments brown, with a dense black vestiture; first flagellar segment a little exceeding segments two and three combined; succeeding fifteen or more segments subequal in length, thence becoming shorter, more pointed and glabrous at their distal ends;

outer three segments oval. Head dark brown; anterior vertex narrow, about three-fourths the diameter of the scape.

Thorax chiefly dark brown, gray pruinose, the praescutum with three stripes that are best-delimited by narrow brown lines, the surface of the stripes with microscopic black punctures. Halteres infuscated, the base of stem yellow. Legs with coxae dark brown; trochanters brownish testaceous; remainder of legs obscure yellow to brownish yellow, appearing dark-colored because of the vestiture. Wings (Fig. 2) much denuded in type, the long costal fringe and discal patch at *r-m* more persistent; all veins normally with long dense trichia. Venation: *Rs* about two-thirds as long as *R*<sub>2-3</sub>, thinner on its proximal two-fifths, joining the stouter straight outer portion at a slight angle; distal section of vein *Cu*<sub>1</sub> not attaining the margin, its tip atrophied; a transverse supernumerary crossvein connects the vein with the margin at some distance before tip.

Abdomen, including hypopygium, dark brown. Male hypopygium (Fig. 1) with the tergite, *gt*, deeply notched, the lateral lobes obtuse, provided with relatively few setae; median lobe short-oval to subcircular in outline, its apex very obtuse. Major lobe of basistyle, *b*, with long coarse setae, each split at tip into three or four slender branches; smaller outer lobe with fewer long scabrous setae. Dististyle, *d*, with the branches markedly unequal, the outer or axial one glabrous, flattened, its tip obtuse; lower branch dark-colored, with five short erect setae, the tip more narrowly obtuse; setae of body of style long and powerful, scabrous, their pits oval in outline.

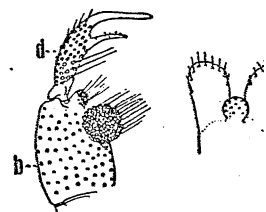
In *argentina*, the lateral tergal lobes are longer, the median one distinctly more elongate, relatively narrow. Basistyle with the major lobe having the setae stouter, more squarely truncate at apex, split into several branches to produce a brushlike appearance. Dististyle with the outer branch shorter and broader, the lower branch concolorous, with about three or four setae.

In *brasiliensis*, the lateral tergal lobes are short and broad, the median lobe difficult to delimit in the available slide material but evidently more elongate than in the present fly. Dististyle with the branches unusually long and slender, the notch between them correspondingly narrow.

Hab. Brazil (San  
September 2, 1936 (I

I am very pleased t  
Fritz Plaumann. The c  
Alexander, *brasiliensis*  
in the structure of th  
conditions existing in  
described by Plauma  
December 1937; 24: 7-1

The fly described  
largest and most consp  
Despite certain venation  
referring the species to



1

Fig. 1. *Bruchomyia plaumanni*, sp. n.; venation of male hypopygium. (Symbols: Male hypopygium, *Cu*, *gt*, *b*, *d*.)

As has been pointed out, *Phlebotomus* has invariably been designated on the genus. The Plaumann technique and methods of designating a group that sight seem to be *Phlebotomus* is merely a matter of fact that the same morphological characters throughout the entire family of *Phlebotomus* with *Nemopalpus*, the true *Phlebotomus* practice of designating characters with letters, as has been done, will be particularly unwarranted. The question have definite characters designated by their Greek letters: Gamma = *R*<sub>2-3-4</sub>; Delta = *R*<sub>2-3</sub>; Epsilon = *R*<sub>2-3</sub>.  
of the fork of *R*<sub>2-3</sub>.

21\*

Hab. Brazil (Santa Catarina). Holotype, male, Nova Teutonia, September 2, 1936 (Plaumann).

I am very pleased to dedicate this interesting fly to the collector, Mr. Fritz Plaumann. The chief differences between the genotype, *argentina* Alexander, *brasiliensis* Alexander, and the present fly are to be found in the structure of the male hypopygium, as contrasted above. The conditions existing in the vicinity of Nova Teutonia have best been described by Plaumann (Koleopterologische Rundschau, 23: 236-243; December 1937; 24: 7-13; May 1938.)

The fly described below as *Phlebotomus imperatrix* is one of the largest and most conspicuous members of the genus so far discovered. Despite certain venational peculiarities I do not see any reason for not referring the species to *Phlebotomus*.

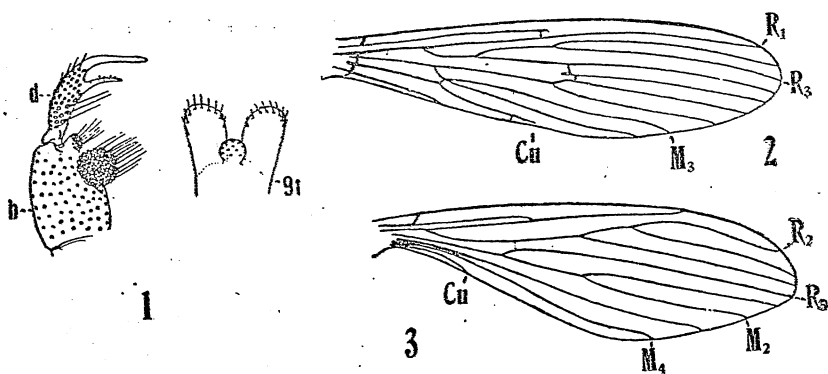


Fig. 1. *Bruchomyia plaumanni*, sp. n.; male hypopygium. — Fig. 2. *Bruchomyia plaumanni*, sp. n.; venation. — Fig. 3. *Phlebotomus imperatrix*, sp. n.; venation. — (Symbols: Male hypopygium. — *b*, basistyle; *d*, dististyle; *t*, tergite. Venation. — *Cu*, Cubitus; *M*, Media; *R*, Radius.)

As has been pointed out by Tonnoir (1935) the venation of *Phlebotomus* has invariably been misinterpreted by all previous workers on the genus. The Phlebotomists have become so specialized in their technique and methods of working upon a single relatively small taxonomic group that sight seems to have been lost of the fact that, after all, *Phlebotomus* is merely another genus within the family Psychodidae and that the same morphological terminology, including venation, applies throughout the entire family. By comparing the slightly specialized venation of *Phlebotomus* with that of the more generalized *Bruchomyia* and *Nemopalpus*, the true homologies of the veins can be demonstrated. The practice of designating certain veins in the wing of *Phlebotomus* by Greek letters, as has been done by various workers on the genus, appears to be particularly unwarranted and unnecessary. All of the veins in question have definite names and homologies and can be properly designated by their correct titles. Thus Alpha =  $R_2$ ; Beta =  $R_{2-3}$ ; Gamma =  $R_{2-3-4}$ ; Delta = the tip of vein  $R_1$  projecting beyond the level of the fork of  $R_{2-3}$ .

*Phlebotomus imperatrix*, sp. n.

Size large (wing, female, 3.4 mm.); general coloration of mesonotal praescutum and scutum dark brown; posterior border or scutellum broadly yellow; pleura and pleurotergite testaceous yellow; wings pale yellow, including the veins, the vestiture darker; forks of radius very deep, cell  $R_2$  more than three times its petiole ( $R_{2-3}$ ); basal section of vein  $R_5$  atrophied so that vein  $R_5$  is connected with  $M_{1-2}$  by the  $r-m$  crossvein.

**F e m a l e.** — Length, about 3 mm.; wing, 3.4 mm.; antenna, about 2.8 mm.

Rostrum approximately twice the length of remainder of head, brownish yellow. Antennae nearly as long as the body, pale brown at base, beyond the first flagellar segment paling to light yellow, including the vestiture; first flagellar segment nearly equal in length to the combined second and third segments; remaining segments gradually decreasing in length, slightly dilated at their bases, the remainder of each segment elongate-cylindrical. Head brownish yellow.

Mesonotal praescutum and scutum almost uniformly dark brown; scutellum brown medially, the posterior border broadly yellow; mediotergite testaceous brown; erect setae of mesonotum dark brown, very long and conspicuous. Pleura and pleurotergite testaceous yellow. Halteres with stem yellow, knob weakly darkened. Legs pale, including the long appressed vestiture; interspersed erect setae conspicuous on all segments, those of ventral surface of femora very long and delicate. Wings (Fig. 3) pale yellow, including the veins; vestiture a little darker and more conspicuous, especially the costal fringe of the proximal three-fourths of wing. Venation:  $Sc$  relatively short, ending about opposite one-third the length of  $M_{1-2}$ ; forks of radius very deep, cell  $R_2$  more than three times its petiole ( $R_{2-3}$ ); posterior branch of  $R_s$  connecting with vein  $M_{1-2}$  by the retention of crossvein  $r-m$  and the evident atrophy of the basal section of vein  $R_5$  (the presumed normal position of the latter is shown in figure by a dotted line); cell  $M_1$  about twice its petiole (second section of  $M_{1-2}$ ); veins  $M_3$  and  $M_4$  forking close to wing-base.

Abdomen brownish yellow, with both cerci and their entire surface yellow.

Hab. Peru (Junco), altitude 3,600-5,400 m.

*Phlebotomus imperatrix* is a new species by the somewhat atrophied basal section of cell  $R_2$  and the atrophy of the basal section of vein  $R_5$ .

For complete bibliography see Alexander, 1929 and 1940 references are added.

Alexander, C. P., — Ann. Ent. Soc.

— 1929, A revision of the subfamily Bruchonotinae, 2 figs.

— 1940, Further observations on the genus *Phlebotomus* (Diptera). — Rev. de Ent.

Tonnoir, A. L., 1933, — Bull. Ent. Res.,

— 1939, Ruwenzori Entomology, British Mus. Nat. Hist.

— 1940, Sur un remaniement du genre *Nemopalpus* d'une autre peu connue. Madrid 1935, pp. 2.

Abdomen brown, the incisures somewhat paler. Ovipositor with both cerci and hypovalvae fleshy, with setae distributed over their entire surfaces.

Hab. Peru (Junin). Holotype, female, Huacapistana, Tarma, altitude 3,600-5,400 feet, March 3, 1940 (Woytkowski).

*Phlebotomus imperatrix* is readily distinguished from all regional species by the somewhat peculiar venation, including the unusually deep cell  $R_2$  and the atrophy of the basal section of vein  $R_5$ .

### Bibliography

For complete bibliographies of the Bruchomyinae, consult the Alexander, 1929 and 1940 references, below. The more recent and pertinent references are added.

- Alexander, C. P., 1920, A new subfamily of Tanyderid flies (Diptera). — *Ann. Ent. Soc. America*, 13: 402-407, pl.
- 1929, A revision of the American two-winged flies of the Psychodid subfamily Bruchomyinae. — *Proc. U. S. Nat. Mus.*, 75, Art. 7: 1-9, 2 figs.
- 1940, Further observations on the Psychodid subfamily Bruchomyinae (Diptera). — *Rev. de Entomologia*, 11: 793-799, 5 figs.
- Tonnoir, A. L., 1935, The Australian species of the genus *Phlebotomus*. — *Bull. Ent. Res.*, 26: 137-147, 3 figs.
- 1939, Ruwenzori Expedition 1934-5. Vol. 1, no. 4. Psychodidae. — *British Mus. Nat. Hist.*, pp. 35-80, 156 figs., 2 pls.
- 1940, Sur un remarquable organe sexuel secondaire chez mâles du genre *Nemophilpus* Macq., avec description d'une espèce nouvelle et d'une autre peu connue (Dipt., Psychodidae). — 6 Congress Int. Ent., Madrid 1935, pp. 203-213, 7 figs.