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(DIPTERA: PSYCHODIDAE)

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THREE NEW SPECIES OF PHLEBOTOMUS FROM MEXICO AND NICARAGUA[1]

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The three following species have been recognized as new for a number of years, but description was postponed in hopes of securing additional material. Further delay seems unwarranted, and descriptions are furnished herewith.

Phlebotomus inusitatus, n. sp.
(Figs. 1-6)

Male.—Wing length 2.0 mm., venation as figured. Mesonotum and dorsum of abdomen faintly infuscated, hardly darker than pleura. Abdominal setae erect, sparse, evenly distributed but more thickly set on posterior margins of tergites. Upper anepisternal setae 12, lower mesanepisternals 3 to 5. Head and appendages as in female, except third antennal segment reaching to middle of third palpal segment and well beyond tip of proboscis. Ascoids simple, slender, about one-third shorter than in female, apparently paired on all but last two segments, though in the weakly stained specimens they are difficult to see. Palpal formula 1-(4-2)-3-5, the fifth segment longer than any two preceding. Pharynx slender, finely wrinkled at apex. Cibarium with weak denticles, of the same general shape as that of female, but more slender, without well-defined pigment patch, the arch weaker and diffuse in middle. Genitalia and pump as figured, the filaments a little over twice pump, their tips expanded, as figured. Second sternite narrowed in middle and with a central unsclerotized strip, as in female. Legs moderately long, the femora, tibiae and basitaris of slide 3063 measuring, in millimeters, as follows: fore legs, 0.8, 0.9 and 0.5; mid legs, 0.8, 1.1 and 0.6; hind legs, 0.9, 1.3 and 0.7.

Female.—Wing length, 2.3 mm., venation as in male, but alpha and delta both longer and wing broader. Mesonotum and abdomen darker than in male, but still a relatively pale fly. Abdominal setae as in male. Upper anepisternals 21, lower mesanepisternals 7. Sides of eighth segment not visible in the single slide available. Head and appendages as figured. Ascoids of fourth antennal segment as figured. Palpal formula 1-(4-2)-3-5, fifth longer than any two preceding. Eyes small, proboscis unusually long and heavy. Pharynx broad and well sclerotized with numerous finely denticulate ridges at apex. Cibarium as figured, the chitinous arch exceedingly thick and heavy. Spermathecae shrunken in the only available specimen, apparently subglobose and rather thick walled, with short separate ducts. Genital fork not remarkable, the stem slender. Cerci ob-

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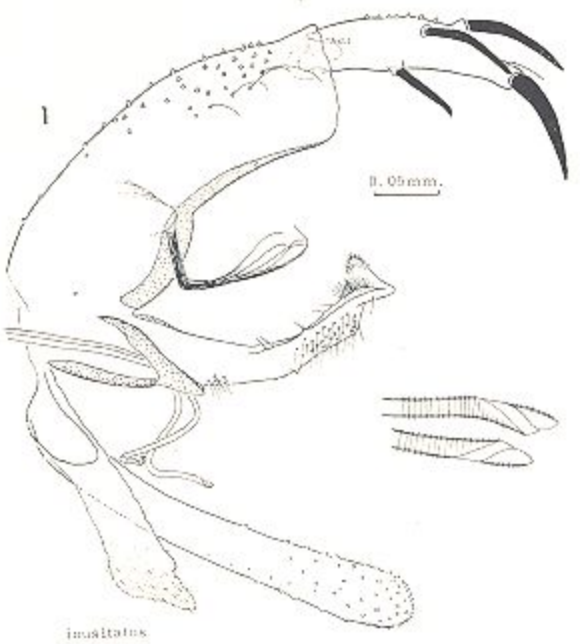
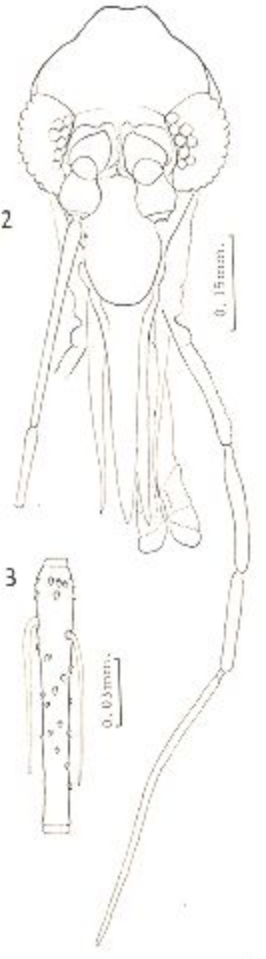
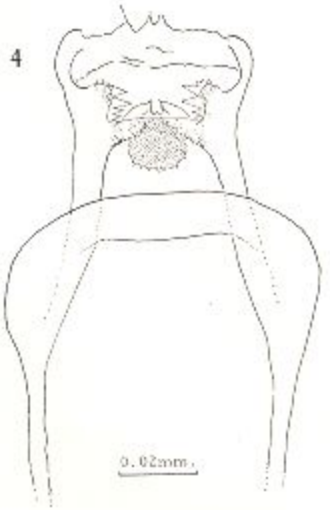
Phlebotomus inusitatus, n. sp.: Fig. 1, male genitalia and tips of genital filaments of holotype, the latter much enlarged; fig. 2, head and appendages of female allotype; fig. 3, antennal segment V of allotype; fig. 4, cibarium of allotype; fig. 5, genital pump of holotype; fig. 6, wing of holotype.







insulatus

secured by a crack in the coverslip and mounted dorsoventrally, apparently broadly subtriangular. Second sternite narrowed in middle and with a broad oval unsclerotized median fenestra. Third sternite as wide as long, widest posteriorly, without fenestra. Legs moderately long, the femora, tibiae and basitarsi of slide 3077 measuring, in millimeters, as follows: fore legs, 0.85, 0.9 and 0.55; mid legs, 0.9, 1.1 and 0.65; hind legs, 1.0, 1.4 and 0.75.

Types.—**Holotype** male, slide 3062, Ocosocoautla, 60 K.W. of Tuxtla Gutierrez, Chiapas, Mexico, 8 April 1951, in holes and buttresses of oak trees, Fairchild and Hartmann colls. **Allotype** female, slide 3077, same data as holotype. **Paratype** male, slide 3063, same data as holotype.

This species seems to be closely related to *P. delpozoi* Vargas and Diaz Najera (1953), but differs strikingly in the structure of the parameres of the male. We are unable to visualize any distortion of this structure in our species which would give an appearance similar to that illustrated for *delpozoi*, and both of our specimens are identical in this respect. Our single female, unfortunately partially obscured by a crack in the coverslip, does not seem to differ appreciably from the description and figures of *delpozoi*. The name signifies unusual or strange.

Phlebotomus vargasi, n. sp.

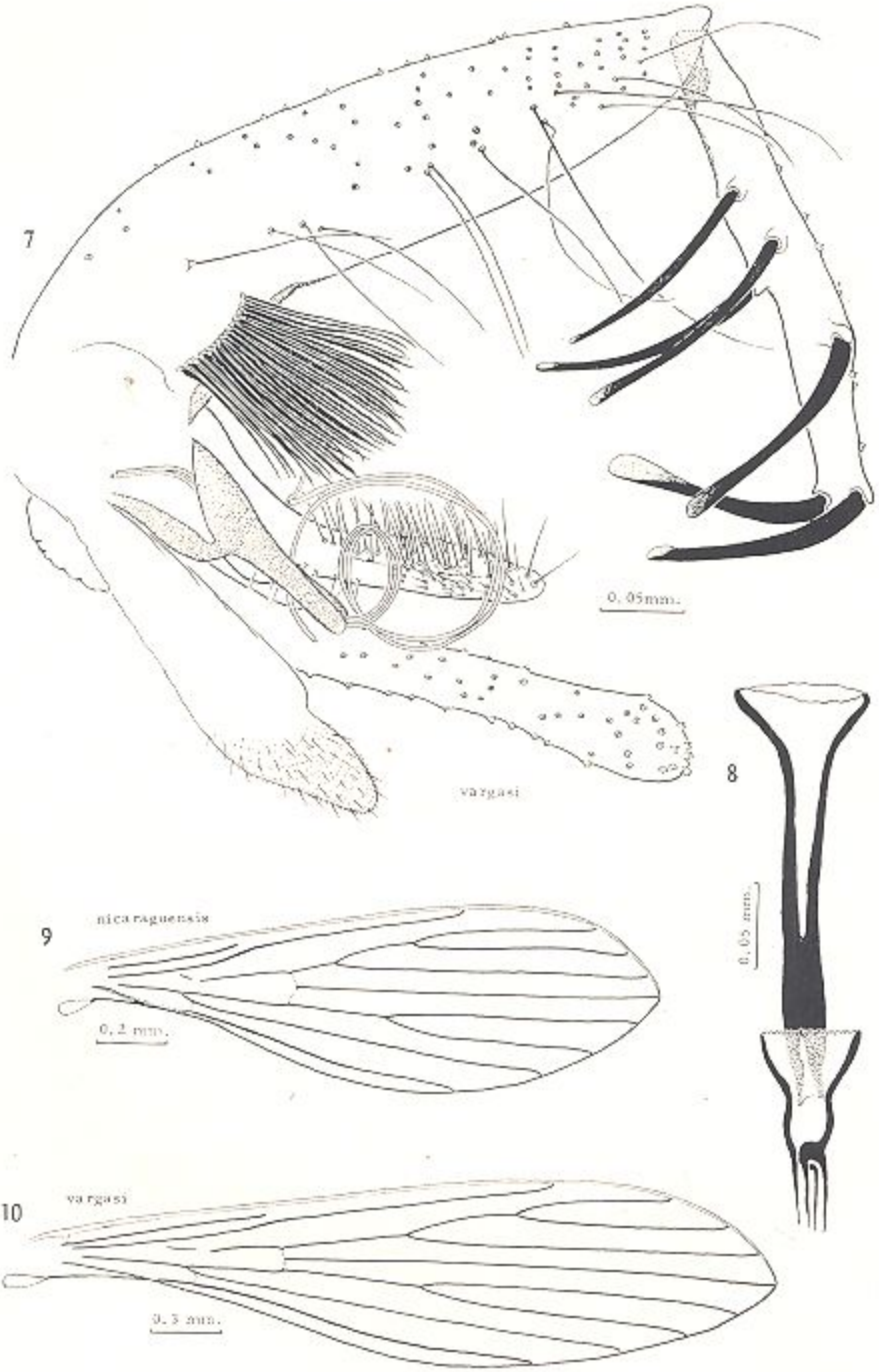
(Figs. 7, 8, 10, 11-13)

Male.—Wing length 3.3 mm., venation as figured. Whole insect pale, the mesonotum hardly darker than pleura. Abdominal setae erect, sparse, except for denser bands on hind margins of tergites. Upper anepisternal setae 11, lower mesanepisternals 4. Head and appendages as figured. Antennal segments very long, the ascoids short, simple, as figured, paired on all but shortened terminal segment. Palpal formula 1-4-2-3-5, the fifth segment about equal to second and third together. Pharynx slender, with an irregular network of fine ridges at apex. Cibarium unarmed, the pigment patch strong, pear-shaped; no chitinous arch. Genitalia as figured, with six major spines on both styles. Genital pump as figured, the filaments a little over 9 times as long as pump. Second sternite as figured, over twice as long as wide, straight sided, without clear areas. Legs exceedingly long, the femora, tibiae and basitarsi of slide 4913 measuring, in millimeters, as follows: fore leg, 1.45, 2.15 and 1.5; mid legs missing; hind leg, 1.4, 2.8 and 1.75.

Type.—**Holotype** male, slide 4913, Cañon de Lobos, between Cuernavaca and Yautepec, 4100 ft. elev., Morelos, Mexico, 20 Sept. 1955, in small cave, P. Galindo and H. Trapido colls. Type to be deposited in U.S.N.M.

We take pleasure in naming this unique and remarkable species in honor of Dr. Luis Vargas, who has done so much to advance the knowledge of medically important insects in Mexico.

Phlebotomus vargasi, n. sp.: Figs. 7 and 8, male genitalia and genital pump of holotype; fig. 10, wing of holotype. *P. nicaraguensis*, n. sp.: Fig. 9, wing of holotype.


7
0.05mm.
vargasi
8
0.05 mm.
9
nicaraguensis
0.2 mm.
10
vargasi
0.3 mm.

The relationships of this species appear to be with the *vexator* group (Fairchild and Hertig 1957) though the six-spined style is found in only one other unrelated American *Phlebotomus*, *P. alphabeticus* Fons. The very dense basal tuft, long style and very long genital filaments are somewhat like members of the *brumpti* group, but the small eyes, short lateral lobes, and narrow wings do not agree. Dr. O. Theodor has recently pointed out (in litt.) a character apparently peculiar to members of the *brumpti* group. In all of these species we have examined, the upper anepisternal (or post-spiracular) setae extend quite far ventrally on the anterior margin of the anepisternum, while in all other American *Phlebotomus*, including the present species, they are limited to the dorsal margin of the sclerite. Of described species, *vargasi* in general aspect resembles *P. oppidanus* Dampf, but is abundantly distinct, having, aside from the six-spined style, a dense basal tuft on coxite, shorter parameres and lateral lobes, longer genital filaments, and a much longer proboscis. If our single specimen should prove to be an aberrant one, with an extra spine on style, the species will key out to *osornoi* Rist. and Van Ty and *noguchii* Shann. in our key (1957). It can be separated from both these species by the much longer genital filaments, the character of the basal tuft on coxite, stouter parameres and relatively much longer third antennal segment. The wing is narrow as in *noguchii*, but alpha is proportionally much longer in that species.

Phlebotomus (Psychodopygus) nicaraguensis, n. sp.
(Figs. 9, 14-16)

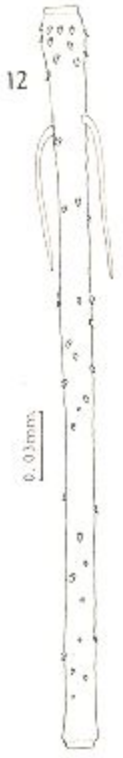
Male.—Wing length 1.7 mm., venation as figured. Mesonotum, abdominal tergites, fore coxae and legs very lightly infuscated, remainder of insect pale. Abdominal setae all recumbent, slender, not scale-like. Upper anepisternal setae 17, lower mesanepisternals 1. There are also much smaller scattered setae on the pleura. Head pale, the eyes large, as in other members of this group. Palpal formula 1-4-5-2-3, as figured. Antennae missing. Pharynx and cibarium as in *panamensis*. Genitalia as figured, the pump similar to related species, the filaments about twice length of pump. Legs rather short, lacking tarsi on fore and hind legs, the femora, tibiae and basitarsi measuring, in millimeters, as follows: fore leg, 0.75 and 1.2; mid leg, 0.7, 1.35 and 0.8; hind leg, 0.8 and 1.6. Second sternite roughly oblong without median clear fenestrae, as in other members of the group. Female unknown.

Type.—**Holotype** male, slide 4321, Villa Somoza, Nicaragua, 15 June 1953, Galindo and Trapido colls.

This species will key out to *hirsutus* Mang. and *colasbelcouri* F. and A. in our key (Fairchild and Hertig 1951). It differs from the former in having the most basal spine of the style basad of the middle

Phlebotomus vargasi, n. sp., holotype: Fig. 11, first three sternites; fig. 12, antennal segment V; fig. 13, head and appendages. *P. nicaraguensis*, n. sp., holotype: Fig. 14, male genitalia, inner aspect; fig. 15, palpus; fig. 16, paramere, outer aspect, the main hair tuft only indicated (genitalia to same scale as *vargasi*).


11
0.1mm.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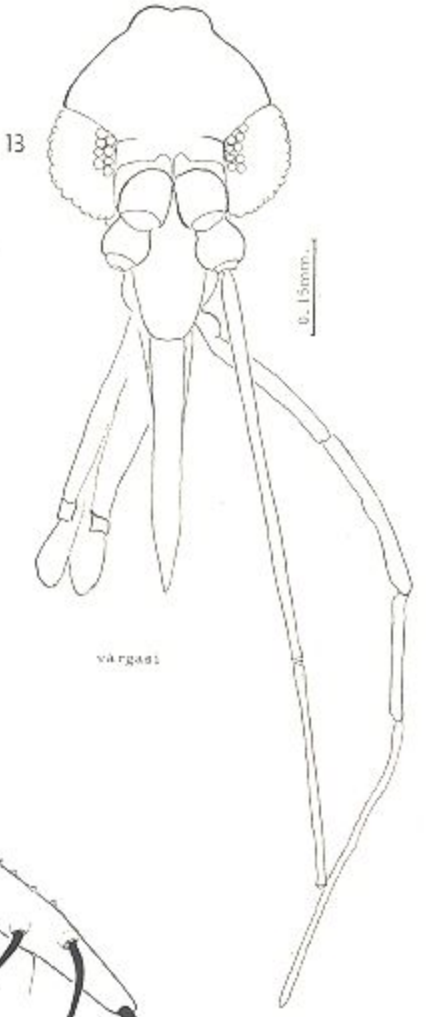
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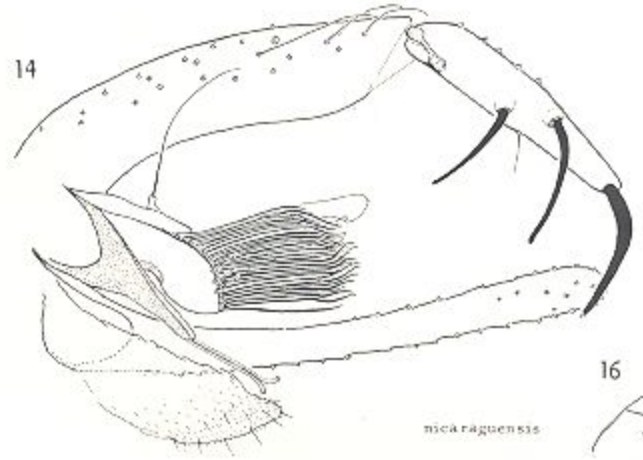
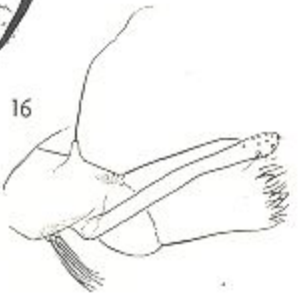
0.15mm.
vargasi


14
nicaraguensis


15
0.1mm.


16

of the style, in having the dense setae of the paramere not blade-like, and the ventral tuft of more numerous setae. From *colasbelcouri* it differs in having a straight outer arm on the paramere and in longer lateral lobes. From both species it differs in possessing a long, strong seta inserted on a prominent tubercle dorso-basally on the paramere, in having a much weaker terminal spine on the arm of the paramere, and in having the fourth and fifth palpal segments together exceeding the length of the third segment. A male and several females of *P. panamensis* Sham. were taken at the same locality.

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