

NOTES ON THE PHLEBOTOMUS OF PANAMA XV
FOUR APPARENTLY NEW SYNONYMIES¹

(DIPTERA, PSYCHODIDAE)

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On working over our collections of *Phlebotomus* we have accumulated notes on several specific synonymies which it seems best to publish at this time.

Phlebotomus longipalpis Lutz and Neiva

1912, Mem. Inst. Oswaldo Cruz, 4 (1):90-92 (♀, ♂, S. Paulo, Minas, Brasil).

Costa Lima, 1932, Mem. Inst. Oswaldo Cruz, 26(1):25-28 and figs. Barretto, 1947, Arq. Zool. Est. S. Paulo, 5, Art. 4:208-209 (full references).

Phlebotomus almazani Galliard, 1934, Ann. Parasit. Hum. Comp., 12(3):193-195, 1 fig. (♀, Chichen Itza, Yucatan, Mexico). Barretto, 1947, Op. cit., p. 183 (full references). Pifano and Ortiz, 1952, Rev. Sanidad Assist. Social, Caracas, 17 (12):147, fig. 1 (♀; Venezuela). Dampf, 1947, An. Esc. Nac. Cienc. Biol., Mexico, 4:424-426, figs. 1-9 (♀; redescription of type).

(New synonymy.)

There appears to be some confusion concerning the female of this species. Lutz and Neiva (1912) described the female from among specimens collected near Sao Paulo, and from Maquine and Ouro Fino in Minas Geraes, the male from a specimen from Ouro Fino. Costa Lima (1932) states, however, that the "typical" material consists almost exclusively of a large number of males taken in Quixada (Ceara) at light by Dr. Gomez de Faria. Costa Lima goes on to note that Lutz mounted three females from this material on a single slide and that he (Costa Lima) mounted some others. It is to be presumed that the photomicrograph given by Costa Lima (Plate XXX, fig. 142) is of one of these specimens. This shows a slender, fusiform finely annulate spermatheca quite unlike the barrel-shaped structure figured by most subsequent authors. In any event, if this specimen was from Ceara, it could hardly have formed part of the type series, since no such locality is mentioned in the original description. It is perhaps better to base the specific name on the male, at least until Lutz and Neiva's real co-types can be re-examined, if they still exist in recognizable condition.

Subsequent authors have either dealt with two different species when describing and figuring the spermathecae, or their figures have been inaccurate. Coutinho (1940) gives a photomicrograph of the spermatheca of a specimen from Ceara, republished more clearly in Galvao and Coutinho (1940). The reproduction is not very clear in either case, but indicates a more or less barrel shaped structure with weak or irregular annulations. A drawing in the latter paper shows a much more clearly annulate spermatheca. DeLucena (1949) figuring

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material from Pernambuco, shows the spermatheca weakly and irregularly annulate. Floch and Abonnene (1952) consider *almazani* and *longipalpis* as distinct species, copying Galvao and Coutinho's drawing for their figure of the spermatheca of *longipalpis*, Dampf's (1947) drawing for *almazani*.

The problem is complicated by the presence of at least two other closely related males, *P. cruzi* Mangabeira and *P. gaminarai* Cordero, Vogelsang and Cossio, which occur within at least the southern portions of the range of *longipalpis* but whose females remain unrecognized. We have compared males from Paraguay, Brasil, Venezuela, Panama, Costa Rica and Chiapas, Mexico, and find that they do not differ specifically. Females from Paraguay, Venezuela, Panama, Costa Rica and Mexico also agree, except that the spermathecal ducts of the Paraguay material appear to be slightly shorter and thicker than those from the other localities. The spermathecae of these females agree reasonably well with the figures of *almazani* published by Galliard, Dampf, and Pifano and Ortiz, and with the figures of *longipalpis* published by Galvao and Coutinho, and de Lucena, taking into account the variable quality of the published figures. The only figure of the cibarium of *longipalpis* we have seen, that of Coutinho (1940), shows 10 horizontal teeth, while both Galliard and Dampf figure 8 teeth for *almazani*. All material we have examined, including the series from Paraguay, shows 8 teeth. The species has been reared several times and there seems little question as to the correct association of the sexes.

The matter is of some importance, since recent work by Deane (1956) indicates that *longipalpis* is the most important vector of visceral leishmaniasis in Brasil. The known distribution of the species suggests also that it prefers relatively dry areas. The localities in Panama, Costa Rica and Mexico from which we have secured material are all in areas of relatively low rainfall, while its reported occurrences, or at least maximum abundance, in Brasil seem also to be in the dry northeastern states. It is certainly not primarily a rain forest species.

Phlebotomus saulensis Floch and Abonnene

1944, Inst. Pasteur Guyane Terr. l'Inini, Pub. No. 80, pp. 11-12, fig. 6, (δ ; Saul, Haute Mana, and Crique Anguille, French Guiana). Barretto, 1947, Arq. Zool. Est. S. Paulo, 5, Art. 4, p. 222. Floch and Abonnene, 1952, Faune de l'Union Francaise, XIV, Dipteres Phlebotomes de la Guyane et des Antilles Francaises, pp. 112-114, fig. 38.

Phlebotomus pincalis Floch and Abonnene, 1944, Inst. Past. Guyane Terr. l'Inini, Pub. No. 81, pp. 11-12, fig. 6, (δ ; Critique Anguille, French Guiana). Barretto, 1947, Arq. Zool. Est. S. Paulo, 5, Art. 4, p. 219. Floch and Abonnene, 1952, Faune de l'Union Francaise, XIV, pp. 185-186, fig. 84. Rosabal, 1954, Investig. Epidem. No. 3, Ministerio Salub. Publ., San Jose, Costa Rica, pp. 29-30, figs. 59-63; (δ ; Costa Rica). (New synonymy.)

We have long hesitated to combine these two names due to the discrepancies in the wing venation, the male (*saulensis*) having delta short or zero, the female (*pinacalis*) having it relatively long. The quite close agreement in other characters, the fact that both sexes appear to belong in the same group, the lack of other possible mates, and the fact that though both sexes are quite rare, they have been taken together at three localities, make it seem advisable to combine them. Certainty in the matter will only be achieved by rearing.

***Phlebotomus vexillarius* Fairchild and Hertig**

1952 (December) *An. Ent. Soc. America*, 45 (4):514-516, figs. 31-41 (♂, ♀; Panama).

Phlebotomus foliatus Mirsa and Ortiz, 1952 (April-May), *Rev. Sanidad Assist. Soc. Venezuela*, 18 (3-4):249-252, figs. 1-4 (♂; Venezuela). (**New synonymy.**)

Although the number of Vol. 18 in which the description of *foliatus* appeared was dated April-May 1952, Dr. Ortiz (in litt.) informs us that it was not actually published until after July 1953, while the description of *vexillarius* appeared 30 January 1953. Dr. Ortiz concurs in the synonymy.

***Phlebotomus camposi* Rodriguez**

1950 (July-December), *Rev. Ecuat. Hig. Med. Trop.*, Guayaquil, 7(3-4): 7-10, figs. 1-7 (♂; Ecuador). Rodriguez, 1953, *Rev. Ecuat. Ent. aPrasit.*, 1(2):91-96, figs. 1-9. Rodriguez, 1956, *Rev. Ecuat. Hig. Med. Trop.*, 13 (2):79.

Phlebotomus acanthobasis Fairchild and Hertig, 1952, *Ann. Ent. Soc. America*, 45 (4):508-511, figs. 9-18 (♂, ♀; Panama). (**New synonymy.**)

In spite of the published date of the description of *camposi*, we have been informed that the publication did not appear until November 1952, when our description was in press. The figures of *camposi* originally published did not show the spines on the bases of the parameres, an oversight corrected in Rodriguez' careful redescription of the species published in 1953.

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