

NOTES ON *LUTZOMYIA (HELCOCYRTOMYIA) TRINIDADENSIS*  
(NEWSTEAD, 1922) (DIPTERA: PSYCHODIDAE-PHLEBOTOMINAE)

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*A re-examination of the syntypes of Lutzomyia (Helcocyratomyia) trinidadensis (Newstead, 1922) in the British Museum (Natural History) led to the designation of a lectotype male and a paralectotype female, and both are now described. On the basis of these descriptions, the status of forms previously placed in synonymy with L. trinidadensis is discussed.*

Key words: Diptera – Psychodidae – Phlebotominae – *Lutzomyia* – *Helcocyratomyia* – *trinidadensis* – morphological descriptions – taxonomic relationships

This paper records observations made during visits to the British Museum (Natural History) – BM(NH) – in 1987. The studies were undertaken because a colleague, without access to BM(NH) material, required a modern description of type specimens of *Lutzomyia (Helcocyratomyia) trinidadensis* (Newstead, 1922) for inclusion in a general review of the subgenus *Helcocyratomyia* Barretto, 1962.

The history of *L. trinidadensis* is confusing and, as revealed herein, may be more confusing than previously thought. The species was described by Newstead (1922) from six males and seven females collected in Trinidad in 1921. Although conforming with the conventions of the period, the original descriptions soon proved to be inadequate. Dyar (1929) considered *L. trinidadensis* to be a junior synonym of *Flebotomus cruciatus* Coquillett, 1907. In studies on sand flies of Trinidad, Theodor (1932) and Callan (1947) confused *L. trinidadensis* with *L. gomezi* (Nitzulescu, 1930), whereas Ristorcelli & Van Ty (1941), dealing with material from Colombia, confused *L. trinidadensis* with *L. longipalpis* (Lutz & Neiva, 1912).

Several species described during the 1930s and early 1940s were later considered by Fairchild & Hertig (1948) to be junior synonyms of *L. trinidadensis*. Subsequent writers (for example, Martins et al., 1978 and Young,

1979) accepted the concept of *L. trinidadensis* given by Fairchild & Hertig (1948). The re-description of *L. trinidadensis* by Fairchild & Hertig (1948) was based on specimens collected in Panama but included measurements made on the wings of type material (two males, one female) in BM(NH). They noted that the type specimens were smaller than but within the range of the Panamanian material. They also recorded that the types were “not in very good condition” and recommended that it would be useful to remount the females of the type series.

The females, but not the males, of the type series were remounted in Berlese fluid by Dr D. J. Lewis on May 1st, 1958. Dr Lewis did not describe the remounted material. However, Lewis & Garnham (1959) commented, as follows, on the remounted females: “The type female slide contained one specimen of *P. trinidadensis* as defined by Fairchild and Hertig (1948. .) and one *P. cayennensis* F. and A., and the rest of the ‘type series’ comprised three of each of these forms”.

The published information regarding the syntypes of *L. trinidadensis* does not agree with the actual specimens held (in 1987) by BM(NH) nor with the museum’s most recent (unpublished) catalogue of Diptera of medical importance. The type series consist of 10 specimens mounted on eight slides. All of the slides bear a white circular (0.8cm diameter) label with a blue edge (0.1cm wide) and printed “SYN/TYPE”. Each slide also bears a small rectangular printed label: “Pres./R. Newstead/B. M. 1947-141”.

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The three slides bearing males appear to be material mounted by or for Professor R. Newstead and have labels in his handwriting. Two of these slides each have two specimens mounted side-by-side in lateral view. The third slide bears a single specimen, also mounted in lateral view. One of the slides with two specimens has a black-rimmed, 2.4x2.2cm white label, handwritten by Professor Newstead: "Phlebotomus/trinidadensis/Newst/♂ Type lot, Type ♂/RN 7.1.22". This slide is also marked, in pencil and in the handwriting of Newstead: "Drawn". The genitalia of the specimen on the right hand side beneath the coverslip closely agrees with the free-hand drawing of Newstead (1922, Fig. 1A). This was the specimen selected as the lectotype male.

The females of the type series of *L. trinidadensis* were all fragmented when remounted in 1958. One of the five slides bearing females has a Newstead label marked "Type ♀", but this specimen is not in a good state of preservation. Of the five slides bearing female material, only one has all fragments mounted under one small circular (1.00cm diameter) coverslip. This slide has two Newstead labels and a label in the handwriting of Dr D. J. Lewis with the following information: "Remounted i.V.1958/∴ head sideways/2 others on other slides". This information is, in fact, inexact because the head is mounted face down. This was the specimen selected as the paralectotype female.

In the following descriptions of the lectotype male and paralectotype female of *L. trinidadensis* reference is made, whenever possible, to both members of paired structures.

The introductory synopsis contains reference only to works that, after examination of the type material, seem to refer to *L. trinidadensis* as redescribed herein. To facilitate information retrieval, complete titles of journals, instead of mystifying abbreviations, are given in the synopsis.

*Lutzomyia (Helcocyrtomyia) trinidadensis*  
(Newstead, 1922)

*Phlebotomus trinidadensis* Newstead, 1922 – *Annals of Tropical Medicine and Parasitology*, 16: 47-49 (♂, ♀), Figs. 1a & b (♂), Figs. 1c & d (♀). Type locality: "Trinidad". Type material: acquired by BM(NH) in 1947. Fairchild & Hertig, 1948 – *Annals of the Entomological*

*Society of America*, 41: 253 (Plate II, Figs. 1-4: ♂, ♀), 255 (synonymy), 255-257 (redescriptions of ♂ & ♀ – Panama). Rosabal, 1954 – *Contribucion al estudio de los Phlebotomus de Costa Rica*: 25-26 (♂, ♀), Plate VII, Figs. 41 & 42 (♂), Fig. 43 & 47 (♀).

*Phlebotomus (Brumptomyia) trinidadensis* Lewis & Garnham, 1959 – *Proceedings of the Royal Entomological Society of London (Series B)*, 28: Figs. 28-31 (♀ – Belize).

*Lutzomyia (Helcocyrtomyia) trinidadensis* Martins, Williams & Falcão, 1978 – *American sand flies*: 73-75 (synonymy and distribution).

*Lutzomyia trinidadensis* Young, 1979 – *A review of the blood sucking Psychodid flies of Colombia*: 223 (♂ & ♀ in keys), 227 & 229 (complete references), 228 (Fig. 85: ♂ & ♀), 229-230 (distribution in Colombia). Murillo & Zeledón, 1985 – *Brenesia*, Numero 23 (Suplemento): 119 (Fig. 53: ♂ & ♀), 120-121 (distribution in Costa Rica).

*Phlebotomus (Neophlebotomus) cruciatus* Dyar, 1929 – *American Journal of Hygiene*, 10: 119 (*trinidadensis* as a junior synonym).

*Phlebotomus yucatanensis* Galliard, 1934 – *Annales de Parasitologie Humaine et Comparée*, 12: 1-6 (♂ & ♀). Type locality: Chichén Itzá, Yucatan, Mexico. Type material: Faculty of Medicine, University of Paris, France. Galliard, 1934 – *Annales de Parasitologie Humaine et Comparée*, 12: 200 & 201 (♂, ♀), Figs. 5a-c (♂), Fig. 5d (♀). Dampf, 1947 – *Anales de la Escuela Nacional de Ciencias Biologicas*, 4: 426-431 (♂, ♀), Plate III, Figs. 10-13 (♀), Plate IV, Figs. 14-16 (♀), Plate V, Figs. 17-22 (♀). Fairchild & Hertig, 1948 – *Annals of the Entomological Society of America*, 41: 255 (listed as a junior synonym of *trinidadensis*).

*Phlebotomus longipalpis* Ristorcelli & Van Ty, 1941 – *Annales de Parasitologie Humaine et Comparée*, 18: 252-254 (♀), Figs. 1A-C (♀), Plate XV, Figs. 1 & 2 (♀), not *longipalpis* Lutz & Neiva, 1912. Fairchild & Hertig, 1948 – *Annals of the Entomological Society of America*, 41: 255 (listed as a synonym of *trinidadensis*).

Fairchild & Hertig (1948), Martins et al. (1978) and Young (1979) listed additional synonyms of *L. trinidadensis* but, for reasons

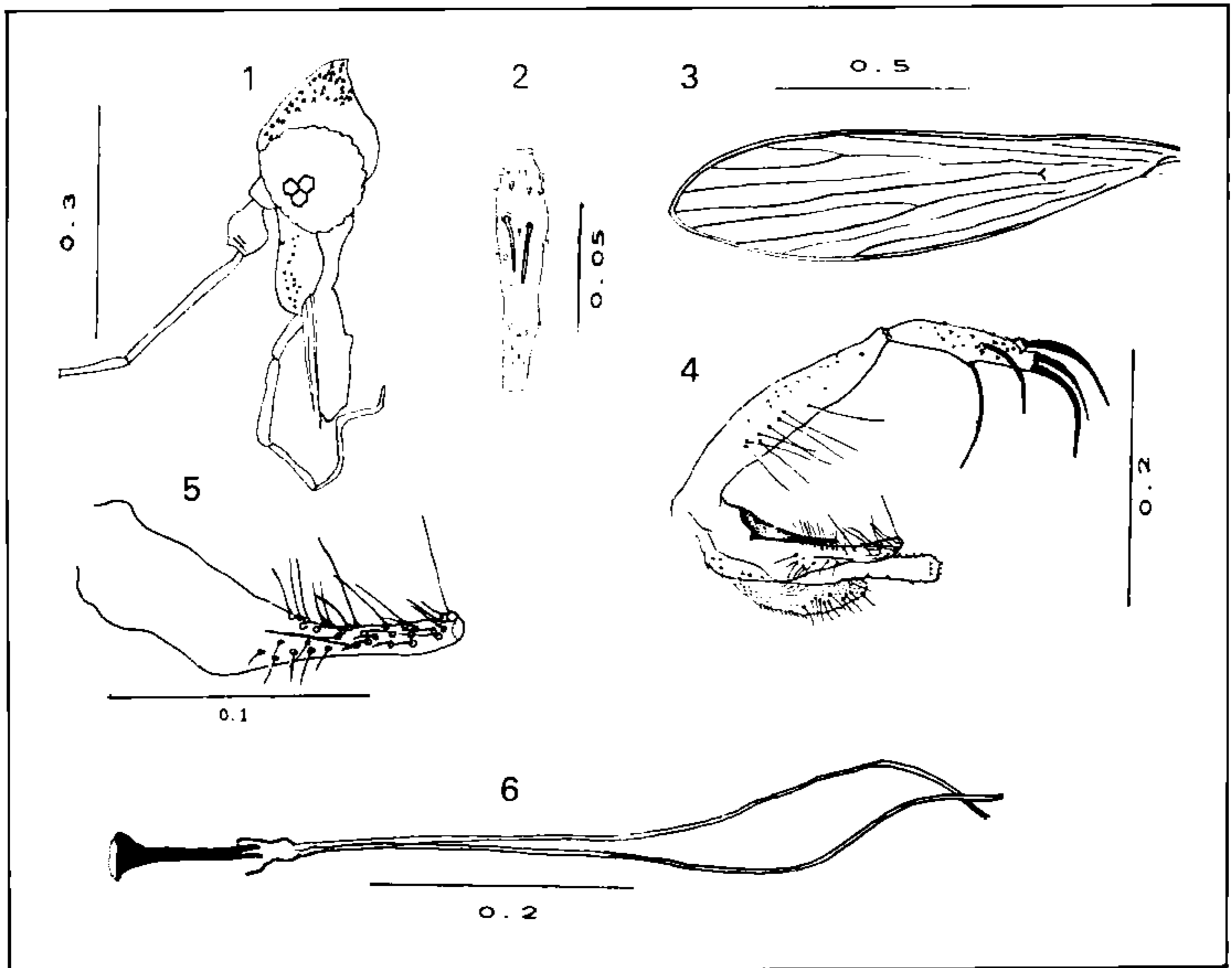
given later, these are not cited in the foregoing synopsis. Forattini (1973) considered *L. goiana* Martins, Falcão & Silva, 1962 to be a synonym of *L. trinidadensis*. Martins et al. (1962) were unable to distinguish the male of *L. goiana* from that of *L. trinidadensis* (*sensu* Fairchild & Hertig, 1948) but described notable differences in the pharynges of the females of the two species.

*Description of the lectotype of L. trinidadensis (Figs 1-6)*

Medium sized sand fly, brownish in general appearance.

Head height, including clypeus: 0.33mm; maximum width of head: not measurable; eye height: 0.13/0.14mm; space between eyes: not measurable; eye facets: 0.01mm wide. Clypeus: 0.14mm long. Labrum, from the distal margin

of the clypeus: 0.13mm long. Total length of antennae (excluding the two basal segments): 1.20/1.20mm. Lengths of flagellomeres: I – 0.20/0.19mm, II – 0.09/0.10mm, III – 0.10/0.09mm, IV – 0.09/0.10mm, V – 0.10/0.10mm, VI – 0.09/0.09mm, VII – 0.09/0.08mm, VIII – 0.08/0.09mm, IX – 0.08/0.08mm, X – 0.07/0.08mm, XI – 0.07/0.07mm, XII – 0.05/0.04mm, XIII – 0.05/0.04mm, XIV – 0.04/0.05mm. Ascoids not clearly visible on any flagellomeres. Total length of one palp (other incomplete): 0.51mm. Lengths of palpomeres: 1 – 0.03/0.02mm; 2 – 0.08/0.08mm; 3 – 0.11mm/(missing); 4 – 0.08mm/(missing); 5 – 0.18mm/(missing). Palpal formula: 1–(2–4)–3–5, with palpomere 5 less than 3+4, and subequal to 2+3. Palpal sensillae (Newstead's scales) not visible. Cibarium in lateral view, without visible teeth. Pharynx 0.15mm long, 0.04mm at its widest, with posterior folds bearing sparsely arranged elongate spines.



*Lutzomyia (Helcochyrtomyia) trinidadensis*, lectotype male (except Fig. 2) – Fig. 1: head and appendages in lateral view. Fig. 2: flagellomere II (of the male mounted on the same slide as the lectotype). Fig. 3: wing. Fig. 4: male genitalia in lateral view. Fig. 5: paramere. Fig. 6: genital apodeme, sperm pump and genital filaments.



Thorax, measured from the anterior edge of the mesonotum to the posterior margin of the scutellum: 0.44mm long. Mesonotum moderately infuscated, pleura and coxae only slightly paler. Thorax too distorted to determine the numbers of episternal setae. Wing length: 1.36mm; maximum width of wing: 0.34mm; ratio of wing length: maximum width – 4.00:1. Lengths of wing sections:  $R_2$  (*alpha*) – 0.34mm;  $R_{2+3}$  (*beta*) – 0.25mm;  $R_{2+3+4}$  (*gamma*) – 0.26mm;  $R_{1\text{ tip}}$  (*delta*) – 0.20mm. Wing pattern: *alpha* > *gamma* > *beta* > *delta*, with *alpha* 1.36X *beta*, *beta* 0.96 of *gamma*, and *delta* 0.59 of *alpha*. Lengths of femora, tibiae and basitarsi: foreleg – 0.58/0.60mm, 0.62/0.62mm, (missing)/0.33mm; midleg (one missing) – 0.58mm, 0.72mm, 0.29mm; hindleg – 0.67/0.65mm, 0.89/0.89mm, 0.46/0.46mm. Hind femora unarmed.

Abdomen, excluding genitalia, 1.23mm long. Tergites, sternites and genitalia moderately infuscated, somewhat paler than the mesonotum. Dististyle 0.12mm long, with five spines: two terminal, one at 0.10mm from the proximal articulation and the other two almost paired – one at 0.08mm, the other at 0.07mm from the proximal articulation. Basistyle, measured along the dorsal margin: 0.21mm long, without an inner basal tuft but with a median diffuse patch of eight hair-like setae arranged almost linearly. Paramere, measured along the ventral margin, 0.16mm long, about 0.04mm wide in the proximal half, narrow (about 0.01mm wide) and digitiform distally, with the distal half bearing spine-like setae on the dorsal and lateral surfaces. Aedeagus in the form of an elongate cone, 0.07mm long ventrally, 0.03mm wide at its base, quite strongly chitinized. Genital pump and filaments rather strongly chitinized, with the genital apodeme 0.12mm long, sperm pump 0.04mm long, and genital filaments 0.54/0.55mm long (or 3.38/3.344X the combined lengths of the genital apodeme and sperm pump). Tips of genital filaments unmodified. Lateral lobe (partly shrunken) 0.18mm long (or 0.86 of the length of the basistyle). Cercus broad and elongate, extending to 0.81 of the length of the paramere, and to 0.70 of the length of the lateral lobe.

*Description of the paralectotype of L. trinidadensis (Figs 7-15)*

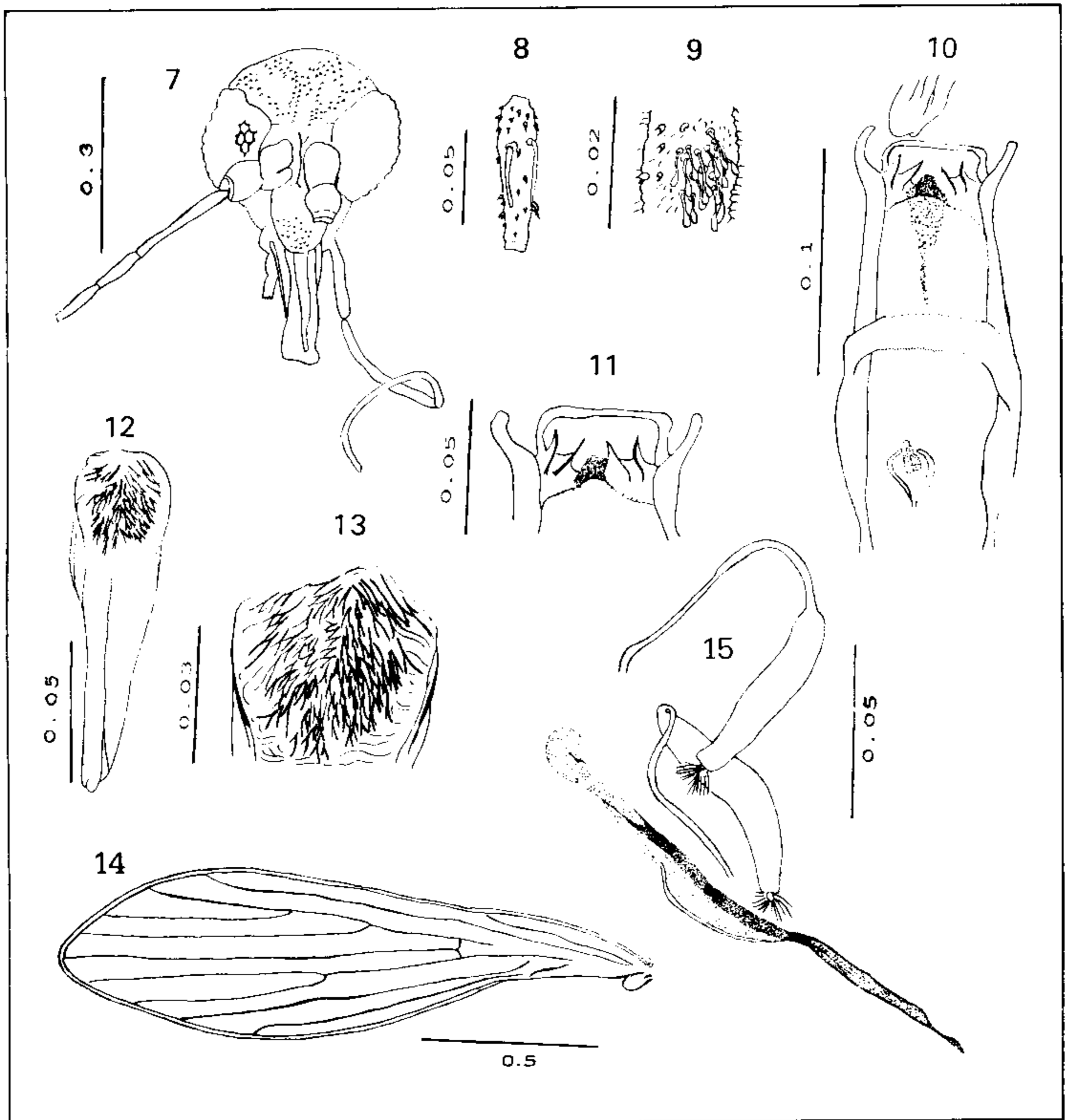
Medium-sized sand fly, brownish in general appearance.

Head height, including clypeus: 0.34mm; maximum width of head: 0.33mm; eye height: 0.19/0.19mm; space between eyes: 0.11mm, equivalent to the diameter of 11 facets. Clypeus: 0.12mm long, bearing sockets for about 40 setae. Labrum, from the distal margin of the clypeus: 0.16mm. Total lengths of antennae (excluding the two basal segments): 1.14/1.24mm. Lengths of flagellomeres: I – 0.18/0.20mm; II – 0.08/0.09mm, III – 0.08/0.09mm, IV – 0.08/0.09mm, V – 0.08/0.09mm, VI – 0.08/0.09mm, VII – 0.08/0.09mm, VIII – 0.08/0.09mm, IX – 0.08/0.09mm, X – 0.08/0.08mm, XI – 0.08/0.08mm, XII – 0.06/0.06mm, XIII – 0.04/0.04mm, XIV – 0.06/0.06mm. Ascoids paired on flagellomeres I-XI, only one visible on XII, and lacking on XIII and XIV. On one flagellomere II, inner ascoid arising at 0.02mm from the proximal articulation and 0.03mm long; outer ascoid arising at 0.03mm from the proximal articulation and 0.04mm long. On the other flagellomere II, both ascoids arising at 0.02mm from the basal articulation, one not clearly visible, the other broken. Total length of one palp (the other incomplete): 0.68mm. Lengths of palpomeres: 1-0.03/0.04mm; 2 – 0.09/0.08mm; 3 – 0.13/0.13mm; 4 – (missing)/0.11mm; 5 – (Missing)/0.32mm. Palpal formula: 1-2-4-3-5, with palpomere 5 greater than 3+4 and 2+3. Palpal sensillae (Newstead's scales) in a cluster on palpomere 3, situated 0.03-0.05/0.04-0.06mm from the proximal articulation. Cibarium with four inwardly inclined, strong horizontal (hind) teeth, eight very small vertical (fore) teeth, arranged in two oblique rows of four, and without lateral denticles. Pigment patch in the form of an elongate triangle with a semi-circular base, and more strongly chitinized between the two inner hind teeth. Cibarial arch complete but weakly defined centrally. Salivary pump small, 0.02mm long, 0.02mm at its widest. Pharynx 0.12mm long, 0.03mm at its broadest, the posterior third with transverse ridges bearing finely pointed spines, each about 0.01mm long.

Thorax, measured from the anterior edge of the mesonotum to the posterior margin of the scutellum: 0.56mm long. Mesonotum moderately infuscated, pleura pale but lightly infuscated ventrally. Pleura with 7/6 upper and 10/4 lower episternal setae. Wing length: 1.67mm; maximum width of wing: 0.50mm, ratio of wing length: maximum width – 3.34:1. Lengths of wing sections:  $R_2$  (*alpha*) – 0.41;  $R_{2+3}$  (*beta*)

— 0.23mm;  $R_{2+3+4}$  (*gamma*) — 0.26mm;  $R_{1\text{rip}}$  (*delta*) — 0.24mm. Wing pattern: *alpha* > *gamma* > *delta* > *beta*, with *alpha* 1.78X *beta*, *beta* 0.88 of *gamma*, and *delta* 0.59 of *alpha*. Lengths of femora, tibiae and basitarsi: foreleg — 0.70/0.70mm, 0.68/0.68mm, 0.35/(missing); both midlegs missing; hindleg — 0.72/0.74mm, 0.96/0.96mm, both basitarsi missing. Hind femora unarmed.

Abdomen: 1.60mm long. Tergites and sternites moderately infuscated, about the same colour as the mesonotum. Genital fork 0.16mm long, fairly well chitinized. Spermathecae elongate and narrow, with smooth walls, sausage shaped, with a small terminal knob, 0.06/0.07mm long (including the terminal knob) and 0.01/0.01mm wide. Individual spermathecal ducts very narrow with smooth walls, not visible for their entire lengths. Common duct not visible.



*Lutzomyia (Helcochyrtomyia) trinidadensis*, paralectotype female Fig. 7: head and appendages in dorsal view. Fig. 8: flagellomere II. Fig. 9: Newstead's scales on palpomere 3. Fig. 10: cibarium. Fig. 11: cibarial armature. Fig. 12: pharynx. Fig. 13: pharyngeal armature. Fig. 14: wing. Fig. 15: spermathecae, distal portions of individual spermathecal ducts, genital fork in lateral view.



## DISCUSSION

Although ascoids were not seen on any of the flagellomeres of the lectotype, they are visible on at least some of those of the other male mounted on the same slide. Flagellomere II of this male is 0.10/0.09mm long; the inner ascoid arises at 0.02/0.02mm from the proximal articulation and is 0.02/0.02mm long; the outer ascoid arises at 0.03/0.02mm and is 0.02/0.02mm long.

In the paralectotype, only the distal parts of the individual spermathecal ducts are visible. From other descriptions or illustrations of material identified as female *L. trinidadensis*, it is clear that the individual ducts are relatively long and the common duct is very short. The lengths of the individual ducts, but not those of the spermathecae and common duct, appear to vary according to the medium in which specimens were mounted. A specimen, now in the BM(NH) collection, from Panama, mounted in copal resin, was found to have spermathecae 0.07mm long, with individual ducts 0.11/0.12mm in length (or 1.57-1.71X the length of the spermathecae). However, in a female chosen at random from a long series of *L. trinidadensis* from Belize and mounted (by the present writer) in Berlese fluid, the spermathecae are 0.07mm long but the individual ducts are 0.26/0.31mm in length (or 3.71-4.43X the length of the spermathecae).

It is likely that delicately chitinized structures, such as the individual spermathecal ducts of *L. trinidadensis*, retain their natural sizes when mounted in a water soluble medium such as Berlese or lactophenol, but shrink considerably when dehydrated in ethyl alcohol and mounted in resins. This was established many years ago by Dampf (1947) who, though advocating dehydration and the preparation of permanent mounts in Canada Balsam, recorded that the length of palpomere 5 of a Brazilian sand fly was diminished by 20% by this process.

Despite the statement of Fairchild & Hertig (1948) that the type series of *L. trinidadensis* is poorly preserved, the males, as originally mounted, are recognisable and, in the lectotype, the most important morphological features are discernable and measureable. Possibly due to shrinkage, palpomere 5 of the lectotype is short in comparison with material described or figured by Galliard (1934a, b),

Dampf (1947), Fairchild & Hertig (1948), Rosabal (1954) and Young (1979). Although Fairchild & Hertig (1948) commented that Panamanian specimens seemed to be somewhat larger than the types, the wing length of the lectotype is within the range (1.34-1.47mm) of males from Costa Rica (Rosabal, 1954) which, in turn, come within the ranges for specimens from Mexico, Panama and Colombia.

Two features of the lectotype of *L. trinidadensis* deserve further consideration. There is a diffuse group, roughly arranged in a line, of eight fine non-deciduous setae on the basistyle. This agrees closely with the number (6-7) and arrangement of setae described or figured by Fairchild & Hertig (1948), Rosabal (1954) and Young (1979). In redescribing the types of *Phlebotomus yucatanensis*, Dampf (1947) recorded two fine setae on the basistyle and suggested that other, similar hairs might have been broken off. The available evidence is, therefore, that males of *L. trinidadensis* from Middle America have eight or fewer fine setae on the basistyle, so fine and diffusely arranged that they can be easily overlooked.

The other feature concerns the length of the lateral lobe in relation to that of the basistyle. In the lectotype of *L. trinidadensis*, the lateral lobe (admittedly partly shrunken) is shorter than the basistyle. The same condition occurs in material from Middle America apart from the Colombian specimen illustrated by Young (1979), in which the two structures are sub-equal.

These two features need to be taken into account in reassessing the status of *Phlebotomus baduelensis* (Floch & Abonnenc, 1941) Floch & Abonnenc, 1944, and *Flebotomus villetai* Mangabeira, 1942, both of which having been considered for many years (Fairchild & Hertig, 1948; Martins et al., 1978; Young, 1979; Lebbe et al., 1987) to be junior synonyms of *L. trinidadensis*.

With regard to *baduelensis*, according to the descriptions of Floch & Abonnenc (1944, 1952), the basistyle has a median diffuse patch of 13+ non-deciduous, fine setae and the lateral lobe is slightly longer than the basistyle. A critical re-examination of the type male of *baduelensis* (if it can be found) and of additional material from French Guiana would be helpful in order to establish if these differences

between *baduelensis* and *trinidadensis* from Middle America are, indeed, constant.

The situation regarding *villelai* is more complicated. Mangabeira (1942) described the species from a male reared in the laboratory from eggs produced by a female captured in Russas, State of Ceará, Brazil. Separation of *villelai* from *trinidadensis* was based on the erroneous idea that the latter has a zero or negative *delta*. Mangabeira (1942) distinguished *villelai* from *yucatanensis* by the presence, in the former, of a diffuse patch of about 12 non-deciduous, fine setae on the basistyle. In the discussion of the relationships of *villelai* no reference was made to the (then) recently described *Phlebotomus yucatanensis* var *baduelensis* (Floch & Abonnenc, 1941).

Barretto (1946) treated *villelai* as a junior synonym of *baduelensis*, and this opinion was followed by Floch & Abonnenc (1952). Such an attitude cannot be accepted now, following the description by Dampf (1947) of what he and Dr O. Mangabeira Filho supposed to be the female of *villelai*. The cibarium of the supposed female of *villelai* is like that of *trinidadensis* but the spermathecae of the two are markedly different. Dampf (1947) recognized *villelai* as a valid species and listed *L. rorotaensis* (Floch & Abonnenc, 1944) as a junior synonym. His reasons for taking such an action are obscure. Floch & Abonnenc (1952) showed the spermatheca of *L. rorotaensis* to be pear shaped distally, with three basal annulations, whereas the material described by Dampf (1947) has a spermatheca that is spherical distally with 8 or 9 basal annulations. Later, based on differences in the lengths of the genital filaments relative length of the genital pump in males, Martins et al. (1963) considered *villelai* to be distinct from *rorotaensis*. From the foregoing, it is clear that the status of *villelai*, especially with regard to *L. trinidadensis* and *L. rorotaensis*, should be critically re-examined.

Recent studies have revealed that certain species of the subgenus *Helcochyrtomyia* can be distinguished only by slight but constant morphological differences (Dias et al., 1986a, b; 1987). For reasons already given, and in view of the very slight difference between the females of *L. goiana* Martins, Falcão & Silva, 1962, and those of *L. trinidadensis*, it could well be that "*L. trinidadensis*", as generally recognized over the past 40 years, is not a single species but a

combination of several siblings. Restudy of material from the many and various localities listed by Martins et al. (1978) would be useful but could possibly lead to a drastic revision of ideas about the geographical distribution of the "species". For the time being, it seems most judicious to restrict the epithet *trinidadensis* to those specimens strictly conforming to the redescrptions contained herein.

In reviewing "*L. trinidadensis*", consideration should also be given to the bionomics of sand flies recorded by this name. Williams (1970) recorded that it accounted for about 43% of specimens collected from tree trunks in Belize over a period of about six years. Young (1979) commented on its abundance in lowland forests of Central America and northern South America and recorded that it represented more than 50% of phlebotomines collected from tree trunks in Chocó Department, Colombia. In contrast, Lebbe et al. (1987) recorded that only 2,624 specimens of "*L. trinidadensis*" (2.75% of a total of 95,542) were collected in French Guiana in the 46 year period of 1941-1987, and, although precise details were not provided, it is clear that the "species" accounts for less than 7% of sand flies collected from tree trunks in French Guiana.

Of the 4,931 female *L. trinidadensis* collected in Belize over the period 1963-1969 (Williams, 1970), only 137 (2.78%) were collected on human skin and there was no evidence that these females attempted to blood feed on man. Indeed, the landing rate of males on human skin (92 specimens during 1963-1969) was only slightly lower than that of females. Williams (1970) considered that female *L. trinidadensis* blood fed mainly on reptiles. This conclusion was based on examination of the stomach contents of newly blood fed females and observations on flagellate infections (probably belonging to the genus *Trypanosoma*) in wild caught specimens. The supposed blood feeding habits of female *L. trinidadensis* were confirmed when Christensen (1972) successfully established a laboratory colony in Panama and Christensen & Telford (1972) discovered that *L. trinidadensis* females are the insect hosts of *Trypanosoma thecadactyli*, a parasite of forest geckoes in Panama. Tesh et al. (1971) had already established that wild caught *L. trinidadensis* females had taken blood meals on amphibians and/or reptiles.



In view of this evidence about the blood feeding habits of female *L. trinidadensis*, it was remarkable and surprising when Scorza et al. (1979) recorded these sand flies blood feeding on mammals, including man, in domestic conditions in the Venezuelan state of Trujillo. The identity of the females captured in these studies was confirmed by Dr I. Ortiz C. and Professor Amilcar Vianna Martins, but no reference was made to males taken in the study area. If the observations of Scorza et al. (1979) can be confirmed then it would appear that specimens of "*L. trinidadensis*" recorded from sea level up to an altitude of 1.840 meters above sea level in Trujillo is distinct from the sand fly recorded by the same name in lowland forest of Central America.

## RESUMO

**Notas sobre *Lutzomyia (Helcocyrtomyia) trinidadensis* (Newstead, 1922) (Diptera: Psychodidae – Phlebotominae) – O reexame dos sintipos de *Lutzomyia (Helcocyrtomyia) trinidadensis* (Newstead, 1922) no Museu Britânico (História Natural) permitiu a designação de um lectotipo macho e um paralectotipo fêmea, e ambos são descritos no presente trabalho. Com base nestas descrições, é discutido o status de formas previamente colocadas em sinonímia com *L. trinidadensis*.**

Palavras-chave: Diptera – Psychodidae – Phlebotominae – *Lutzomyia* – *Helcocyrtomyia* – *trinidadensis* – redescrições morfológicas – relações taxonômicas

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