

LIST OF DESCRIPTIONS AND OTHER TAXONOMIC PROPOSALS
ON AMERICAN SAND FLIES (DIPTERA, PSYCHODIDAE,
PHLEBOTOMINAE): 1975-1993 ¹

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ABSTRACT. A check-list of new species, descriptions of other sex of previously described species, redescrptions, proposals of synonymy, and new status for species previously in synonymy or described as subspecies for american sand flies (Diptera, Psychodidae, Phlebotominae), for the period 1975-1993, and not included in the revision of MARTINS *et al.* (1978), are presented.

KEY WORDS. Diptera, Psychodidae, Phlebotominae, check-list

Since the publication of the revision on american sand flies (MARTINS *et al.* 1978), a lot of new species and other sex of previously described species, and proposals os synonymy, new states, and revalidation of species were published. A list of all these proposals would be useful to make easier the identification and the research of these insects and is presented here. The type localities and the sites where the types of new taxa were deposited are also cited.

Several systems were proposed for Phlebotomine sand flies (ABONNENC & LÉGER 1976a,b; LEWIS *et al.* 1977; MARTINS *et al.* 1978; READY *et al.* 1980, 1981). The system of MARTINS *et al.* (1978) is widely accepted and it was used here. The species are distributed on the subgenera and groups, mostly based on comments of the describers.

The following codes were used: **m**: males; **f**: females; *****: illustration; **desc.**: description; **redesc.**: redescription; **type-loc**: type localities and localities where the authors got insects for studies; **dep.**: institutions where the types were deposited; **ca.**: circa, about; **cf**: compared to; **non**, **nec**: not.

RESULTS

Brumptomyia França & Parrot, 1921

brumpti (Larrousse, 1920) - WILLIAMS 1988a: 336-341, redesc. m*, f*. Type-loc.: BRAZIL, *São Paulo*: Albuquerque Lins. Dep.: Br. Mus. Nat. Hist., London, UK.

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- pintoi* (Costa Lima, 1932) - FELICIANGELI *et al.* 1988: 56-57, desc. f*. Type-loc.: VENEZUELA, Amazonas: Caño Marieta. Dep.: C. Nac. Refer. Flebótomos, Univ. Carabobo, Maracay, Venezuela, Florida St. Collection Arthropods, Gainesville, Florida, USA; Br. Mus. Nat. Hist., London, UK. LEGER *et al.* 1977: 217, syn. *B. spinosipes* (Floch & Abonnenc, 1943).
- B. spinosipes* (Floch & Abonnenc, 1943) - WILLIAMS 1988b: 343-345, redesc. f*. Type-loc.: FRENCH GUIANA. Dep.: Br. Mus., London, UK (voucher specimen).

Lutzomyia França, 1924

Lutzomyia (*Lutzomyia*) França, 1924

SERIES *longipalpis*

- alencari* Martins, Souza & Falcão, 1962. - MARTINS *et al.* 1982: 421-423, desc. f*. Type-loc.: BRAZIL, Minas Gerais: Grão Mogol (Morro do Chapéu). Dep.: C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil.
- bifoliata* Osorno-Mesa, Morales Alarcon, de Osorno & de Hoyos, 1970. - YOUNG 1979: 52-54, desc. f*. Type-loc.: COLOMBIA, Antioquia: Anori. Dep.: U.S. Nat. Mus., Washington, USA, Florida St. Collection Arthropods, Gainesville, Florida, USA; Inst. Nac. Salud, Bogotá, Colombia; Br. Mus. Nat. Hist., London, UK.
- cruzi* (Mangabeira, 1938). - MARTINS *et al.* 1984: 440-442, redesc. m*, desc. f*. Type-loc.: BRAZIL, Mato Grosso: Camapuan; Goiás: Paraúna. Dep.: C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil.
- dispar* Martins & Silva, 1963. - WILLIAMS & CARVALHO 1979: 325-328, redesc. m*, desc. f*. Type-loc.: BRAZIL, Mato Grosso: Aquidauana, Camisão, Camapuã (Fazenda Três Águas); Goiás: Paraúna. Dep.: C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil; Fac. Higiene USP, São Paulo, Brazil; Dept Entomology Nematology, Univ. Florida, Gainesville, Florida, USA; Br. Mus. Nat. Hist., London, UK.

SERIES *cavernicola*

- forattinii* Galati, Rego Jr., Nunes & Teruya, 1985: 261-266, desc. m*, f*. Type-loc.: BRAZIL, Mato Grosso do Sul: Corumbá. Dep.: Fac. Saúde Pública USP, São Paulo, Brazil.

Lutzomyia (*Pintomyia*) Costa Lima, 1932

- Lutzomyia* sp. of Anchicaya Young, 1979: 237-238, desc. m*. Type-loc.: COLOMBIA, Valle: Anchicaya Dam.

*Lutzomyia (Evandromyia) Mangabeira, 1941***SERIES *infraspinosa***

- pinottii* (Damasceno & Arouck, 1956). -RYAN 1986: 36-37, desc. f*, redesc. m*.
Type-loc.: BRAZIL, *Pará*: Acará, Belém. Dep.: Inst. Evandro Chagas, Belém, Pará, Brazil. YOUNG & ARIAS 1977: 64, syn. *L. aroucki* Barretto, 1962.
- begonae* (Ortiz & Torres, 1975): 101, desc. m* (as *begoñae*). Type-loc.: VENEZUELA, *Amazonas*: El Gavilán. Dep.: not given. - YOUNG & ARIAS 1977: 64-65, desc. f*, redesc. m*. Type-loc.: BRAZIL, *Amazonas*: Manaus. Dep.: not given. FELICIANGELI *et al.* 1988: 58,60, desc. f*, redesc. m*. Type-loc.: VENEZUELA, *Amazonas*: Caño Marieta, Caño Mosquito, Caño Boca Chico, El Gavilán. Dep.: Centro Nac. Refer. Flebótomos, Univ. Carabobo, Maracay, Venezuela; Florida St. Collection Arthropods, Gainesville, Florida, USA; Br. Mus., London, UK.
- gruta* Ryan, 1986: 109-111, desc. m*, f*. Type-loc.: BRAZIL, *Pará*: Marabá (Serra dos Carajás). Dep.: Inst. Evandro Chagas, Belém, Pará, Univ. São Paulo, São Paulo (?); Brazil; Museu Hist. Nat. Univ. Fed. Minas Gerais, Belo Horizonte, Minas Gerais, Brazil; Br. Mus. Nat. Hist., London, UK; and Florida St. Collection Arthropods, Gainesville, Florida, USA.
- cerqueirai* (Causey & Damasceno, 1945). - YOUNG & MORALES 1987: 658-659, redesc. m*, desc. f*. Type-loc.: COLOMBIA, *Tolima*: Mariquita (Vereda de Flor Azul). Dep.: Inst. Nac. Salud, Bogotá, Colombia; Univ. Florida, Gainesville, Florida, USA.
- inpai* Young & Arias, 1977: 61-63, desc. m*, f*. Type-loc.: BRAZIL, *Amazonas*: Manaus. Dep.: Museu Zoologia USP, São Paulo; Brazil; Inst. Nac. Pesq., Amazônia, Manaus, Amazonas, Brazil; U.S. Nat. Mus. Nat. Hist., Washington, D.C., USA; and Florida St. Collection Arthropods, Gainesville, Florida, USA.

*Lutzomyia (Psychodopygus) Mangabeira, 1941***SERIES *squamiventris***

- killicki* Feliciangeli, Ramirez-Perez & Ramirez, 1988: 49-51, desc. m*, f*.
Type-loc.: VENEZUELA, *Amazonas*: Caño Marieta. Dep.: C. Nac. Refer. Flebótomos, Univ. Carabobo, Maracay, Venezuela; Florida St. Coll. Arthropods, Gainesville, Fla, USA; Br. Mus. Nat. Hist., London, UK.
- leonidasdeanei* Frahia, Ryan, Lainson & Shaw, 1986: 333-336,338, desc. m*, f*.
Type-loc.: BRAZIL, *Pará*: Santarém (Serra do BEC). Dep.: Inst. Evandro Chagas, Belém, Pará, Inst. Oswaldo Cruz, Rio de Janeiro; Brazil; C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil; Univ. Florida, Gainesville, Florida, USA; Br. Mus. Nat. Hist., London, UK.
- maripaensis* (Floch & Abonnenc, 1964). - READY *et al.* 1982: 201-211, desc. m*, f*, (as *L. squamiventris maripaensis*), **stat. nov.**, cf. *L. squamiventris*

squamiventris.

squamiventris squamiventris (Lutz & Neiva, 1912). - READY *et al.* 1982: 201-211, desc. m*, f*, cf. *L. squamiventris maripaensis*.

SERIES *panamensis*

amazonensis (Root, 1934). - FRAHIA & WARD 1980b: 15, desc. m*. - BIANCARDI *et al.* 1982: 178, syn. *L. robini* Abonnenc, Arias, Leger & Young, 1980.

ayrozai (Barretto & Coutinho, 1940). - FORATTINI & GALATI 1977: 26, desc. f*.

Type-loc.: BRAZIL, *São Paulo*: Miracatu (Porto Raso, Alecrim), Ubatuba (Sítio Itamanduca), Pedro de Toledo (Sítio Samburá, Bairro Araçatuba, Sítio Ubaldo); *Amazonas*: Manacapuru (River Paruary); COLOMBIA, Antioquia. Dep. - Fac. Saúde Pública USP, São Paulo, Brazil. YOUNG 1979: 175, syn. *L. amazonensis* Aitken *et al.*, 1968, non *L. amazonensis* Root, 1934), *Lutzomyia* sp. de Ture Lewis, 1975, *L. tintinabula* Christensen & Fairchild, 1971.

bernalei (Osorno-Mesa, Morales-Alarcon & De Osorno, 1966). - FELICIANGELI *et al.* 1988: 56-57, desc. f*. Type-loc: VENEZUELA, *Amazonas*: Cerro La Neblina. Dep.: C. Nac. Refer. Flebótomos, Univ. Carabobo, Maracay, Venezuela; Florida St. Collection Arthropods, Gainesville, Fla, USA; Br. Mus. Nat. Hist., London, UK.

carrerai carrerai (Barretto, 1946). - YOUNG 1979: 178-180, redesc. m*, f*, stat. nov., syn. *Sergentomyia pessoana*: Barretto, 1955, *Psychodopygus pessoanus*: Forattini, 1971.

carrerai thula Young, 1979: 180-183, desc. m*, f*. Type-loc.: PANAMA, *Panama*: Cerro Campana, Upper Pacora River; Bocas del Toro: River Changena; Honduras: Lancetilla Valley: Tela. Dep. not given. YOUNG 1979: 180, syn. *Lutzomyia pessoana*: Chaniotis *et al.*, 1971, 1972, Tesh *et al.*, 1972, Chaniotis & Correa, 1974, Chaniotis, 1974, Rutledge & Ellenwood, 1975, *Phlebotomus paraensis*: Fairchild & Hertig, 1951, 1959, *Phlebotomus pessoanus*: Hanson, 1961, *Psychodopygus paraensis*: Forattini, 1971.

claustrai Abonnenc, Leger & Fauran, 1979: 80,82-85, desc. m*. Type-loc.: FRENCH GUIANA: Maripasoula, Paramana, Oyapock, Inini River. Dep.: collection of Dr. Leger. LE PONT & PAJOT 1980: 62-63, desc. f*. ABONNENC *et al.* 1980: 715-716, redesc. f*. Type-loc.: FRENCH GUIANA: Maripasoula. Dep.: Serv. Scient. Centraux, Orstom, Bondy, France.

davisi (Root, 1934). - ABONNENC *et al.*, 1980: 708-711, redesc. m*, f*. Type-loc.: BRAZIL, *Pará*: Apeg Forest. Dep.: not given. LEGER *et al.* 1977: 223, syn. *Flebotomus (Shannonomyia) hirsuta* Mangabeira, 1942.

hirsuta hirsuta (Mangabeira, 1942). - YOUNG 1979: 188-189, stat. nov. for *Phlebotomus hirsutus* Mangabeira, 1942.

hirsuta nicaraguensis (Fairchild & Hertig, 1961). - YOUNG 1979: 189, desc f*, stat. nov. for *Phlebotomus (Psychodopygus) nicaraguensis* Fairchild & Hertig; 188, syn. *Phlebotomus* sp. "c" Velasco, 1973.

llanosmartinsi (Frahia & Ward, 1980a): 10-13, desc. m*, f*. Type-loc.: PERU,

Cuzco: Pilcopata. Dep.: Depto Zool. Parasitol., Inst. Ciências Biol., Univ. Fed. Minas Gerais, Belo Horizonte, Minas Gerais, and Inst. Evandro Chagas, Belém, Pará, Brazil, Inst. Salud Publica, Lima, Peru.

panamensis (Shannon, 1926). - YOUNG 1979: 190, syn. *Phlebotomus pessoanus* Strangways-Dixon & Lainson, 1966. *L. robini* Abonnenc, Arias, Leger & Young, 1980: 711-715, desc. m*, f*. Type-loc.: FRENCH GUIANA: Maripasoula. Dep.: Musée Nationale Hist. Nat., Paris, France. ABONNENC *et al.* 1980: 715, syn. *L. rooti*: ABONNENC *et al.* 1979.

Lutzomyia sp. No. 401. 63 (Frahia, Ryan, Ward, Lainson & Shaw, 1987) in RYAN, 1986: 138, desc. m*, f*. Type-loc.: BRAZIL, Pará: Santarém (Curuá-Una and Serra do B.E.C.), Transamazonica Road, Itaituba-Altamira Road. Dep.: Collection of Ryan, Lainson and Shaw.

yucumensis (Le Pont, Caillard, Tibayrenc & Desjeux, 1986): 79-84, desc. m*, f*. Type-loc.: BOLIVIA, Beni: km 4 Road Yucumo-Rurrénabaque, side of Serrania del Pilon. Dep.: Serv. Scient. Centraux, Orstom, Bondy, France, Fac. Saúde Pública USP. São Paulo, Inst. Evandro Chagas, Belém, Pará, Brazil; Florida St. Collection Arthropods, Gainesville, Florida, USA.

SERIES *arthuri*

arthuri (Fonseca, 1936). - GALATI 1981: 321, syn. *Phlebotomus lloydi* Coutinho, 1940 (m).

lloydi (Antunes, 1937). - GALATI 1981: 322, syn. *Phlebotomus arthuri* Fonseca, 1939 (m), and *Flebotomus rachoui* Damasceno & Arouck, 1956.

OTHER SPECIES OF SUBGENUS *Psychodopygus*

corossoniensis Le Pont & Pajot, 1978: 224-225, desc. m*. Type-loc.: FRENCH GUIANA: Corossony Village, Corossony savanna, km 23 Route St. Elie., Dep.: Serv. Scient. Centraux, Orstom, Bondy, France.

dorlinsis (Le Pont & Desjeux, 1982): 279-282, desc. m*. Type-loc.: FRENCH GUIANA: Florida (4°20' N 53°30'W- 12 km of Dorlin). Dep.: Serv. Scient. Centraux, Orstom, Bondy, France.

Lutzomyia sp. of Tres Esquinas Young, 1979: 171, 195, desc. f*, possibly equal to *L. guyanensis*.

Lutzomyia (Viannamyia) Mangabeira, 1941

caprina Osorno-Mesa, Morales-Alarcon & de Osorno, 1972. - YOUNG 1979: 103, syn. *Phlebotomus furcatus* Fairchild, 1943 (non *Phlebotomus furcatus* Mangabeira, 1941), *Phlebotomus arborealis* Floch & Hervé, 1959 (non *arborealis* of Floch & Abonnenc, 1944), *Lutzomyia furcata* Osorno *et al.*, 1970, and *Phlebotomus arborealis* Chaniotis *et al.*, 1971.

Lutzomyia (Dampfomyia) Mangabeira, 1942

rosabali (Fairchild & Hertig, 1956). - YOUNG 1979: 91-93, revalidated, as a possible geographical variation of *L. dodgei*.

*Lutzomyia (Micropygomyia) Barretto, 1962***SERIES *cayennensis***

cayennensis (Floch & Abonnenc, 1941). - LEGER *et al.* 1977: 220, syn. *Phlebotomus* Farilli Vargas & Diaz Najera, 1959, *Phlebotomus wirthi* Vargas & Diaz Najera, 1951, *Phlebotomus hardisoni* Vargas & Diaz Najera, 1952, and *Phlebotomus yencanensis* Ortiz, 1965.

cayennensis cruzi Gonzalez & Garcia, 1981: 16, desc. m*, f*. Type-loc.: CUBA: Guantanamo Bay U.S. Naval Base. Dep.: not given.

lewisi Feliciangeli, Ordoñez & Fernandez, 1984: 359-360, desc. f*. Type-loc.: VENEZUELA, *Cojedos*: La Vaquira. Dep.: Brit. Mus. Nat. Hist., London, UK, Univ. Carabobo (Parasitol.), Maracay and Valencia, Venezuela.

yencanensis (Ortiz, 1965). - CAZORLA *et al.* 1988: 481-483, redesc. m*, f*. Type-loc.: VENEZUELA, *Aragua*: Rancho Grande. Dep.: not given.

*Lutzomyia (Helcocyrtomyia) Barretto, 1962***SERIES *oswaldoi***

capixaba Dias, Falcão, Silva & Martins, 1987: 193-195, desc. m*, f*. Type-loc.: BRAZIL, *Espírito Santo*: Baixo Guandu (Conquista). Dep.: C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil.

ferreirana (Barretto, Martins & Pellegrino, 1956). - DIAS *et al.* 1989: 245-248, redesc. m*, desc. f*. Type-loc.: BRAZIL, *Minas Gerais*: Itambacuri. Dep.: C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil.

peresi (Mangabeira, 1942). - DIAS *et al.* 1986a: 216-218, redesc. m*, desc. f*. Type-loc. (neotype): BRAZIL, *Minas Gerais*: Januária (Lapão). Dep.: C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil.

pusilla Dias, Martins, Falcão & Silva, 1986b: 395-398, desc. m*, f*. Type-loc.: BRAZIL, *Amapá*: Macapá (Serra do Navio). Dep.: C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil. syn. *Phlebotomus* sp. de Saul Floch & Abonnenc, 1944.

saccii Feliciangeli, Ramirez-Perez & Ramirez, 1989 in FELICIANGELI (1989a): 335-337, desc. m*, f*. Type-loc.: VENEZUELA, *Bolívar*: La Gran Sabana (Wamarainen, La Escalera, Santa Helena de Juairén). Dep.: C. Nac. Taxon. Flebótomos, Univ. Carabobo, Maracay, Venezuela; Florida St. Collection Arthropods, Gainesville, Florida, USA; Br. Mus. Nat. Hist., London, UK.

sordellii (Shannon & del Ponte, 1927). - YOUNG & MORALES 1987: 662, syn. *Phlebotomus nordestinus* Mangabeira, 1942.

- Lutzomyia* sp. No. 2 de Araracuara Morales & Minter, 1981: 106-108, 115-116, desc. m*, f*. Type-loc.: COLOMBIA, *Caquetá*: Araracuara. Dep.: not cited.
- tortura* Young & Rogers, 1984: 605, 609-610, desc. m*, f*. Type-loc.: ECUADOR, *Napo*: Limoncocha. Dep.: not given.
- trinidadensis* Newstead, 1922. - WILLIAMS 1988c: 377-381, redesc. m*, f*. Type-loc.: TRINIDAD. Dep.: Br. Mus. Nat. Hist., London, UK.

SERIES *vexator*

- apache* Young & Perkins, 1984: 276-277, 294, 301. Type-loc.: USA, *Arizona*: Apache (Springerville), Cochise (3.1 km SW of Portal), Gila (27 km NE of Payson, Tonto Creek). Dep.: U.S. Nat. Mus., Washington, D.C., USA.

SERIES *peruensis*

- ayacuchensis* Caceres & Galati, 1988: 55-61, desc. m*, f*. Type-loc.: PERU, *Ayacucho*: Quebrada Saquihuacca, Sancos. Dep.: Inst. Nac. Salud, Lima, Peru, Fac. Saúde Pública, São Paulo, Depto Parasitologia, Inst. Ciências Biológicas, Univ. Fed. Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.
- blancasi* Galati & Caceres Lazaro, 1990: 505-511, m*, f*. Type-loc.: PERU, *Ancash*: Punta de Huarcampu. Dep.: Fac. Saúde Pública USP, São Paulo; C. Pesq. René Rachou, Belo Horizonte, Brazil; Inst. Nac. Salud, Lima, Peru.
- caballeroi* Blancas, Caceres & Galati, 1989: 455-463, desc. m*, f*. Type-loc.: PERU, *Ancash*: Pumamachay, Parag, Pucuhuaillán. Dep.: Inst. Nac. Salud, Lima, Peru; Fac. Saúde Públ. USP, São Paulo, Brazil; Depto Parasitologia, Inst. Ciências Biológicas, Univ. Fed. Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.
- ceferinoi* (Ortiz & Alvarez, 1963). - ORTIZ, 1978: 207-208, redesc. m*. Type-loc.: VENEZUELA, *Zulia*: Caja Seca. Dep.: not given. CAZORLA & AÑEZ 1988: 314-321, redesc. m*, desc. f*. Type-loc.: VENEZUELA, *Mérida*: Sucre. Dep.: not given.
- erwindonaldoi* Ortiz, 1978: 205-207, desc. m*. Type-loc.: VENEZUELA, *Zulia*: Caja Seca. Dep.: not given. - YOUNG & MORALES 1987: 655-657, desc. f*, m*. Type-loc.: COLOMBIA, *Norte de Santander*: Arboledas. Dep.: Inst. Nac. Salud, Bogotá, Colombia, Univ. Florida, Gainesville, Florida, USA.
- larensis* Arredondo, 1987: 395-398, desc. m*, f*. Type-loc.: VENEZUELA, *Lara*: Andres Eloy Blanco (Parque Nac. Yacambu), Diego de Lozada (Cubiro). Dep.: Sección Parasitol. Méd., Esc. Med., Univ. Centro Occidental Lisandro Alvarado, Barquisimeto, Venezuela.
- reclusa* Fernandez & Rogers, 1991: 129-131, desc. m*. Type-loc.: PERU, *Cajamarca*: Caserio El Monte (15 km SW of Santa Cruz). Dep.: Inst. Nac. Salud, Lima, Peru, and Smithsonian Inst., Washington, D.C., USA.
- strictivilla* Young, 1979: 206-207, 209, desc. m*, f*. Type-loc.: COLOMBIA, *Antioquia*: Anori River. Dep.: U.S. Nat. Mus., Washington, D.C., and Florida St. Collection Arthropods, Gainesville, Florida, USA, Inst. Nac.

Salud, Bogotá, Colombia, Br. Mus. Nat. Hist., London, UK.

Lutzomyia sp. of Pichinde Young, 1979: 210-212, desc. m*, f*. Type-loc.: COLOMBIA, *Valle*: Cali (10 km W and 15 km SW of Cali). Dep.: U.S. Nat. Mus. Nat. Hist., Washington, D.C., and Florida St. Collection Arthropods, Gainesville, Florida, USA, Inst. Nac. Salud, Bogotá, Colombia, Br. Mus. Nat. Hist., London, UK.

tejadai Galati & Caceres, 1990: 510-517, desc. m*, f*. Type-loc.: PERU, *Huánuco*: Huánuco, Huncuymaran, Nausilla, Vichaycoto. Dep.: Fac. Saúde Pública USP, São Paulo, Brazil; C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil; Inst. Nac. Salud, Lima, Peru.

valderramai Cazorla, 1988: 607-609, desc. m*. Type-loc.: VENEZUELA, *Mérida*: Los Curos. Dep.: Depto Biol., Fac. Cien, Univ. Los Andes, Mérida, Venezuela.

SERIES *sanguinaria* Galati & Caceres, 1992: 452 455-456

kirigetiensis Galati & Caceres, 1992: 449-454, desc. m*, f*. Type-loc.: PERU, *Cuzco*: Kirigeti (River Piccha). Dep.: Inst. Nac. Salud, Lima, Peru; Fac. Saúde Pública USP, São Paulo, Brazil.

Lutzomyia (Trichophoromyia) Barretto, 1962

araracuarensis Morales & Minter, 1981: 98,111, desc. m*. Type-loc.: COLOMBIA, *Caquetá*: Araracuara (Left edge of Caquetá River). Dep.: not given.

beniensis Le Pont & Desjeux, 1987a: 189-191, desc. m*, f*. Type-loc.: BOLIVIA: Left edge of River Beni, 100 km above El Dorado Farm (ca. 67° 50' W and 67° 05' S). Dep.: Serv. Scient. Centraux, Orstom, Bondy, France, Inst. Nac. Salud, La Paz, Bolivia; Cenotrop, Santa Cruz de la Sierra, Bolivia.

bettinii Feliciangeli, Ramirez-Perez & Ramirez, 1988: 52-53, desc. m*, f*. Type-loc.: VENEZUELA, *Amazonas*: Cerro La Neblina. Dep.: C. Nac. Refer. Flebotomos, Univ. Carabobo, Maracay, Venezuela; Florida St. Collection Arthropods, Gainesville, Florida, USA; Br. Mus. Nat. Hist., London, UK.

castanheirai (Damasceno, Causey & Arouck, 1945). - RYAN 1986: 100-101, desc. f*. Type-loc.: BRAZIL, *Pará*: Belém, Irituia, Santa Izabel, Óbidos, Ourém, Peixe Boi, São Miguel do Guamá, Santarém.

cellulana Young, 1979: 142-144, desc. m*, f*. Type-loc.: COLOMBIA, *Caquetá*: Tres Esquinas. Dep.: U.S. Nat. Mus., Washington, D.C., USA.

howardi Young, 1979: 144-146, desc. m*. Type-loc.: COLOMBIA, *Amazonas*: 17 km west of Leticia. Dep.: U.S. Nat. Mus., Washington, D.C., USA.

inirii (Floch & Abonnenc, 1943). - ARIAS & FREITAS 1982: 249, syn. *Flebotomus melloi* Causey & Damasceno, 1945.

napoensis Young & Rogers, 1984: 600-602, desc. m*, f*. Type-loc.: ECUADOR, *Napo*: Limoncocha. Dep.: U.S. Nat. Mus. Nat. Hist., Washington, D.C.,

- and Florida St. Collection Arthropods, Gainesville, Florida, USA, Inst. Leopoldo Izquieta Perez, Guayaquil, Ecuador.
- readyi* Ryan, 1986: 103-106, desc. m*, f*. Type-loc.: BRAZIL, *Pará*: Itaituba-Altamira (km 25 of Transamazônica). Dep.: Inst. Evandro Chagas, Belém, Pará, Brazil; Univ. São Paulo, São Paulo, Brazil.
- ruii* Arias & Young, 1982: 249-251, desc. m*, f*. Type-loc.: BRAZIL, *Amazonas*: Duke Reserve. Dep.: Inst. Nac. Pesq. Amazônia, Manaus, Amazonas, Univ. Fed. Minas Gerais, Belo Horizonte, Minas Gerais, Instituto Oswaldo Cruz, Rio de Janeiro, Rio de Janeiro, Instituto Evandro Chagas, Belém, Pará, Brazil; Museu Par. Emílio Goeldi, Belém, Pará, Brazil; U.S. Nat. Mus., Washington, D.C., USA; Florida St. Collection Arthropods, Gainesville, USA.
- saltuosa* Young, 1979: 145, 148, desc. m*. Type-loc.: COLOMBIA, *Amazonas*: 17 km W of Leticia. Dep.: U.S. Nat. Mus., Washington, D.C., USA.
- Lutzomyia* sp. No. 1 de Aracuara Morales & Minter, 1981: 102-103, 113-114, desc. m*, f*. Type-loc.: COLOMBIA, *Caquetá*: Aracuara. Dep.: not given. It is a possible variety of *L. howardi* (MORALES & MINTER 1981).
- Lutzomyia* sp. # 1 Young, Perez & Romero, 1985: 143, m, similar to *L. howardi*.
- Lutzomyia* sp. # 2 Young, Perez & Romero, 1985: 144, m, similar to *L. howardi*.
- velascoi* Le Pont & Desjeux, 1991b: 473-475, desc. m*, f*. Type-loc.: BOLIVIA, *La Paz*: Mururata Village. Dep.: Dept. Santé, Orstom, Montpellier, France, Inst. Nac. Salud, and Inst. Boliv. Biol. Altitud, La Paz, Bolivia.
- wilkersoni* Young & Rogers, 1984: 603-604, desc. m*, f*. Type-loc.: ECUADOR, *Zamora-Chinchipec*: 12 km S Zamora (4° 12' S, 78° 56' W). Dep.: not given.

Lutzomyia (Coromyia) Barretto, 1962

SERIES *vespertilionis*

- disneyi* Williams, 1987: 525-528, desc. m*, f*. Type-loc.: BELIZE, *Cayo*: San Antonio. Dep.: C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil. - WILLIAMS 1987: 525-528, syn. *L. beltrani* Belize form Williams, 1976.
- steatopyga* (Fairchild & Hertig, 1958). - WILLIAMS 1987: 528, redesc. f.*, cf. *L. disneyi*
- zeledoni* Young & Murillo, 1987: 711-712, desc. m*. Type-loc.: COSTA RICA, *Guanacaste*: Brasilito, Honduras: Atlantica: Tela. Dep.: Univ. Costa Rica, San José (?), Costa Rica; U.S. Nat. Mus., Washington D.C., USA. - LE PONT *et al.* 1987: 273-275, f*. Type-loc.: NICARAGUA: Somotillo (Rota Chinandega-Somotillo). Dep.: C. Nac. Salud, Min. Salud, Complejo Nac. "Dra. Concepción Palacios", Managua, Nicaragua.

SERIES *saulensis*

- wilsoni* (Damasceno & Causey, 1945). - MARTINS *et al.* 1983a: 68-69, desc. f*. Type-loc.: BRAZIL, *Rondonia*: Ariquemes, Porto Velho, Guajará-Mirim. Dep.: Centro Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil.

Lutzomyia (Nyssomyia) Barretto, 1962

- anduzei* (Rozeboom, 1942). - WARD & FRAHIA 1977: 315, redesc. f*, cf. *L. umbratilis*.
- bibinae* Leger & Abonnenc, 1988: 136-138, desc. f*. Type-loc.: FRENCH GUIANA: Saül. Dep.: Mus. Nat. Hist. Nat. (Lab. Entomol.), Paris, France.
- edentula* (de Leon, 1971). - MURILLO & ZELEDON 1985: 59, desc. m*, redesc. f*. Type-loc.: COSTA RICA, *Chirripo*: Moravia. MARTINS *et al.* 1978: 168-as inadequately described species.
- frahiai* Martins, Falcão & Silva, 1979: 357-359, desc. m*, f*. Type-loc.: BRAZIL, *Bahia*: Carvolândia (Três Braços). Dep.: Depto Parasitologia, Inst. Ciências Biol., Univ. Fed. Minas Gerais, Belo Horizonte, Minas Gerais, Brazil. See *L. yuilli yuilli*.
- olmea bicolor* Fairchild & Theodor, 1971. - YOUNG & ARIAS 1982: 136, cf. *L. olmea nociva*.
- olmea nociva* Young & Arias, 1982: 134-136, desc. m*, f*. Type-loc.: BRAZIL, *Amazonas*: Manaus (Reserva Ducke, Reserva Campinas, Estrada do Aleixo), 243 km E of Manaus; *Pará*: Planalto Porto Trombetas. Dep.: Museu Zoologia USP, São Paulo; Inst. Evandro Chagas, Belém, Pará, Inst. Nac. Pesq. Amazônia, Manaus, Amazonas, Brazil, U.S. Nat. Mus. Nat. Hist., Washington, D.C., USA; Florida St. Collection Arthropods, Gainesville, Florida, USA.
- olmea olmea* Fairchild & Theodor, 1971. - YOUNG & ARIAS 1982: 136, cf. *L. olmea nociva*.
- olmea reducta* Feliciangeli, Ramirez-Perez & Ramirez, 1988: 54-55, desc. m*, f*. Type-loc.: VENEZUELA, *Amazonas*: Cerro La Neblina. Dep.: C. Nac. Refer. Flebótomos, Univ. Carabobo, Maracay, Venezuela; Florida St. Collection Arthropods, Fla, USA; Br. Mus. Nat. Hist., London, UK.
- reducta* (Feliciangeli Ramirez-Perez & Ramirez, 1988). - FREITAS *et al.* 1989: 363, redesc. m*, f*, stat. nov., syn. *Lutzomyia* sp. 3; FREITAS *et al.* 1987. Type-loc.: BRAZIL, *Amazonas* and *Rondonia*: sympatric with *L. olmea nociva* and *L. flaviscutellata*.
- richardwardi* Ready & Frahia, 1981: 705-707, desc. m*, f*. Type-loc.: BRAZIL, *Pará*: Transmazonica Highway (km 43 Altamira -Itaituba). Dep.: Inst. Evandro Chagas, Belém, Pará, Mus. Hist. Nat., Univ. Fed. Minas Gerais, Belo Horizonte, Minas Gerais; Fac. Saúde Públ., Univ. São Paulo, São Paulo, Brazil; Brit. Mus. Nat. Hist., London, UK; Florida St. Collection Arthropods, Gainesville, Florida, USA.
- shawi* Frahia, Ward & Ready, 1981: 699-702, desc. m*, f*. Type-loc.: BRAZIL, *Pará*: Marabá (Serra dos Carajás). Dep.: Seção Parasitol., Inst. Evandro Chagas, Belém, Pará; Mus. Hist. Nat., Univ. Fed. Minas Gerais, Belo Horizonte, Minas Gerais; Fac. Saúde Públ., Univ. São Paulo, São Paulo, Brazil; Brit. Mus. Nat. Hist., London, UK; Florida St. Collection Arthropods, Gainesville, Florida, USA. Syn. *Lutzomyia* sp. 260. 43 Ward, Shaw & Lainson, 1973.

- umbratilis* Ward & Frahia, 1977: 314-315, desc. f*. Type-loc.: BRAZIL, *Pará*: Monte Dourado (River Jari). Dep.: Inst. Evandro Chagas, Belém, Pará; Fac. Saúde Pública USP. São Paulo; Museu Hist. Nat. Univ. Fed. Minas Gerais, Belo Horizonte, Brazil; Br. Mus. Nat. Hist., London, UK. - WARD & FRAHIA 1977: 314, syn. *Phlebotomus anduzei*: Floch & Abonnenc, 1944, *Phlebotomus intermedius*: Floch & Abonnenc, 1941, *Lutzomyia anduzei*: Almeida, 1970, *Psychodopygus anduzei*: Forattini, 1973 (pro part?). - YOUNG 1979: 160, syn. *Phlebotomus* sp. 260. 31: Ward *et al.*, 1973.
- waltoni* Arias. - FREITAS & BARRETT 1984: 325-326, desc. m*, f*. Type-loc.: BRAZIL, *Rondonia*: near Ji-Paraná. Dep.: not given.
- yuilli* Young & Porter, 1972. - YOUNG 1979: 164, syn. *L. antunesi* Llanos, 1973 (pro parte) (non *Phlebotomus antunesi* Coutinho, 1939), *L. intermedia*: Osorno *et al.*, 1972 (non *Phlebotomus intermedius* Lutz & Neiva, 1912), *L. near intermedia*: Shaw *et al.*, 1972.
- yuilli yuilli* (Young & Porter, 1972). - ABONNENC *et al.* 1979: 79-81, redesc. m*, f*, stat. nov. Type-loc.: COLOMBIA. Dep.: not given. - VEXENAT *et al.* 1986: 295, syn. *L. frahiai* Martins, Falcão & Silva, 1979: 357-359, desc. m*, f*.
- yuilli pajoti* Abonnenc, Leger & Fauran, 1979: 75-78, desc. m*, f*. Type-loc.: FRENCH GUIANA: Saül Village. Dep.: not given. Syn. *Lutzomyia* sp. de Souvenir Floch & Abonnenc, 1944.

Lutzomyia (Psathyromyia) Barretto, 1962

- guatemalensis* Porter & Young, 1986: 236-242, desc. m*, f*. Type-loc.: GUATEMALA, *Chiquimula*: Concepción Las Minas (Montaña Plan de Pinto), Quezaltepeque (Volcán Quezaltepeque), El Progreso: San Agustín Acasaquastlán. Dep.: U.S. Nat. Mus. Nat. Hist., Washington, D.C., USA; Universidad del Valle, Guatemala, and authors' collections.
- scaffi* (Damasceno & Arouck, 1956). - YOUNG 1979: 115, desc. f (cibarium).
- tanyopsis* Young & Perkins, 1984: 275-276, desc. f*. Type-loc.: USA, *Arizona*: Pima (Sabino Canyon, Coronado Nat. Forest). Dep.: U.S. Nat. Mus., Washington, D.C., USA.
- undulata* (Fairchild & Hertig, 1950). - YOUNG 1979: 119, syn. *Lutzomyia cratifera* Osorno-Mesa, Morales-Alarcon, de Osorno & Ferro-Vella, 1972.

Lutzomyia (Trychopygomyia) Barretto, 1962

- ARIAS *et al.* (1983) and FELICIANGELI (1989b) revised the subgenus.
- conviti* Ramirez-Perez, Martins & Ramirez, 1976: 599-602, desc. m*, f*. Type-loc.: VENEZUELA, *Amazonas*: Ocamo. Dep.: Depto Zool. Parasitol., Inst. Ciên. Biol., Univ. Fed. Minas Gerais, Belo Horizonte, Minas Gerais, Brazil; Div. Dermat. Sanit., Vila de Cura, Aráguia, Venezuela.
- dasypodogeton* (Castro, 1939). - MARTINS *et al.*, 1983b: 224-229, redesc. m*, f*. Type-loc.: of CASTRO (1939): BRAZIL, *Pará*: Abaeté; of redesc.: *Pará*: Belém

- (Ilha Preta); *Roraima*: Caracará, *Rondônia*: Aeroporto de Guajará-Mirim, Guajará-Mirim (Serra dos Parecis, km 45, km 50, and km 85 of BR-319). Dep.: C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil.
- ferroae* Young & Morales, 1987: 651-653, desc. m*, f*. Type-loc.: COLOMBIA, *Norte de Santander*: Arboledas. Dep.: Inst. Nac. Salud, Bogotá, Colombia; Univ. Florida, Gainesville, Florida, USA.
- gantieri* Le Pont & Desjeux, 1987c: 571-574, desc. m*, f*. Type-loc.: BOLIVIA, *Alto Beni*: Serrania de Marimonos (Rota Palos Blancos-Inicua). Dep.: Serv. Scient. Centraux, Orstom, Bondy, France; Inst. Nac. Salud, La Paz; Cenetrop, Santa Cruz de la Sierra, Bolivia.
- martinezi* Young & Morales, 1987: 653-655, desc. m*, f*. Type-loc.: COLOMBIA, *Meta*: Iteviare River. Dep.: Inst. Nac. Salud, Bogotá, Colombia, Univ. Florida, Gainesville, Florida, USA.
- pinna* Feliciangeli, Ramirez-Perez & Ramirez, 1988: 558-560, desc. m*, f*. Type-loc.: VENEZUELA, *Bolívar*: Waramaisen. Dep.: C. Nac. Refer. Flebótomos, Univ. Carabobo, Maracay, Venezuela.
- ratcliffei* Arias, Ready & Freitas, 1983: 456-459, desc. m*. Type-loc.: BRAZIL, *Amazonas*: Manaus (Parque das Laranjeiras), Fazendas Unidas, Cidade Nova). Dep.: Inst. Nac. Pesq. Amazônia, Manaus, Amazonas, Museu Par. Emílio Goeldi, Belém, Pará; Museu Zool. USP, São Paulo; Univ. Fed. Minas Gerais, Belo Horizonte, Minas Gerais; Inst. Oswaldo Cruz, Rio de Janeiro, Brazil; U.S. Nat. Hist. Mus., Washington, D.C.; Univ. Florida, Gainesville, Florida, USA; Br. Mus. Nat. Hist., London, UK.
- wagleyi* (Causey & Damasceno, 1945). - MORALES & MINTER 1981: 101, 112, desc. f*. Type-loc.: COLOMBIA, *Caquetá*: Araracuara. Dep.: not given.
- witoto* Young & Morales, 1987: 655-656. Type-loc.: COLOMBIA, *Amazonas*: 8 km N of Leticia. Dep.: Inst. Nac. Salud, Bogota, Colombia, Univ. Florida, Gainesville, Florida, USA.

GROUP *cruciata*

- diabolica* (Hall, 1936). - YOUNG & PERKINS 1984: 170-171, redesc. m*, f*, revalidated, syn.: *Lutzomyia cruciata*: Rosabal & Miller, 1970 non *cruciata* Coquillet, 1907, *Lutzomyia cruciata diabolica* Lewis, 1975 (mouthpart morphology).
- eliensis* Le Pont & Desjeux, 1983: 48-51, desc. f*, m*. Type-loc.: FRENCH GUIANA: Piste de Saint Élie. Dep.: Serv. Faunistique, Serv. Scient. Centraux, Orstom, Bondy, France.
- marinkellei* Young, 1979: 59-61, desc. m*, f*. Type-loc.: COLOMBIA, *Caquetá*: Tres Esquinas, BRAZIL, *Mato Grosso*: Near Aripuanã River (Arias col.). Dep.: U.S. Nat. Mus. Nat. Hist., Washington, D.C.; Florida St. Collection Arthropods, Gainesville, Florida, USA; Inst. Nac. Salud, Bogotá, Colombia; Br. Mus. Nat. Hist., London, UK.
- ponsi* Perruolo, 1984: 1-3, desc. f*. Type-loc.: VENEZUELA, *Tachira*: Parque Nac, El Tama. Dep.: Author's collection, Cat. Zool. Agric., Depto Bioquí-

mica, Univ. Nac. Exper. Táchira, San Cristobal, Táchira; Cat. Parasitol. del Grupo Rafael Rangel Trujillo, Trujillo; Cat. Parasitol., Fac. Med., Univ. Carabobo, Valencia; C. Refer. Inst. Zool. Trop., Fac. Cien., Univ. Central de Venezuela, Venezuela.

GROUP *verrucarum*

- amilcari* Arredondo, 1984: 63-64, desc. m*. Type-loc.: VENEZUELA, *Lara*: Parque Nac. Yacambu. Dep.: Sección Parasitol. Méd., Fac. Med., Univ. Centro-Occidental Lisandro Alvarado, Barquisimeto, Venezuela; C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil.
- aulari* Feliciangeli, Ordoñez & Manzanilla, 1984: 592-596, desc. m*, f*. Type-loc.: VENEZUELA, *Trujillo*: Loma Abajo, Vitisay. Dep.: British Mus. Nat. Hist., London, UK; Univ. Carabobo, Maracay, Venezuela.
- andina* de Osorno, Osorno-Mesa & Morales-Alarcon, 1972. - YOUNG 1979: 75, syn. *Phlebotomus verrucarum* Osorno *et al.*, 1967, non *verrucarum* Townsend.
- deorsa* Pérez, Ogusuku, Monje & Young, 1991: 134, desc. m*. Type-loc.: PERU, *Apurimac*: Abancay. Dep.: Col. Entomología, Museo Hist. Nat., Lima, Peru.
- diazii* Gonzalez & Garcia, 1981: 39, desc. m*, f*. Type-loc.: not given, 3 localities in Cuba.
- gruta* Ryan, 1986: 109-111, desc. m*, f*. Type-loc.: BRAZIL, *Pará*: Marabá (Serra dos Carajás). Dep.: Inst. Evandro Chagas, Belém, Pará; Univ. São Paulo, São Paulo; M. Hist. Nat. Univ. Fed. Minas Gerais, Belo Horizonte, Minas Gerais, Brazil; Br. Mus. Nat. Hist., London, UK; Florida St. Collection Arthropods, Gainesville, Florida, USA.
- moralesi* Young, 1979: 80-82, desc. m*, f*. Type-loc.: COLOMBIA, *Valle*: Near Rio Pance (ca. 10 km SW of Cali), near Pichindé (ca. 10 km W of Cali). Dep.: U.S. Nat. Mus. Nat. Hist., Washington, D.C.; Florida St. Collection Arthropods, Gainesville, Florida, USA; Inst. Nac. Salud, Bogotá, Colombia; Br. Mus. Nat. Hist., London, UK.
- nadiae* Feliciangeli, Arredondo & Ward, 1992: 731-735, desc. m*, f*. Type-loc.: VENEZUELA, *Lara*: Zanare. Dep.: C. Nac. Taxonomia Flebótomos, Univ. Carabobo, Maracay, Venezuela; Florida St. Collection Arthropods, Gainesville, Florida, USA; Br. Mus. Nat. Hist., London, UK.
- novoae* Gonzalez & Garcia, 1981: 31, desc. m*, f*. Type-loc.: not given, 5 localities in Cuba.
- nuneztovari* (Ortiz, 1954). - LE PONT & DESJEUX 1984: 281, (as *L. nuneztovari nuneztovari*), cf. *L. nuneztovari anglesi*.
- nuneztovari anglesi* Le Pont & Desjeux, 1984: 278-281, desc. m*, f*. Type-loc.: BOLIVIA, *La Paz*: Tocania Village. Dep.: Serv. Scient. Centraux, Orstom, Bondy, France, Univ. Florida, Gainesville, Florida, USA, INLASA, La Paz; Cenetrop, Santa Cruz de la Sierra, Bolivia.
- youngi* Feliciangeli & Murillo, 1987: 141-145, desc. m*, f*. Type-loc.:

VENEZUELA, *Trujillo*: Las Calderas, other 45 localities. Dep.: C. Nac. Taxonomía Flebótomos, Univ. Carabobo, Maracay, Venezuela; Florida St. Collection Arthropods, Gainesville, Florida, USA; Br. Mus. Nat. Hist., London, UK; Esc. Med. Veter., Univ. Nacional, Heredia, Costa Rica. - MURILLO & ZELEDON 1985: 71, m*, f*. The name *L. youngi* was first used in 1985, but the sand fly was adequately described by FELICIANGELI & MURILLO (1987)

GROUP *walkeri*

andersoni Le Pont & Desjeux, 1988: 421-424, desc. m*, f*. Type-loc.: BOLIVIA, *La Paz*: South Yungas: Serranía de Marimónos (Rota Palos Blancos- Inicua). Dep.: Serv. Scient. Centraux, Orstom, Bondy, France.

carmelinoi Ryan, Frahia, Lainson & Shaw, 1986: 323-324, 326-328, desc. m*, f*. Type-loc.: BRAZIL, *Pará*: Santarém (Distr. Saubal). Dep.: Inst. Evandro Chagas, Belém, Pará, Brazil, Br. Mus. Nat. Hist., London, UK.

dubitans (Sherlock, 1962). - FELICIANGELI 1985: 308-310, redesc. m*, f*, Type-loc.: BRAZIL, *Pará*: Marajó Island. VENEZUELA *Carabobo*: San Esteban, Trincheras, La Glorieta, La Belén, Cojedes: Zambrano, Las Rosas, Apure: Sta Lucia. Colombia (from British Mus.), syn. *Phlebotomus marajoensis* Fairchild & Hertig, 1961 non Damasceno & Causey, 1944.

Lutzomyia sp.n. 222. 12 Ryan, 1986: 54, desc. m*, f* (near *L. lenti*). Type-loc.: BRAZIL, *Pará*: Santarém (Saubal).

walkeri (Newstead, 1914). - YOUNG 1979: 67, syn. *Phlebotomus gasti* Sherlock, 1962, *L. gasti*: Theodor, and *Phlebotomus dubitans* Sherlock, 1962. - FELICIANGELI 1985: 309, syn. *Flebotomus marajoensis* Damasceno & Causey, 1944, non Fairchild & Hertig, 1961. - YOUNG (1979) and MURILLO & ZELEDON (1985) do not agree with these synonymies. FELICIANGELI 1985: 308-311, redesc. m*, f*. Type-loc.: BRAZIL: Abura River, Bolivia- Brazil boundary. VENEZUELA, *Apure*: Guaramaco, El Novillo, Pto Paez, Cojedes: Boca de Cero, Las Rosas; *Trujillo*: El Mamón, Las Cocuizas, Sabana Grande, El Volcan.

williamsi (Damasceno, Causey & Arouck, 1945). - RYAN *et al.* 1986: 325-328, desc. f*. Type-loc.: BRAZIL, *Pará*: Belém (Utinga Forest), Serra dos Carajás. Dep.: Inst. Evandro Chagas, Belém, Pará, Brazil.

GROUP *migonei*

corumbaensis Galati, Nunes, Oshiro & Rego Jr, 1989: 465-474, m*, f*. Type-loc.: BRAZIL, *Mato Grosso do Sul*: Corumbá. Dep. -Fac. Saúde Pública USP, São Paulo, Brazil.

rabelloi Galati & Gomes, 1992: 457-462, desc. m*, f*. Type-loc.: BRAZIL, *São Paulo*: Iguape (Sítio Palmeiras), Pedro de Toledo (Bairro Araçatuba), Cananéia (Itapitangui). Dep.: Fac. Saúde Pública USP, São Paulo, Brazil.

xerophila Young, Brenner & Wargo, 1983: 313-315, desc. m*, f*. type-loc: USA,

California: Riverside Co. (Palm Desert, Cahuilla Hills). Dep. - U.S. Nat. Mus. (Natural History); Florida State Collection of Arthropods, Gainesville; Univ. California at Riverside, USA; British Mus. Nat. Hist., London, UK.

GROUP *brasiliensis*

abunaensis Martins, Falcão & Silva, 1965. - YOUNG & ROGERS 1984: 600-601, desc. f*, revalidation of the species. Type-loc.: ECUADOR, *Limoncocha*. Dep.: U.S. Nat. Mus. Nat. Hist., Washington, D.C.; Florida St. Collection Arthropods, Gainesville, Florida, USA; Inst. Leopoldo Izquieta Perez, Guayaquil, Ecuador; Br. Mus. Nat. Hist., London, UK.

antezanai Le Pont, Dujardin, Mouchet & Desjeux, 1990: 139-143, desc. m*. Type-loc.: BOLIVIA, *La Paz*: Serrania de Marimonos (Route Palos Blancos-Inicua). Dep.: Serv. Scient. Orstom, Bondy, Inst. Français Development Coop., Montpellier, Musée Nat. Hist. Nat., Paris, France; Inst. Nac. Salud; Inst. Boliv. Biol. Altitud, La Paz, Bolivia. - LE PONT & DESJEUX 1992: 268, desc. f*. Type-loc.: not given. Dep.: not given.

barrettoi (Mangabeira, 1942). - YOUNG 1979: 128-129, 131, redesc. m*, f*, (as *L. barrettoi barrettoï*), stat. nov, syn. *Phlebotomus* sp. de Maripa Floch & Abonnenc, 1946. Type-loc.: COLOMBIA, *Caquetá*: Tres Esquinas. TRINIDAD: Macqueripe U.S. Naval St., Tucker U.S. Naval St., San Jose Point U.S. Naval St.; Brazil.

barrettoi majuscula Young, 1979: 129-132, desc. m*, f*. syn. *Phlebotomus* sp. # 6 Rosabal, 1954. Type-loc.: PANAMA, *Canal Zone*: Madden Forest Reserve (Cruces Trail), Camp Piña, San Lorenzo, Mojinga Swamp, G. Field, Cerro Azul. COLOMBIA, *Antioquia*: Anori River; *Chocó*: Alto Curiche, Curiche; *Valle*: 25 km E of Buenaventura. COSTA RICA: Suerre de Guapiles. ECUADOR, *Pichincha*: Santo Domingo de los Colorados. NICARAGUA, *Carrazo*: Guapilonar;. Dep.: not given.

GROUP *dreisbachi*

aclydifera (Fairchild & Hertig, 1952). - MURILLO & ZELEDON 1985: 125-126, syn. *Phlebotomus* sp. # 1 Rosabal, 1954.

Group *gorbitzi*

gorbitzi (Blancas, 1959/60). - MURILLO & ZELEDON 1985: 121, 123-124, syn. *Phlebotomus* sp. # 11 Rosabal, 1954.

moucheti Pajot & Le Pont, 1978: 295-297, desc. m*, Type-loc.: FRENCH GUIANA: Piste de Saint Élie (near Corossony Village). Dep.: Serv. Faunist., Serv. Scient. Centraux, Orstom, Bondy, France.

GROUP *gasparviannai*

carvalhoi (Damasceno, Causey & Arouck, 1945). - RYAN 1986: 44-45, desc. f*. Type-loc.: BRAZIL, *Pará*: Belém, Irituia, Santa Izabel, Carajás. Dep.: not

given.

spathotrichia Martins, Falcão & Silva, 1963. - RYAN 1986: 50-51, desc. f*.
Type-loc.: BRAZIL, *Pará*: Jari. Dep.: not given. - LEBBE *et al.* 1987: 28, syn.
L. eliensis Le Pont & Desjeux, 1983.

ABERRANT AND ISOLATED SPECIES

baculus Martins, Falcão & Silva, 1965. - RYAN *et al.* 1986: 345-347, desc. f*.
Type-loc.: BRAZIL, *Pará*: Marabá (Serra dos Carajás). Dep.: Inst. Evandro
Chagas, Belém, Pará, Brazil.

bristolai Le Pont & Desjeux, 1987: 319-323, m*, f*. Type-loc.: BOLIVIA, *Alto
Beni*: Serrania de Marimonos (route Palo Blanco- Inicua). Dep.: Serv. Scient.
Centraux, Orstom, Bondy, France.

misionensis (Castro, 1960). - MARTINS *et al.* 1977: 569-571, desc. m*, redesc.
f*. Type-loc.: BRAZIL, *Minas Gerais*: Belo Horizonte. Dep.: Depto
Parasitologia, Inst. Ciências Biológicas, Univ. Fed. Minas Gerais, Belo
Horizonte, Minas Gerais, Brazil.

mollinedoi Le Pont & Desjeux, 1991a: 305-307, desc. m*, f*. Type-loc.: BOLIVIA,
Potosi: Toro Toro Village. Dep.: Dept. Santé, Orstom, Montpellier, France;
Inst. Nac. Lab. Salud (Inlasa) and Inst. Boliv. Biol. Altitud, La Paz, Bolivia.

nematoducta Young & Arias, 1984: 428, desc. m*, f*. Type-loc.: BRAZIL,
Amazonas: Manaus (Reserva Ducke, 43 km N of Manaus, Parque da Laran-
jeiras). Dep.: Museu Zoologia USP, São Paulo, Brazil; U.S. Nat. Mus. Nat.
Hist., Washington D.C.; Florida St. Collection Arthropods, Gainesville,
Florida, USA.

oligodonta Young, Perez & Romero, 1985: 136-139, desc. m*, f*. Type-loc.:
PERU, *Lima*: Cocachacra. Dep.: Museo Hist. Natural, Lima, Peru, Florida
St. Collection Arthropods, Gainesville, Florida; U.S. Nat. Mus. Nat. Hist.,
Washington, D.C., USA; Br. Mus. Nat. Hist., London, UK.

pennyi Arias & Freitas, 1981: 847-849, desc. m*. Type-loc.: BRAZIL, *Amazonas*:
Manaus. Dep.: Inst. Nac. Pesq. Amazônia, Manaus, Amazonas, and Museu
de Zoologia, Univ. São Paulo, São Paulo, Brazil, U.S. Nat. Mus. Nat. Hist.,
Washington D.C., and Florida State Arthropod Collection, Gainesville,
Florida, USA.

preclara Young & Arias, 1984: 429-430, desc. m*. Type-loc.: COLOMBIA,
Amazonas: 9 km N of Leticia. PERU, *Madre de Dios*: Puerto Maldonado.
Dep.: U.S. Nat. Mus. Nat. Hist., Washington D.C., USA. - YOUNG &
MORALES 1987: 658-660, desc. f*. Type-loc.: COLOMBIA, *Meta*: Near border
of Vichada Dept. Dep.: Inst. Nac. Salud, Bogotá, Colombia; Univ. Florida,
Gainesville, Florida, USA.

ramirezi Martins, Falcão, Silva & Miranda Filho, 1982: 418-421, desc. m*, f*.
Type-loc.: BRAZIL, *Minas Gerais*: Grão Mogol (Morro do Chapéu). Dep.:
C. Pesq. René Rachou, Belo Horizonte, Minas Gerais, Brazil.

samueli (Deane, 1955). - MARTINS *et al.* 1989: 354-356, f*. Type-loc.: BRAZIL,
Piauí: Piracuruca (Parque Nac. Sete Cidades). Dep.: C. Pesq. René Rachou,

Belo Horizonte, Minas Gerais, Brazil.

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ACKNOWLEDGEMENTS. To Dr. Ana Leuch Lozovei and to Dr. Cláudio Barros Carvalho (both of Universidade Federal do Paraná) and to Dr. Eunice A.B. Galati (Universidade de São Paulo), for comments and suggestions.

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Recebido em 24.I.1994; aceito em 08.III.1995.