

Description of the female of *Thyrsopelma itaunense* (Diptera, Simuliidae)¹Milton Norberto Strieder²

¹This research received financial support from the Universidade do Vale do Rio dos Sinos and Fundação de Amparo à Pesquisa do Estado do Rio Grande do Sul-FAPERGS.

²Laboratório de Entomologia, Ciências da Saúde, Universidade do Vale do Rio dos Sinos. Av. Unisinos 950, 93022-000 São Leopoldo-RS, Brazil. E-mail: strieder@bios.unisinos.br

ABSTRACT. The female of *Thyrsopelma itaunense* (d'Andretta & González, 1964) is described and illustrated for the first time. *T. itaunense* and *T. orbitale* are morphologically compared. New records on geographical distribution are also presented.

KEYWORDS. Diptera; Simuliidae; blackflies; Neotropical.

RESUMO. Descrição da fêmea de *Thyrsopelma itaunense* (Diptera, Simuliidae). A fêmea de *T. itaunense* (d'Andretta & González, 1964) é descrita pela primeira vez, acompanhada de ilustrações e a sua diferenciação de *T. orbitale*. A distribuição geográfica de *T. itaunense* é apresentada, com registro de novas localidades.

PALAVRAS-CHAVE. Borrachudos; Diptera; região Neotropical; Simuliidae.

The females of the species belonging to the genus *Thyrsopelma* (Enderlein, 1934) are easily differentiated from the others occurring in the southern region of Brazil, mainly by the following characteristics: frons, clypeus and occiput black with intense white pruinosity, covered with yellow or silver grey hairs; mesonotum greyish black with white pruinosity and yellowish or silver grey pilosity interspersed among groups; claws without basal tooth; and basal portion of cibarium armed with small tubercles (COSCARÓN 1987, 1991; MIRANDA-ESQUIVEL & COSCARÓN 2001).

Thyrsopelma itaunense was described (D'ANDRETTA & GONZÁLEZ 1964) based on material from Itatinga, São Paulo (Itaúna farm), only one male obtained from pupa. The larva was described by PY-DANIEL *et al.* (1985), while the female remained unknown. Therefore, the objective of this paper is to provide the description of the female of this species.

MATERIAL AND METHODS

Twelve females were examined, all collected at Picada Verão, district of Sapiranga, Rio Grande do Sul, Brazil. They were found on horned cattle during systematic captures of adult blackflies on human, bovine, canine and swine. This material, collected throughout the years 1987 and 1988, has been deposited in the Laboratório de Entomologia, Universidade do Vale do Rio dos Sinos, São Leopoldo, Rio Grande do Sul.

For the supraspecific denomination of taxa it was used the system employed by PY-DANIEL & MOREIRA SAMPAIO (1994; 1995). The dissecting methodology followed COSCARÓN (1981).

Thyrsopelma itaunense (d'Andretta & González, 1964)
(Figs 1-18)

Simulium itaunensis [sic] d'Andretta & González, 1964: 106; Vulcano, 1967: 14; 1977: 292; Py-Daniel *et al.*, 1985: 98.

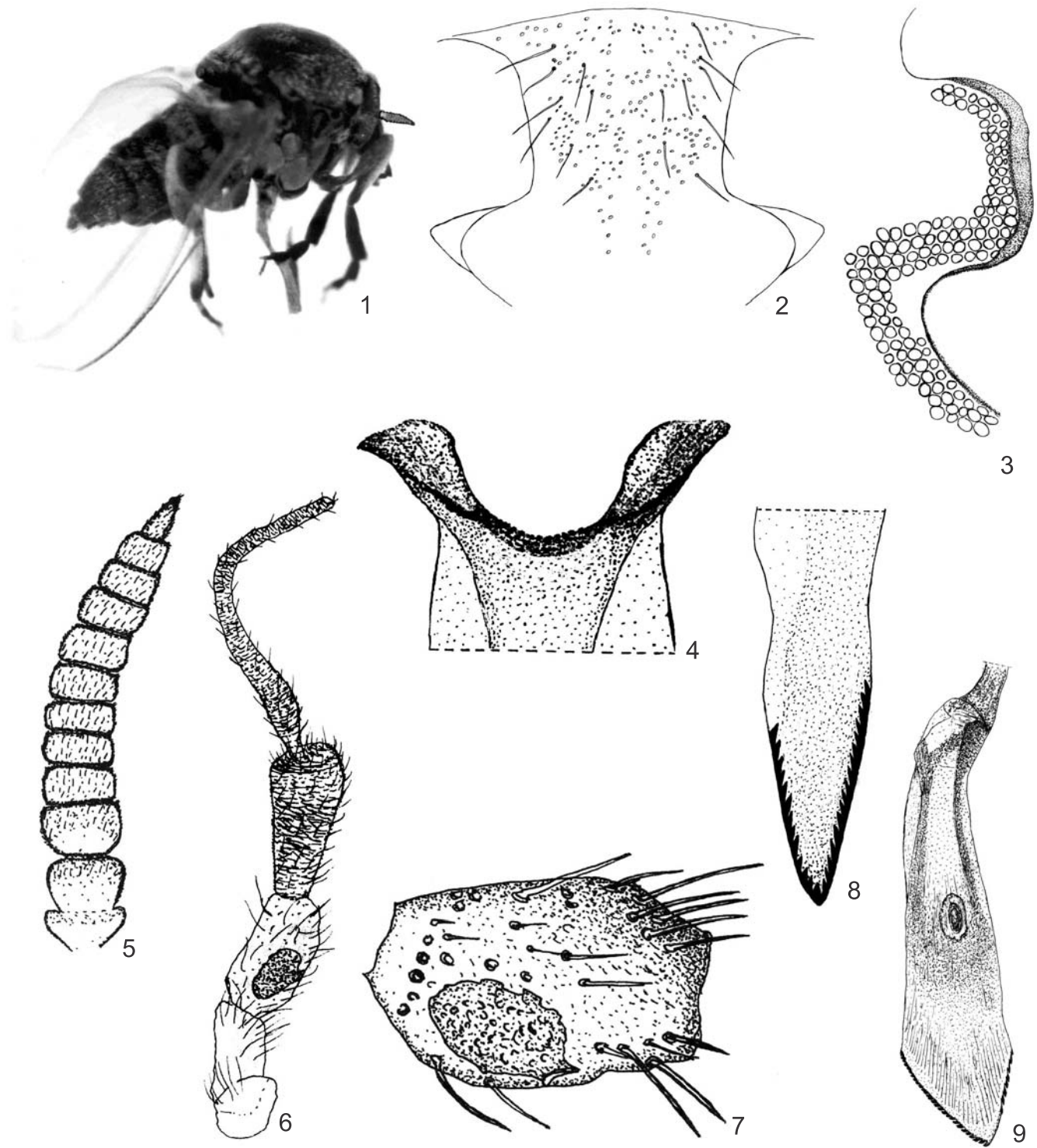
Simulium (*Thyrsopelma*) *itaunense*; Coscarón, 1987: 39; 1991: 290; Strieder *et al.*, 1992: 70; Miranda-Esquivel & Coscarón, 2001: 429.

Simulium (*Trichodagma*) *itaunense*; Crosskey & Howard, 1997: 79. *Thyrsopelma itaunense*; Py-Daniel & Moreira Sampaio, 1995: 119 (n. comb.).

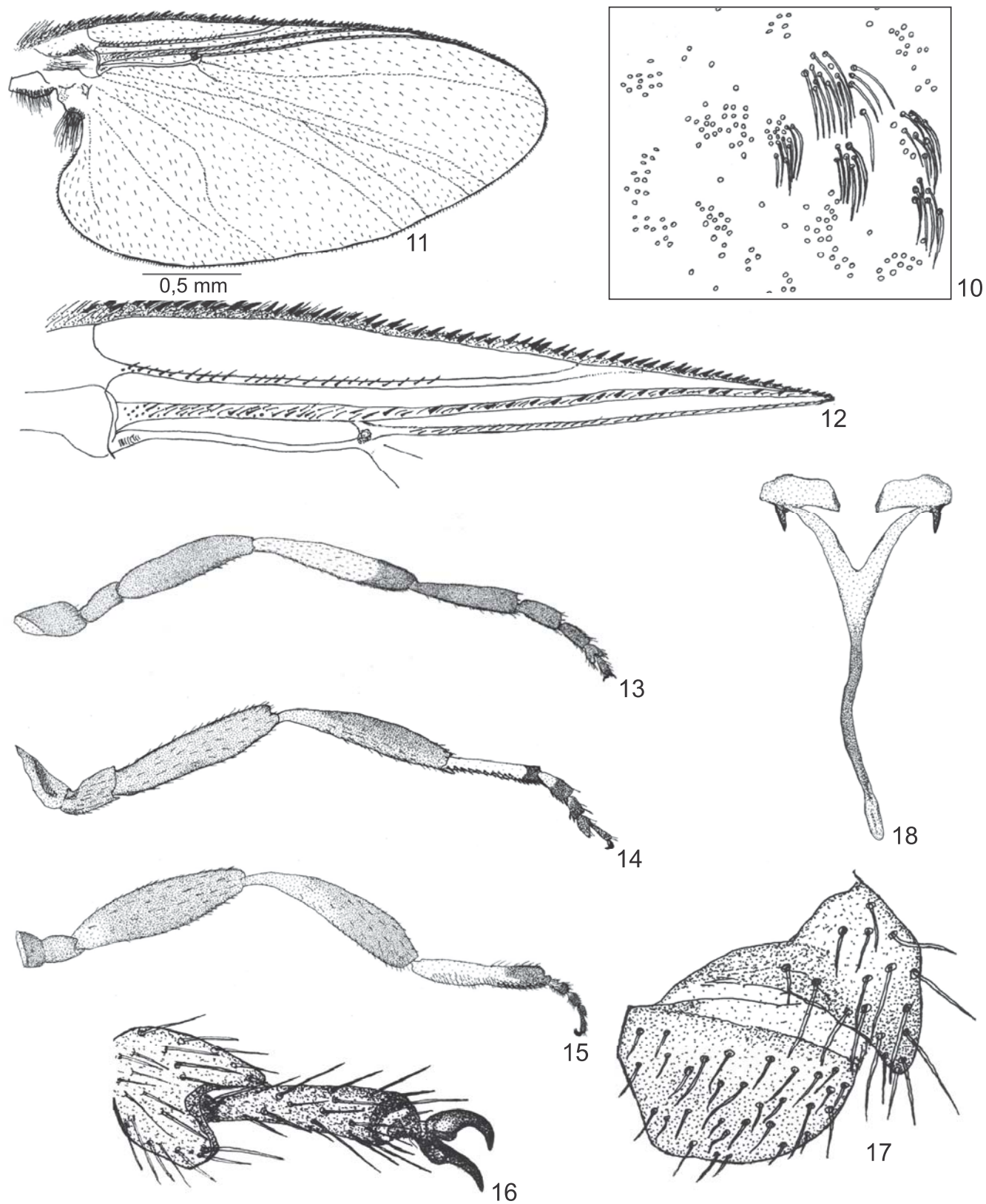
Female. General body color black with intense pruinosity (Fig. 1). Body length 3,3-3,5 mm (n=12); wing length 3,5-3,8 and wing width 1,7-1,9 mm (n=12).

Head black. Frons, clypeus and occiput black with intense white pruinosity, covered with silver grey and yellow hairs. Frons somewhat wider than long or almost as long as wide (Fig. 2). Fronto-ocular triangle deep (Fig. 3). Mouthparts dark brown. Cibarium with small tubercles and medial region heavily sclerotized (Fig. 4). Antennae with short white hairs; scape, pedicel and basal region of first flagellomere light brown, following flagellomere dark brown (Fig. 5). Palpi dark brown, palpomere V 3.2 times as long as palpomere III and 2.6 times as long as palpomere IV (Fig. 6). Palpal sensory vesicle elongate and enlarged (Fig. 7). Maxillae with 30 retrorse, sharp pointed and heavily sclerotized teeth, arranged in "V" shape (12/1/17) (Fig. 8). Mandibles with 8 external serrations and 29 internal teeth (Fig. 9).

Mesonotum greyish black with intense white pruinosity



Figs. 1-9. *Thyrsopelma itaunense*, female. 1, lateral view; 2, frons; 3, fronto-ocular triangle; 4, cibarium; 5, antenna; 6, maxillary palpus; 7, palpal sensory vesicle; 8, maxilla; 9, mandible.



Figs. 10-18. *Thyrsopelma itaunense*, female. **10**, scutum setae interspersed amongst groups; **11**, wing; **12**, wing veins; **13**, fore leg; **14**, middle leg; **15**, hind leg; **16**, tarsal claws of hind leg; **17**, cercus and paraproct; **18**, genital fork.

in front and laterally, with antero-superior lighting; scutum covered with silver grey and yellowish pilosity interspersed among groups, forming platelets covering its whole surface (Fig. 10). Scutellum black, with yellowish setae directed towards the medial region and posterior border with long black setae directed upwards. Postnotum grey, covered with intense pruinosity, basal region dark and distal part with yellowish setae. Pleural regions black with intense pruinosity that gives it a light grayish ornamentation. Wing veins yellowish brown; setae brown and spines dark brown (Fig. 11). Sc with 24-30 setae; R1 with spines and setae; base of Radius with many setae (Fig. 12). Halter with dark brown stem and terminal region brown. Legs with general form and distribution of pigmentation as in Figs. 13, 14 and 15. Fore legs (Fig. 13) with coxae, trochanters and femora dark brown, with black setae and silver grey hairs; tibiae with $\frac{3}{4}$ of basal region yellowish, with white pruinosity, covered with yellowish and silver grey hairs, $\frac{1}{4}$ distal black, with black setae; tarsi black; claws curved and slender, without basal tooth as well in mid and hind legs (Fig. 16). Middle legs (Fig. 14) with coxae, trochanters and femora light brown, with black setae and covered with yellowish and silver grey hairs; tibiae light brown and with $\frac{2}{3}$ distal region blackish, with black setae and silver grey hairs; basitarsus with $\frac{4}{5}$ basal region light yellowish and distally black; $\frac{1}{2}$ basal of tarsomeres II-III yellowish and dark distally; subsequent tarsomeres black. Hind legs (Fig. 15) with coxae black, covered with white pruinosity and light yellow setae; trochanters light brown; femora dark brown, with basal region light brown, covered with yellowish and silver grey hairs; tibiae with $\frac{1}{3}$ of basal region light brown and $\frac{2}{3}$ dark brown; basitarsus with basal $\frac{4}{5}$ yellowish and distal $\frac{1}{5}$ black; basal $\frac{1}{2}$ of tarsomere II yellowish and black distally; subsequent tarsomeres black.

Abdomen black with abundant silver grey hairs. Paraproct and cercus with general form and distribution of microtriquies and setae as in Fig. 17. Genital fork (Fig. 18) slender, with sclerotin, moderately long and anteriorly expanded stem; fork arms very expanded distally and without internal projection, forming a triangular space in the region of bifurcation.

Comments. During the study of the simuliid fauna of the State of Rio Grande do Sul, Southern Brazil, 32 species of eight

Table I. Differences observed in females of *Thyrsopelma itaunense* and *T. orbitale*.

	<i>T. itaunense</i>	<i>T. orbitale</i>
Body length	3,3-3,5 mm	2,9-3,0 mm
Wing length	3,5-3,8 mm	2,8-3,0 mm
Wing width	1,7-1,9 mm	1,4-1,5 mm
Sc setae	24-30	15-20
Maxillae teeth	30 (12/1/17)	32 (12/1/19)
Mandible teeth on the inner border	29	30

genera were collected. Of the genus *Thyrsopelma* (Enderlein, 1934), *T. itaunense* and *T. orbitale* were identified. Females of these species show differences displayed in the Table I.

Bionomics. The females of *T. itaunense* were collected on horned cattle. Larvae and pupae on Podostemaceae and underwater rocks in second and third-orders streams, with clear water and strong current.

Geographical distribution. BRAZIL. *São Paulo*: Itatinga; *Rio Grande do Sul*: Arroio dos Ratos, Barracão, Caraá, Caxias do Sul, Caxoeira do Sul, Derrubadas, Machadinho, Salvador do Sul, Santa Cruz do Sul, São Francisco de Paula and Sapiranga.

Acknowledgements. Dr. Paulo Günter Windisch, Fernando Joner and Ulisses Gaspar Neiss, Universidade do Vale do Rio dos Sinos, reviewed and improved the manuscript.

REFERENCES

- COSCARÓN, S. 1981. Insecta, Diptera, Simuliidae. In: R. A. RINGUELET (ed.) **Fauna de agua dulce de la República Argentina**. FECIC, Buenos Aires, 38(1): 105 p.
- COSCARÓN, S. 1987. **El género Simulium Latreille en la región Neotropical: Análisis de los Grupos Supraespecíficos, Especies que los Integran y Distribución Geográfica (Simuliidae, Diptera)**. Museu Paraense Emílio Goeldi, Coleção Emílio Snethlage, Belém, 111 p.
- COSCARÓN, S. 1991. Insecta, Diptera, Simuliidae. In: Z. A. DE CASTELLANOS (ed.) **Fauna de agua dulce de la República Argentina**. FECIC, Buenos Aires, 38(2): 304 p.
- CROSSKEY, R. W. & T. M. HOWARD. 1997. **A New Taxonomic and Geographical Inventory of World Blackflies (Diptera: Simuliidae)**. London, The Natural History Museum, 144 p.
- D'ANDRETTA, C. J. & D. B. GONZÁLEZ. 1964. Três novas espécies brasileiras de Simuliidae (Diptera-Nematocera). **Memórias do Instituto Butantan** 30: 103-116 [1960-1962].
- MIRANDA-ESQUIVEL, D. R. & S. COSCARÓN. 2001. Cladistic analysis of *Simulium (Trichodagmia)* and *Simulium (Thyrsopelma)* (Diptera: Simuliidae). **Zoological Journal of the Linnean Society** 132: 429-439
- PY-DANIEL, V. & R. T. MOREIRA SAMPAIO. 1994. *Jalacimomyia* gen.n. (Culicomorpha); a ressurreição de Gymnopauidinae; a eliminação do nível tribal; apresentação de novos caracteres e a redescoberta dos estágios larval e pupal de *Simulium colombaschense* (Fabricius, 1787) (Diptera: Simuliidae). **Memorias del Centro Amazônico para Investigación y Control de Enfermedades Tropicales - CAICET** 4: 101-148.
- PY-DANIEL, V. & R. T. MOREIRA SAMPAIO. 1995. Gêneros e espécies de Simuliidae (Diptera: Culicomorpha) assinalados para o Brasil até 1995. **Entomologia y Vectores** 2: 117-121.
- PY-DANIEL, V.; H. G. KONRAD & H. A. O. GASTAL. 1985. Simuliidae (Diptera: Culicomorpha) no Brasil. IV. Descrição das larvas de *Simulium (Psaroniocompsa) brevifurcatum* Lutz, 1910; *S. (P.) anamariae* Vulcano, 1962; *S. (Thyrsopelma) itaunense* d'Andretta & González, 1964. **Iheringia, Série Zoologia**, 65: 95-102.
- STRIEDER, M. N.; E. CORSEUIL & V. PY-DANIEL. 1992. Espécies do gênero *Simulium* (Diptera, Simuliidae) ocorrentes no Rio Grande do Sul - Brasil, com chaves para sua identificação. **Acta Biologica Leopoldensia** 14: 53-74.
- VULCANO, M. A. 1967. A catalogue of the Diptera of the Americas South of the United States, Family Simuliidae. **Papéis Avulsos do Departamento de Zoologia** 16, 44 p.
- VULCANO, M. A. 1977. Simuliidae, p. 285-293. In: H. HURLBERT. (ed.). **Biota Acuática de Sudamerica Austral**. San Diego.