

**WYEOMYIA FORCIPENIS, NEW SPECIES OF MOSQUITO  
(DIPTERA: CULICIDAE) FROM RIO DE JANEIRO, BRAZIL**

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*Wyeomyia forcipenis* sp.n. is described from specimens caught in Jacarepaguá, State of Rio de Janeiro, Brazil. The male genitalia and the chaetotaxy of the pupa and larva are figured. This species is close to *Wy. bourrouli* (Lutz, 1905), being distinguished particularly by the shape of the hind plate of the phallosome.

In the course of a study on mosquito ecology carried out in Rio de Janeiro, Brazil (Lourenço-de-Oliveira, 1984), two species of *Wyeomyia* were collected: *Wy. (Men.) leucostigma* (Lutz, 1905) and another provisionally identified as *Wy. (Den.)* sp. Subsequent study led to the conclusion that the latter is a new species.

The terminology used in this description is that of Belkin, Heinemann & Page (1970) and Harbach & Knight (1980).

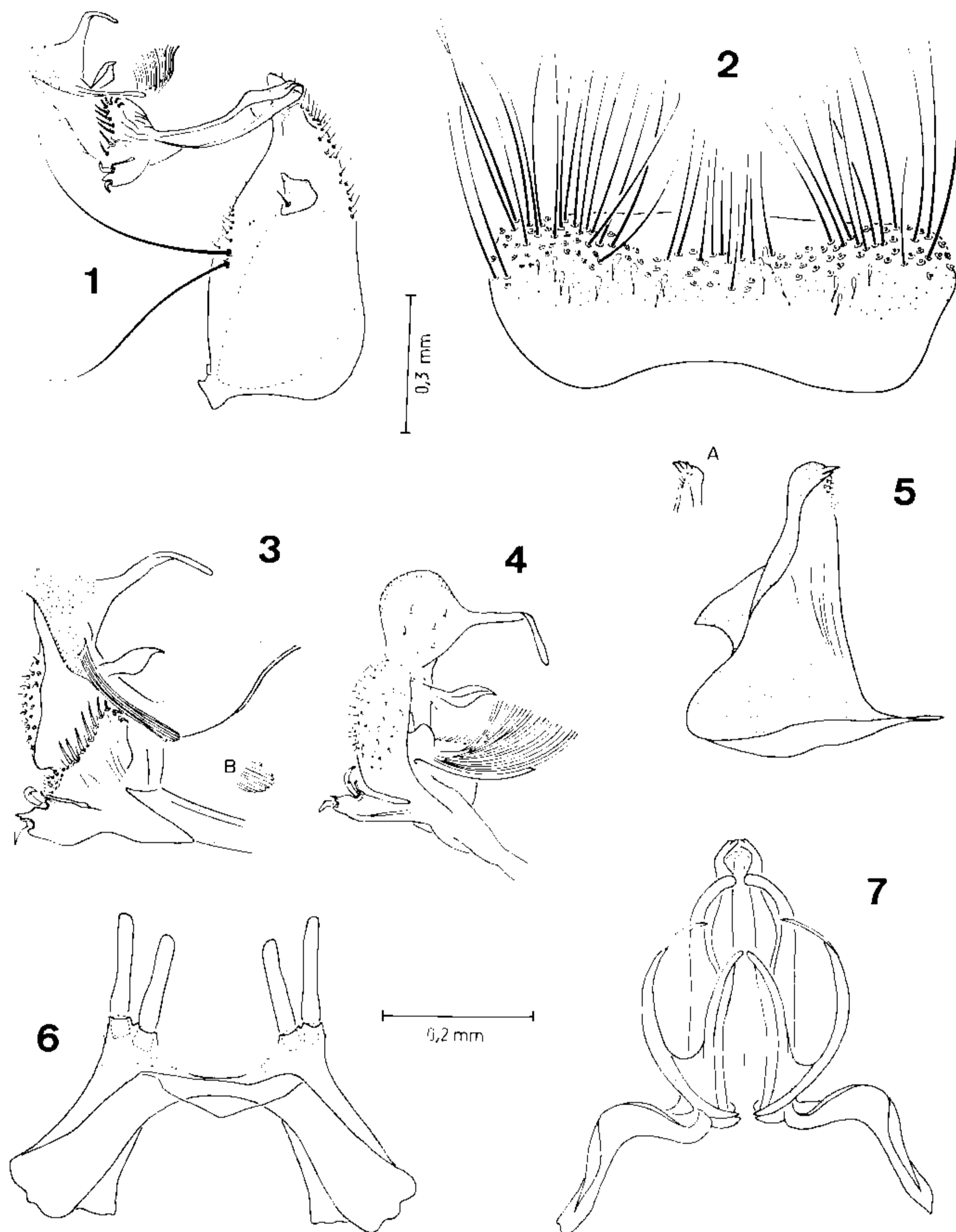
*Wyeomyia (Dendromyia) forcipenis* sp.n. (> *L. forceps* + *penis*)

*Wyeomyia (Den.)* sp.: Lourenço-de-Oliveira (1984); Lourenço-de-Oliveira, Silva & Heyden (1985); Lourenço-de-Oliveira & Silva (1985).

**Female:** *Head.* Vertex with blackish broad decumbent scales; white ones on ocular margin, side of eyes and postgena; two long, strong and dark brown interorbital setae; orbital ones smaller. Proboscis nearly three fourths as long as fore femur, thickened at apex, blackish, with a longitudinal stripe of white scales underneath; eight or more dark brown basal bristles, two or three of them longer. Palpus blackish and a little longer than clypeus. Clypeus ovate, blackish, pruinose and without setae. Antenna – torus blackish and pruinose with some small dark setae internally; flagellum a little smaller than proboscis, slightly plumose. *Thorax.* Ante-pronotum with blackish scales with violet shine on top, and white laterally. Mesonotum with broad, dark brown scales usually dull, few white ones anteriorly; anterior promontory and supra-alar setae well developed, brown; scutellum with scales as on mesonotum, and with about ten setae on each lateral lobe, half of them much smaller; about five long and two small ones on the midlobe. Postnotum from yellowish to darkish brown, with a tuft of brown setae and sometimes with one pale scale. Pleuron with white scales; row of lower mesokatepisternal setae not extending dorsally to ventral border of mesanepimeron; without upper mesokatepisternal setae; mesanepimeron with only the upper row of setae. *Legs.* Dark. Coxae with patches of white scales and pale setae. Femora and tibia with white scales ventrally. Tarsi dark; tarsal claw simple. *Wing.* With broad scales. Squamula nude. *Haltere.* Pedicel white and capitellum dark. *Abdomen.* Dark above, white below, the colors separated on sides in a nearly straight line; setae of the eighth segment long and brown.

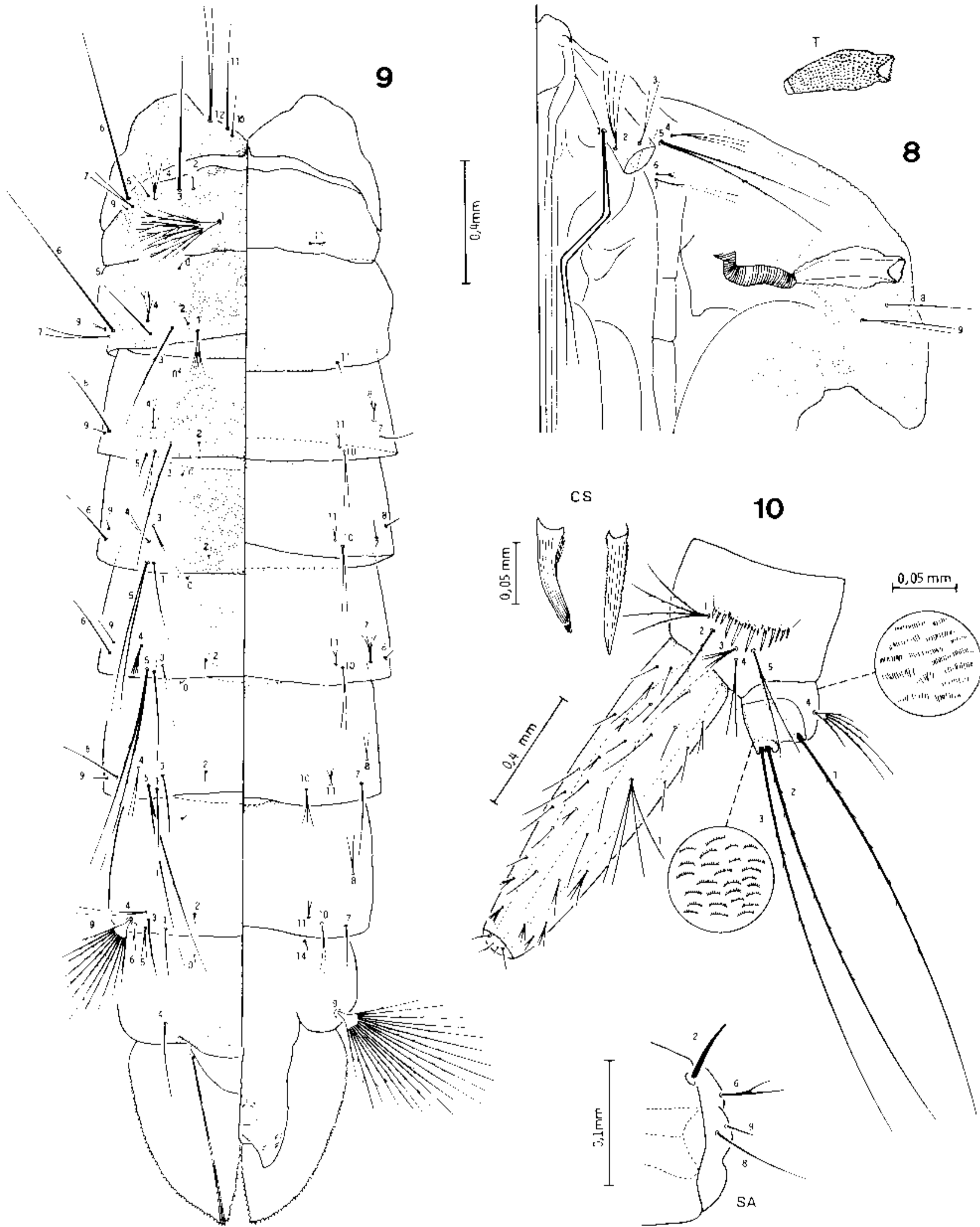
**Male:** In general, as described for female, differing in having more plumose antenna.

**Male genitalia:** (Figs. 1-7). *Segment VIII.* Tergite VIII full of spatulate scales, and with three nearly continuous groups of setae, one central and two lateral. *Segment IX.* Tergite IX with interlobar area concave, lobes eminent, with minute setae mainly on the inner side of the base, having two or three dark, large and blunt setae. *Sidepiece.* Slender, conical, with mixed small setae and scales, mainly at apex of the lateral tergal surface; inner tergal surface with two long setae at about middle and several (about nine) short setae just above them; mesal plate subquadrate, with a point on one of apical angles and having one, or rarely two setae; external surface lengthened at apex by one conical column; beyond the middle of the lateral surface there is a prominent base for an apparently long seta, not seen in the material examined. *Clasper:* Stem curved at about middle;



Figs. 1-7: *Wyeomyia forcipenis* sp.n. 1: sidepiece and clasper; 2: tergite VIII; 3 and 4: views of the apex of the clasper; 5: proctiger; 6: tergite IX; 7: phallosome; A: other view of the apex of the proctiger; B: apex of the fimbriated process of the largest lobe of clasper.

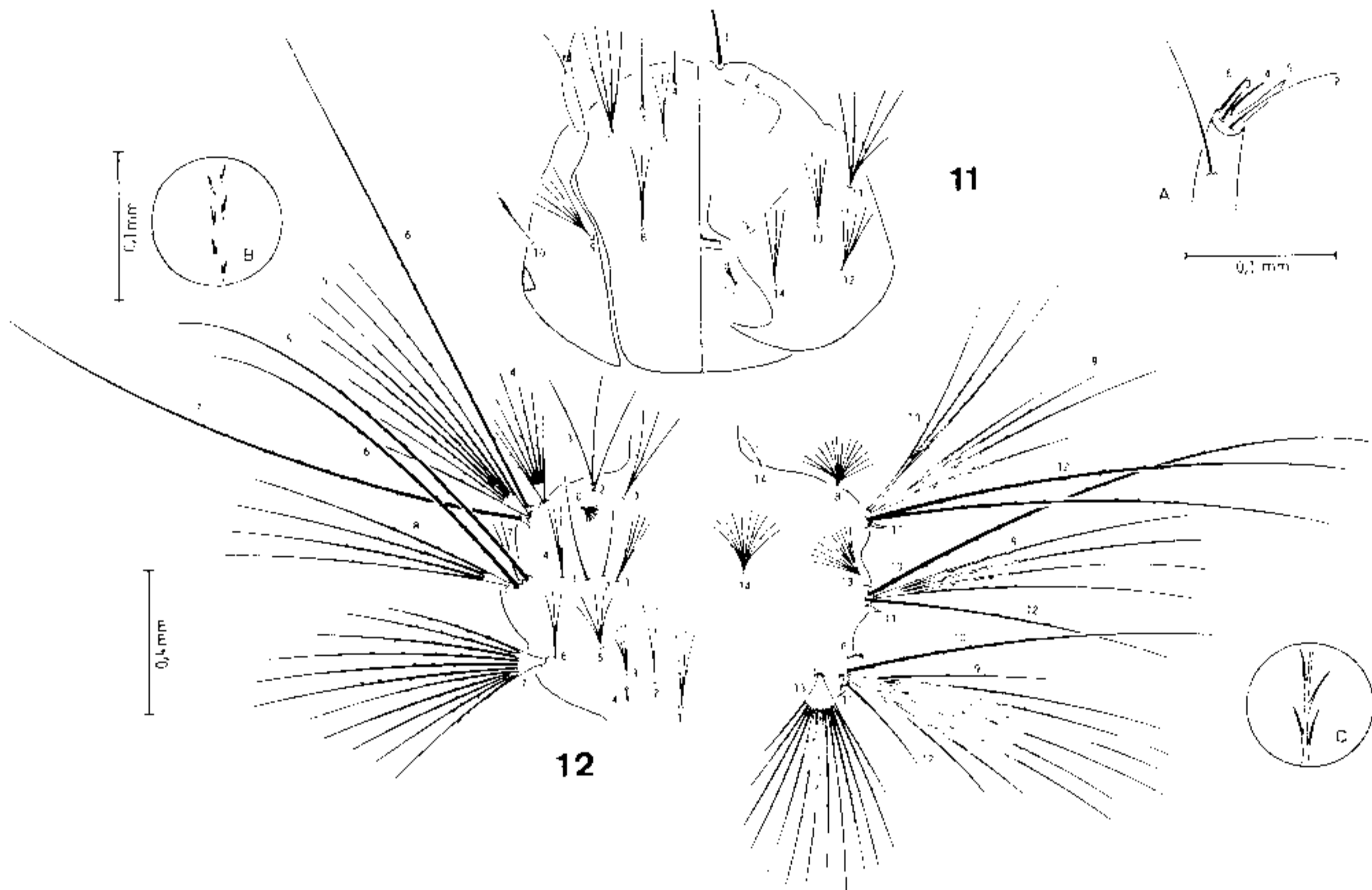
apex with three lobes: one large, fimbriated on external margin and densely spiculate, with three additional processes, one long and slender, one short and foliaceous and the other darker, fimbriated, the apex irregular, as figured; internal lobe smaller, ending in a row of thick spicules and another of slender setae, almost as long as the spicules; near the apex of this lobe there are several minute setae; after one gap there are two or rarely three foliaceous setae and another spiniform seta apically; third lobe tongue-like, fimbriated, recurved, with a big tuft of long and parallel hairs. *Phallosome*. Ovate, the anterior plate toothed at apex, the hind plate longer than the fore one, ending in two claw-shaped plates each with two teeth, forceps like. *Proctiger*. Esclerotized laterally and apically, with three or more internal teeth and two larger terminal ones; with about five minute cercal setae and some spicules.



Figs. 8-10: *Wyeomyia forcipenis* sp.n. 8 and 9: Pupa – Cephalothorax and abdomen. 10: Larva – Segment VIII, siphon and anal segment; T: trumpet; CS: Comb scales; SA: Lateral aspect of spiracular apparatus.

**Pupa:** (Figs. 8-9). General outline and complete chaetotaxy as figured. Pigmentation of cephalothorax and abdomen (segments I to V) dark, usually with a distinct pattern of dark and pale areas. *Trumpet*. Short, pitcher-shaped, strongly dark pigmented; base narrowed nearly half width of pinna; widened beyond middle and narrowing before pinna. *Cephalothorax*. Seta 1-C 2b; 2-C 4b (2-4); 3-C 2-rarely 3b; 4-C 3b (2-4) slightly barbed; 5-C 2b (2-4) barbed; 6-C 2b (1-3) forked; 7-C 2-3b (2-6); 8-C single (1, 2b) barbed; 9-C 2b (1-rarely 3b) barbed. *Metanotum*. Setae 10, 11-C single; 12-C 2b (1-3) slightly barbed. *Abdomen*. Segment I: seta 1-I fanlike with barbed dendritic branches; 2-I 1, 2 forked; 3, 5, 6, 9-I single, seta 3 slightly barbed; 4-I 4b (3-6); 7-I 2b (2-4); 11-I 2-4 forked. Segment II: seta 1-II 4-8b; 2-II 1, 2 forked; 3-II single, slightly barbed; 4-II 4b (3-5); 5, 6-II single, rarely 2b; 6-II sometimes slightly barbed; 7-II 2, 3b; 9, 11-II single (1-3b). Segment III: seta 1-III usually 2b (1, 2); 2, 3, 5, 6, 7-III single, rarely 2b, 3-III slightly barbed; 4, 10, 11-III

2b, sometimes single, 10-III rarely 3b; 8-III dendritic with 2-4b. Segment IV: setae 1, 2, 6, 8-IV single, rarely 2b; 3-IV 3, 4b (2-5); 4-IV 1, 2b; 5-IV 1, 2b, barbed; 7, 9-IV single, 10, 11-IV 2b (1-3). Segment V: setae 1, 6-V, rarely 2b; 2, 8-V single; 3, 11-V 2b (2, 3); 4-V 3, 4b; 5, 10-V 2b, 5-V barbed; 7-V 3, 4b (2-5); 9-V 2b (1-3). Segment VI: setae 1, 2, 9-VI single; 3, 7-VI 2b (1, 2b); 4-VI 3b (2-4); 5, 10-VI 2b (2, 3), 5-VI barbed; 6-VI single, rarely 2b; 8-VI 3b (2-4); 11-VI 2b (1-3). Segment VII: setae 1, 2-VII single; 3-VII usually single (1, 2b), slightly barbed; 4, 7-VII single, 2b; 5-VII 2b (1-3); 6, 11-VII 2b (2, 3), 6-VII rarely single; 8-VII 2b (2-4); 9-VII multi-branched, usually 13 barbed branches (10-13); 10-VII 2b, rarely single. Segment VIII: setae 4, 14-VIII single, 2b, 4-VIII sometimes slightly barbed; 9-VIII multibranched (15-24), barbed. Median caudal lobe darkish brown on male, rarely on female. Seta 0-II-VIII single. *Paddle*. Nearly twice as long as segment VIII, with serrations on both margins; ovate laterally, pointed at apex, pale; midrib strong and darkish. Genital lobe much more pigmented than paddle.

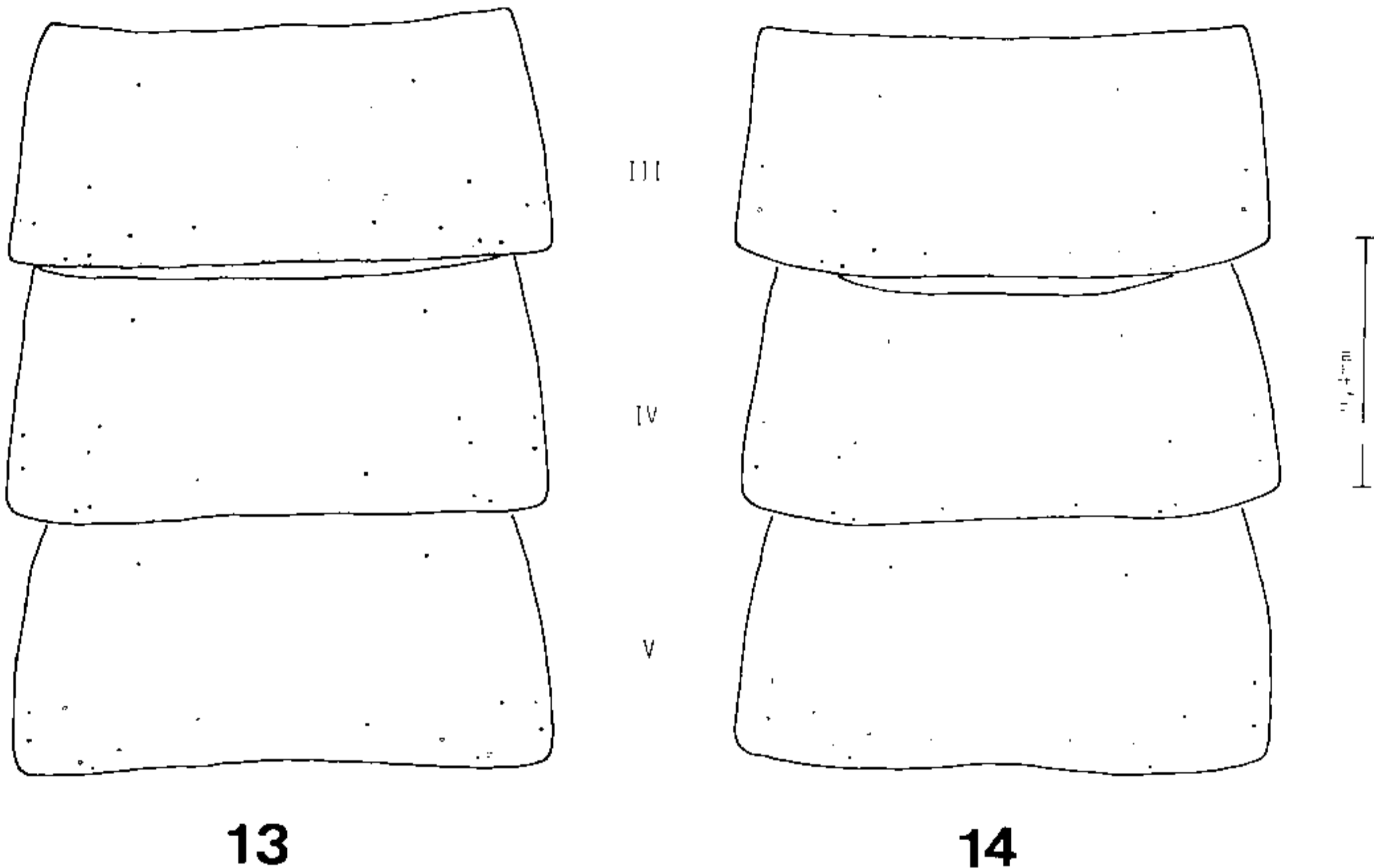


Figs. 11-12: *Wyeomyia forcipenis* sp.n. Larva – Head and thorax. A: apex of the antenna; B and C: aspects of setae 4, 5-P and 7, 13-T (aciculate) basal and distal views, respectively.

**Larva:** (Figs. 10-12). Chaetotaxy as figured. We did not have suitable and good material to describe the complete abdominal chaetotaxy. *Head*. Almost unpigmented to very pale brown; ocular bulge distinct but not large. Seta 1-C spiniform, stout; 0, 3, 4, 6-C single, 0, 3-C slender, 5-C 3b (2-4); 7-C 4b (3-6), slightly barbed; 8-C 3b (3, 4); 9-C 5, 6b (4-8); 10-C 4b (2-4) slender, forked; 11-C 5, 6b, barbed; 12-C 3-5b, slightly barbed; 13-C 3b (3, 4); 14-C 3b (2, 3), barbed; 15-C 4b (2-4); mental plate with 9-11 lateral teeth on each side of median tooth. Antenna short, almost unpigmented, bare; 1-A single, sometimes extending beyond apex of 3-6-A; 2-6-A single. *Thorax*. Nude. Prothorax: Seta 0-P 10-12b, slightly barbed; 1, 3-P 2, 3b, slightly barbed; 4, 5-P 7, 8b, aciculate; 6, 7-P single; 8-P 10-14b, barbed; 9-10-P 3, 4b, barbed; 12-P 2b, barbed; 14-P 2, 3b, barbed. Mesothorax: Setae 1, 4-M 3, 4b, slightly barbed; 2, 3-M single; 5, 6, 10, 12-M single, barbed; 7-M 2, 3b, slightly barbed; 8-M 4b, barbed, 9-M 4, 5b, barbed; 13-M 10-14b barbed, 14-M 10b (8-10). Metathorax: Seta 1-T 3b, slightly barbed; 2-T 2b; 3-T 4-6b; 4-T 2, 3b; 5-T 4, 5b; 6-T 2, 3b; 7-T 11b (11, 12), aciculate (as seta 4-P); 8-T 8, 9b (6-10), slightly barbed; 9-T 8, 9b, barbed; 10, 12-T single, barbed; 13-T 13, 14b, aciculate (as seta 4-P). Seta 11-P, M, T spiniform, sometimes divided. *Abdomen*. Almost nude, but segments II-VII with a distinct band of strong spicules anteriorly. Segment VIII: Seta 1-VIII 4, 5b, barbed; 2-VIII single, barbed; 3-VIII 4-7b; 4, 5-VIII 2, 3b, barbed. Comb scales on a weakly sclerotized spiculose plate with about ten large, elongate scales on posterior row; one or two anterior irregular rows of short, small scales, all of them with a

fringe of fine spicules. *Siphon*. Siphon index nearly 5; pigmentation yellowish; false pecten absent; single and two to four branched hair on all aspects; near apex almost all are two or three branched; all of them are barbed. Seta 1-S before middle, 3b (2-4), barbed; 2, 8, 9-S single; 6-S 2-4b. *Anal segment*. Integument densely pilose (as figured); saddle little more pigmented than siphon, posterior caudal margin without spine-like spicules; setae 1, 2, 3-X single; 4-X 4-7b; all setae barbed.

**Type data:** Holotype ♂ with genitalia and associated pupal and larval skins; Granjas Calábria (23°00'S and 43°26'W), Jacarepaguá, Rio de Janeiro, Brazil; sea level, 8 April 1982, Ricardo Lourenço-de-Oliveira col.; deposited in the Entomological Collection of Instituto Oswaldo Cruz, Rio de Janeiro, Brazil (IOC). Allotype ♀ with associated pupal and larval skins; other data and depository same as holotype except 11 March 1982. Paratypes: three males, same data as holotype (IOC) except 27 January 1982; one male, with genitalia and pupal skin, other data same as holotype except 28 January 1982 (IOC); one male, same data as holotype except 28 August 1981, deposited in Departamento de Epidemiologia, Faculdade de Saúde Pública, Universidade de São Paulo, São Paulo, Brazil (FSP); two females, same data as allotype except 11 March 1982 (IOC); one female, same data as allotype except 4 March 1982 (FSP); one male, same data as holotype except 11 March 1982 (IOC); two males, same data as holotype (IOC).



Figs. 13-14: Outline of pupal pigmentation of *Wyeomyia forcipenis* sp.n. (13) (from type locality) and *Wyeomyia bourrouli* (14) (from Santa Tereza – Espírito Santo State and Represa do Cigano, Rio de Janeiro, Rio de Janeiro State).

**Distribution:** Known from the city of Rio de Janeiro, Rio de Janeiro State, Iguape and Pedro de Toledo, São Paulo State, Brazil.

**Material examined:** *Wy. forcipenis* - 11 males, 30 females, 10 males genitalia, 28 pupal and 17 larval skins.

**Taxonomic discussion:** *Wy. forcipenis* sp.n. is closely related to *Wy. bourrouli* (Lutz, 1905). Based on the description on the latter made by Lane (1953), Bruijning (1959) and Clastrier (1974) and on specimens identified by Lane & Cerqueira (no. 2752 ♂ – slide 685 G, 21-IV-1940; 2753 ♀ – slide 686 Pe Le, 5-V-1940, Santa Tereza – Espírito Santo State, Brazil – FSP) and by ourselves (no. 556 and 562 ♂♂, Pe G, 27-VII-1984, Represa do Cigano, Tijuca National Park, Rio de Janeiro State – IOC), we found some differences in larval, pupal and male genitalia features, but were not able to detect them on adult males and females. The differences in the pupal pigmentation of *Wy. forcipenis* sp.n. and *Wy. bourrouli* are presented in Figs. 13 and 14. In *Wy. forcipenis* sp.n. the basis of setae 4-III, 5-III and 2-IV are included in the pigmented area; in *Wy. bourrouli* these setae are outside of it, seta 2-IV being on rare occasions slightly surrounded by the pigmentation. Segment V in *Wy. bourrouli* is unpigmented dorsally, rarely with slightly brown pigment

near the base. Almost all *Wy. forcipenis* sp.n. examined had dark pigmentation on this segment. *Wy. bourrouli* has only single setae on larval siphon, except seta 1-S and few others near apex. Besides other differences, the principal character found to be reliable for separating these two species is the hind plate of phallosome, forceps-like in *Wy. forcipenis* sp.n.

*Wy. bourrouli* has been found in the interior or/and in the mountains (Teresópolis – Rio de Janeiro State, Itaici – São Paulo State, Santa Tereza – Espírito Santo State, Brazil; Saint Laurent du Maroni, French Guiana). We have caught *Wy. bourrouli* and *Wy. forcipenis* sp.n. in the same county (Jacarepaguá), but *Wy. bourrouli* was present in the mountains (Represa do Cigano – Tijuca Massif) and *Wy. forcipenis* sp.n. at the seashore lowland (Granjas Calábria – see Lourenço-de-Oliveira, 1984, Fig. 1). We examined some *Wyeomyia* specimens collected in Iguape and Pedro de Toledo (São Paulo State, Brazil, at sea level – FSP) and found them to be *Wy. forcipenis* sp.n., but their pupal pigmentation and siphonal setae are different from *Wy. forcipenis* sp.n. from the type locality. This material shall be studied latter.

## RESUMO

*Wyeomyia forcipenis* sp.n. é descrita de espécimes coletados em Jacarepaguá, Rio de Janeiro, Estado do Rio de Janeiro. A genitália masculina e a quetotaxia da larva e da pupa são ilustradas. Esta espécie é próxima de *Wy. bourrouli* (Lutz, 1905), sendo distinguida particularmente pelo aspecto da placa posterior do falosoma.

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