

A NEW SPECIES OF *CULEX (MELANOCONION)* FROM ATLANTIC TROPICAL SYSTEM OF SOUTHERN BRAZIL (DIPTERA: CULICIDAE)

OSWALDO PAULO FORATTINI & MARIA ANICE MUREB SALLUM

Departamento de Epidemiologia, Faculdade de Saúde Pública da Universidade de São Paulo, Av. Dr. Arnaldo, 715, 01255 São Paulo, SP, Brasil

The male adult of Culex (Melanoconion) anoplicitus, a new species from Southern Tropical Atlantic System of Brazil, South America, is described and illustrated. Identification may be made by characteristic morphological aspects of genitalia which are peculiar to this species.

Key words: *Culex anoplicitus* – Culicidae – *Culex* – *Melanoconion* s. gen.

Continuing studies on *Culex (Melanoconion)* mosquitoes of Southern Brazil, provided a chance to find a species that proves to be very characteristic and distinctive from others previously described. We take this opportunity to describe and name it.

For the description the terminology utilized is that of Harbach & Knight (1980), except for venational terms which follow those of Belkin (1962).

Culex (Melanoconion) anoplicitus, sp. n.

MALE – Small, body dark almost entirely clothed by dark brown scales. *Head* – Antenna dark, strongly plumose with length about 1.31 mm. Proboscis dark-scaled. Maxillary palpus entirely dark; length about 1.34 mm, equivalent to proboscis; palpomeres 4 and 5 scarcely setose; palpomere 3 with 1, 2 long setae on apex. Vertex with broad spatulated pale greyish scales, covering to some extent from the margin of the apex to inside, where there are falcate pale greyish scales; forked scales pale brown; occipital region with whitish falcate scales. *Thorax* – Integument brown. Scutum covered by very fine falcate scales uniform in size and color, bronzy with discrete golden reflections; scutal setae developed, brownish with reddish reflection; acrostichal setae absent. Scutellar scales similar to scutal

ones; lateral lobes with 2,3 large setae each, median lobe with 6 large setae. Anteprepronotum without scales, with scattered dark setae of different lengths. Postprepronotum with scales similar to scutal ones, posterodorsal margin with 3, 4 dark setae. Pleural setae pale brownish with golden reflections, little darker on prealar knob: about 5 upper proepisternal, 2, 3 prealar, 5-8 upper mesokatepisternal, 4-7 lower mesokatepisternal, 2, 3 upper mesepimeral and 1 lower mesepimeral. Pleura without scales. *Wing* – Length about 1.90 mm; cell R_2 nearly 5.0 of $R_2 + 3$; cell M_2 about 0.7 of cell R_2 ; subcosta intersects costa at level of $R_2 + 3$ furcation. Dorsal scaling: appressed spatulate scales on costa, subcosta, R, R_1 , $R_4 + 5$, distal 0.5 of $M_1 + 2$, $M_3 + 4$, Cu, Cu_1 , Cu_2 and 1A where they are slender on distal 0.4; linear plume scales on R_s , $R_2 + 3$ and on M; inclined narrow spatulate scales on R_2 , R_3 and on proximal 0.5 of $M_1 + 2$. Ventral scaling: appressed spatulate scales on costa, subcosta, R_s , $R_2 + 3$, R_2 , R_3 , M and on proximal 0.5 of M_1 ; linear plume scales on proximal 0.3 of R_1 , proximal 0.4 of $R_4 + 5$, Cu_1 , Cu_2 and on 1A; inclined narrow spatulate scales on distal 0.7 of R_1 , distal 0.6 of $R_4 + 5$, distal 0.5 of M_1 and on M_2 ; Cu and proximal 0.5 of 1A devoid of scales. *Halter* – Scabellum and pedicel pale; capitellum dark. *Legs* – Anterior surface of forecoxa dark-scaled; anterior surfaces of mid- and hindcoxae with longitudinal patch of almost colorless scales. Antero- and posteroventral surfaces of foretrochanter dark-scaled; mid- and hindtrochanters with antero- and posteroventral surfaces pale-scaled. Fore- and midfemora mainly dark-scaled, posterior surface of forefemur with indistinct longitudinal stripe of dingy pale scales, posteroventral

Supported by Grant 86/0966-3, Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP) and Grant MVR-BR-2-84-6, National Academy of Sciences, USA.

Received September 5, 1988.

Accepted October 14, 1988.

surface of midfemur with dingy pale scales; hindfemur with complete dark dorsal stripe, gradually widening distally and expanding on anterior and posterior apex surfaces. Tibiae and tarsi entirely dark-scaled. *Abdomen* – Tergum I with small patch of dark scales on postero-medial surface; terga II, III entirely dark-scaled; terga IV-VI with basolateral white patches; tergum VII not examined; tergum VIII (ventral in position) entirely dark-scaled and without evident V-shaped median posterior emargination (Fig.). Sterna II, VII not examined; sternum III with basolateral white patches; sterna IV-VI with basal white bands; sternum VIII (dorsal in position) not examined. *Genitalia* (Fig.) – Tergal IX lobes conspicuous, nearly triangular outlined, hyaline, medially approximated and apically separated, attached to tergum by an arch-shaped chitinized plate; lobes bearing developed setae inserted on small tubercles, the outer ones longer than the inner. Gonocoxite stocky, ovoid shaped, outer margin convex, inner moderately convex; ventrolateral surface with strongly developed setae mixed with slender others, medial surface with small setae in indistinct rows, extending from base to level of subapical lobe, lateral surface with small patch of long and slender setae (*Isp*) at apical region near subapical lobe, dorsomedial margin with some minute setae, proximal part of ventrolateral surface with scales; subapical lobe clearly divided, divisions distinctly separated; proximal division subdivided in 2 divergent arms, nearly equal in length, with 1 long apical sinuous seta (*a* and *b*) each; distal division with 8 apical setae, 1 long hooked seta (*h*), 1 short and 1 long saberlike seta (*s*), 1 broad asymmetrical leaf-like seta (*l*), 2 narrow appressed foliform setae (*f*), 1 foliform longer bract lily-like seta (*f*) and 1 short stiff saberlike seta (*s*). Gonostylus slender, curved and distally widened on lateral side, ventral surface with small lapel-shaped fold laterally directed and a reduced minutely wrinkled crest before apical snout and a small thin fold apically placed, bearing minute serrulate border; gonostylar claw short, leaf-like, subapical in position. Phallosome with lateral plate longer than aedeagal sclerite that is narrow and curved in lateral view, with anterior margin thickened and sclerotized, dorsal end narrowly fused to base of lateral plate; distal part of lateral plate with apical and lateral processes, apical process broad at base, curved at apex and bent laterally, lateral process short and broad dorsolaterally directed and with

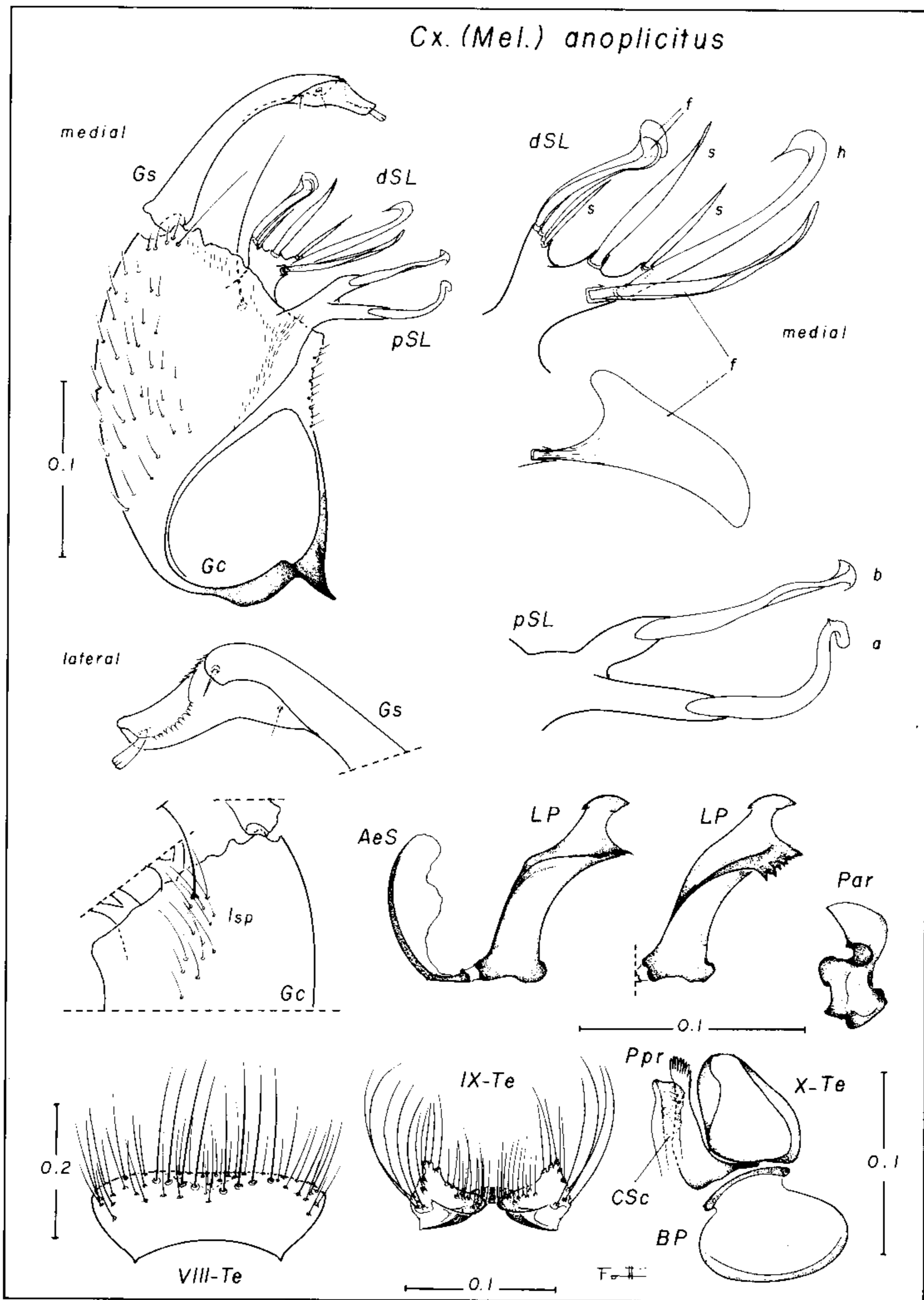
serrulate apical border, ventral process not developed; base of lateral plate with stout dorsal process and basally continuous with thickened margin of aedeagal sclerite that is not connected by dorsal aedeagal bridge. Proctiger elongate; paraproct distally narrowed, basally expanded at the articulation with the basal plate and the posterolateral margin of tergum X, crown with row of almost 9 short simple blades; cercal sclerite long, narrow and lightly sclerotized, basally broadest; 1,2 small cercal setae; tergum X large, concavo-convex with dorsal surface concave, somewhat ovoid outlined.

MATERIAL EXAMINED – A total of 5 adult specimens were examined. *Holotype*: male collected in Vilarinho, Itapitanguí, Cananéia County, São Paulo State, Brazil, 8.III.1983, Coll. O. P. Forattini et al. This adult was collected by Shannon type trap and is deposited in the Entomological Collection of the Department of Epidemiology, School of Public Health, University of São Paulo, Brazil (FSP-USP), (no. E-7862). *Paratypes*: 3 males from Folha Larga Farm, Itapitanguí, Cananéia County, São Paulo State, Brazil, 30.V.1984, Coll. O. P. Forattini et al.; 1 male genitalia without associated adult, from the same locality, 27.II.1985, Coll. O. P. Forattini et al. These specimens were collected by aspiration technique, three of them are deposited in the FSP-USP (nos. E-7863 – E-7865), the other deposited in the National Museum of Natural History, Smithsonian Institution, Washington, DC, USA.

DISTRIBUTION AND BIONOMICS – *Culex anoplicitus* seems to be an uncommon species, nowadays known from only the type-locality in Southern Brazil. Nothing is known about its bionomics.

DISCUSSION – *Culex anoplicitus* is named for a peculiar character of the male genitalia, that is the gonostylus apex with a peculiar fold, hyaline and serrulated, placed near the snout. The description of this species, even though based on only four adult male specimens and one male genitalia, clearly shows very distinctive aspects.

The adult of *anoplicitus* shows, to some extent, resemblance with the species of Saranaccensis Group of the Melanoconion Section of Sirivanakarn (1982), by its small size and maxillary palpus length equivalent to that of proboscis. Notwithstanding, this species bears



Culex (Mel.) anoplicitus sp. n. - Abbreviations used: a - seta *a* of pSL; AeS - aedeagal sclerite; b - seta *b* of pSL; BP - basal piece; dSL - distal division of subapical lobe; f - flat or foliiform seta; Gc - gonocoxite; Gs - gonostylus; h - hooked seta; l - leaf; LP - lateral plate; lsp - lateral setal patch; Par - paramere; ppr - paraproct; pSL - proximal division of subapical lobe; s - saberlike seta; VIII-Te - tergum VIII; IX-Te - tergum IX.

morphologic characters of male genitalia, as lateral plate without the ventral process, that brings it near the species of Conspirator Group too, from which it may be easily distinguished by others characters. The tergum IX lobes shape and setae that it bears, the aspect of tergum VIII unprovided of the V-shaped incision. The gonostylus is characteristic, with the triangular fold on ventral surface and the thin apical fold with serrulate border, and the subapical position of the gonostylar claw. The aspects of subapical lobè of the gonocoxite are characteristic too, mainly the shape and disposition of *l* and *f* setae of the distal division, and the aspects of *lsp* setal patch on the lateral surface of the gonocoxite.

RESUMO

Nova espécie de *Culex (Melanoconion)* do sistema tropical atlântico meridional do Brasil

(Diptera: Culicidae) – Descreve-se e ilustra-se o macho de *Culex (Melanoconion) anoplicitus*, como espécie nova encontrada no sistema tropical atlântico do sul do Brasil, América do Sul. Sua identificação pode ser feita com segurança, graças a aspectos morfológicos da genitália e que lhe são peculiares.

Palavras-chave: *Culex anoplicitus* – Culicidae –
Culex – *Melanoconion* s. gen.

REFERENCES

- BELKIN, J. N., 1962. *The mosquitoes of the South Pacific (Diptera: Culicidae)*. Berkeley and Los Angeles, University of California Press.
- HARBACH, R. E. & KNIGHT, K. L., 1980. *Taxonomists' glossary of mosquito anatomy*. Marlton, NJ, Plexus Publishing.
- SIRIVANAKARN, S., 1982. A review of the systematics and a proposed scheme of internal classification of the New World subgenus *Melanoconion* of *Culex* (Diptera: Culicidae). *Mosq. Syst.*, 12: 7-14.