

A NEW SPECIES OF *CULEX (MELANOCONION)* FROM THE AMAZONIAN REGION (DIPTERA: CULICIDAE)

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Culex (Melanoconion) eknomios, a new species from Amazonian region is described, including the adult, pupal and larval stages. Available data about distribution and bionomics are presented.

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

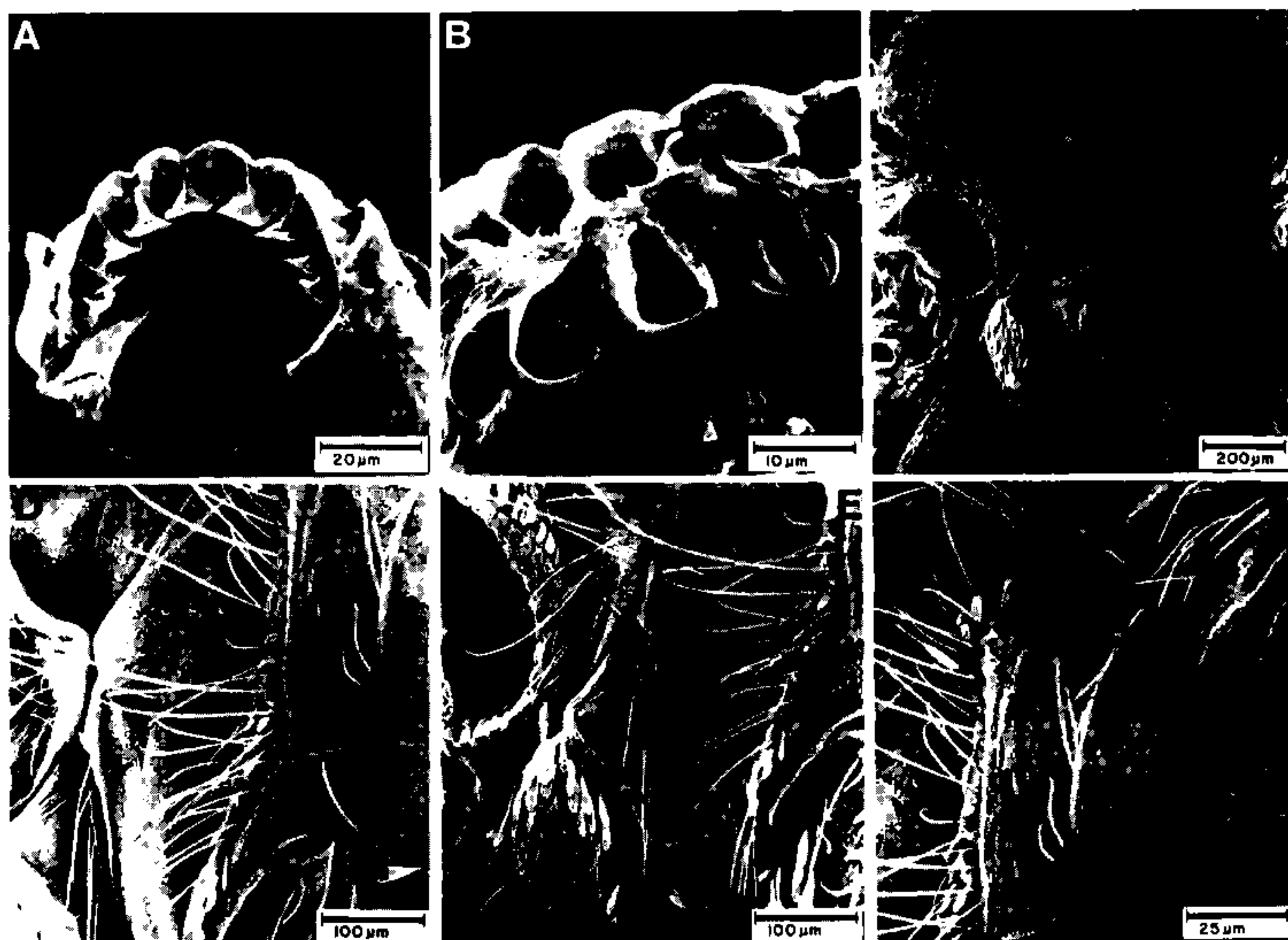
Several specimens, formerly identified as *Culex (Melanoconion) educator* and *Cx. (Mel.) spissipes*, were found in the Entomological Collection of the School of Public Health of the University of São Paulo, Brazil. More detailed study of this material lead to the conclusion that it was misidentified and the specimens belong to an unknown species. Besides, it was possible to study specimens from several other localities of the Amazonian region. So such material provided the opportunity of describing a new species as follows.

For the descriptions, the terminology utilized is that of Harbach & Knight (1980), except for the wing veins which follow Belkin (1962). For some hitherto unnamed pleural setae new terminology was established.

Culex (Melanoconion) eknomios sp. n.

FEMALE – Body dark, clothed by dark brown and golden scales. *Head* – Antenna dark, length about 1.80 mm; flagellum normal, whorls normally with 6 setae. Proboscis entirely dark-scaled; length about 1.43 – 1.54 mm, mean 1.49 mm. Maxillary palpus entirely dark-scaled; length about 0.24 – 0.26 mm, mean 0.25 mm, about 0.17 of proboscis length, with small palpomere 5 in the two mounted specimens. Vertex with broad spatulate scales, these dark dorsally, dingy white laterally; forked

scales dark; occipital region with some white falcate scales. *Cibarial armature* (Figs 1-A, B; 3) – Dorsal surface arched. Cibarial bar wide, posterior margin regularly shaped as a series of flat archs; about 7-9 cibarial teeth, plate shaped, attached by a posterior expansion to the cibarial bar. Cibarial dome nearly pentagonal, concave-convex, surface with long, triangular, sharply pointed, posterior directed denticles. *Thorax* (Figs 1C-F) – Integument dark brown. Scutum covered by falcate scales, anterior two-thirds largely golden-scaled, sometimes with small patch of dark scales on scutal fossal surface and some scattered on acrostichal area, posterior third dark-scaled. Scutal setae conspicuous (acrostichal setae absent), brownish black with golden or reddish reflections. Scutellar scales as scutal scales, golden on lateral and entirely golden or mixed with small number of dark scales on median lobe; lateral lobes each with 4,5 large setae, median lobe with 8 large setae. Antepnotum without scales; with evenly dispersed dark and golden setae. Postpronotum with falcate golden scales; with 4,5 dark setae on posterodorsal margin. Pleural setae light golden, darker on prealar knob: about 11-20 upper proepisternal (one of them darker than the others), 0-4 postprocoxal (PoS), 5-9 prealar, 14-21 upper mesokatepisternal, 16-21 lower mesokatepisternal, 1-13 anterior mesokatepisternal (MkSA), frequently with alveolus only, 10,11 upper mesepimeral and 3-7 lower mesepimeral. Pleura with scales on mesokatepisternum only: a patch of white scales on upper corner and on lower posterior border. *Wing* – Length 2.73-2.80 mm, mean 2.78 mm; dark-scaled; cell R_2 4.55-5.49 of R_{2+3} , mean 5.02; cell M_2 0.81 of cell R_2 ; subcosta intersects costa at level of furcation



of R_{2+3} . 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 , basal 0.5 of 1A; linear plume scales on R_s , R_{2+3} and on M; inclined narrow spatulate scales on R_2 , R_3 , proximal 0.5 of M_{1+2} and distally on 1A; remigium with appressed spatulate scales and 2-4 distal setae. Ventral scaling: appressed spatulate scales on costa, subcosta, R_s , R_{2+3} , base of R_2 , base of R_3 , M and on proximal 0.3 of M_{1+2} ; linear plume scales on proximal 0.5 of R_1 , proximal 0.5 of R_{4+5} , Cu_1 , Cu_2 and on middle of 1A; inclined narrow spatulate scales on distal 0.5 of R_1 , R_2 , R_3 , distal 0.5 of R_{4+5} , distally on M_{1+2} , M_{3+4} and distally on 1A; 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 surface of mid- and hindcoxae with longitudinal patch of nearly colorless scales. Antero- and posteroventral surfaces of foretrochanter dark-scaled, midtrochanter with anteroventral surface dark-scaled, posteroventral surface pale-scaled, hindtrochanter with

antero- and posteroventral surfaces pale-scaled. Fore- and hindfemora mainly dark-scaled, posterior surface of forefemur with indistinct longitudinal stripe of dingy pale scales, posteroventral surface of midfemur with dingy pale scales, hindfemur with complete dorsal stripe of dark scales distally widening and expanding onto anterior and posterior surfaces at apex; fore-, mid- and hindknees white-scaled. Tibiae and tarsi entirely dark-scaled. *Abdomen* – Tergum I with median posterior patch of dark scales; terga II-VII dark-scaled with basolateral patches of white scales; tergum VIII mostly dark-scaled, sometimes with small number of white scales laterally. Sterna II-VII with broad basal white bands; sternum VIII usually with white scales centrally, dark laterally. *Genitalia* (Fig. 3) – Tergum IX narrowed in middle, lobes each bearing 7-13 setae. Upper vaginal lip narrow, distinct; lower vaginal lip and insula indistinct; about 11, 12 insular setae in cluster. Upper vaginal sclerite distinct, inverted U-shaped, chitinized. Postgenital lobe short, trapezoid in outline, rounded distally,

with 8, 9 setae on either side of midline, setae mostly on ventral surface.

MALE – Like female except for sexual differences as follows. *Head* – Antenna strongly plumose, length about 1.39 mm. Proboscis entirely dark. Maxillary palpus dark, length about 2.05 mm, extending beyond tip of proboscis by about apical 0.5 of palpomere 4 and palpomere 5; palpomeres 4 and 5 densely setose; palpomere 3 with 6-8 setae at apex. *Abdomen* – Tergum II with minute basolateral white patches; tergum III-VII with basolateral white patches; tergum VIII (ventral in position) with basolateral white patches and deep V-shaped median posterior emargination (Fig. 2). Sterna with basal white bands; sternum VIII (dorsal in position) with basolateral white patches. *Genitalia* (Fig. 2) – Tergum IX-lobes small, cone shaped, connected by a bridge slightly curved and shorter than the lobe width, bearing sparse setae arranged in irregular rows. Gonocoxite stocky, outer margin convex, inner moderately concave, ventrolateral surface with strongly developed setae, mesal surface with small setae in indistinct rows extending from base to level of subapical lobe, lateral surface with sparse patch of short setae at level of subapical lobe, proximal part of ventrolateral surface with scales; subapical lobe clearly divided, divisions distinctly separated, proximal division subdivided in 2 arms, basal arm shorter, each with 1 long apical sinuous setae (*a* and *b* setae); distal division with 8 apical setae, 1 long hooked seta (*h*), 1 short and 1 long saberlike setae (*s*), 1 wide asymmetrical foliform seta (*l*), 4 narrow appressed flat setae dissimilar in length (*f*). Gonostylus slender, curved and moderately widened distally on lateral side, crest slightly wrinkled on ventral surface before apical snout; gonostylar claw short, leaf-like, broadest apically. Phallosome with lateral plate and aedeagal sclerite equivalent in length; aedeagal sclerite narrow and curved in lateral view, anterior margin thickened and sclerotized, dorsal end fused to base of lateral plate; distal part of lateral plate with apical, ventral and lateral processes, apical process small, triangular in outline, broadest at base, apex with some small teeth, margin between ventral process and the tip of apical process strongly concave, ventral process long and strongly curved laterally, lateral process shorter, nearly pointed and directed dorso-laterally; base of lateral plate with stout dorsal process, base of this process continuous with

thickened margin of aedeagal sclerite, aedeagal sclerites not connected by dorsal aedeagal bridge. Proctiger elongate; paraproct distally narrowed, basally expanded, base articulated with posterolateral margin of tergum X, crown with row of about 8-10 short, simple blades. Cercal sclerite long and narrow, sclerotized, broadest basally; 1 small cercal setae. Tergum X large, somewhat rectangular, concave-convex, dorsal surface concave.

PUPA (Fig. 3) – General chaetotaxy as figured; range and modal number of branches presented in Table I. *Cephalothorax* – Moderately tanned, scutum, mesothoracic wing, metathoracic wing and legs with unevenly darker spots. Setae 1,3-CT usually with 5 branches; 2-CT with 5-8 branches; 4,5,8,12-CT frequently with 4 branches (2-7); 6,9-CT normally double; 7-CT triple or with 4 branches; 10-CT multiple, often with 11 branches (9-16); 11-CT single. *Trumpet* – Moderately tanned; slender, cylindrical; index 4.72-5.32, mean 4.96; tracheoid area darker, extending about 0.5 from base; pinna large, about 0.29 of trumpet length, lateral margin with a small notch; meatus with short slit. *Abdomen* – Moderately tanned; length 2.21-2.79 mm, mean 2.52 mm. Seta 1-III-V multiple; 2-III-V small and single, mesal to seta 1, 2-VI,VII variable in position, lateral or occasionally mesal to seta 1; 3-I single, 3-II double, 3-III usually double (1-3); 5-IV-VI shorter than length of following tergum, 5-IV with 6-12 branches, 5-V usually with 5 branches (4-6), 5-VI frequently with 4 branches, rarely with 5(3-5); 6-III,IV,VI usually with 5 branches, 6-V normally with 4 branches (3-6); 9-VII often with 5 branches (4-7), 9-VIII commonly with 6 branches (5-8). *Genital lobe* – Lightly pigmented in female, darker in male, length about 0.14 in female, 0.32 in male. *Paddle* – Lightly tanned, midrib and buttress darker; midrib strong except at apex, buttress strong only at base; margins smooth; length 0.65-0.76 mm, mean 0.71 mm, width 0.48-0.55 mm, mean 0.51 mm, index 1.29-1.52, mean 1.42. Seta 1-P usually single, rarely double; 2-P about 0.3 length of 1-P.

LARVA (Fig. 4) – General chaetotaxy as figured; range and modal number of branches presented in Table II. *Head* – Wider than long; length 0.56-0.63 mm, mean 0.59 mm; width 0.99-1.02 mm, mean 1.00 mm; moderately tanned, area of lateralialia around compound eyes

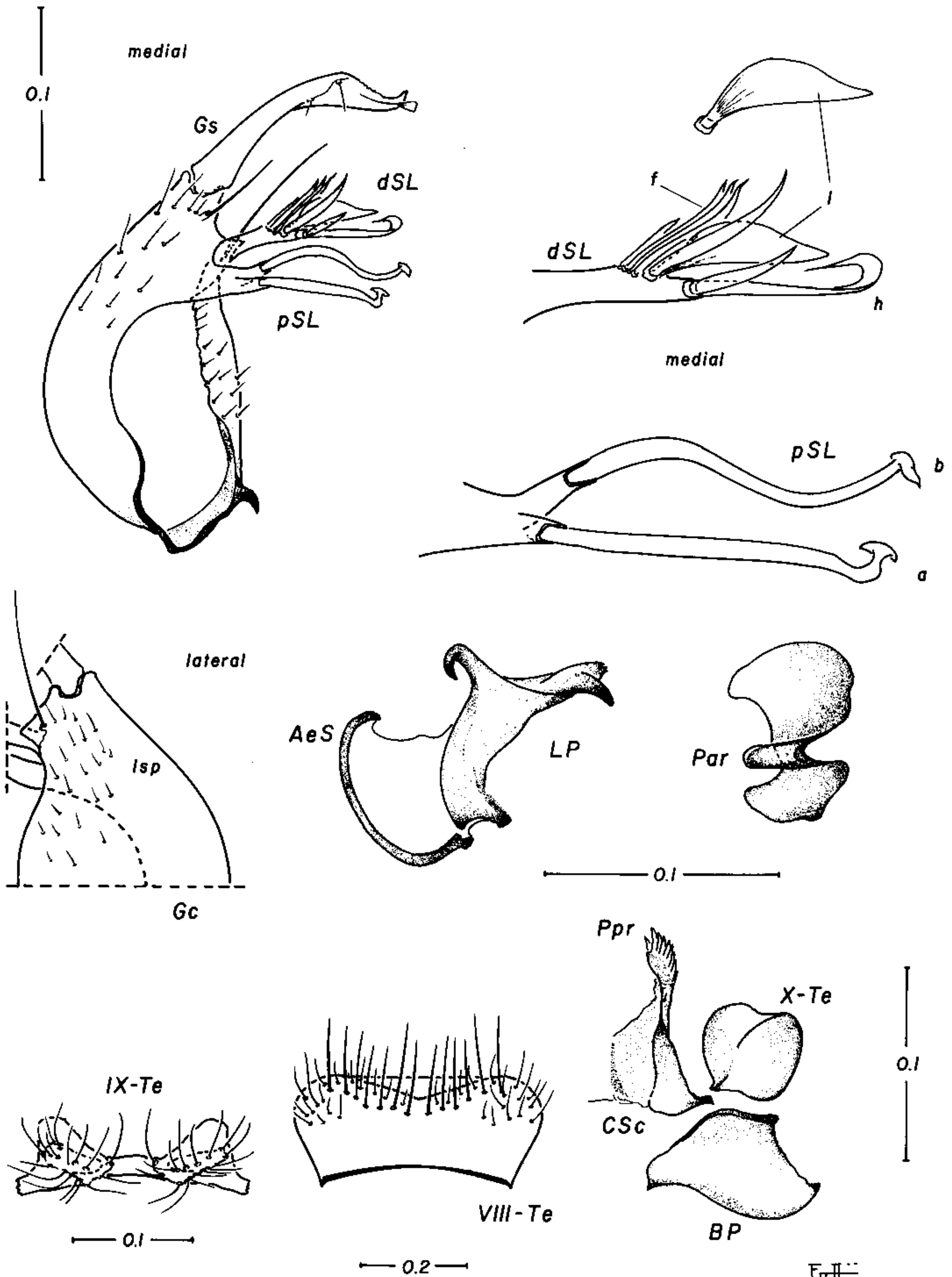


Fig. 2: *Culex (Mel.) eknomios* sp. n. male genitalia - a: seta *a* of pSL. AeS: aedeagal sclerite. b: seta *b* of pSL. BP: basal piece. CSc: cercal sclerite. dSL: distal division of subapical lobe. f: flat seta of dSL. Gc: gonocoxite. Gs: gonostylus. *l*: leaf. lsp: lateral setal patch. LP: lateral plate. Par: paramere. Ppr: paraproct. pSL: proximal division of subapical lobe. VIII-Te: tergum VIII. IX-Te: tergum IX. X-Te: tergum X.

lighter. Median labral plate dorsally distinct, anterior margin slight concave between insertions of seta 1-C. Labiogula larger than broad, broader posteriorly; hypostomal suture com-

plete, extended posteriorly from posterior tentorial pit to collar. Collar poorly developed, heavily pigmented. Dorsomentum nearly triangular with a large median tooth and 4,5

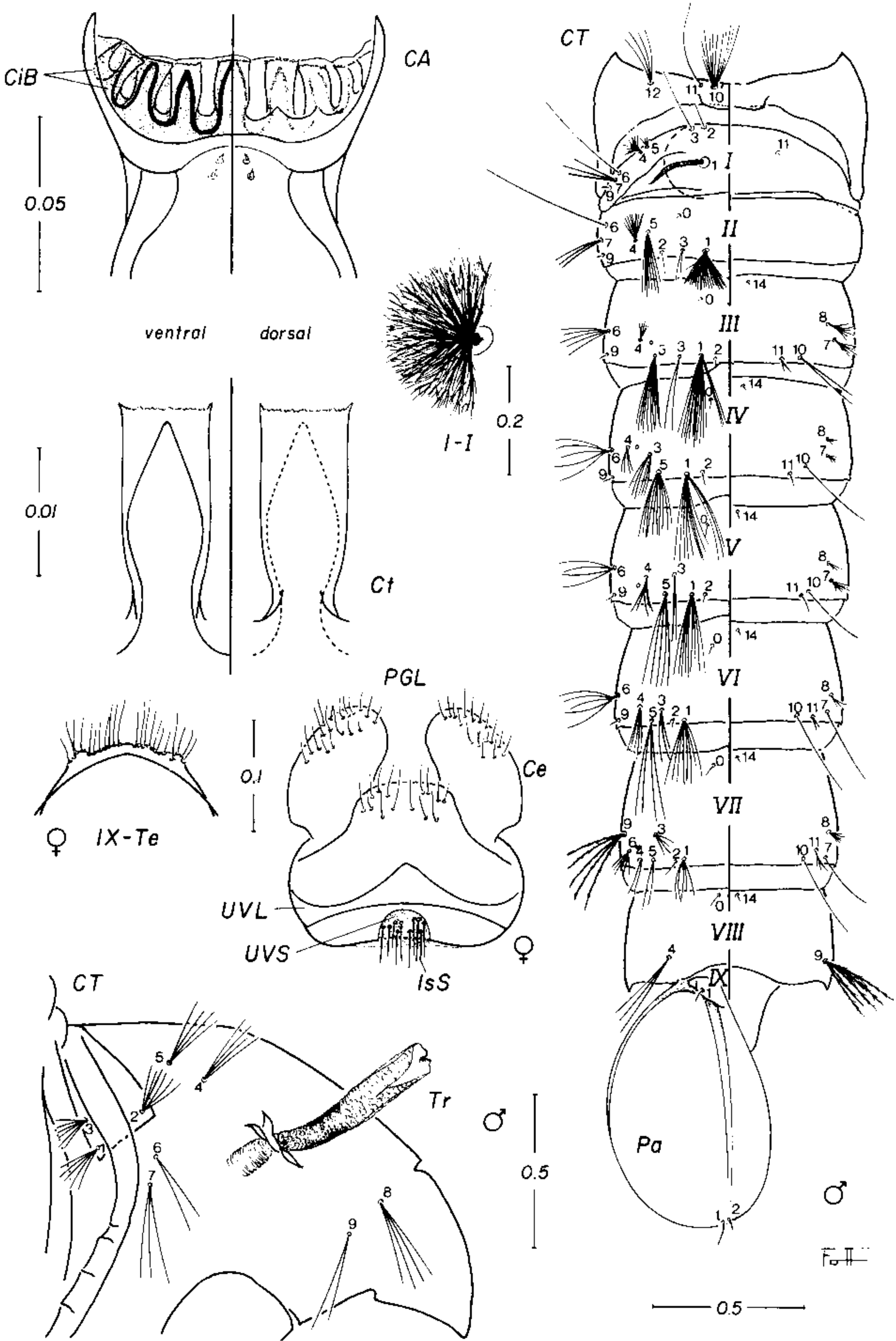


Fig. 3: *Culex (Mel.) eknomios* sp. n. female and pupa – CA: cibarial armature. Ce: cercus. CiB: cibarial bar. Ct: cibarial tooth. CT: cephalothorax. IsS: insular seta. Pa: paddle. PGL: postgenital lobe. Tr: trumpet. UVL: upper vaginal lip. UVS: upper vaginal sclerite. I-IX: abdominal segments. IX-Te: tergum IX.

smaller teeth on either side. Seta 1-C spiniform, dark; 2,3-C absent; 4-C short, usually double, occasionally single or triple; 5-C often double, sometimes single; 6-C long, single; 8-10-C

similar, 8-C normally with 4 branches (3-7), 9-C with 6-11 branches, 10-C frequently with 5 branches (4-6); 13-C double or triple, near level of 11-C; 14,15-C at same level, 14-C

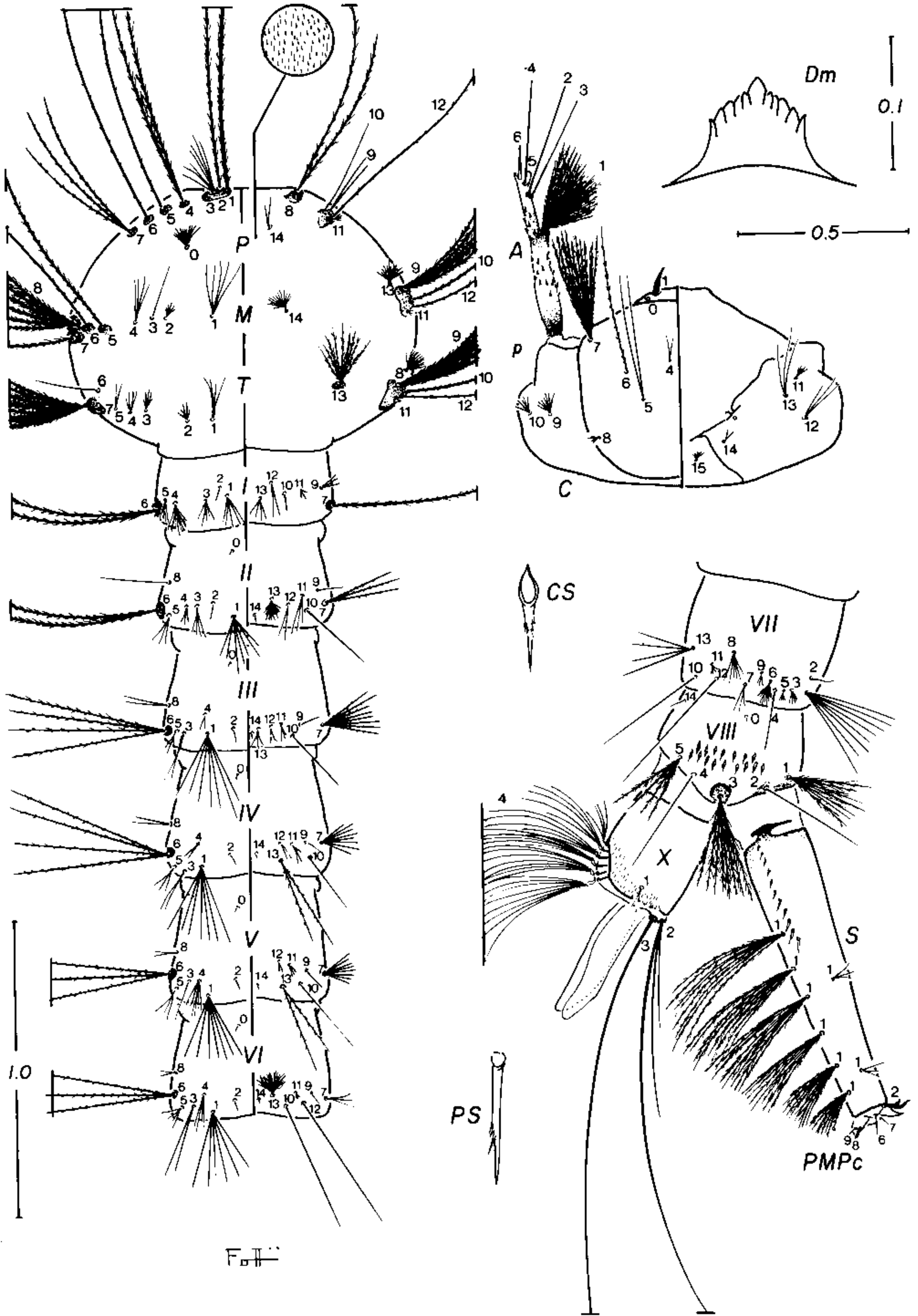


Fig. 4: *Culex (Mel.) eknomios* sp. n. larva – A: antenna. C: cranium. CS: comb scale. Dm: dorsomentum. M: mesothorax. p: puncture. P: prothorax. PMPc: posterior median process. PS: pecten spine. S: siphon. T: metathorax. I-X: abdominal segments.

stronger than 15-C, 14-C double or triple, 15-C usually with 6 branches (4-6). *Antenna* – Length 0.50-0.57 mm, mean 0.54 mm; lightly tanned with dark ring at base and level of seta

1-A. Scape developed; pedicel weak; part of flagellum proximal to seta 1-A curved and aciculate, distal part thinner, straighter with only few aciculae lateral to seta 1-A; seta 1-

TABLE I
Number of branches of pupal setae, *Culex (Melanoconion) eknomios*^a

Setae No.	Cephalo-thorax CT	Abdominal segments										
		I	II	III	IV	V	VI	VII	VIII	IX	Paddle P	
0	-	-	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	-	-
1	4-6(5) ^b [20]	4-10(8) [18]	23-33(30) [10]	12-24(16,18) [16]	8-16(13,14) [20]	8-10(9) [20]	4-8(8) [18]	3-5(5) [19]	-	1 [20]	1,2(1) [19]	
2	5-8(6) [16]	1 [18]	1,2(1) [20]	1 [20]	1 [20]	1 [20]	1 [20]	1,2(1) [20]	-	-	1,2(1) [20]	
3	4,5(5) [11]	1 [18]	2 [19]	1-3(2) [20]	5-9(6) [18]	2-4(2,3) [20]	3,4(3) [17]	3-5(4) [20]	-	-	-	
4	3-5(4) [18]	8-11(10) [11]	7,8(7,8) [12]	4-7(5) [16]	3-7(3) [17]	6-9(8) [20]	4-7(5) [16]	2-4(2) [19]	2-4(3) [19]	-	-	
5	4-7(4) [19]	3-5(4) [12]	5-11(7) [18]	7-13(11) [16]	6-12(10) [19]	4-6(5) [16]	3-5(4) [17]	2-4(2) [19]	-	-	-	
6	2-4(2) [17]	1 [17]	1,2(1) [19]	3-7(5) [18]	2-7(5) [20]	3-6(4) [19]	3-6(5) [18]	6-9(6,8) [11]	-	-	-	
7	3,4(3) [19]	2-5(3) [16]	3,4(3) [19]	4-7(6,7) [12]	4-7(5) [13]	5-10(7,8) [14]	1,2(1) [18]	1 [20]	-	-	-	
8	3-6(4) [20]	-	-	3-7(6) [16]	2-4(3) [19]	2-4(3) [19]	3-5(3,4) [20]	5-7(6) [16]	-	-	-	
9	2,3(2) [17]	1,2(1) [17]	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	4-7(5) [18]	5-8(6) [20]	-	-	
10	9-16(11) [20]	a ^c [8]	-	2,3(2) [17]	1 [20]	1 [20]	1 [20]	1,2(2) [20]	-	-	-	
11	1 [20]	1,2(1,2) [4]	-	1,2(2) [17]	1-3(1) [18]	1,2(2) [20]	1,2(2) [20]	2,3(3) [18]	-	-	-	
12	2-5(4) [20]	-	-	-	-	-	-	-	-	-	-	
13	-	-	-	-	-	-	-	-	-	-	-	
14	-	-	-	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	-	-	

a: based on counts made on holotype and 9 paratypes.

b: range; (mode); [number counted]

c: alveolus (= a) only.

A 0.66 from base; antennal puncture distinct. Seta 1-A large, with 22-28 branches heavily aciculate; setae 2,3-A subapically inserted. A ventral hyaline gill-like pouch at base of antenna. *Thorax* - Integument hyaline, with conspicuous spicules; pro-, meso- and metathoracic segments with irregular transverse patches of black pigment granules under integument; tubercles of all large setae moderately tanned, setae 1-3-P and 9-12-P,M,T on common tubercles; 13-T usually on very small tubercle. *Prothorax* - Setae 1,2-P long, single, 1-P stronger than 2-P, apically curved; 3-P about 0.5 of

1,2-P, often with 7 branches (5-9); 4-P double; 5,6-P single; 7-P normally triple, rarely double (2-4); 8-P usually double (1-3). *Mesothorax* - Seta 1-M well developed, with 4-6 branches; 2-M shorter than 1-M, with 5-7 branches; 5-M lengthy, single. *Metathorax* - Seta 1-T similar but shorter than 1-M, usually with 4 branches (4-6); 5-T normally double, occasionally single; 13-T similar to 1-M, often with 9 branches (6-12). *Abdomen* - Integument hyaline, with conspicuous spicules, spicules more conspicuous on posterior segments; segments III, V, VII and VIII each with broad band of black pig-

TABLE II
Number of branches for fourth-instar setae, *Culex (Melanoconion) eknomios*^a

Seta No.	Head C	Thorax			Abdominal segments									
		P	M	T	I	II	III	IV	V	VI	VII	VIII	X	
0	a ^b [20]	13-21(18) [11]	-	-	-	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	-	1 [20]	-
1	1 [20]	1 [9]	4-6(5) [12]	4-6(4) [20]	3-6(5) [20]	4-9(7) [20]	6-9(7) [20]	5-8(7) [20]	4-8(7) [20]	4-8(6) [20]	7-10(8) [16]	6-9(7) [15]	3-5(3) [17]	
2	-	1 [18]	5-7(6) [14]	3-6(5) [19]	1,2(1) [20]	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	1 [18]	1-3(3) [19]	
3	-	5-9(7) [13]	1 [20]	4-8(5) [19]	5-10(5) [14]	2-4(3) [18]	1-3(2) [16]	1-3(2) [20]	1 [19]	1,2(2) [19]	4-6(5) [12]	7-9(8) [8]	1 [19]	
4	1-3(2) ^c [21]	2 [15]	3-5(4) [18]	3-5(4) [18]	8-19(11) [16]	6-9(9) [13]	2,3(2,3) [16]	2 [19]	4-11(6,8) [14]	3-6(4) [17]	1 [17]	1 [20]	2-11(8) [17]	
5	1,2(2) [10]	1 [18]	1 [19]	1,2(2) [18]	3-5(4) [19]	1-3(3) [18]	2-5(3) [20]	3-5(3) [19]	2-5(3) [19]	3-5(3) [20]	2-6(4) [16]	3,4(4) [18]	-	
6	1 [18]	1 [17]	1 [19]	1 [20]	2 [20]	2,3(2) [20]	3-5(4) [15]	3-5(4) [14]	3,4(3) [19]	3 [17]	14-21(17) [15]	1a-S, [17]	5-8(6)	
7	9-11(10) [13]	2-4(3) [16]	1 [15]	7-9(8) [14]	1 [20]	1-4(3,4) [18]	6-10(8) [13]	7-11(8) [11]	5-8(8) [12]	2-4(3) [19]	2,3(3) [15]	1b-S, [16]	7-9(8)	
8	3-7(4) [15]	1-3(2) [19]	5-7(6) [16]	15,16(16) [6]	-	1 [20]	2,3(2) [20]	2,3(2) [19]	2 [20]	2-4(2) [16]	5-8(6) [16]	1c-S, [19]	2-4(3)	
9	6-11(6) [13]	1,2(2) [19]	5,6(5) [11]	5-8(6) [12]	2,3(3) [19]	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	2,3(3) [13]	1d-S, [18]	7-10(8)	
10	4-6(5) [12]	1 [18]	1 [13]	1 [16]	1,2(1) [20]	1 [20]	1 [20]	1 [20]	1 [20]	1 [15]	1 [17]	1e-S, [18]	7-10(8)	
11	4-6(5,6) [11]	4-7(5) [14]	2-4(3) [12]	2-4(3) [16]	3-6(4) [20]	2,3(3) [19]	2-4(3) [14]	2-4(3) [14]	2-4(3) [19]	2-4(3) [18]	2-4(4) [16]	1f-S, [17]	7-10(8)	
12	2-4(3) [15]	1 [20]	1 [14]	1 [14]	2-4(2) [19]	1-3(2) [20]	2,3(2) [17]	1,2(2) [17]	1,2(1) [20]	1 [18]	1 [20]	1g-S, [19]	2-4(3)	
												1h-S, [20]	7-11(8)	
13	2,3(3) [19]	-	28-34 ^d [5]	6-12(9) [16]	4-6(4) [9]	12-27(20) [7]	2-5(3) [18]	1-3(2) [19]	2-4(3) [20]	25-42(30) [9]	2-5(4) [19]	2-S, [20]	2	
14	2,3(2) [18]	2 [19]	14-22(14) [7]	-	-	1 [20]	1 [20]	1 [20]	1 [20]	1 [20]	-	1 [20]		
15	4-6(6) [14]	-	-	-	-	-	-	-	-	-	-	-	-	

a: based on counts made on holotype and 9 paratypes.
b: alveolus (= a) only.
c: range: (mode); [number counted]
d: mode indefinite

ment granules under integument, segments I, II, IV, VI each with irregular patches of similar granules; setae 6-I,II, 7-I and 2,3-VIII on moderately tanned tubercles. Segments I-VI: setae 1-I with 3-6 branches, 1-II, III, IV, V usually with 7 branches, 1-VI often with 6 branches (4-8); setae 2-I frequently single, rarely double, 2-II single; 6-I,II long, 6-I double, 6-II normally double, occasionally triple, 6-III,IV usually with 4 branches (3-5), 6-V commonly triple (3,4), 6-VI triple; 7-I long, single, 7-II short, usually with 3 or 4 branches, rarely single or double, 7-III-V normally with 8 branches, 7-VI with 2-4 branches; 13-III,V usually triple, 13-IV often double (1-3). Segment VII: seta 1-VII with 7-10 branches; 4-VII single; 7-VII usually triple; 10-VII single; 13-VII with 2-5 branches. Segment VIII - Comb with 10-16 scales, mean 12.84; scales long,

pointed, fringed on sides; scales arranged in roughly 2 irregular rows. Siphon - Index 3.85-4.59 (width measured at base), mean 4.17; moderately tanned with darkened ring at base and near middle; accus attached, long and slender on anterior side of attachment. Pecten of 10-17 spines, mean 14.3; spines disposed in a row at the basal 0.3 of the siphon, increasing in size distally, ventral edge of spines ringed with numerous closely-set denticles; spines sometimes apically bifid, with equals or different branches. Seta 1-S usually in 8 pairs (in 10 siphons examined, 1 with 8.5, 6 with 8, 2 with 7.5 and 1 with 6.5), 1 posterior pair usually within pecten; 4 proximal posterior pairs with length nearly 3.0 width of siphon at point of insertion, 2 distal posterior pairs about 2.0; 2 anterior pairs with length less than width of siphon at point of insertion; seta 2-S inserted

in membrane near base of anterolateral spiracular lobe, anteriorly curved with slender curved secondary branch at base of curved side. *Segment X* – Saddle complete, without acus, with distinct spicules on dorsal and lateral areas at posterior end, spicules dorsal to seta 1-X stouter; length 0.29-0.32 mm, mean 0.31 mm, siphon/saddle index 2.53-2.84, mean 2.70. Seta 1-X usually triple (3-5); 2-X long, rarely single, usually with 1 long branch and 1,2 shorter; 3-X long, single; 4-X most often with 6 paired setae, rarely with 5, anterior setae (3 pairs) usually with 8 branches (6-11), posterior setae (3 pairs) frequently with 4 branches (2-8), all setae borne on grid, anterior end of grid attached to saddle. Anal papillae long and slender, gradually tapering to blunt tip, dorsal pair shorter than ventral pair, dorsal pair as long as length of saddle, ventral pair about 1.2 length of saddle.

TYPE-DATA – Holotype male (HW-06-8) with associated larval and pupal exuviae on slides, and with the following collection data: BRAZIL, Rondonia State, Costa Marques Town, Guaporé River, 4 november 1986, coll. B. Harrison and R. C. Wilkerson, collected as a larva from river margin in valley with bushes at elevation of 110 m, deposited in the National Museum of Natural History, Smithsonian Institution, Washington, DC (NMNH). Paratypes: 2 males and 1 female in pins; 1 female on slide; 2 males and 1 female on slides with larval and pupal exuviae, 4 females with larval and pupal exuviae; 5 males with pupal exuviae, 1 larval and 1 pupal exuviae without associated adult and 4 fourth-instar larvae, with same data as holotype, 12 paratypes are deposited in the NMNH, and 9 in the Entomological Collection of the School of Public Health-USP (FSP-USP). Thirty-six paratypes deposited in FSP-USP, misidentified as *Cx. educator* Dyar and Knab and *Cx. spissipes* (Theobald), and with the following collection data: BRAZIL, Amazonas State, Amaná River, March 1937, coll. Worontzow, 6 males and 4 females (nos. 5965-5971, 6142, 6145 and 6146); Maués, Feb 1937, coll. Worontzow, 5 males and 3 females (nos. 5953-5960); Parauari River, March 1937, coll. Worontzow, 8 males and 3 females (nos. 5943, 5946-5952, 6141, 6143 and 6144); Mato Grosso State, Rio das Mortes, September 1937, coll. A. B. Oliveira, 6 males and 1 female (nos. 2219-2225). Six paratypes males, deposited in NMNH: BRAZIL, Amazonas State, Parauari River, March 1937, coll. Worontzow, 1 male; Roraima Ter-

ritory, Caracarai, 5,6 July 1964, coll. J. P. Duret, 4 males. ECUADOR: ECU-47-100, coll. Y. M. Huang, 1 male.

DISTRIBUTION AND BIONOMICS – *Culex eknomios* was hitherto found in the Amazonian region, in the States of Amazonas, Mato Grosso, Rondonia and Roraima, Brazil and an unknown locality in Ecuador. Despite collected in spotted areas, it seems that its distribution extends as far as that of the biogeographic Amazonian dominium of the Neotropical region.

Little is known about breeding places. Specimens of immature stages collected in Costa Marques, Roraima, were found on the Guaporé river margin, associated with the floating macrophyte water hyacinth *Eichhornia*, and a small one similar to *Salvinia*. The larvae were found in roots of these plants.*

DISCUSSION – *Culex eknomios* exhibits characters similar to several species of the Educator group which also includes *crisovaoi* Duret, *educator* Dyar and Knab, *inadmirabilis* Dyar, *keenani* Galindo and Mendez, *mistura* Komp and Rozeboom and *rachoui* Duret.

Adult female of *Cx. eknomios* can be easily differentiated from the other members of that group by having some very characteristic features as follows:

(1) vertex scales broad and mostly dark, (2) forked scales totally dark, (3) anterior two-third of scutum largely golden-scaled, (4) 14-21 upper mesokatepisternal setae disposed in two irregular rows, (5) 16-21 lower mesokatepisternal setae disposed in two irregular rows; (6) a large patch of upper mesokatepisternal scales, (7) 1-13 anterior mesokatepisternal setae, which is not observed in mosquitoes, (8) 0-4 postprocoxal setae, not observed in mosquitoes as setae, but only as scales, (9) 3-7 lower mesepimeral setae, when more than 5 (6,7) is similar to *Cx. (Lutzia)*, (10) knees white-scaled.

The male genitalia of *eknomios* bears remarkable resemblance to that of *educator*, *keenani* and *rachoui*. It can be separated from *educator* and *keenani* by the shape of the

*Bruce Harrison & R. C. Wilkerson personal data (04/II/1986).

foliform seta (1) of the distal division of the subapical lobe which is wide asymmetrical in *eknomios* but narrower in the other two species. From *rachoui*, by the shape of the tergum IX lobes which are nearly cone-shaped and approximated in *eknomios*, but small, rounded and largely separated in *rachoui*.

The pupal stage of *eknomios* can be distinguished from *educator* and *mistura* by having the lateral margin of trumpet with conspicuous funnel-shaped indentation or notch.

The larva of *eknomios* is easily separated from *educator* and *mistura* by having the proximal posterior pair of seta 1-S (1a-S) usually inserted within pecten and by having the distal spines of pecten sometimes apically bifid. Besides, it can be distinguished from *educator*

by having seta 2-5 with a slender curved secondary branch, but single in *educator*.

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