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New species of *Cyamops* (Diptera: Opomyzoidea: Periscelididae) from the old and new world tropics

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ABSTRACT. Two new species of *Cyamops* Melander are described, one from the Afrotropical and one from the Neotropical Region. The newly described species are (type locality in parenthesis): *Cyamops mathisi* **sp. nov**. (Province Fianarantsoa, Madagascar) and *Cyamops manauensis* **sp. nov.** (state of Amazonas, Brazil). Both species can be separated from congeners based on characters of the male genitalia, particularly the shape of the surstyli. A new country, the Ivory Coast, is added to the distribution records of *Cyamops nigeriensis*, previously known only from Nigeria and Namibia. Updated keys to the Afrotropical and Neotropical species of the genus are also given.

KEY WORDS. Afrotropical Region; Brazil; Madagascar; Neotropical Region; Stenomicrinae.

Cyamops Melander, 1913 includes 32 valid species: two from the Afrotropical Region, 14 from the Australasian/Oceanian Region, three from the Nearctic Region, seven from the Neotropical Region, five from the Oriental Region, and one from the Palearctic Region (Mathis & Rung 2011, Mathis & Sueyoshi 2011). Despite the fact that the taxonomy of the genus has been well-documented in recent years, very little is known about the biology of the included species, and immatures have never been found. Adults have been collected near streams, on rocks in streams, near waterfalls, in marshy habitats (often on broad-leaved plants), and beside pools in almost dry riverbeds (Khoo 1985).

Baptista & Mathis (1994) last reviewed the Neotropical fauna of *Cyamops*, and a few new species were later added by the same authors (1996, 2000). The two Afrotropical species were described in a single contribution (Baptista & Mathis 2000). The genus was recently catalogued and its classification was briefly discussed by Mathis & Rung (2011).

In this paper we describe two new species, one from Madagascar and one from northern Brazil. We also provide locality data on the discovery of *C. nigeriensis* Baptista & Mathis, 2000 in the Ivory Coast. The Brazilian specimens were collected as part of an insect survey in the Amazon using Malaise and "Suspensa" traps (Rafael & Gorayeb 1982). In order to facilitate identification of the new species, we have updated the keys to the Afrotropical and New World species (modified from Baptista & Mathis 2000). We also present illustrations of the external morphology and diagnostic structures of the male terminalia of the new species. A diagnosis of Periscelididae, a world key to the included subfamilies, genera and subgenera, as well as a discussion of the taxonomic placement of *Cyamops* have been recently published (Mathis & Rung 2011) and will not be replicated here. The most recent description of the genus can be found in Mathis & Sueyoshi (2011).

MATERIAL AND METHODS

The descriptive terminology, with the exceptions noted in Baptista & Mathis (1994, 2000), follows the Manual of Nearctic Diptera (McAlpine 1981). For some structures of the male terminalia, we follow the terminology adopted by other workers in Periscelididae (Baptista & Mathis 1994, 2000, Sueyoshi & Mathis 2004, Mathis & Sueyoshi 2011). The format for the species' descriptions adheres to Baptista & Mathis (1994, 2000). Species' descriptions are composite, including information on the holotype and other conspecific specimens. All species exhibit sexual dimorphism to some degree, although not always in the same characters. To account for this variation in the descriptions, we describe the male first, followed by a section on differences in the female. Three wing vein ratios used in the descriptions of the new species are based on the largest and smallest specimens and are defined as: (1) wing ratio: straight line distance between wing base and apex/greatest straight line distance from anterior margin to posterior margin; (2) costal vein ratio I: the straight line distance between the apices of R_1 and R_{2+3} (costal section II)/distance between the apices of R_{2+3} and R_{4+5} (costal section III); (3) costal vein ratio II: straight line distance between the apices of R_{2+3} and R_{4+5} (costal section IV)/

distance between the apices of R_{4+5} and M (costal section III). Because specimens are small, study and illustration of the male and female terminalia required use of a compound microscope. Photographs were taken with a Nikon Coolpix Ds-Fi1 digital camera using a Nikon SMZ1500 stereomicroscope. In order to produce final images with most structures in focus, we took several photograph layers of each body part and subsequently assembled them with Combine ZM 2008. The photographs were enhanced, formatted and arranged in Adobe Photoshop 7™

The Brazilian specimens examined as part of this study are deposited in the Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus, and Coleção Zoológica da Universidade Estadual do Maranhão (CZMA), Caxias. Specimens from the Afrotropics are at the California Academy of Sciences (CAS), San Francisco, and the California State Collection of Arthropods (CSCA), Sacramento.

TAXONOMY

Cyamops Melander, 1913

Cyamops Melander, 1913: 291. Type species: *C. nebulosus* Melander, by original designation. Sturtevant 1954: 557-559 [revision]; Hennig 1958: 633 [generic characters, relationships], 1969: 610-613 [discussion]; Sabrosky 1958: 169-171 [revision], 1965: 820 [Nearctic catalog]; Khoo 1985: 527-536 [revision, Australian species]; Khoo & Sabrosky 1989: 551 [Australasian/Oceanian catalog]; Baptista & Mathis 1994: 1-25 [revision, New World species], 2000: 481-506 [review]; Poole & Gentili 1996: 65 [checklist, Nearctic]; Grimaldi 2009: 23-27, 38 [key] [fauna of Fiji]; Mathis & Rung 2011: 359-363 [World catalog].

Diagnosis. *Cyamops* can be easily recognized and separated from other genera of Periscelididae by the following combination of characters: Frons lacking interfrontal setae; 2 fronto-orbital setae, 1 proclinate and 1 reclinate; medial vertical seta absent; face in profile shallowly and vertically arched, lacking a flattened dorsal area; eyes microsetulose (sometimes sparsely). Katepisternum bearing 1 prominent seta; supra-alar seta well developed. Hind femur lacking anterodorsal, preapical seta. Crossvein bm-cu well developed, cell bm distinct from cell dm; vein CuA2 well developed; cell cup present. Male postabdomen and terminalia strongly asymmetrical, especially surstyli; ejaculatory apodeme large. Female abdomen with segment 6 forming a complete ring.

Afrotropical species

With the inclusion of the new species described below, a total of three species of *Cyamops* are known in the Afrotropical Region, two in Madagascar and one in Nigeria, Namibia and the Ivory Coast (new record, see below). All known Afrotropical species have two spermathecae, a character state common to all Old World species, and lack setae on the posterior dorsal margin of the anepisternum.

Key to Afrotropical species of *Cyamops* Melander

1. Only apical scutellar seta present; dorsocentral setae 0 + 2; hind femur mostly yellow, infuscate apically; wing mostly brown with 2 conspicuous white spots along anterior margin, and 2 white spots along posterior margin (Baptista & Mathis 2000: 505, fig. 33) (Ivory Coast, Nigeria, Namibia).. ..... *C. nigeriensis* Baptista & Mathis

1'. Apical and basal scutellar setae present (Figs 6 and 8); dorsocentral seta 0 + 1 (Fig. 6); hind femur brown on apical ½-¾; wing hyaline or only lightly infuscate (Madagascar)...2

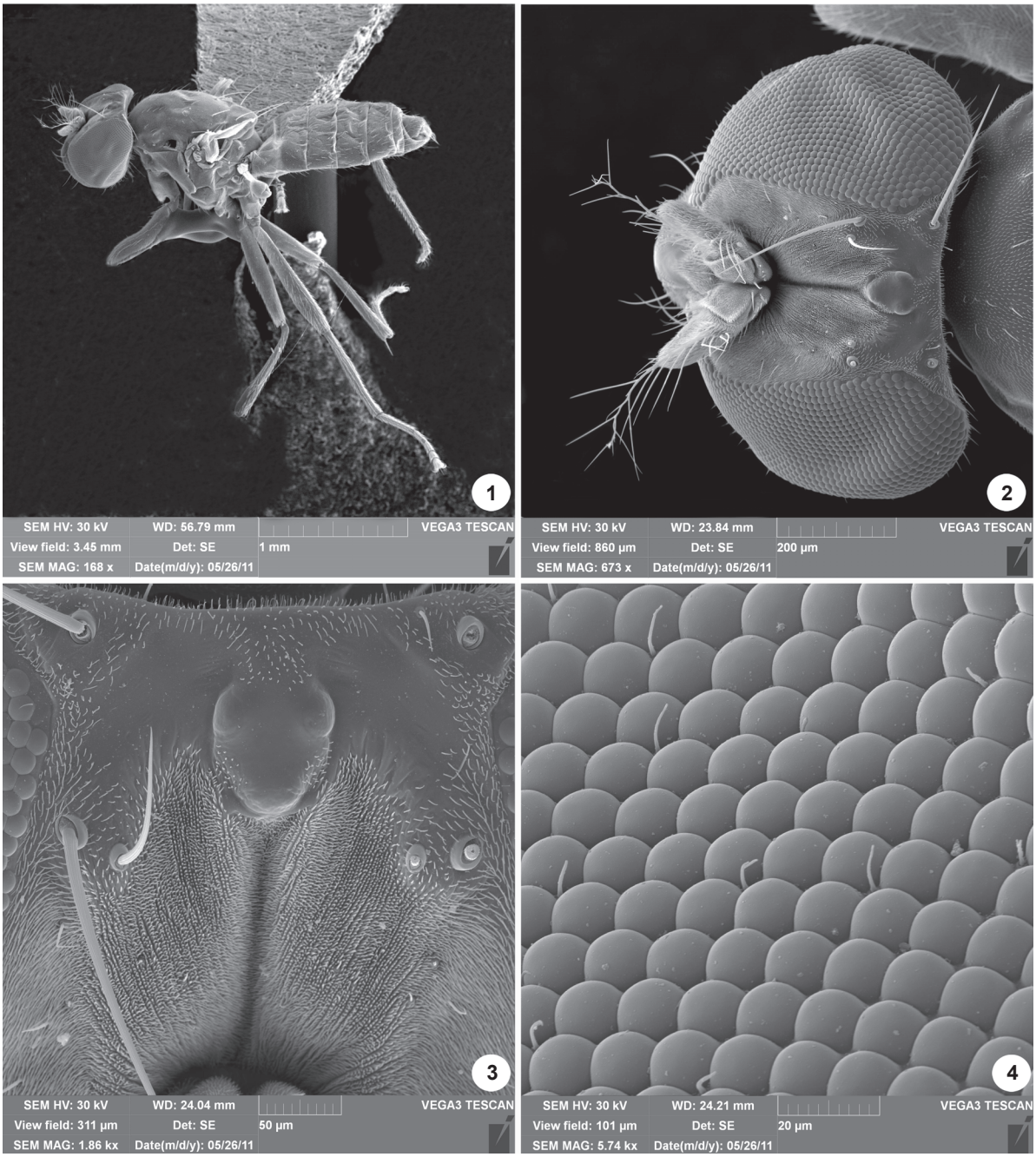
2. Right surstylus in ventral view with apical margin deeply concave in middle, claw-shaped; left surstylus in ventral view irregular, tapered apically, triangular apex aligned with surstylar axis (Baptista & Mathis 2000: 491, fig. 11) .... *C. freidbergi* Baptista & Mathis

2'. Right surstylus in ventral view roughly triangular with round corners; left surstylus in ventral view with triangular apex expanded toward the left side of the abdomen (Fig. 9) ....*C. mathisi* **sp. nov.**

Cyamops mathisi **sp. nov.**

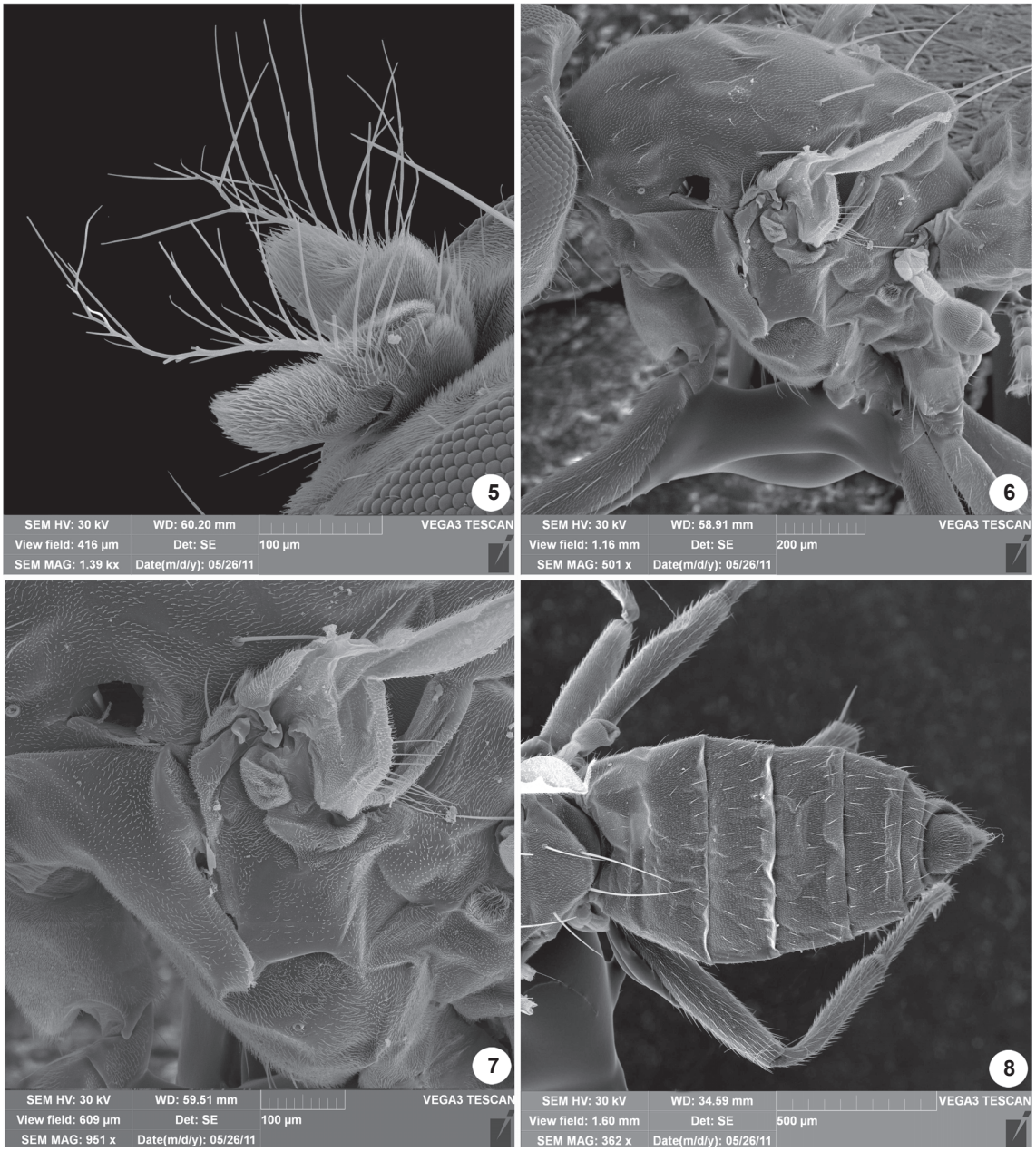
Figs 1-10

Description. Male (three specimens measured): Adult length 1.9-2.1 mm; wing length 1.7-2 mm; wing width 0.6-0.75 mm. Head: Ocellar tubercle mostly polished, shiny spot on vertex reaching ⅔ distance to eye margin; frons subshiny microtomentose, velvet at deepest portion, parafacial margins densely microtomentose, silver up to just underneath insertion of fronto-orbital setae; antenna mostly yellow, slightly infuscate at dorsal margin of scape; face constricted medially by anteroventral margin of eyes, expanded into a ventral triangular region below level of pseudovibrissae and bearing a vertical, midfacial, yellow carina, facial triangle mostly yellow; gena yellow, when viewed anteriorly conspicuously silvery white microtomentose; palpus and labellum mostly pale yellow; face in profile shallowly and vertically arched, not angulate; eye sparsely microsetulose. Chaetotaxy: Medial fronto-orbital setae slightly divergent; arista with about 8-9: 3 rays, 4-5 basal rays clearly bifurcate; peristomal setae 7-8. Thorax: Mostly brown. Postpronotum subshiny microtomentose; halter mostly white, infuscate at base; mesonotum slightly longer than wide; scutellum trapezoidal, disc flattened. Chaetotaxy: Dorsocentral setae 0+1, subequal in length to the 1st scutellar seta; few setulae between dorsocentral and acrostichal rows in most specimens; setulae of mesonotum at most ⅓ length of dorsocentral seta; scutellar setae 2 pairs, basal pair about ⅔ length of apical. Legs: Mostly yellow; hind femur brown on apical ½-¾; apical and sometimes subapical tarsomere of each leg brown; spine-like setulae on fore femur 5. Wing: Mostly hyaline, central portion very slightly infuscate with brown; costal vein ratio I: 0.9-1; costal vein ratio II: 3.3-3.7; wing ratio 2.6-3.1. Abdomen (Figs 9 and 10): Coloration as described for the thorax, without pol-



Figures 1-4. Scanning electron micrographs of *Cyamops mathisi* **sp. nov.** (female, Madagascar: Province Fianarantsoa): (1) habitus, lateral view; (2) head, dorsal view; (3) frons, frontal view; (4) eye facets and interfacetal setulae of left eye, lateral view.

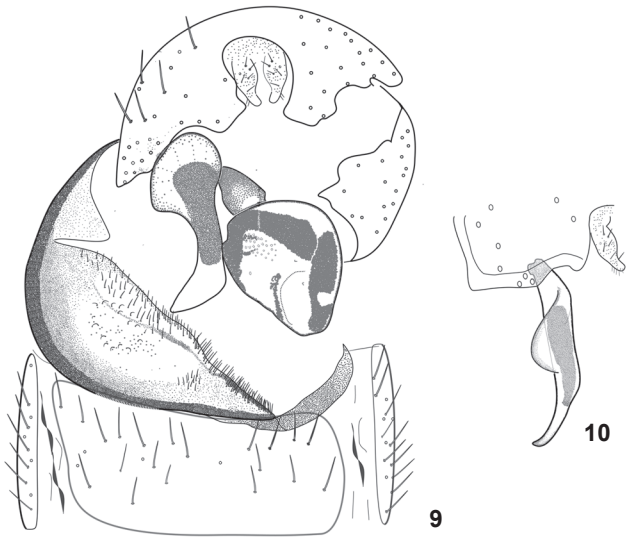
ished segments; 6th and 7th tergites large, subequal in length; posterior process of 6th and 7th sternites as in Fig. 9. Male terminalia as follows (Figs 9 and 10): Left surstylus narrow, in ventral view with base expanded and apex pointing to the left side; right surstylus slightly shorter but considerably wider than left, in ventral view subtriangular with round corners; hypandrium asymmetrical, gonopods not clearly differentiated; ejaculatory apodeme with two main axes making a right angle with one another, longest axis triangular in dorsal view, as long as right surstylus, shorter axis mostly parallel-sided with subapi-



Figures 5-8. Scanning electron micrographs of *Cyamops mathisi* **sp. nov.** (female, Madagascar: Province Fianarantsoa): (5) close up of antennae, lateral view; (6) thorax, lateral view; (7) pleural region of thorax, lateral view; (8) abdomen, dorsal view.

cal notch; postero-ventral portion of aedeagal apodeme fused with hypandrium.

Female (3 specimens measured): Adult length 2.1-2.3 mm (Fig. 1); wing length 2.1-2.3 mm; wing width 0.8 mm. Head (Figs 2-5): Ocellar tubercle polished and shiny spot on vertex more extensive; arista with about 9-10: 3 rays, 5-6 basal rays clearly bifurcate; face mostly light brown, not constricted medially by the eyes, with a more elevated, parallel, central region (a broad carina); facial carina mostly subshiny except for densely microtomentose basal ¼; gena and lateral portions of face below level of pseudovibrissa strongly microtomentose; face in profile angulate, sloped anteroventrally from base of antenna to vibrissal angle, thereafter slightly receded to oral margin; arista with 13-14 dorsal rays. Thorax (Figs 6 and 7): Wing somewhat infuscate



Figures 9-10. Illustrations of the male terminalia of *Cyamops mathisi* **sp. nov.**, paratype: (9) abdominal segments 5-7 and epandrium, ventral view; (10) left surstylus, lateral view.

in some specimens, with the following areas completely hyaline: cells sc and r_1, dorsal ⅔ of cell $r_{2+3,}$ posterior portion of cell m and somewhat cell cua_1. Abdomen (Fig. 8): Demarcation between tergites 7 and 8 sharp dorsally; sternite 8 fused to 7th; 2 spermathecae present, oblong, both the same size; apical portion of spermathecal ducts with a very thin area bearing sclerotization.

Type material: The holotype male is labeled "MADAGASCAR: Province Fianarantsoa, near Isalo National Park, in dry wash east of interpretive Center [,] 28 March- 9 April 2003 [,] 22°37.50'S, 45°21.49'E [,] coll: M. Irwin, R. Harin'Hala [,] California Academy of Sciences [,] Malaise trap in open area elev 885 m, MA-02-11B-60/ HOLOTYPE ♂ *Cyamops mathisi* Rung & Ale-Rocha CAS [red]." The holotype is double mounted (right side glued on white paper triangle), is in very good condition (right outer fronto-orbital broken, left vertical seta and outer fronto-orbital missing, tarsi of mid right leg missing) and is deposited in the CAS. Paratypes (3 males, 3 females; CAS) bear the same label as the holotype.

Distribution. Madagascar, Province Fianarantsoa.

Etymology. The species epithet, *mathisi*, is to honor and recognize the contributions of Wayne N. Mathis to dipterology and to the study of *Cyamops*.

Remarks. Among the Afrotropical species, *C. mathisi* **sp. nov.** is most difficult to separate from *C. freidgergi* Baptista & Mathis, 2000. Both species have two pairs of setae on the scutellum, the wing mostly hyaline, at most with light infuscation, and lack anepisternal setae on the dorsal right margin of the anepisternum. Males of both species can be easily separated based on the shape of the surstyli and sternite 6+7. Females of *C. freidbergii* are unknown.

Cyamops nigeriensis Baptista & Mathis, 2000

Cyamops nigeriensis Baptista & Mathis, 2000: 487. Nigeria. NW State: Badeggi Rice Research Station. HT male USNM; Mathis & Rung 2011: 362 [World catalog].

Specimens examined. IVORY COAST. Bouaké, December 1980 (pan trap), P. Cochereau (6 males, 12 females; CSCA).

Distribution. Afrotropical: Ivory Coast, Nigeria, Namibia.

Remarks. This species was previously only known from Nigeria and Namibia, and its discovery in the Ivory Coast extends our knowledge of this species' distribution.

Neotropical species

With the inclusion of the new species described below, a total of 11 species of *Cyamops* are known in the New World. Of these, eight occur in the Neotropical Region. Females of all Neotropical species that have had their abdomens dissected (four species total) have four spermathecae. This number contrasts with the two/three spermathecae found in species from other regions and is a putative synapomorphy for the Neotropical fauna.

Key to New World species of *Cyamops*

1. Anepisternum bare along posterior margin (Figs 6 and 7) 2

1'. Anepisternum setose along posterior margin, usually bearing 1 seta and a few setulae (Baptista & Mathis 1994: 23, fig. 55) 6

2. Only apical scutellar seta present (United States) .... C. *imitatus* Sturtevant

2'. Apical and basal scutellar setae present (Fig. 8) 3

3. Wing hyaline (Baptista & Mathis 1994: 15, fig. 22) (Canada, USA) ..... *C. halteratus* Sabrosky

3'. Wing at least partially infuscate 4

4. Vein R_{2+3} sinuous (Baptista & Mathis 1994: 15, fig. 24); mid- and hind tibiae mostly yellow; scutellar disc slightly convex (eastern Canada and United States) .... *C. nebulosus* Melander

4'. Vein R_{2+3} straight or nearly so; mid- and hind tibiae lightly infuscate to brown; scutellar disc flat 5

5. Right surstylus as narrow as left; hypandrial projection large and exposed; 7th and 8th sternites reduced (Baptista & Mathis 1994: 20, fig. 43) (Brazil: São Paulo) .... C. *fasciatus* Baptista & Mathis

5'. Right surstylus much broader than left; hypandrial projection of normal length, not large, usually hidden beneath right surstylus; 7th and 8th sternites well developed, fused to 5th sternite (Baptista & Mathis 1994: 18, figs 37-39) (Mexico: Chiapas) ..... *C. buenorum* Baptista & Mathis

6. Face of male and female angulate in profile, sloped anteroventrally from base of antenna to vibrissal angle; facial carina lacking in male; frons of male entirely depressed below insertion of fronto-orbital setae; eye densely micro-

setulose (Colombia) .... *C. colombianus* Baptista & Mathis

6′. Face of maleand female shallowly and vertically arched, never angulate; facial carina present in male; frons of male depressed only medially; eye microsetulae sparse, difficult to discern (Fig. 4) 7

7. Wing cell R_{4+5} usually completely infuscate, dividing subapical white spot (Fig. 13) (pale specimens with only traces of brown on the veins around cell R_{4+5}); mid and hind femora mostly yellow 8

7′. Wing cell R_{4+5} with a conspicuous, undivided subapical white spot; mid and hind femora mostly dark 12

8. Basal 3-4 rays of arista bifurcate; hind tibia completely yellow; postpronotum shiny, lacking microtomentum (Costa Rica, Honduras, Mexico: Chiapas) .... *C. americus* Baptista & Mathis

8′. Basal rays of arista not bifurcate; middle portion of hind tibia darkened to completely yellow; postpronotum shiny to subshiny, microtomentose 9

9. Right surstylus approximately trapezoidal on apical ¾, margins tapering toward apex, with a narrow, setose, transversal, preapical stripe (Baptista & Mathis 2000: 484, fig. 1) (Guyana) ..... *C. funkae* Baptista & Mathis

9′. Right surstylus not as above 10

10. Hind femur infuscate on apical ⅙; produced portion of male face generally ¾ width of 1st flagellomere; surstyli not as below 11

10′. Hind femur infuscate on apical ½; face of male only slightly produced, produced portion of face ¼ width of 1st flagellomere; right surstylus, from ventral view, approximately pear-shaped, narrower at base, and with an apical "notch" (Baptista & Mathis 2000: 486, fig. 7) (Panama) .... *Cyamops* sp. 2 (Baptista & Mathis 2000)

11. Surstyli very elongate, apical portion concealed below 6th-7th sternite; right surstylus boot-shaped, longer than left surstylus; left surstylus not bifurcated apically (Baptista & Mathis 2000: 486, fig. 5) (Trinidad) .... *Cyamops* sp. 1 (Baptista & Mathis 2000)

11′. Surstyli not very elongate, apex of right surstylus only partially concealed below sternites 6-7; right surstylus, in ventral view, with a centrally elevated area bearing setae, and right lower corner bearing a setose protuberance; left surstylus clearly bifurcating apically in lateral view (Figs 14 and 15) (Brazil: Amazonas, Maranhão) .... *C. manauensis* **sp. nov.**

12. Right surstylus with apical margin deeply concave in middle, having a hook-shaped appearance; aedeagal apodeme length equal to length of combined 6th and pregenital tergites (Baptista & Mathis 1996: 246, fig. 1) (Brazil: Rio de Janeiro) ..... *C. sabroskyi* Baptista & Mathis

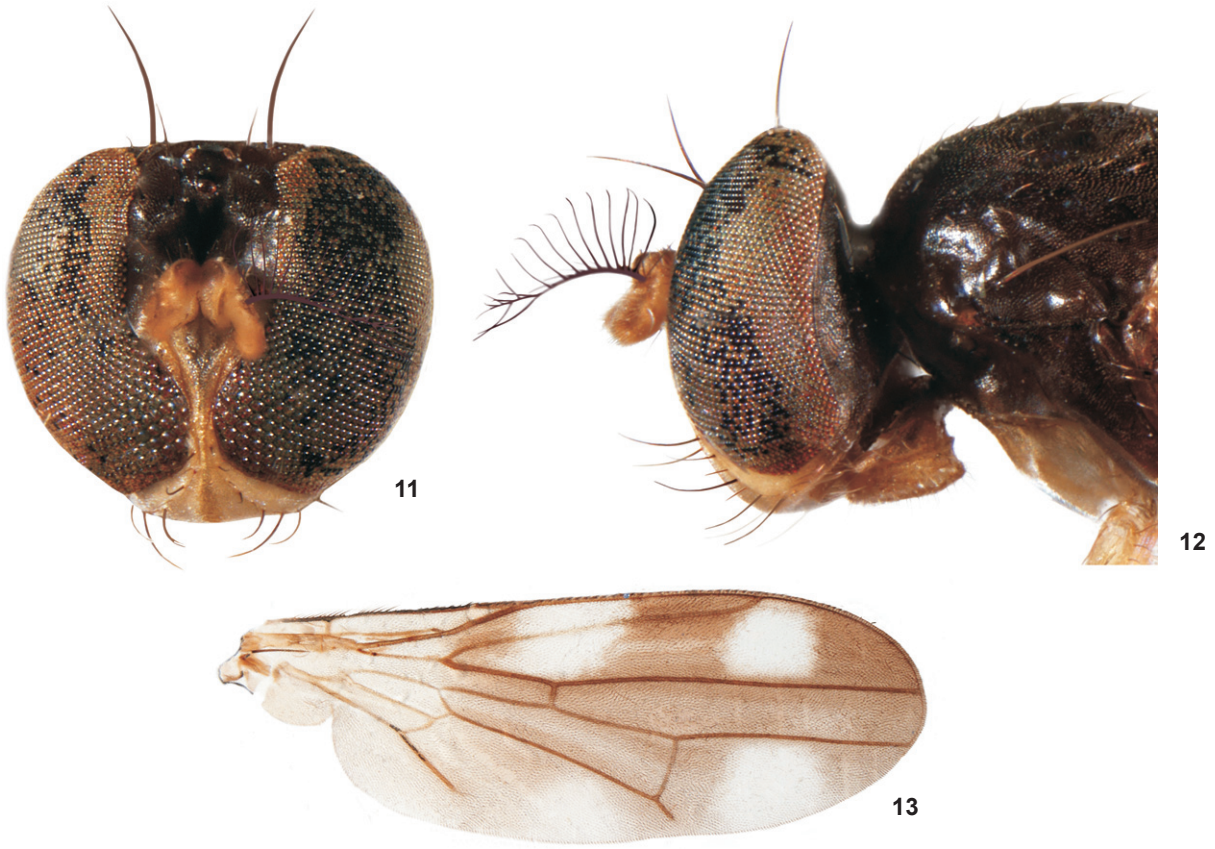
12′. Right surstylus with apical margin convoluted, irregular (Baptista & Mathis 1994: 24, fig. 58); aedeagal apodeme very large, length equal to combined length of 5th, 6th, and pregenital tergites (Brazil: São Paulo, Costa Rica, Peru) .... *C. neotropicus* Hennig

Remarks. In the key above, the two species referred to as "1" and "2", from Trinidad and Panama, respectively, were not named by Baptista & Mathis (2000) because the specimens available were few and in their condition precluded a thorough description. We have kept these species in this revised "Key to New World species of *Cyamops*" in the hope that further collecting in those countries will produce more specimens, and that one day they can be described and have their names in the appropriate couplets.

Cyamops manauensis **sp. nov.**

Figs 11-18

Description. Male (two specimens measured): Adult length 2.2-2.4 mm; wing length 1.9-2.2 mm; wing width 0.6-0.7 mm. Head (Figs 11 and 12): Ocellar tubercle mostly polished, shiny spot on vertex reaching ⅔ distance to eye margin; frons subshiny microtomentose, velvet at deepest portion, parafacial margins densely microtomentose, silver up to just below insertion of fronto-orbital setae; antenna mostly yellow, slightly infuscate at dorsal margin of pedicel; face constricted medially by the anteroventral margin of the eyes, expanded into a ventral triangular region below level of pseudovibrissae and bearing a vertical, midfacial, brownish carina, facial triangle brown; gena yellow, when viewed anteriorly conspicuously silvery white microtomentose; palpus and labellum mostly pale yellow; face in profile shallowly and vertically arched, not angulate; eye sparsely microsetulose. Chaetotaxy: Inner fronto-orbital setae slightly divergent; arista with about 10-11: 3 rays, none bifurcate; peristomal setae 8-10. Thorax: Mostly brown. Postpronotum subshiny microtomentose; halter mostly white, infuscate at base; mesonotum slightly longer than wide; scutellum trapezoidal, disc flattened. Chaetotaxy: Dorsocentral setae 0+1, subequal in length to the 1st scutellar seta; many setulae between dorsocentral and acrostichal rows in most specimens; setulae of mesonotum at most ⅓ length of dorsocentral seta; scutellar setae 2 pairs, basal pair about ⅔ length of apical; anepisternum bearing posterior setae on upper 1/3. Legs: Mostly yellow; fore femur brown infuscate dorsally in the holotype; hind femur brown apically; apical and sometimes subapical tarsomere of each leg brown; spine-like setulae on fore femur 10. Wing (Fig. 13): Partially hyaline, mostly with dark pattern; cell r_{4+5} entirely infuscate, dividing subapical white spot; brown area near apex of vein $R_{1;}$ costal vein ratio I: 1-1.4; costal vein ratio II: 3.7-4.5; wing ratio 2.7-2.9. Abdomen (Figs 14-17): Coloration as described for the thorax, without polished segments; tergites 6 and 7 large, subequal in length; posterior process of sternites 6 and 7 as in Fig. 14. Male terminalia as follows: Left surstylus narrow, elongate, approxi-

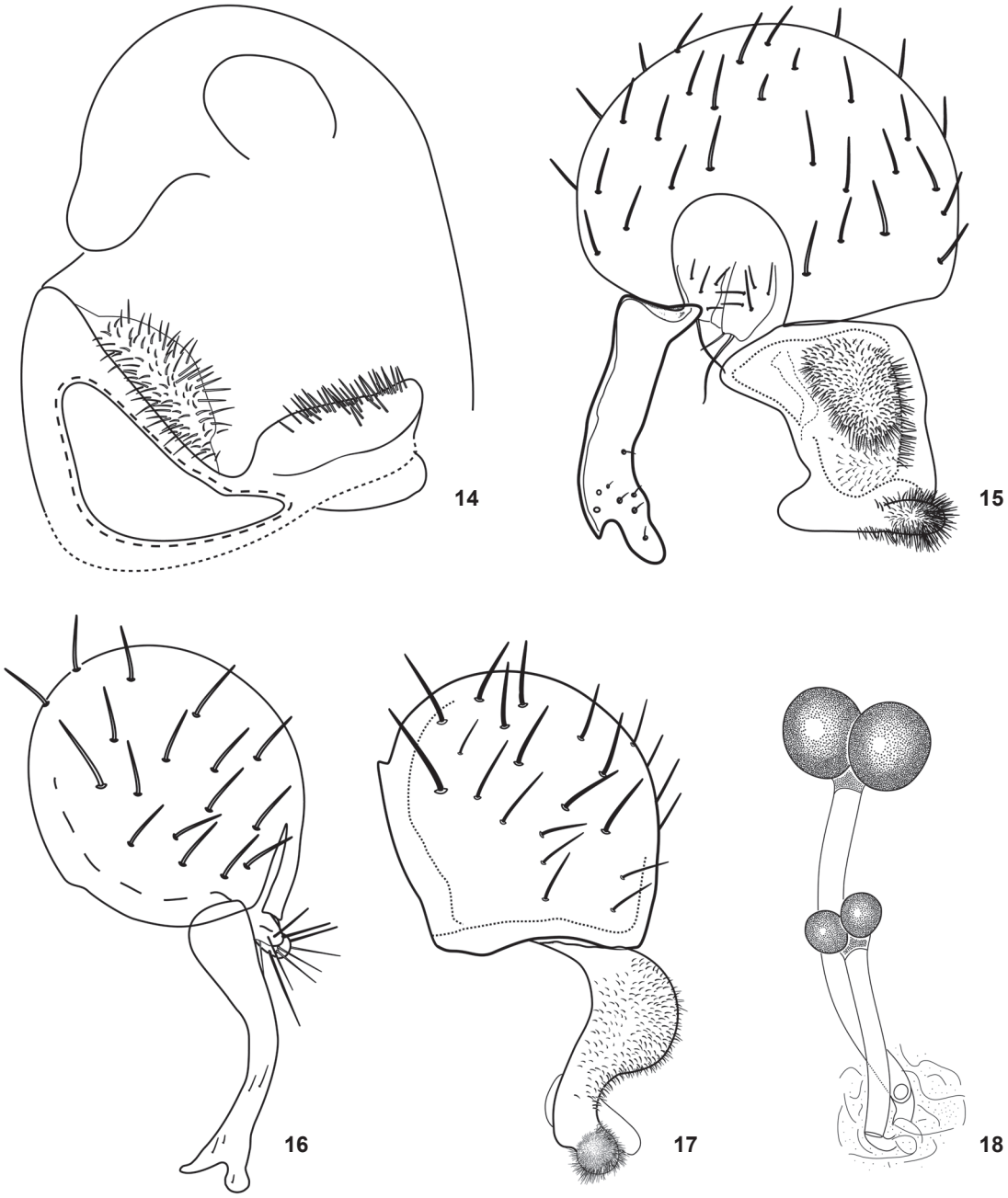


Figures 11-13. Photographs of *Cyamops manauensis* **sp. nov.**, male paratype: (11) head, frontal view; (12) head and anterior portion of thorax, lateral view; (13) wing, dorsal view. Not all to the same scale.

mately boot-shaped in ventral view; right surstylus slightly shorter but considerably wider than left, in ventral view subrectangular, central region with a lump bearing setae and right lower corner bearing a setose protuberance; hypandrium and gonopods asymmetrical, left gonopod digitiform, bearing small setulae; ejaculatory apodeme lost during specimen preparation; postero-ventral portion of aedeagal apodeme fused with hypandrium.

Female (two specimens measured): Adult length 2.6-2.7 mm; wing length 2.5-2.8 mm; wing width 0.9-1 mm. Head: Ocellar tubercle polished and shiny spot on vertex more extensive. Antenna with dorsal ½ and apex of 1st flagellomere brown; face mostly dark brown, not constricted medially by the eyes, bearing a more elevated, parallel, central region (a broad carina); facial carina mostly polished, encroached by lateral microtomentum basally; gena and lateral portions of face below level of pseudovibrissa strongly microtomentose; palpus brown; face in profile angulate, sloped anteroventrally from base of antenna to vibrissal angle, thereafter slightly receded to oral margin; arista with 13-14 dorsal rays. Thorax: Dorsocentral setulae typically better developed than in the males. Abdomen (Fig. 18): Demarcation between tergites 7 and 8 sharp dorsally; sternite 8 fused to 7th; 4 spermathecae present, oblong, one pair slightly smaller than other, apical portion of spermathecal ducts sclerotized.

Type material: The holotype male is labeled "BRA[SIL]. Amazonas[,] Manaus, Res[erva] Ducke[,] Igarapé Barro Branco[,] Armadilha Malaise/12- 22 2004 IX [day and month handwritten] Henriques A. Leg/HOLOTYPE ♂ *Cyamops manauensis* Rung & Ale-Rocha INPA [red]." The holotype is double mounted (right side glued on white paper triangle), is in fair condition (right eye collapsed, right wing partly broken, left hind leg with only basal tarsomere present, remaining tarsomeres missing, left dorsocentral and katepisternal setae lost, abdomen dissected and attached to a microvial] and is deposited in INPA. Paratypes (4 females; INPA) are from the same country and state as the holotype. All of them were collected with Malaise trap and bear the following additional information: Manaus, Carauari, July 2005, A. Henriques *et al.* (1 female); Parque Nacional do Jaú, Rio Papagaio, 01 June 2003, J.A. Rafael & J. Vidal (1 female), Rio Jaú, Joca, 27 April- 03 May 1995, J.A. Rafael & J. Vidal (1 female), Seringal, 27 April- 03 May 1995, J.A. Rafael & J. Vidal (1 female).



Figures 14-17. Illustrations of *Cyamops manauensis* **sp. nov.** (14-16) Male terminalia (paratype): (14) sternite 6+7, ventral view; (15) epandrium and surstyli, ventral view; (16) epandrium and surstylus, left side, lateral view; (17) epandrium and surstylus, right side, lateral view. (18) Spermathecae, paratype. Spermathecae not to the same scale as male terminalia.

Other specimens examined. Maranhão. Caxias, Fazenda Frexeira, 28 July - 01 Aug 2001, F. Limeira-de-Oliveira (1 male; CZMA); Caxias, Reserva Ecológica Inhamum, 02-08 Nov 2005, G.A. Cunha (2 females; CZMA).

Distribution. Brazil: Amazonas and Maranhão.

Etymology. The species epithet, *manauensis*, refers to the type locality of the species, Manaus.

Remarks: A total of three species have been previously recorded from Brazil, all from southern states: *C. fasciatus* and *C. neotropicus* (state of São Paulo), and *C. sabroskyi* (state of Rio

de Janeiro). Among Neotropical species of *Cyamops*, *C. americus*, *C. funkae*, and *C. manauensis* **sp. nov.**, in addition to two undescribed species mentioned in Baptista & Mathis (2000), are difficult to separate based on external characters. They all share a similar wing pattern (with cell r_{4+5} completely infuscate dividing subapical white spot) and coloration of the legs. For this reason, dissection of the male terminalia is essential to differentiate each of them.

ACKNOWLEDGMENTS

We thank Augusto L. Henriques (INPA) and Francisco L. de Oliveira (CZMA) for the loan of the material, and Stephen Gaimari (CSCA) for facilitating access to specimens. Tom Manos assisted with the scanning electron microscopy. Collecting was financed by a grant from CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico, process # 574999/2008-6).

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Reads: Periscelidae
Should read: Periscelididae

All changes are already incorporated in the online version of these articles available at http://www.scielo.br/zool