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FIRST KNOWN BRAZILIAN SPECIES OF THE GENERA *SCUTOPS* AND *NEOSCUTOPS* (DIPTERA: PERISCELIDIDAE), WITH COMMENTS ON THE RELATIONSHIPS AMONG THE SPECIES IN EACH GENUS

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Four new species of Periscelididae are described from Brasil – Neoscutops cariri, *sp. n., and* Scutops marcgrafi *sp. n., from the northern extreme of the Atlantic Forest,* S. lopesi, *sp. n., from southeastern Brazil, and* S. goianiensis, *from central Brazil.* S. chapmani *is herein synonymized to* S. fascipennis. *A key is provided for the known species of* Neoscutops *and* Scutops. *A brief discussion is made about the possible phylogenetic relationships among the species of each of these two genera.*

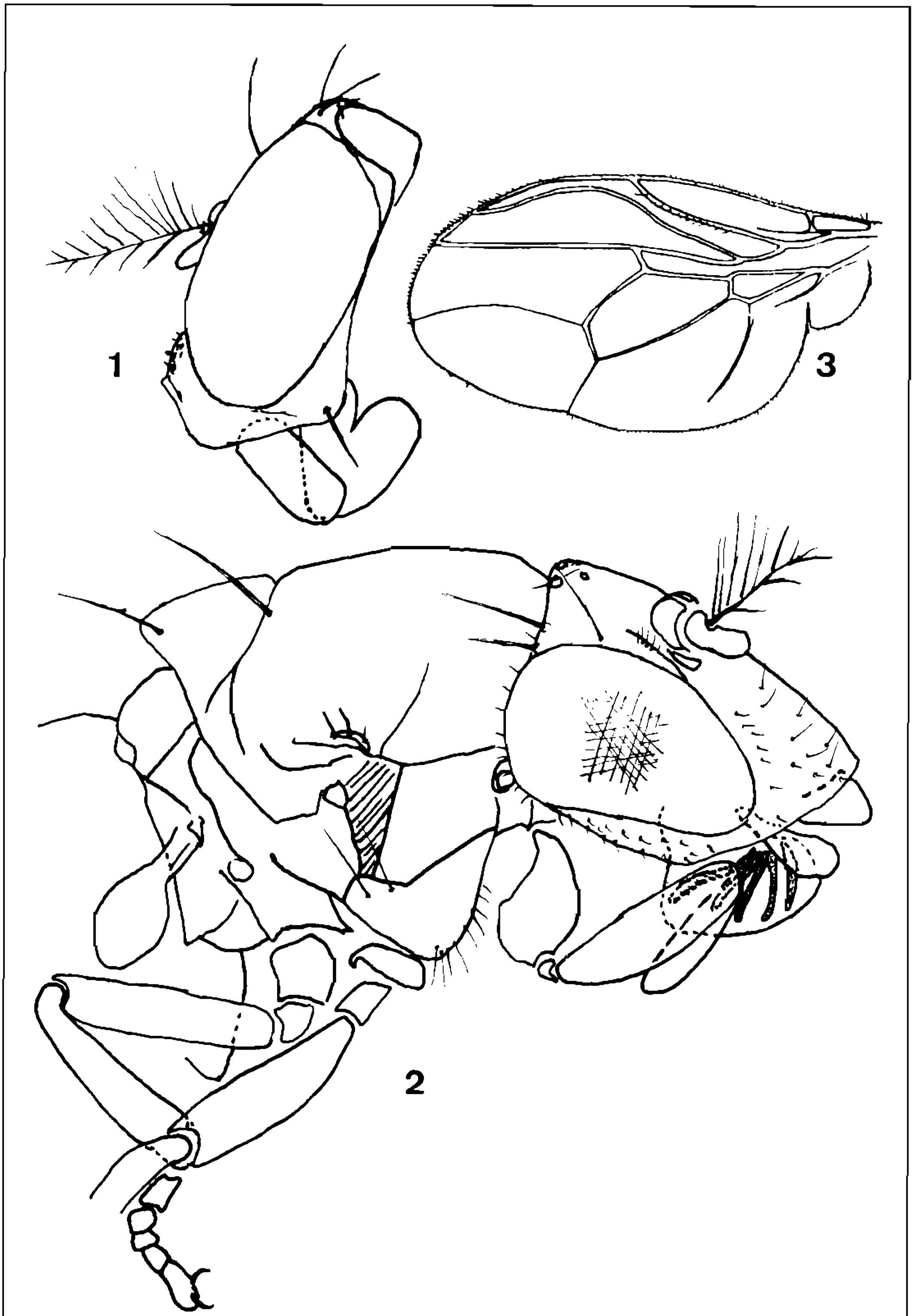
Key words: *Scutops* – *Neoscutops* – Periscelididae – Diptera – Phylogenetic relationships

Periscelididae is a small family with rather unprecisely defined limits. The genera *Periscelis*, *Scutops*, *Neoscutops*, and *Marbenia* have been included by all authors in the family. The genera *Cyamops* and *Planinasus* have not been considered part of the Periscelididae by Sturtevant (1954), Hennig (1969), and Teskey (1981), while Sabrosky (1956), McAlpine (1983), and Khoo (1984) have included the genera in the family. Based on a phylogenetic analysis, *Diopsosoma* and *Schizochaeta* should also be excluded from the Periscelididae (Amorim & Vasconcelos, in preparation).

Only 13 periscelidid species have been referred to the Neotropical region up to now – four in *Periscelis* (two underscribed; Hennig, 1969), six in *Scutops* (one undescribed; Sturtevant, 1954), two in *Neoscutops* and one in *Marbenia*. A careful analysis of the description of *Scutops chapmani* (Curran, 1934) shows that it must be considered a junior synonym of *S. fascipennis* Coquillett, the name-bearing species of the genus. This paper describes four new Neotropical species for the family – all from Brazil –, one in the genus *Neoscutops* and three in the genus *Scutops*. This raises the number of described Neotropical Periscelididae species to 16.

Neoscutops cariri sp. n.
(Figs 1-3)

Female: *Head* – Front dark brown, face brown below antennae and above clypeus with an inverted w-shaped light yellow mark in between; many small yellowish setulae covering face; scape of antenna very short, brown, pedicel dark brown, with arista yellowish basally, light brown apically; maxillary palpi brown, well developed, quite rectangular in shape; gena yellow, with a vibrissa-like small setae; occiput brown. Setae: 1 pair of inner verticals; 1 pair of outer verticals; 1 pair of stronger ocellars, with other scattered setulae; 1 pair of small divergent postocellars; 1 pair of fronto-orbitals, with a series of setulae along parafacialia (Fig. 1). *Thorax* – Scutum dark brown, with light brown areas, yellowish in anterior corners; scutellum brown; pronotum, episternum I, and epimeron I yellowish; anepisternum brown, except for lighter antero-dorsal and postero-dorsal corners; katepisternum dark brown; epimeron II and laterotergite brown, yellowish dorsally; mediotergite brown, except for a pair of lateral yellow spots below the corners of scutellum. Setae: 1 postpronotal; 1 notopleural; 1 supra-alar; 1 dorsocentral; scutum covered with small setae; 1 pair of stronger scutellars, with some scattered small setae; two stronger katepisternals, beyond a small group of ventral katepisternal setulae (Fig. 2). *Legs* – Coxae and femora brown, slightly broadned; tibia I brown, tibiae II and III yellowish brown on basal 3/4, brown on apical 1/4; tarsi light yellow; apex of tibia II with a stronger ventral black setae; second tarsomeres with some ventral blackish setulae. *Wing* – As Fig. 3. *Abdomen* – Tergites dark brown; sternites brown.



Neoscutops cariri, sp. n. Fig. 1: head, lateral view. Fig. 2: thorax, lateral view. Fig. 3: wing.

Male: Unknown.

Material examined: Holotype – Female, Brazil, State of Paraíba, João Pessoa (Campus Universitário), Malaise trap in forest, xi.1987, D. S. Amorim col. (deposited at the Museu de Zoologia da Universidade de São Paulo). Paratype: 1 female, Brazil, State of Alagoas, São Miguel dos Campos, iv.1984, M. Alvarenga col. (deposited at the Museu Nacional do Rio de Janeiro).

Comments – Both *Neoscutops fascipennis* and *N. peruvianus* are known only from the type-localities, the former in Costa Rica, the latter in Peru (Madre de Dios). The species described above is known from two localities in northeastern Brazil, along the northern extreme of the Atlantic Forest. It can be easily differentiated from the two other species by the features given in the key below. It is difficult to determine precisely the relationships among the three species without examining the types. The base of CuA_2 is incomplete in *N. peruvianus* and *N. cariri* (an apomorphic condition), and A_1 is interrupted at its base in both these species. However, in *N. cariri* CuA_1 reaches wing margin, and $CuA_2 + A_1$ is rather well sclerotized, but in *N. peruvianus* and in *N. rotundipennis* CuA_1 ends slightly before the wing margin and A_1 and $CuA_2 + A_1$ are very slightly sclerotized. The smaller number of setulae in the arista seems to be another apomorphic condition that, if homoplasy has not occurred in the history of this character, would be shared by *N. peruvianus* and *N. rotundipennis* – respectively with 3 and 2 ventral setulae –, different from *N. cariri*, with 4 setulae. A better solution of the relationships among these species would probably be achieved if the males where known and a comparison of the genitalia could be made.

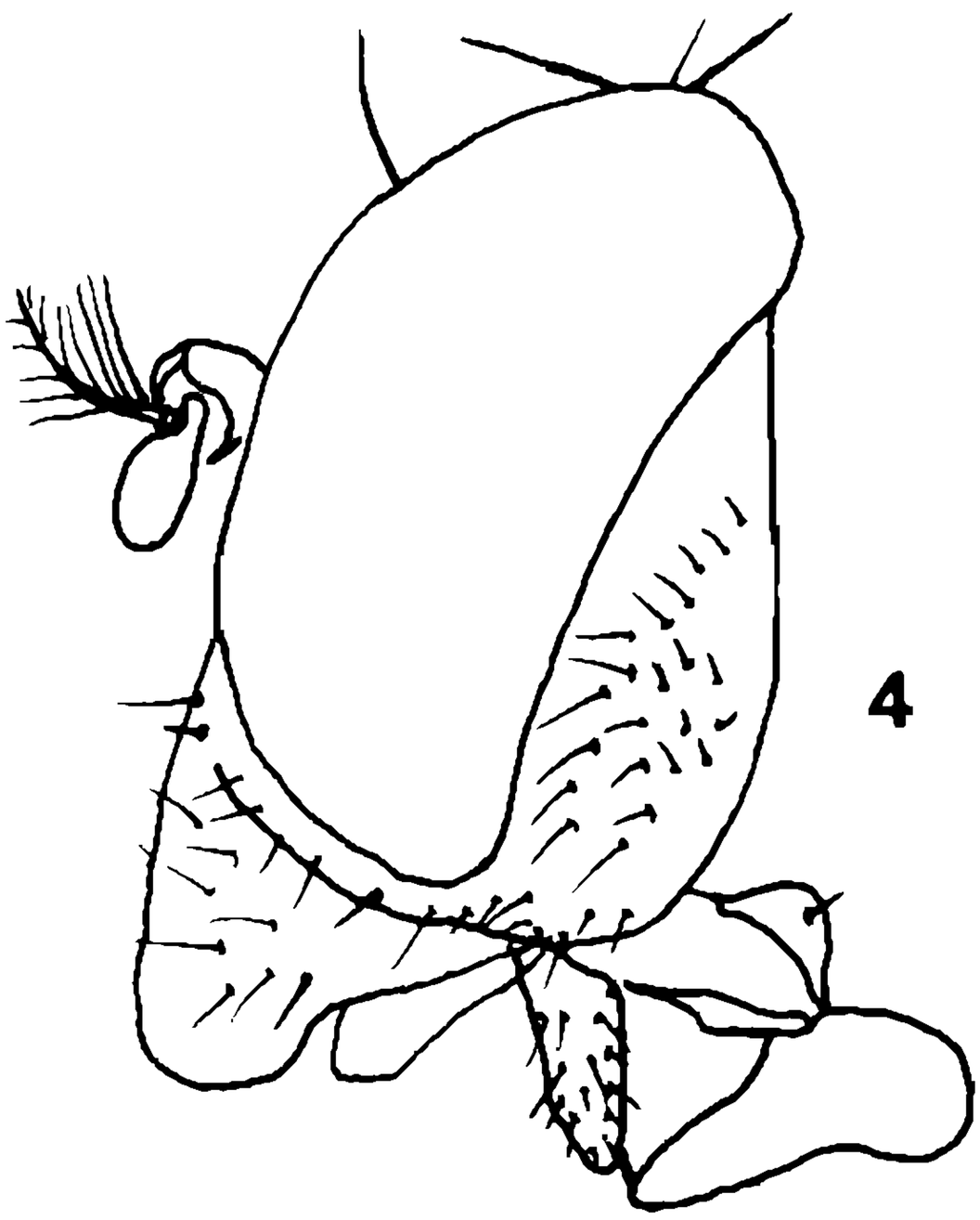
KEY TO THE KNOWN SPECIES OF *NEOSCUTOPS*

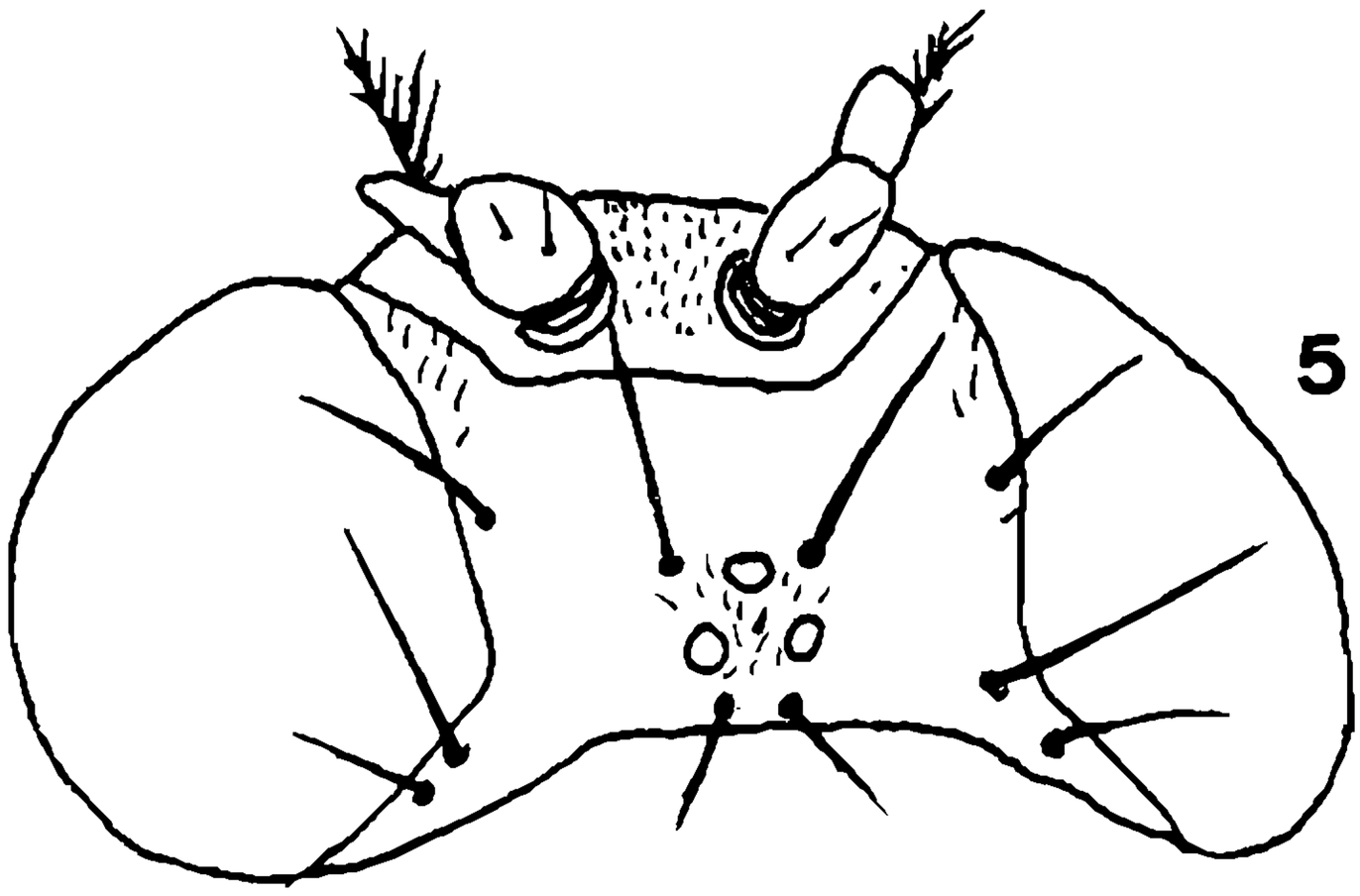
1. Arista ventrally with 3 or less setulae; CuA_1 not reaching wing margin 2
– Arista ventrally with 4 setulae; CuA_1 reaching wing margin; a vibrissa-like setulae present; base of $CuA_2 + A_1$ incompletely sclerotized; bm-cu transversal. (NE Brazil) *N. cariri* sp. n.
2. Arista with 2 setulae; base of $CuA_2 + A_1$ incompletely sclerotized; M_1 and CuA_1 reaching wing margin; a short spurious vein arising from bM just anterior to M1; a spurious sclerotization at base of Rs; bm-cu oblique; $CuA_2 + A_1$ long; although incomplete . . . . .(Peru) *N. peruvianus* Hennig
– Arista ventrally with 2 setulae; base of $CuA_2 + A_1$ normally sclerotized; M_1 and CuA_1 not reaching wing margin; no spurious veins in wing; $CuA_2 + A_1$ rather reduced. . . . . .(Costa Rica) *N. rotundipennis* Malloch

Scutops lopesi sp. n.
(Figs 4-7)

Male: *Head* – Front yellowish brown, with a mesal vertical brown band; vertex brown; face flattened, white, mesally bare of setae, and light brown with brown setae laterally; gena and postgena yellow, with brownish setae, with dense white pruinosity; vibrissa absent; mouth parts and palpi dark brown; scape of antenna brown, pedicel and flagellomere 1 yellow, arista brown. Setae: 1 pair of inner verticals; 1 pair of outer verticals; 1 pair of stronger ocellar, with other scattered setulae; 1 pair of divergent postocellars; 1 pair of fronto-orbital, with a series of setulae along parafacialia (Figs 4, 5). *Thorax* – Scutum brown, lighter on sides with an orange mesal longitudinal band, very slender anteriorly (not reaching anterior margin) and nearly as wide as scutellum posteriorly; scutellum mostly orange, brown on borders; whitish pruinosity laterally on scutum; pleural sclerites brown, except for laterotergite, whitish yellow; halteres basally yellow with capitulum brown. Setae: 1 postpronotal; 1 notopleural; 1 dorsocentral; 2 pairs of stronger scutellars; katepisternum with a stronger dorso-posterior setae and a scattered setae on the sclerite, except for the dorso-anterior corner. *Legs* – Coxa I brown, coxae II and III light brown; femora I-III and tibia I brown with apex and base yellow; tibiae II and III with basal 1/4 brown, yellow apically, except for a brown ring before apex; tarsi dark yellow, basal tarsomere quite longer than remaining tarsomeres and slightly compressed; a stronger ventral setae on apex of tibia II; second tarsomeres with some blackish ventral setulae. *Wing* – As in Fig. 6. The very base of the wing veins are yellow, as well as a small subapical extension of R1. The membrane hyaline transversal macula near apex reaches cell r_{2+3}. *Abdomen* – Tergites and sternites light brown, tergites much wider than sternites. *Genitalia* – as in Fig. 7.

Female: Identical to male in coloration and chaetotaxy.





Scutops lopesi, sp. n. Fig. 4 : head, lateral view. Fig. 5 : head, dorsal view.

Material analysed: Holotype – male, Brazil, State of Rio de Janeiro, Rio de Janeiro (Grajaú), 28.vii.1941, Lopes & Oliveira cols., ("on foliage in shady places") (deposited at the Museu de Zoologia da Universidade de São Paulo). Paratypes: 1 male and 1 female, same data; 1 female, same data, except for 23.1.1936, H. S. Lopes col. (1 female paratype at the collection of the Departamento de Sistemática e Ecologia da Universidade Federal da Paraíba).

Etimology: This species is named in honour of Dr. Hugo de Souza Lopes, the eminent Brazilian entomologist, who has been always a teacher and a friend to the younger generations of entomologists in Brazil.

Scutops lopesi, sp. n. Fig. 6: wing. Fig. 7: male genitalia, ventral view.

Scutops goianiensis sp. n.
(Figs. 8-10)

Female: as *S. lopesi*, except for the following: *Head* – Front mesally yellow; face yellow below antenna, light brown laterally; gena and postgena dark brown, except dorsally in the postgena, whitish yellow; antennae dark yellow (Fig. 8). *Thorax* – Scutum brown with a median short and slender orange band (Fig. 9). *Legs* – Femora I-III entirely brown; tibia II with brown maculae quite reduced. *Wings* – Membrane microtrichia rather long, giving a darker aspect to the wing. Base of veins R_1, Rs, R_{2+3}, and R_{4+5} yellow, other veins dark brown (Fig. 10).

Material analysed: Holotype – Female, Brazil, State of Goiás, Goiânia, viii.1943, Freitas & Nobre cols. (deposited at the Museu de Zoologia da Universidade de São Paulo).

Scutops marcgrafi sp. n.

Female: as *S. lopesi*, except for the following. *Head* – Vertex entirely light brown, without the median vertical brown band; scape brown with yellow markings. *Thorax* – Scutum with sides yellow brown, the median yellow band nearly reaching anterior margin; pronotal lobes white. *Wings* – Veins Hu, Sc, Rs, most R_1, and base of R_{4+5} (before r-m) yellow. Subapical transversal macula not reaching R_{2+3}.

Male: Unknown.

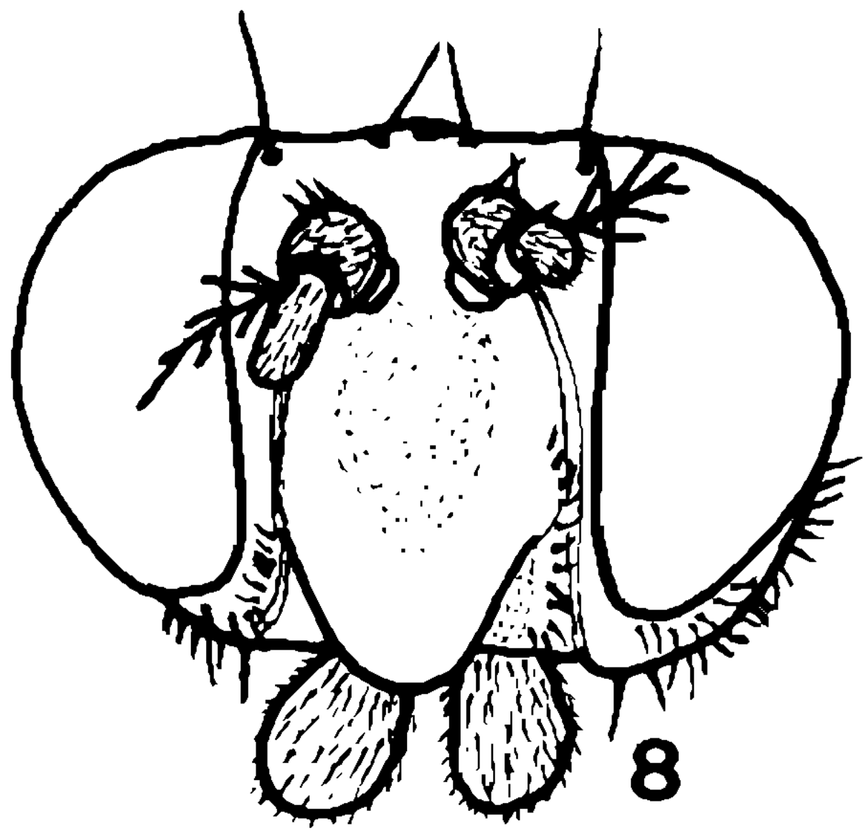
Material examined: Holotype – Female, Brazil, State of Paraíba, João Pessoa (Campus Universitário), Shannon trap in forest, 16.viii-15.ix.1986, D. S. Amorim col. (deposited at the Museu de Zoologia da Universidade de São Paulo).

Etimology: This species is named after the German naturalist Georg Marcgraf (or Marcgrave), who has studied with William Piso the Brazilian fauna, flora, cartography, and anthropology in the 16th century (1638-1643/4), during the dutch invasion of part of the country.

Comments – The three species differ in some features and can be easily differentiated. The sinuose dm-cu, a certainly apomorphic feature, differs these three species from any other in the genus. It is possible that the larger extension of the yellow coloration of the basal wing veins, and the shorter extension of the transversal hyaline subapical maculae in *S. goianiensis* and *S. marcgrafi* are synapomorphic conditions that would show a closer genealogical relationship between these two species. The presence of a median orange band in the scutum could be thought as an apomorphic feature shared by the three new Brazilian species and *S. peruanus*. It is possible to infer that *S. fascipennis* is near to these last four species since they share a very developed face with a typical shape of an inverted triangule, the scutum with some kind of yellow marking, and the typical pattern of wing, with a basal and an apical lighter bands over a dark membrane. Particularly, the shape of R_{2+3}, with a rather strong fold toward C, beyond some other features, clearly shows that this group of species of *Scutops* is separated from *S. striatus* Hennig and *S. maculipennis*. Actually, the genus *Scutops* is presently defined only by symplesiomorphies and constitutes a merophyletic arrangement. Part of the genus, including the name-bearing species, is the sister group of *Neoscutops*, and a new genus will be described elsewhere for the other part of *Scutops*. The species of *Scutops* herein described are directly related to the name-bearing species. As commented above, a general phylogenetic analysis of the family is being finished and will be published in the near future.

KEY TO THE KNOWN SPECIES OF *SCUTOPS*

1. Wing dark with an hyaline basal macula and usually an additional apical lighter transversal band; face developed, ventrally projected; scutum with a mesal orange band or a pair of mesal orange bands; R_{2+3} strongly curved toward anterior margin 3
– Wing without such pattern; face not ventrally developed; scutum brown; R_{2+3} rather straight 2
2. Wing mostly hyaline, with a greyish slender longitudinal band on anterior margin. . . . . (Peru) *S. striatus* Hennig
– Wing membrane black, with numerous whitish spots . . . . . (Mexico) *S. maculipennis* Malloch
3. A single katepisternal setae; a pair of yellow bands on scutum . . . . . (Central America) *S. fascipennis* Coquillett
– Two katepisternal setae; a single mesal maculae or a pair of bands on scutum 4



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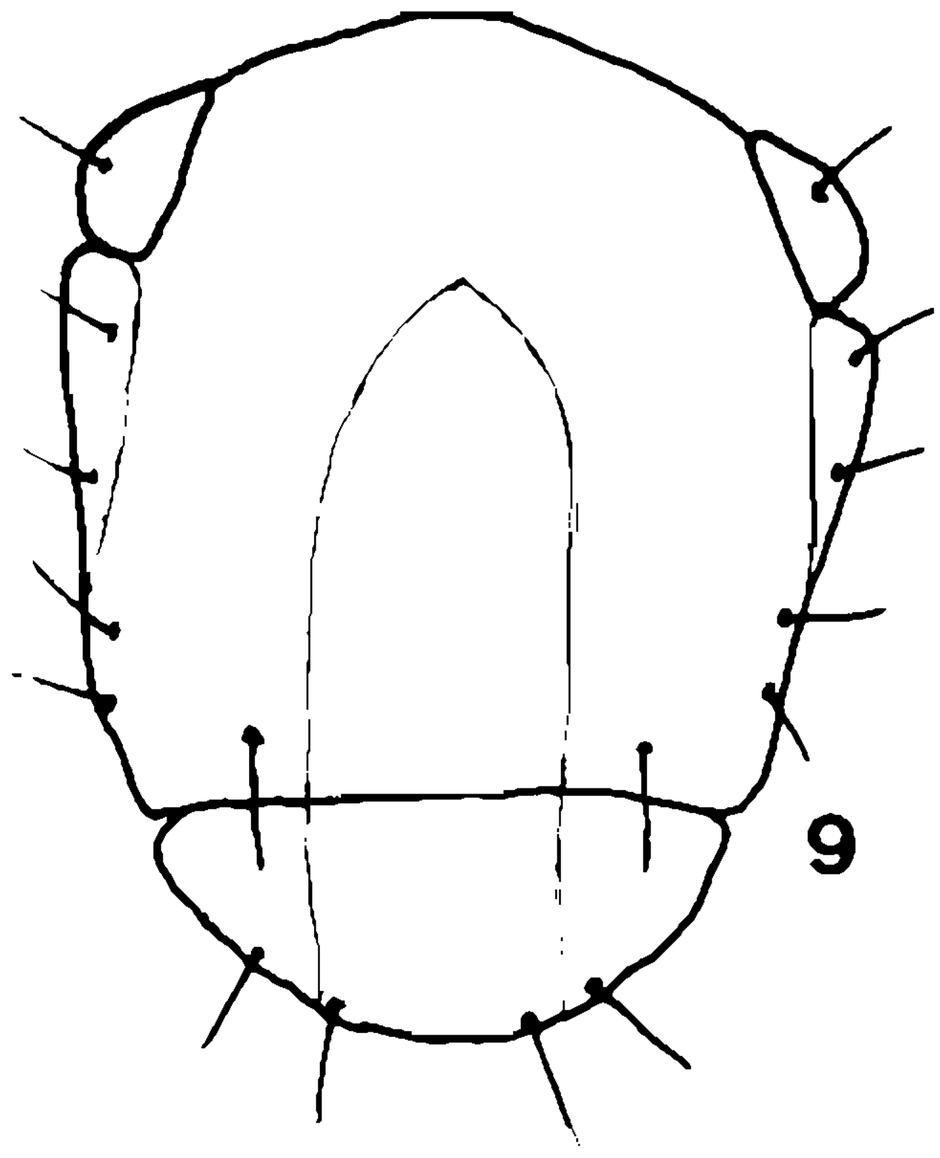

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Scutops goianiensis, sp. n. Fig. 8: head, frontal view. Fig. 9: thorax. Fig. 10: wing.

4. A pair of yellow bands on scutum; bm-cu interrupted at the contact with bM; apex of wing without apical hyaline transversal band . . . . . (Peru) *Scutops peruanus* Hennig
– A single mesal orange band on scutum; bm-cu complete; apex of wing with an hyaline transversal band 5
5. Membrane of cell r_{4+5} below apex of R_1 quite hyaline; cell c rather wide; only R_1 subapically yellow in a short extension . . . . . .(SE Brazil) *S. lopesi*, sp. n.
– Membrane of cell r_{4+5} below apex of R_1 dark; cell C normal, slender; mesal orange band on scutum short, not slender anteriorly 6
6. Mesal band of scutum rather short, beginning slightly before the middle of the sclerite; microtrichia of wing rather developed . . . . . .(Central Brazil) *S. goianiensis*, sp. n.
7. Mesal band of scutum long, nearly reaching the anterior margin of the sclerite; micro-

trichia of wing normal . . . . . (NE Brazil) *S. marcgrafi*, sp. n.

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