Pseudoyelicones (Hymenoptera: Braconidae: Rogadinae), a new genus from Brazil and Costa Rica

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Pseudoyelicones (Hymenoptera: Braconidae: Rogadinae), a new genus (type species: *Pseudoyelicones manoeli* spec. nov.) from Brazil is described and illustrated. Two additional species from Brazil and Costa Rica are described.

Introduction

The second author found a highly aberrant specimen collected in Brazil by her husband, the lepidopterist Manoel M. Dias, which looks similar to the genus *Yelicones* Cameron, 1887 (Rogadinae), because of the shortened hind tarsal segments (figs 5, 7-9, as a result having the fore tibial spur as long as the fore basitarsus), the strongly slanted labrum (resulting in a large empty space behind the mandibles) and the large triangular basal area of the second metasomal tergite (fig. 6). However, it can be easily separated as follows: the tarsal claws not distinctly pectinate (fig. 7); the telotarsi hardly or not enlarged (figs 8, 9); vein 1r-m of hind wing vertical (fig. 1), vein 2-SC+R of hind wing vertical and widened (fig. 1); vein cu-a of fore wing far antefurcal; the occipital carina absent; the mesoscutal transverse suture normal medially; the prosternum indistinct, invisible in lateral view; vein M+CU1 of fore wing straight apically (fig. 1); the hind basitarsus without specialized area; and the mandible distinctly bidentate. The genus *Yelicones* is widespread (cosmopolitan), and contains koinobiont endoparasites of lepidopterous larvae (van Achterberg, 1995; Quicke et al., 1996). The biology of the new genus is unknown, but all Rogadinae are koinobiont endoparasites of caterpillars, which have become mummified when the parasite pupates.

For the identification of the subfamily Rogadinae, see van Achterberg (1990, 1993), and for the terminology used in this paper, see van Achterberg (1988, 1993).

Descriptions

Pseudoyelicones gen. nov.
(figs 1-11)

Type species.— *Pseudoyelicones manoeli* spec. nov.

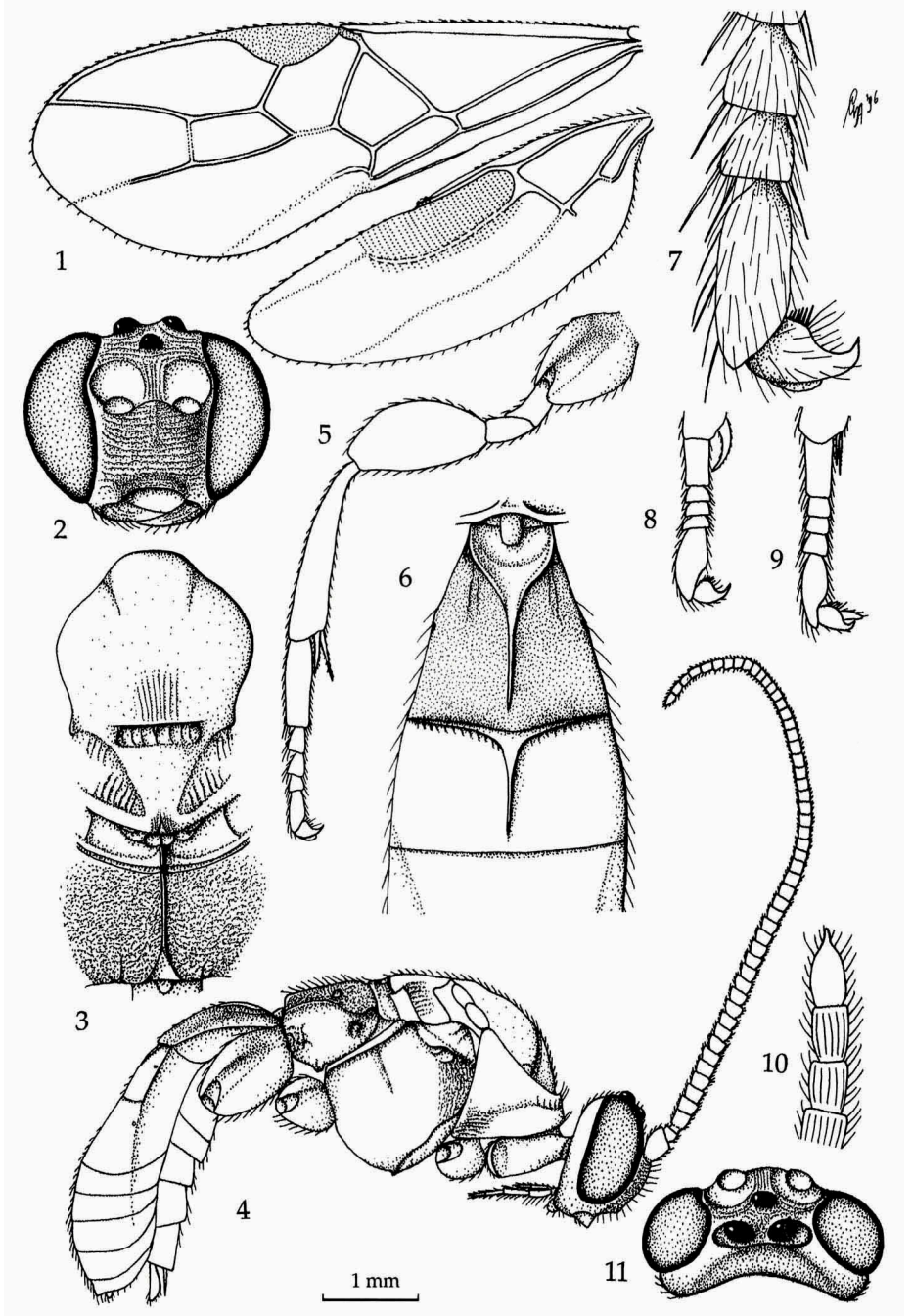
Etymology.— From "pseudes" (Greek for "false") and "*Yelicones*" (based on the generic name *Yelicones* Cameron, 1887) because it is superfically similar to *Yelicones*, but not closely related. Gender: masculine.

Diagnosis.— Length of fore wing 3-6 mm, of body 4-8 mm; antennal segments of ♀ more than 40, apical segment with distinct spine (fig. 10); antenna slightly longer than fore wing (figs 1, 4); apex of scapus oblique (figs 4, 13); maxillary and labial palpi of ♀ slender, at most slightly widened (fig 4); occipital carina completely absent; vertex deeply depressed near posterior ocelli, smooth; frons slightly concave and striate (figs 2, 11); malar suture absent; eyes distinctly emarginate, large (figs 2, 17); antescutal depression indistinct; prepectal carina complete; precoxal sulcus absent (fig. 4); notauli narrow, absent medially and posteriorly (figs 3, 12); mesoscutum without median groove; medial carina of metanotum present posteriorly (fig. 12), not protruding dorsally (fig. 3); propodeal areola indistinct and median carina complete (figs 3, 12, 15); propodeal tubercles absent; vein 1-SR of fore wing short, continuous with vein 1-M; vein m-cu of fore wing far antefurcal (fig. 1), straight, angled with vein 2-CU1, and subparallel with vein 1-M (fig. 1); vein r of fore wing not continuous with posterior margin of pterostigma; vein 3-SR of fore wing long (fig. 1), about 0.6 times as long as vein SR1; first subdiscal cell of fore wing elongate, vein cu-a short and far antefurcal (fig. 1); vein cu-a of fore wing vertical; discal cell of fore wing setose; vein M+CU1 of fore wing straight; marginal cell of hind wing narrow parallel-sided apically, and widened basally and medially, widened area glabrous and corrugated (figs 1, 14); vein SR of hind wing distinctly curved medially, its medial and basal part flattened, widened, intermediately sclerotized and distinctly pigmented, not vein-like (fig. 14); vein 1r-m of hind wing vertical; vein 2-SC+R vertical; basal cell of hind wing nearly completely glabrous, widened posteriorly (figs 1, 14); vein M+CU of hind wing longer than vein 1-M; subbasal cell of hind wing narrow and glabrous (figs 1, 14); outer side of fore tibia striate, especially in ♂ with strong central longitudinal carina; femora strongly inflated; fore femur flattened ventrally; tarsal claws simple, slightly serrate medio-ventrally (figs 7, 16); tarsi shortened and robust (figs 5, 8, 9); telotarsi hardly widened; middle and hind tibial spurs straight and shortly setose; apex of hind tibia without comb of specialized setae at inner side; first tergite with minute dorsope, its dorsal carinae present at basal third, strong, united posteriorly to a nearly complete median carina, and without basal flanges (figs 6, 15); second tergite with large smooth medio-basal triangular area and distinct medio-longitudinal carina (figs 6, 15); third-sixth tergites without sharp lateral crease and smooth (fig. 4); third-sixth tergites straight medio-posteriorly; hypopygium of female in lateral view straight ventrally and medium-sized, medio-ventrally without keel, and apically truncate (fig. 4); ovipositor straight, narrow (fig. 4); ovipositor sheath widened, short (fig. 4); metasoma of ♀ largely depressed, robust.

Distribution.— Neotropical: three species.

Key to species of the genus *Pseudoyelicones* nov.

1. Posterior ocelli enlarged, almost touching eyes, OOL of ♂ about 0.2 times diameter of posterior ocellus; mesoscutum and scutellum completely black; area below pterostigma distinctly darkened and contrasting with subhyaline apex of



Figs 1-11, *Pseudoyelicones manoeli* gen. nov. & spec. nov., ♀, holotype. 1, wings; 2, head, frontal aspect; 3, mesosoma, dorsal aspect; 4, habitus, lateral aspect; 5, hind leg; 6, first and second metasomal tergites, dorsal aspect; 7, outer hind claw; 8, fore tarsus, lateral aspect; 9, middle tarsus, lateral aspect; 10, apex of antenna; 11, head, dorsal aspect. 1, 4, 5: 1.0 × scale-line; 2, 3, 6, 11: 1.5 ×; 7, 10: 5 ×; 8, 9: 2.0 ×.

fore wing; tore tarsus more slender; apex of hind tibia yellow, contrasting with dark brown remainder of tibia; vein 1+2-CU1 of fore wing completely yellow .... ***P. nigriscutum*** van Achterberg, spec. nov.

- Posterior ocelli medium-sized, distinctly removed from eyes (figs 11, 17), OOL of ♀♂ 0.3-0.5 times diameter of posterior ocellus; mesoscutum and scutellum yellowish; area below pterostigma slightly darkened and not or hardly contrasting with apex of fore wing; fore tarsus robust (fig. 8); colour of apex of hind tibia and of vein 1+2-CU1 of fore wing variable 2

2. Pterostigma (except basally and apically narrowly), mesopleuron antero-dorsally, middle and hind tibiae (except apically in ♀), and apices of femora dark brown; length of fore wing 3-5 mm .... ***P. phaeostigma*** van Achterberg & Quicke, spec. nov.

- Pterostigma, mesopleuron antero-dorsally, middle and hind tibiae, and apices of femora brownish-yellow; length of fore wing about 8 mm .... ***P. manoeli*** van Achterberg & Penteado Dias, spec. nov.

Pseudoyelicones manoeli van Achterberg & Penteado-Dias spec. nov.
(figs 1-11)

Material.— Holotype, ♀ (DCBU), "[Brazil], Ilha do Cardoso, Cananéia-S.P., 23.iv.1987, luz, M.M. Dias, coll.".

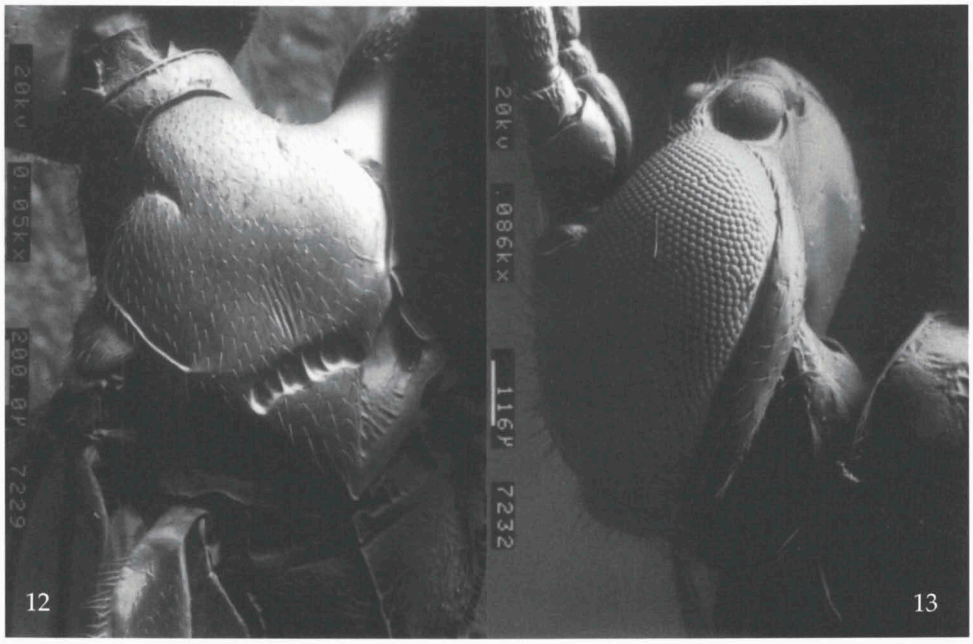
Description.— Holotype, ♀, length of body 7.8 mm, of fore wing 6.3 mm.

Head.— Antenna with 52 segments, long and densely setose, length of third segmet 1.5 times fourth segment, length of third, fourth and penultimate segments 1.2, 0.8, and 1.6 times their width, respectively; length of maxillary palp 0.8 times height of head; length of eye in dorsal view 3.1 times temple; OOL:diameter of ocellus:POL = 3:6:3; face densely transversely rugose; clypeus rugulose, moderately wide, low (fig. 2); width of hypoclypeal depression 0.6 times minimum width of face; length of malar space 0.3 times basal width of mandible, and 0.1 times height of eye (fig. 2).

Mesosoma.— Length of mesosoma 1.3 times its height; mesoscutum distinctly higher than pronotum anteriorly (fig. 4); mesopleuron smooth, but epicnemial area rugulose dorsally; mesoscutum setose, largely smooth except for some punctulation and some striae posteriorly (fig. 3); scutellum largely smooth, medio-posteriorly with some striae and minute triangular protruding area; surface of propodeum densely rugulose, with median carina distinct (fig. 3).

Wings.— Fore wing: r:3-SR:SR1 = 9:15:27; 2-M+CU1 oblique, 2-M+CU1:1+2-CU1 = 3:14; 2-SR:3-SR:r-m = 8:15:9; r-m distinctly shorter than 3-SR (fig. 1); basal, first subdiscal and subbasal cells much sparser setose than other cells. Hind wing: cu-a short, unsclerotized (fig. 1); m-cu indistinct; sclerotized part of CU1a nearly as long as m-cu.

Legs.— Hind coxa smooth, with long depression dorsally (fig. 5); length of femur, tibia and basitarsus of hind leg 2.2, 5.6, and 3.2 times their width, respectively; fore tibial spur as long as fore basitarsus (fig. 8); length of hind tibial spurs 0.4 and 0.6 times hind basitarsus; hind basitarsus strongly compressed, aciculate (fig. 5).



Figs 12-13, *Pseudoyelicones phaeostigma* gen. nov & spec. nov., ♂, paratype, Brazil, Sinop. 12, mesosoma, dorsal aspect; 13, head, dorsal-lateral aspect.

Metasoma.— Length of first tergite 0.9 times its apical width, its surface densely and finely coriaceous, with nearly complete strong median carina (fig. 6); second tergite largely smooth, with large, smooth triangular medio-basal area, connected to long median carina (fig. 6); third and following tergites smooth; second suture narrow and distinct, but weak laterally; length of ovipositor sheath 0.05 times fore wing.

Colour.— Brownish-yellow; apical segment of antenna ivory; 17 preceding segments of antenna and ovipositor sheath dark brown; remainder of antenna brown; stemmaticum black; palpi, head and mesosoma (except dorsally) pale brownish-yellow; pterostigma, parastigma, veins 1-SR. 1-M, M+CU1, CU1, 1A, C+SC+R and 1-R1 of fore wing and veins of hind wing brownish-yellow; remainder of veins dark brown, but vein SR1 only basally so; basal half of fore wing and hind wing slightly yellowish; remainder of wing membrane slightly infuscate.

Pseudoyelicones nigriscutum van Achterberg, spec. nov.

Material.— Holotype, ♂ (INBIO), "Costa Rica, P.N. Manuel Antonio, Quepos, Prov. Punta, 80 m, v.1991, R. Zuñiga, LS 370900-448800 #1690", "Costa Rica, INBIO CR I 001 729933".

Holotype, ♂, length of body 5.3 mm, of fore wing 4.5 mm. Morphologically very similar to the holotype of *P. manoeli*, despite it is a male. *P. nigriscutum* is easily separable because of the colour of the mesoscutum and the enlarged ocelli.

Head.— Antenna with 45 segments; OOL:diameter of posterior ocellus: POL = 2:12:5; posterior ocelli enlarged, almost touching eyes.

Mesosoma.— Propodeum only superficially micro-sculptured, with some oblique striae posteriorly, shiny.

Wings.— Fore wing: r:3-SR:SR1 = 9:15:26; 2-SR:3-SR:r-m = 10:15:9.

Legs. — Length of femur, tibia and basitarsus of hind leg 2.5, 6.1, and 4.0 times their width, respectively; length of hind tibial spurs 0.4 and 0.5 times hind basitarsus; fore tarsus more slender than as figured in fig. 8.

Metasoma.— Length of first tergite 1.05 times its apical width, its surface superficially micro-sculptured, with some fine longitudinal striae laterallly, shiny, its median carina complete; second tergite largely smooth and shiny, with some punctulation and anteriorly indistinctly micro-sculptured.

Colour.— Brownish-yellow; 14 apical segments of antenna dark brown, but most apical and most basal segment paler than other segments; fore tibia (except largely ventrally and its spurs), middle and hind tibia (except apex and spurs), third tergite apically, fourth and fith tergites largely, ventral part of patch on mesopleuron, pterostigma and veins in dark band below pterostigma, dark brown; fore wing with distinct dark band below pterostigma, contrasting with subhyaline apical part of fore wing, including most of vein SR1 and vein 1-R1; vein 1+2-CU1 completely yellow; remainder of membrane slightly yellowish; stemmaticum, mesoscutum, scutellum, metanotum, and mesopleuron dorso-anteriorly, black.

Pseudoyelicones phaeostigma van Achterberg & Quicke, spec. nov.
(figs 12-17)

Material.— Holotype, ♀ (AEIG), "Brazil, Sinop, M. Grosso, 12°31'S 55°37'W, xi.1975, M. Alvarenga". Paratype: ♂ (AEIG), topotypic, but x.1974. Excluded: 1 ♂ (INBIO), "Costa Rica, P.N. Guanacaste, Prov. Guan., Los Almendros, 7-26."ene".1991, E. López, L-N-334800, 369800", "Costa Rica, INBIO CR I 001 192269".

Holotype, ♀, length of body 6.5 mm, of fore wing 4.8 mm. Morphologically very similar to *P. manoeli*, mainly separable because of the colour differences.

Head.— Antenna incomplete, 28 segments remaining; OOL:diameter of posterior ocellus: POL = 5:11:4.

Mesosoma.— Propodeum distinctly micro-sculptured, with some oblique striae posteriorly, rather matt (fig. 12).

Wings.— Fore wing: r:3-SR:SR1 = 9:14:30; 2-SR:3-SR:r-m = 9:14:9; r less oblique than of other species; sclerotized part of CU1a of fore wing about as long as m-cu.

Legs. — Length of femur, tibia and basitarsus of hind leg 2.4, 5.9, and 3.6 times their width, respectively; length of hind tibial spurs 0.4 and 0.5 times hind basitarsus; fore tarsus robust as figured in fig. 8.

Metasoma.— Length of first tergite 1.05 times its apical width, its surface superficially micro-sculptured, shiny, its median carina nearly complete (figs 14, 15); second tergite largely smooth and shiny, with some punctulation and anteriorly indistinctly micro-sculptured (fig. 15).

Colour.— Brownish-yellow; colour of apical segments of antenna unknown;

Figs 14-17, *Pseudoyelicones phaeostigma* gen. nov & spec. nov., ♂, paratype, Brazil, Sinop. 14, hind wing; 15, metasoma, dorsal aspect; 16, tarsal claws; 13, head, dorsal aspect.

stemmaticum, tibiae (except apex broadly and spurs), apices of femora, pterostigma (except basally and apically narrowly), veins below pterostigma (including largely 1+2-CU1) up to base of vein SR1), mesopleuron antero-dorsally, mesoscutum laterally, scutellum (but medially brown), metanotum, first tergite medio-posteriorly, second tergite medially and posteriorly, third-sixth tergbites largely, and seventh tergite (except posteriorly) dark brown; fore wing with indistinct dark band below pterostigma, not contrasting with paler apex of fore wing, remainder of wing membrane slighthly yellowish.

Male.— Length of fore wing 3.3 mm. length of body 4.2 mm; antennal segments 39; similarly coloured as holotype, but basal half of vein 1+2-CU1 of fore wing yellow, apex of tibiae dark brown, tibial spurs brown, third-fifth tergites only anteriorly infuscate and remainder of metasoma pale yellowish; 9 apical antennal segments dark brown, its apical segment slightly paler; OOL:diameter of posterior ocellus: POL = 3:10:4 (fig. 17).

Note.— The very similar male from Costa Rica with 39 antennal segments is excluded because it has the tegula and the base of the vein 1-CU1 of fore wing dark brown, the mesoscutum yellowish-brown laterally, the metasoma without any infuscation, and the area below the pterostigma is darker than in the type specimens.

Acknowledgements and abbreviations

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AEIG stands for American Entomological Institute, Gainesville, U.S.A., DCBU for Department of Ecology and Evolutionary Biology, Federal University of São Carlos, São Carlos, S.P., Brazil, and INBIO for Instituto Nacional de Biodiversidad, Cementerio de Santa Domingo de Heredia, Costa Rica.

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